CleanHarbors
ENVIRONMENTAL SERVICES, INC.

108555 East Highway 36
Deer Trail, CO 80105
970.386.2293
www.cleanharbors.com

April 30, 2014

Phillip J. Peterson
Environmental Protection Specialist
Radioactive Materials Unit
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, CO 80246-1530

Re: License 1102-01 Condition 15.J, 2013 Annual Report

Mr. Peterson,

Please find the attached report written to comply with Condition 15.J of the State of Colorado Department of Public Health and Environment (CDPHE) Radioactive Materials License Number 1102-01, Amendment Number 13.

Please do not hesitate to contact me with any questions or concerns pertaining to this submittal.

Regards,

C E Christman

Clyde Christman, RRPT
Radiation Safety Officer
Clean Harbors Deer Trail

Cc: Craig Tessmer

Clean Harbors Deer Trail, LLC
108555 East Highway 36
Deer Trail, Colorado 80105

2013 Annual Report

Colorado Department of Public Health and Environment
Radioactive Materials License Number 1102-01

Clean Harbors Deer Trail, LLC
108555 East Highway 36
Deer Trail, Colorado 80105

2013 Annual Report

Colorado Department of Public Health and Environment
Radioactive Materials License Number 1102-01

Approvals:

John Kehoe, MS, Facility General Manager

Clyde E. Christman, RRPT, Radiation Safety Officer

Executive Summary

Clean Harbors Deer Trail, LLC (CHDT, or facility) is the holder of Colorado Department of Public Health and Environment (CDPHE) Radioactive Materials License 1102-01, Amendment 13. Condition 15(J) of the License is to provide an annual report to the CDPHE with details pertaining to environmental and occupational monitoring, disposal activities, anticipated activities for the next year, and an evaluation of the decommissioning warranty and funding plan. This report is written to satisfy Condition 15(J) of the License.

Results of the environmental monitoring program are consistent with the baseline sampling results. The L-4 wells and cell leachate results indicate the highest variability, while L-3 appears to have the lowest water quality. The L-5 wells are the more stable wells, with the highest water quality. No treated or surface water that came into contact with radiologically impacted materials was released off-site. Air monitoring results indicate radiological concentrations below CDPHE airborne limits. Area exposure rates are consistent with baseline values. Results of the routine monthly clean area contamination surveys did not indicate any release of radioactive materials from site operations to unrestricted surface areas.

The calculated effective dose equivalent to the maximally exposed individual of the general public residing approximately 3500 meters north of the facility is 1.88E-04 mrem/yr. The effective dose equivalent calculated for the nearest resident is 8.2E-05 mrem/yr. Both doses are well within the general public dose limit of 100 mrem/yr.

Occupational monitoring results indicated worker exposure to radioactive materials was well within ALARA goals. Lapel air sampling was conducted in the Treatment Building and Disposal Cell to more accurately reflect radionuclide concentrations in the worker breathing zone. The results were used to calculate the internal portion of the effective dose equivalent.

The decommissioning warranty was updated for inflation and reported separately in September, 2013 to comply with State regulations. Review of the decommissioning funding plan indicates that a total of $1,303,844 has been accumulated towards decommissioning as of December 31, 2013. Continued contributions toward the funding plan should provide adequate funding for decommissioning.

The License was renewed on December 21, 2010. The License was amended in December of 2012. This License amendment (13) incorporated modifications to the waste acceptance procedure negotiated for the Adams County Amended CD. Modifications included clarification of terminology, reporting procedures and dispute resolution. The scope of the License remains unchanged. All other procedures approved during the License renewal were considered adequate and remained unchanged during 2013.

Table of Contents

1.0 INTRODUCTION 1

2.0 ENVIRONMENTAL MONITORING 2

2.1 RADIOACTIVE CONTAMINANTS RELEASED TO UNRESTRICTED AREAS 2

2.2 AIRBORNE EFFLUENTS 2

2.3 LIQUID EFFLUENTS 2

2.4 GROUNDWATER MONITORING 3

2.5 RADON MONITORING 3

2.6 EXTERNAL DOSE 3

2.7 DOSE TO MEMBERS OF THE PUBLIC 4

3.0 SITE CHARACTERISTICS AND DISPOSAL ACTIVITIES 6

3.1 DISPOSAL UNIT SURVEY AND MAINTENANCE ACTIVITIES 6

3.2 DISPOSAL QUANTITIES 6

3.3 SITE CHARACTERISTICS 6

4.0 OCCUPATIONAL DOSE AND ALARA 7

4.1 DEEP DOSE EQUIVALENT 7

4.2 COMMITTED EFFECTIVE DOSE EQUIVALENT 7

4.3 AS LOW AS REASONABLY ACHIEVABLE PROGRAM 8

5.0 DECOMMISSIONING WARRANTY AND FUNDING PLAN 9

6.0 2014 ANTICIPATED ACTIVITIES 10

7.0 APPENDIX 1 – ALARA PROGRAM AUDIT 60

REVIEW OF THE 2013 OPERATIONS 61

2013 OCCUPATIONAL EXPOSURE ALARA GOAL 61

Personnel Contamination Events 61

Spills 62

2014 OPERATIONS 62

2014 ALARA GOALS 62

Occupational Exposure 62

Personnel Contamination Events 62

Spills 62

8.0 APPENDIX 2 – 2013 CAP-88PC REPORT 63

List of Figures

FIGURE 1 - CHDT LOCATION 12
FIGURE 2 - CHDT FACILITY LAYOUT 13
FIGURE 3 - CHDT AIR MONITORING STATIONS 14
FIGURE 4 – GROUNDWATER TRENDING RESULTS – CELL 1 LCS 15
FIGURE 5 - GROUNDWATER TRENDING RESULTS – CELL 1 LDS 16
FIGURE 6 - GROUNDWATER TRENDING RESULTS – CELL 1 PS 17
FIGURE 7 - GROUNDWATER TRENDING RESULTS – CELL 2 LCS 18
FIGURE 8 - GROUNDWATER TRENDING RESULTS – CELL 2 LDS 19
FIGURE 9 - GROUNDWATER TRENDING RESULTS – TRB LDS 20
FIGURE 10 - GROUNDWATER TRENDING RESULTS – CELL 3 LCS 21
FIGURE 11 - GROUNDWATER TRENDING RESULTS – CELL 3 LDS 22
FIGURE 12 - GROUNDWATER TRENDING RESULTS – WELL L3-42 23
FIGURE 13 - GROUNDWATER TRENDING RESULTS – WELL L4-16 24
FIGURE 14 - GROUNDWATER TRENDING RESULTS – WELL L4-32A 25
FIGURE 15 - GROUNDWATER TRENDING RESULTS – WELL L4-32WA 26
FIGURE 16 - GROUNDWATER TRENDING RESULTS – WELL L4-33 27
FIGURE 17 - GROUNDWATER TRENDING RESULTS – WELL L4-41 28
FIGURE 18 - GROUNDWATER TRENDING RESULTS – WELL L4-8 29
FIGURE 19 - GROUNDWATER TRENDING RESULTS – WELL L4-8N 30
FIGURE 20 - GROUNDWATER TRENDING RESULTS – WELL L4-9N 31
FIGURE 21 - GROUNDWATER TRENDING RESULTS – WELL L4-9W 32
FIGURE 22 - GROUNDWATER TRENDING RESULTS – WELL L4-28 33
FIGURE 23 - GROUNDWATER TRENDING RESULTS – WELL L5-10A 34
FIGURE 24 - GROUNDWATER TRENDING RESULTS – WELL L5-4 35
FIGURE 25 - GROUNDWATER TRENDING RESULTS – WELL L5-5 34
FIGURE 26 - GROUNDWATER TRENDING RESULTS – WELL L5-6 37
FIGURE 27 - GROUNDWATER TRENDING RESULTS – WELL L5-7 38
FIGURE 28 - GROUNDWATER TRENDING RESULTS – WELL L5-8 39
FIGURE 29 - GROUNDWATER TRENDING RESULTS – WELL L5-9 40
FIGURE 30 - GROUNDWATER TRENDING RESULTS – WELL L6-3A 41
FIGURE 31 - CHDT RADON MONITORING STATIONS 42
FIGURE 32 - CHDT THERMOLUMINESCENT DOSIMETER MONITORING STATIONS 43

List of Tables

TABLE 1 – 2013 CHDT AIRBORNE MONITORING RESULTS (UCI/ML) 45
TABLE 2 – CHDT 2013 WASTEWATER DISCHARGE MONITORING RESULTS 47
TABLE 3 - CHDT GROUNDWATER MONITORING RESULTS – CELL GROUP 48
TABLE 4 - CHDT GROUNDWATER MONITORING RESULTS – L3-42 49
TABLE 5 - CHDT GROUNDWATER MONITORING RESULTS – L4 GROUP 50
TABLE 7 - CHDT GROUNDWATER MONITORING RESULTS – L6-3A 53
TABLE 8 - CHDT 2013 RADON MONITORING RESULTS 54
TABLE 9 - CHDT 2013 ENVIRONMENTAL DOSIMETER MONITORING RESULTS 55
TABLE 10 - CHDT SITE-SPECIFIC CAP-88PC POPULATION FILE 56
TABLE 11 - CHDT 2013 CAP-88PC SOURCE TERM 57
TABLE 12 - CHDT 2013 OCCUPATIONAL THERMOLUMINESCENT DOSIMETRY RESULTS 58
TABLE 13 – CHDT 2013 CEDE CALCULATIONS 59

1.0 INTRODUCTION

Clean Harbors Deer Trail, LLC (CHDT, or facility) is the holder of Colorado Department of Public Health and Environment (CDPHE) Radioactive Materials License 1102-01 (License). Condition 15(J) of the License is to provide an annual report to the CDPHE. This report is written to satisfy condition 15(J) of the License. Specifically, this condition of the license requires details pertaining to the following items:

A. Specification of each quantity of radioactive contaminants released to unrestricted areas in liquid and in airborne effluents;

B. The results of the environmental monitoring program;

C. A summary of licensee disposal unit radiation survey and maintenance activities;

D. A summary of activities and quantities of radionuclides disposed of;

E. Any instances in which the observed site characteristics were significantly different from those described in the application for a license;

F. Estimated doses to members of the public from the licensee's activities. This includes TEDE (total effective dose equivalent) and TODE (total organ dose equivalent) for both the nearest resident and the maximally exposed member of the public (if they are not the same person). The calculation of public doses shall be in accordance with Department approved methods, sampling frequencies, and dose modeling assumptions. Dose estimates shall be accompanied by appropriate supporting data including an electronic copy of the lab results, spreadsheets, computer model inputs, and modeling results/outputs;

G. A summary of Occupational Doses (total effective dose equivalent (TEDE), committed effective dose equivalent (CEDE), and deep dose equivalent (DDE));

H. A copy of the annual ALARA program audit;

I. A summary of anticipated activities for the coming year;

J. An evaluation of the existing decommissioning warranty to ensure that the available funds are sufficient to account for inflation, current site conditions, and projected activities for the coming year; and

K. An evaluation of the existing decommissioning funding plan to ensure that the licensee will have sufficient funds for the licensee to complete site decommissioning activities.

CHDT is also a permitted hazardous waste treatment and disposal facility. The facility is located in eastern Colorado (Figure 1), and currently has two closed and one active disposal cells. CHDT has multiple buildings that are utilized for various functions, such as laboratory, water treatment, and maintenance activities. A map of CHDT is presented as Figure 2.

2.0 ENVIRONMENTAL MONITORING

Environmental monitoring is performed at CHDT for various pathways and contaminants. Airborne particulate monitoring, radon monitoring, and external exposure monitoring are performed at various locations throughout the facility.

2.1 Radioactive Contaminants Released to Unrestricted Areas

Potential radioactive contaminants present in liquid or airborne particulate forms are monitored for the potential impact to offsite property and personnel. Results of the air monitoring program are compared directly to the limits for airborne effluents listed in Table 4B2, Column 2 of Appendix 4B of 6 Colorado Code of Regulations (CCR) 1007-1 Part 4, Standards for Protection Against Radiation. Routine monthly clean area survey results did not indicate any release of radioactive materials to unrestricted surface areas.

2.2 Airborne Effluents

Airborne effluents are monitored in accordance with the CHDT SOP 15.OPS.15, Air Monitoring for Radioactive Materials. Airborne effluents are monitored utilizing four fixed monitoring stations located at the facility as shown in Figure 3. Filters are collected monthly and sent off-site for analyses. The reported activities from the filter analyses are used along with the sample collection time and recorded flow rates to calculate airborne concentration levels for the month.

The monitors were operated during daylight hours to reflect emissions during operational hours. The following table presents a summary of the results in units of microcuries per milliliter (µCi/ml) for the airborne monitoring. The attached Table 1 of this report presents the full monthly results for the airborne monitoring.

As shown by the summary table, none of the air concentrations exceed the Table 4B2 air effluent limit, Column 2 of Appendix 4B of 6 Colorado Code of Regulations (CCR) 1007-1 Part 4, Standards for Protection Against Radiation.

	Station A		**Station B**		**Station C**		**Station D**		
Analysis	**Average (mCi/ml)**	**Maximum (mCi/ml)**	**Average (mCi/ml)**	**Maximum (mCi/ml)**	**Average (mCi/ml)**	**Maximum (mCi/ml)**	**Average (mCi/ml)**	**Maximum (mCi/ml)**	**Table 4B2 Air Effluent Limit (mCi/ml)**
Gross Alpha	1.6E-15	3.7E-15	4.0E-15	3.8E-14	3.3E-15	2.7E-14	1.2E-15	2.8E-15	N/A
Gross Beta	2.2E-14	6.1E-14	4.6E-14	3.8E-13	4.0E-14	2.8E-13	1.4E-14	2.5E-14	N/A
Th-232	6.0E-17	2.5E-16	1.1E-16	1.0E-15	7.9E-17	4.8E-16	5.5E-17	2.6E-16	4.0E-15
Th-230	3.4E-16	1.6E-15	1.5E-15	1.7E-14	3.2E-16	2.2E-15	2.8E-16	1.3E-15	2.0E-14
Th-228	1.1E-16	3.8E-16	1.7E-16	1.3E-15	1.1E-16	4.8E-16	1.4E-16	1.0E-15	2.0E-14
U-238	3.5E-17	8.9E-17	8.0E-17	7.5E-16	8.6E-17	6.0E-16	1.5E-17	3.3E-17	5.0E-14
U-235	1.1E-17	4.4E-17	2.5E-17	2.5E-16	1.9E-17	1.8E-16	3.1E-17	2.6E-16	6.0E-14
U-234	3.9E-17	1.4E-16	5.9E-17	5.0E-16	6.0E-17	3.0E-16	4.3E-17	1.1E-16	6.0E-14
Ra-226	1.5E-16	4.5E-16	5.2E-16	5.6E-15	3.5E-16	2.7E-15	2.1E-16	9.1E-16	9.0E-13

2.3 Liquid Effluents

No liquid effluents, including surface or treated water, that came into contact with radioactive materials were released off the facility property or outside the permitted area

in 2013. All treated water was recycled and reused in plant operations. Water discharges to recycle tanks in 2013 are presented in Table 2.

2.4 Groundwater Monitoring

Groundwater monitoring is performed quarterly at CHDT. The wells are sampled utilizing low-flow sampling techniques. The samples are collected from the cell leachate and collection sumps, and from the various geologic strata of CHDT.

The results of the sampling indicate a continuation of the past sampling events. The L-4 and cell leachate results indicate the highest variability, while L-3 appears to have the lowest water quality. The L-5 wells are the more stable wells, with the highest water quality. Figures 4 through 30 present a visual representation of the data as compared to the baseline sampling events. Tables 3 through 7 present the data for the sampling events.

In summary, the groundwater monitoring data from 2013 present no indications of verifiable waste release to groundwater from facility operations.

2.5 Radon Monitoring

Radon monitoring at CHDT is performed at ten locations throughout the facility. Locations of the radon monitors are presented in Figure 31. Radon is detected utilizing passive alpha track radon detectors. The detectors are exchanged and analyzed by Landauer, Inc. on a quarterly frequency. Results of the radon monitoring are summarized in the table below, with all results presented in Table 8. The results do not indicate any significant impacts from radon emanation originating from radioactive materials disposed at the facility.

Location Number	Location Description	Average (pCi/L)	Maximum (pCi/L)
1	Disposal Cell A	0.7	1.1
2	Disposal Cell B	1.0	1.3
3	Treatment Bldg N	0.3	0.3
4	Treatment Bldg. S	0.3	0.3
5	South Air Sampler B	0.9	1.2
6	North Air Sampler A	0.8	1.0
7	N. Perimeter Fence	0.9	1.2
8	E. Perimeter Fence	0.9	1.3
9	Gate 8	1.0	1.3
10	W. Perimeter fence	0.9	1.4

2.6 External Dose

External dose is measured at 16 locations at the facility using environmental thermoluminescent dosimeters (TLDs). Locations of the TLDs are presented in Figure 32. The TLDs are exchanged and analyzed by Landauer, Inc., on a quarterly basis. The total annual dose in millirem (mrem) and equivalent dose rate in microrem per hour (µrem/hr) from the environmental TLD monitoring are summarized in the table below, with all quarterly results presented in Table 9.

Location Number	Location Description	Total (mrem)	Equivalent Dose Rate (μrem/hr)
N/A	Deploy Control	178.2	20.3
1	Admin Bldg	164.0	18.7
2	Scale	152.8	17.4
3	West Fence	167.7	19.1
4	Gate 8	156.6	17.9
5	East Fence	164.9	18.8
6	North Fence	165.0	18.8
7	Gate 4	151.7	17.3
8	Lunch Room	157.4	18.0
9	Laboratory	138.3	15.8
10	Sample Bay	154.9	17.7
11	Maintenance	165.5	18.9
12	Treatment Building	148.1	16.9
13	Haul Road	164.9	18.8
14	South Air Sampler	185.8	21.2
15	Disposal Cell	140.0	16.0
16	North Air Sampler	158.7	18.1

2.7 Dose to Members of the Public

Estimated doses to members of the public from the secure cell disposal operations were determined utilizing the USEPA CAP-88PC30 computer model. This includes total effective dose equivalent (TEDE) and total organ dose equivalent (TODE) for both the nearest resident and the maximally exposed member of the public. The computer model estimates dose and risk from radionuclide emissions to the air from various sources.

A population file specific to the facility was created for the assessment using Figure 5.8.2, *Housing Units and Population Count within a Ten Mile Radius of Site*, from the initial citing of the facility. Clean Harbors personnel verified the current status of the resident locations. Table 10 presents the residencies for each of the assessed locations.

The Stapleton Airport wind file data (23062) from the CAP-88PC program was selected for the assessment. The annual precipitation was input as 35.6 centimeters per year, with an annual ambient temperature of 10 degrees Celsius. The height of lid was input as 10,000 meters and the absolute humidity was left as the default value. The food source scenario selected was rural.

The source evaluated was a 1,000 square meter area which was one meter high. This represents a conservative daily disposal operation. Further conservatism is built into the assessment in that the disposal area is covered daily to prevent dust emission.

The radionuclide source term was created by multiplying the tons of materials received by the maximum waste concentration to obtain total curie content per generator. The source term was then adjusted for fugitive emissions utilizing dumping operations as described in the facility air permit. Table 11 presents the source term evaluated in the assessment.

The CAP-88PC model calculated an effective dose equivalent of 1.88E-04 mrem/yr to the maximally exposed individual residing approximately 3500 meters north of the facility. The effective dose equivalent calculated for the nearest resident is 8.2E-05 mrem/yr. Both calculated doses are well within the general public dose limit of 100 mrem/yr.

3.0 SITE CHARACTERISTICS AND DISPOSAL ACTIVITIES

3.1 Disposal Unit Survey and Maintenance Activities

The disposal area for radiologically impacted materials is surveyed prior to and after the placement of the daily cover to assure proper cover. No maintenance activities were required for the secure cell itself except for routine removal of leachate water collected in the sump of the cell in order to prevent leachate headspace from exceeding regulatory limits.

3.2 Disposal Quantities

The following presents the quantities and generators of radioactive materials containing NORM or TENORM that were disposed of at the facility in 2013.

Generator	Location	Waste Description	Tons
Tervita Corporation	Alexander, ND	TENORM filter cake, oil processing cont. Ra^{226} & Ra^{228}	12307.14
FMI	Empire, CO	TENORM contaminated pipe and debris	592.89
OWL, LLC	Culbertson, MT	NORM impacted filter cake	7333.94
OWL, LLC	Culbertson, MT	NORM impacted filter socks	241.19
Honeywell	Geismar, LA	NORM Fluorogypsum pipe scale	156.46
Raytheon	Wichita, KS	Soil and incidental debris with NORM and TENORM	29.89
Raytheon	Wichita, KS	Soil and incidental debris with NORM and TENORM	72.43
City of Aurora	Aurora, CO	NORM Wastewater Sludge	1962.31
Clean Harbors Cleveland	Cleveland, OH	NORM/TENORM waste from drilling mud contains Ra^{226}	13.37
Duratherm	San Leon, TX	Desorber Solids	38.35
Duratherm	San Leon, TX	Desorber Solids	48.64
Stonegate Village Metro.	Byers, CO	TENORM non-infectious bio-solids	28.50
EOG Resources	Stanley, ND	NORM filter socks	28.61
ICL Performance Products	Carteret, NJ	NORM Phosphogypsum Block	7.91
Whiting Oil & Gas	Dickinson, ND	NORM Filter Socks	10.80
Air Liquide Industrial US	Wake Forest, NC	Non-Contact Cooling Water	5.37
		Total for 2013	**22877.80**

3.3 Site Characteristics

No observed site characteristics were significantly different than those presented in the license application and the renewal application.

4.0 OCCUPATIONAL DOSE AND ALARA

4.1 Deep Dose Equivalent

Workers wear TLDs to measure occupational external exposure to radioactive materials while at CHDT. The TLDs are exchanged on a quarterly frequency and are analyzed by Landauer, Inc. Results of the personnel monitoring are summarized in the table below in units of millirem (mrem), with all results presented in Table 12. The detection limit was 1 mrem.

Participant ID	Deep Dose Equivalent (mrem)
00002	0
00012	0
00013	0
00014	0
00020	0
00025	0
00029	0
00030	0
00034	0
00038	0
00039	0
00040	0
00049	0
00059	0
00060	0
00061	0
00062	0

4.2 Committed Effective Dose Equivalent

The committed effective dose equivalent (CEDE) is calculated at CDHT in accordance with CHDT *Standard Operating Procedure (SOP) 15.RPP.05, Estimation of Inhalation Dose* and *SOP 15.OPS.15, Air Monitoring for Radioactive Materials*. Lapel breathing zone air sampling within the treatment building and the active disposal cell was conducted during peak disposal activities to better estimate actual inhalation dose to exposed employees. Analytical results from the lapel sampling were used to determine intake and CEDE for Site workers. The use of full-face, air-purifying respirators with an assigned protection factor of 50 was factored into the dose calculations. Since respiratory protection is required at all times within the disposal cell, a wear frequency of 100% was incorporated into the calculation process. The maximally exposed individual at CHDT spent approximately 62.5% of the time in the Treatment Building and 12.5% of the time in the disposal cell. The CEDE assigned to this individual is 3.7 millirem. The next highest exposed individual spent approximately 62.5% of the time in the disposal cell and 12.5% of the time in the Treatment Building, for a total of 3.3 millirem. CEDEs for the remainder of the employees will be assigned accordingly, depending upon the percentage of time spent working in each environment.

4.3 As Low As Reasonably Achievable Program

A copy of the annual as low as reasonably achievable (ALARA) program audit is attached in Appendix 1.

5.0 DECOMMISSIONING WARRANTY AND FUNDING PLAN

In 2013, CHDT made adjustments to the funding mechanism for the Decommissioning Warranty and the Long-Term Care Warranty insurance policies, which are also integrated into the RCRA Permit Closure and Post-Closure financial assurance. The funding amounts were adjusted for inflation. The inflated closure and post-closure cost estimates were calculated by multiplying the current cost estimate by the current annual inflation factor (1.02141

The current Closure warranty is $5,424,827.57. The current Post Closure warranty is $5,613,213.93. CHDT feels that these amounts are sufficient to cover projected activities for 2014 and to complete site decommissioning activities.

CHDT also accrues funding for decommissioning costs that increases in two ways: one is based on accruing an amount per cubic yard on monthly units of consumption; the other is based on accreting the cumulative balance at the weighted average discount rate. The per cubic yard accrual is based upon a financial estimate of closure of the individual landfill cell, closure of the site, and post-closure care of the site.

Following are the accrued balances as of December 31, 2013:

Cell 3 Closure	$1,270,641
Site Closure	$11,622
Post Closure	$21,581
Total	$1,303,844

Continued accrual of funds at current rates should be sufficient to pay for site decommissioning and post closure care at the time of projected facility closure.

6.0 2014 ANTICIPATED ACTIVITIES

Clean Harbors Deer Trail intends to construct landfill cell number 4 during 2014 per approved design. Landfill cell 4 will have a capacity 491,840 cubic yards.

Figures

Figure 1 - CHDT Location

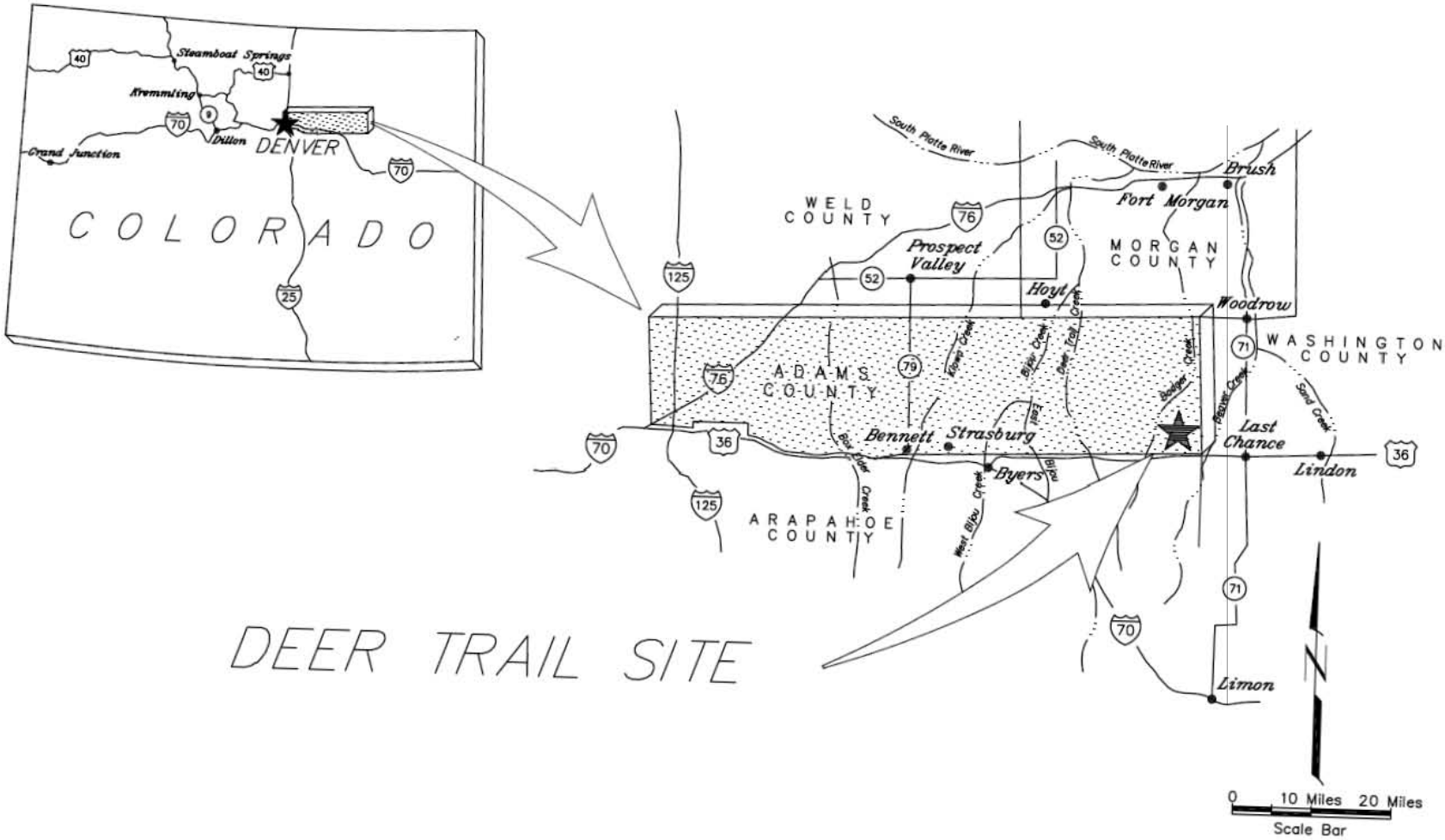


Figure 2 - CHDT Facility Layout

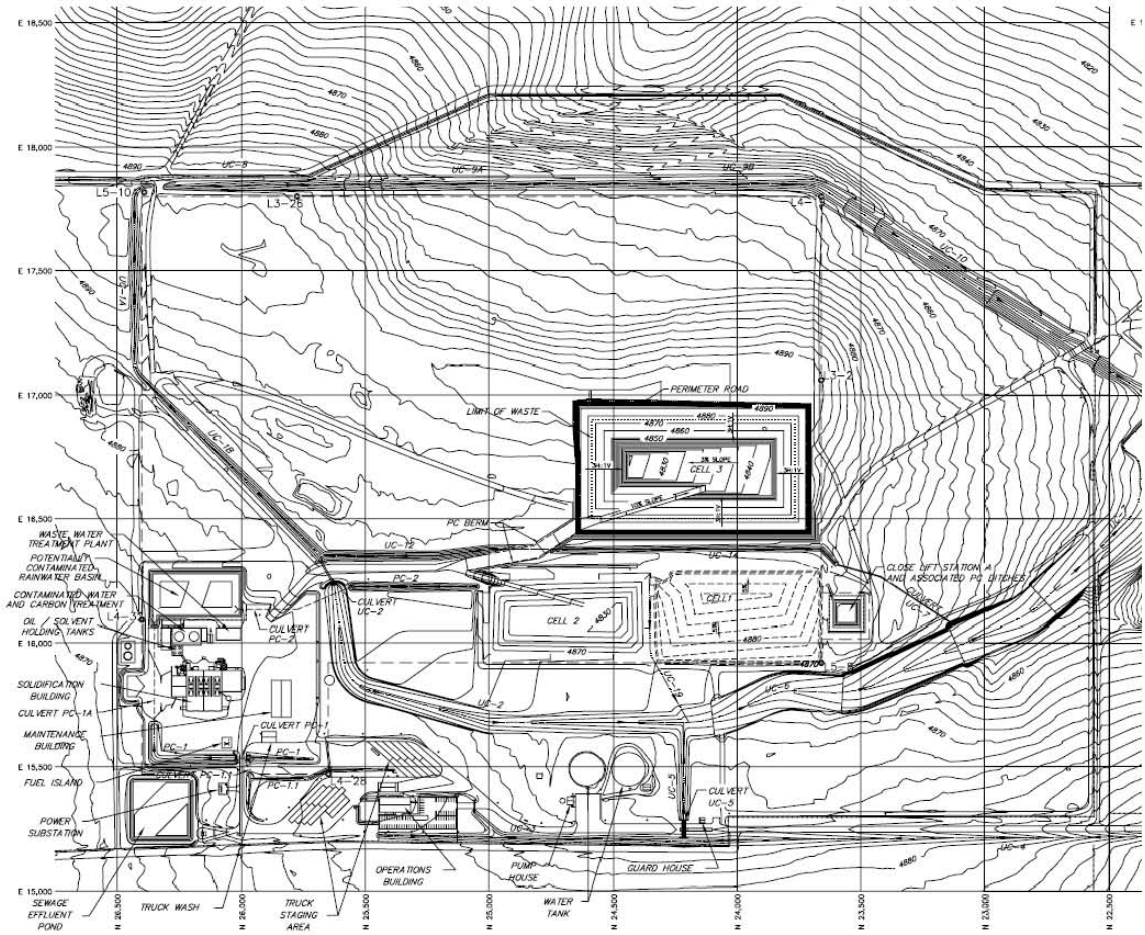
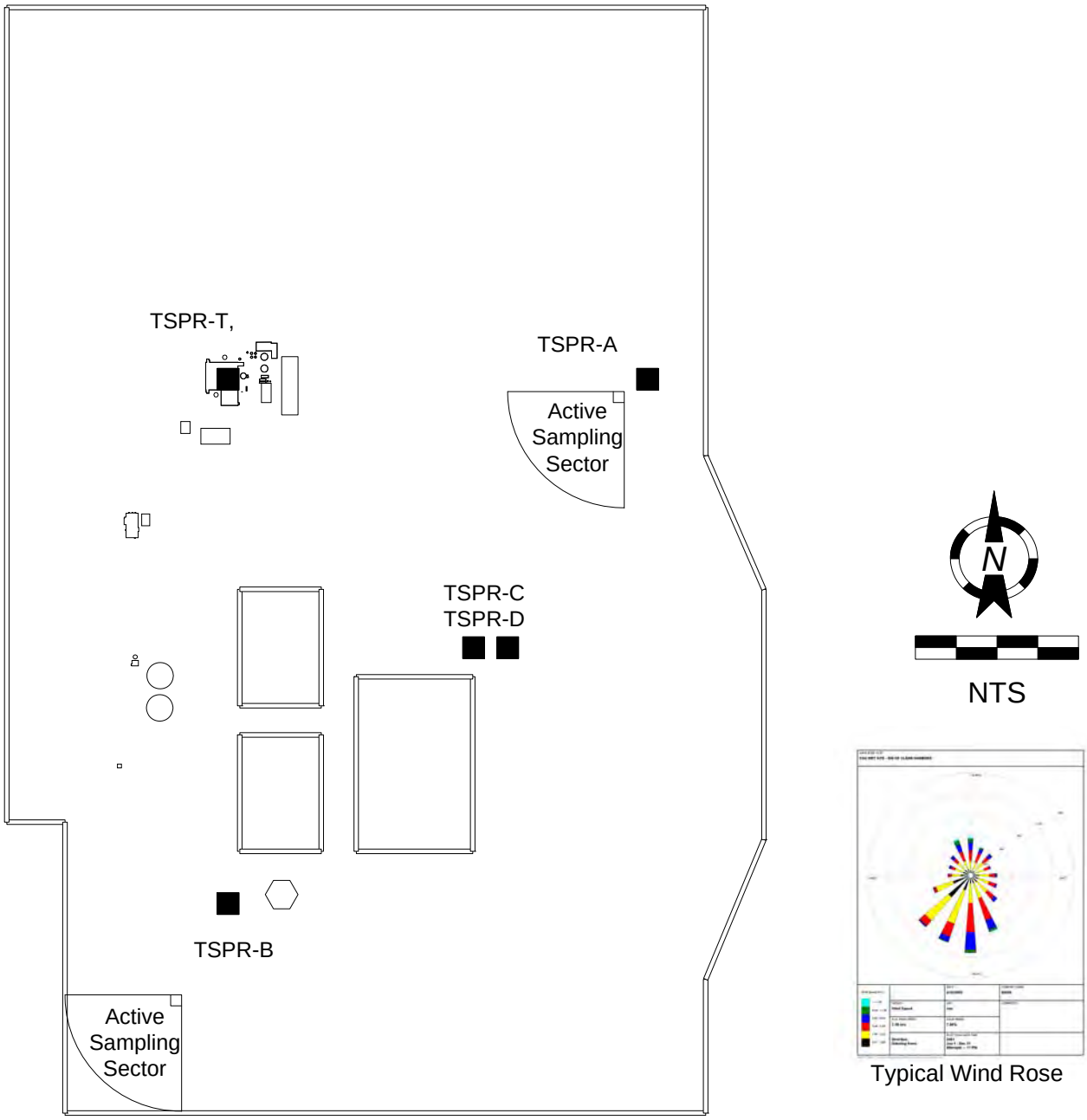


Figure 3 - CHDT Air Monitoring Stations



TSPR-A is the designated primary sampler used for data statistical analysis

TSPR-B is the sampler designated to measure background concentrations

TSPR-C is the sampler designated to the active secure cell area

TSPR-D is the designated collocated sampler used to measure the precision and accuracy of the samplers

TSPR-T is the sampler designated to the Treatment Building

Figure 4 – Groundwater Trending Results – Cell 1 LCS

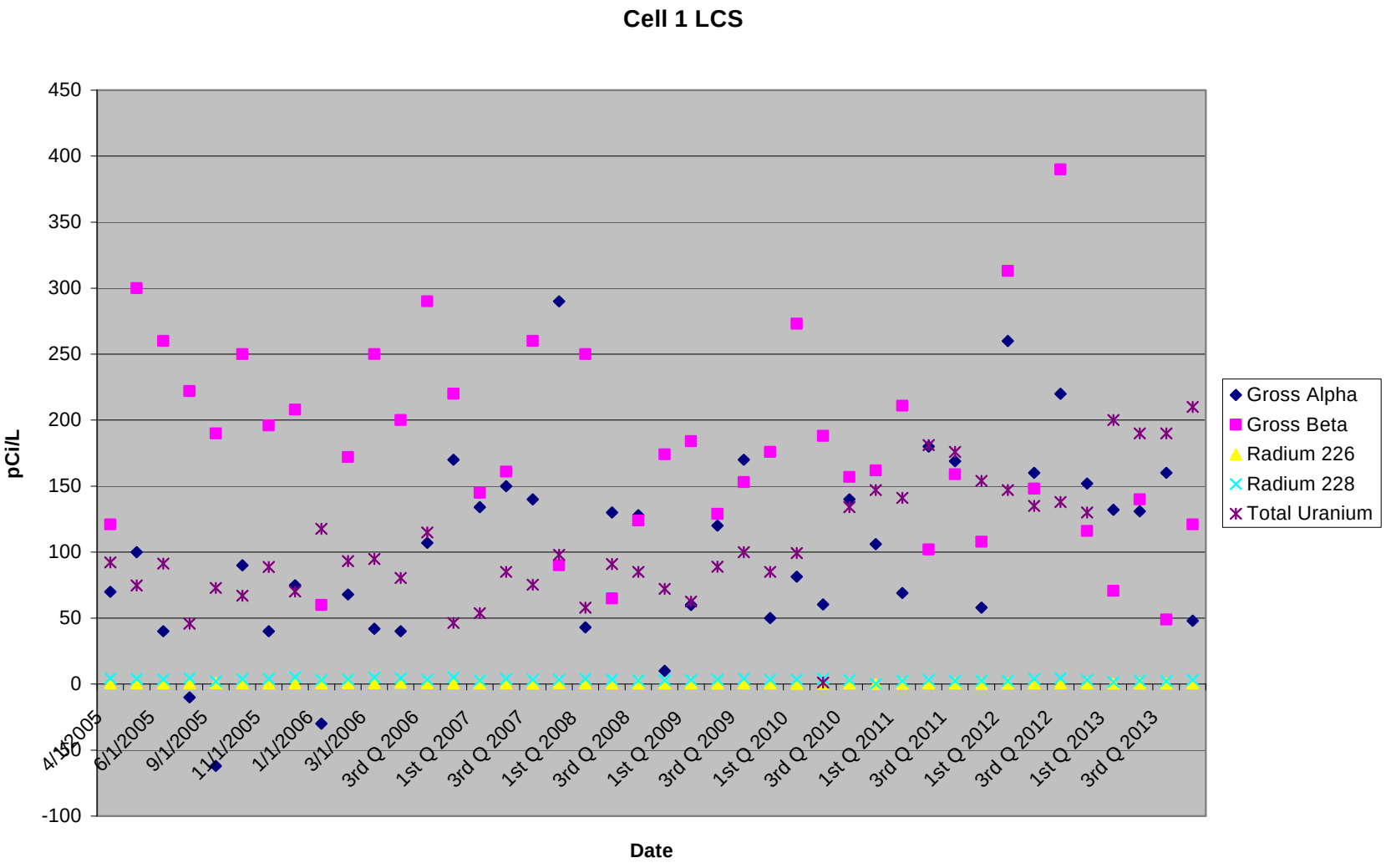


Figure 5 - Groundwater Trending Results – Cell 1 LDS

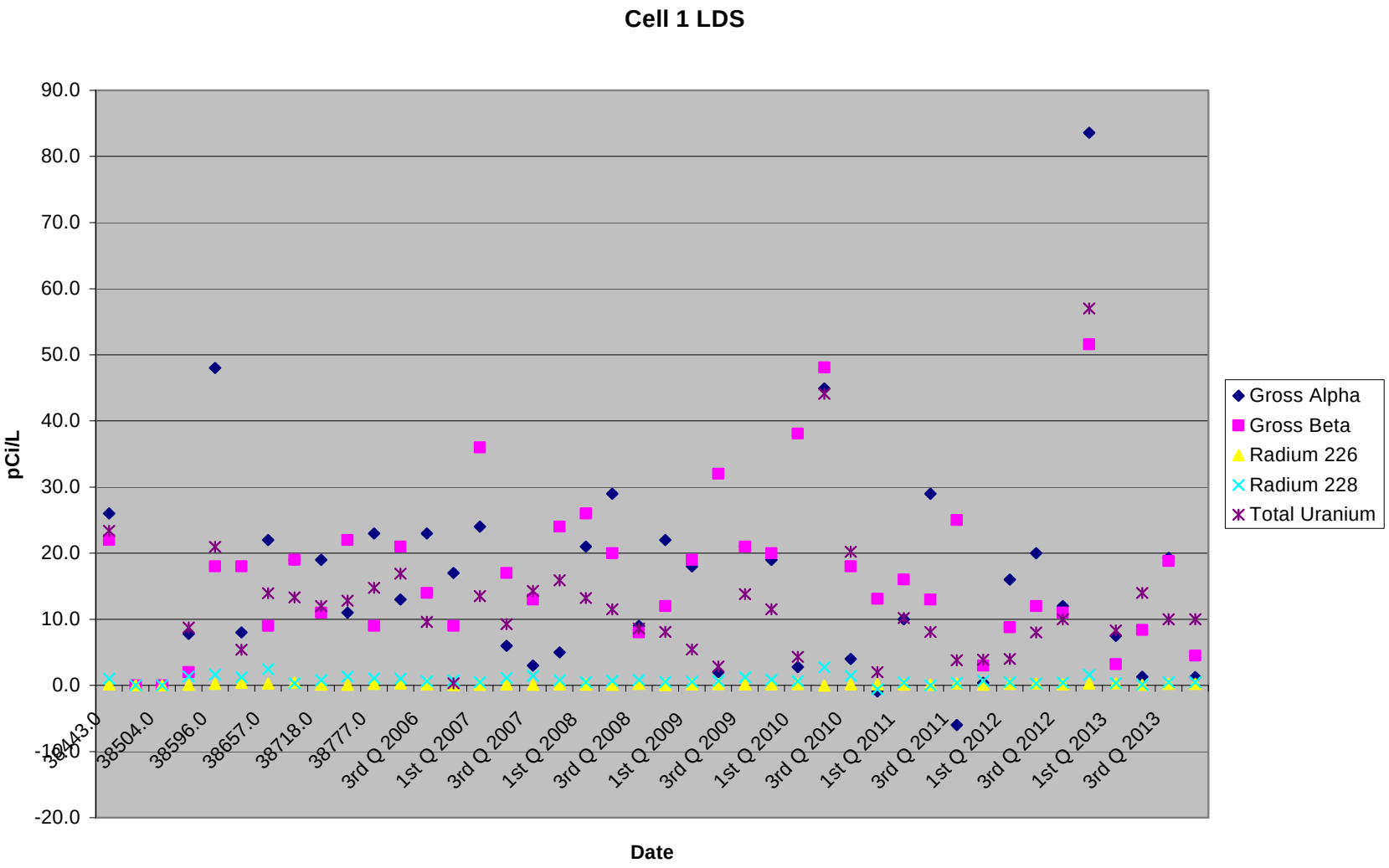


Figure 6 - Groundwater Trending Results – Cell 1 PS

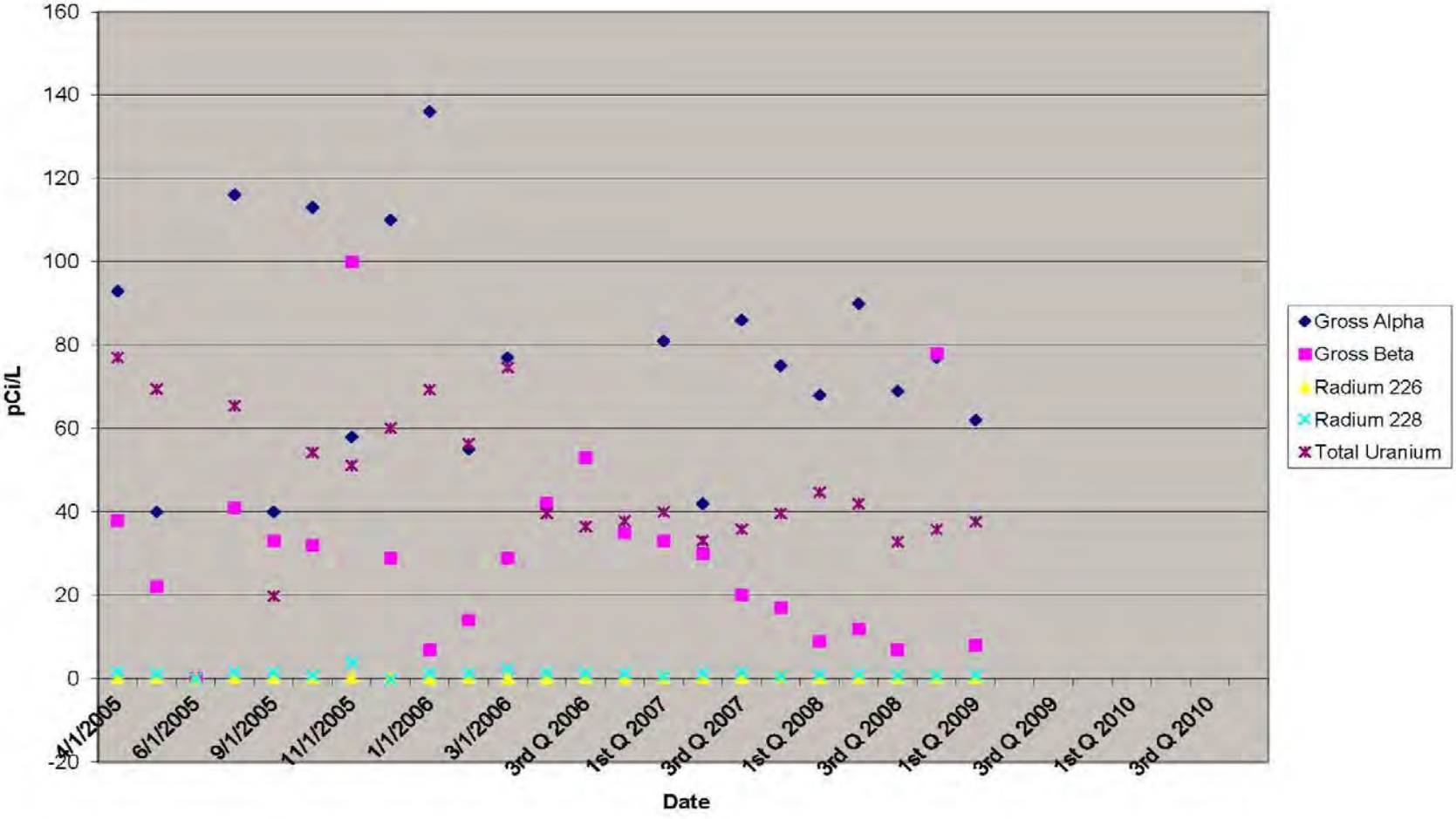


Figure 7 - Groundwater Trending Results – Cell 2 LCS

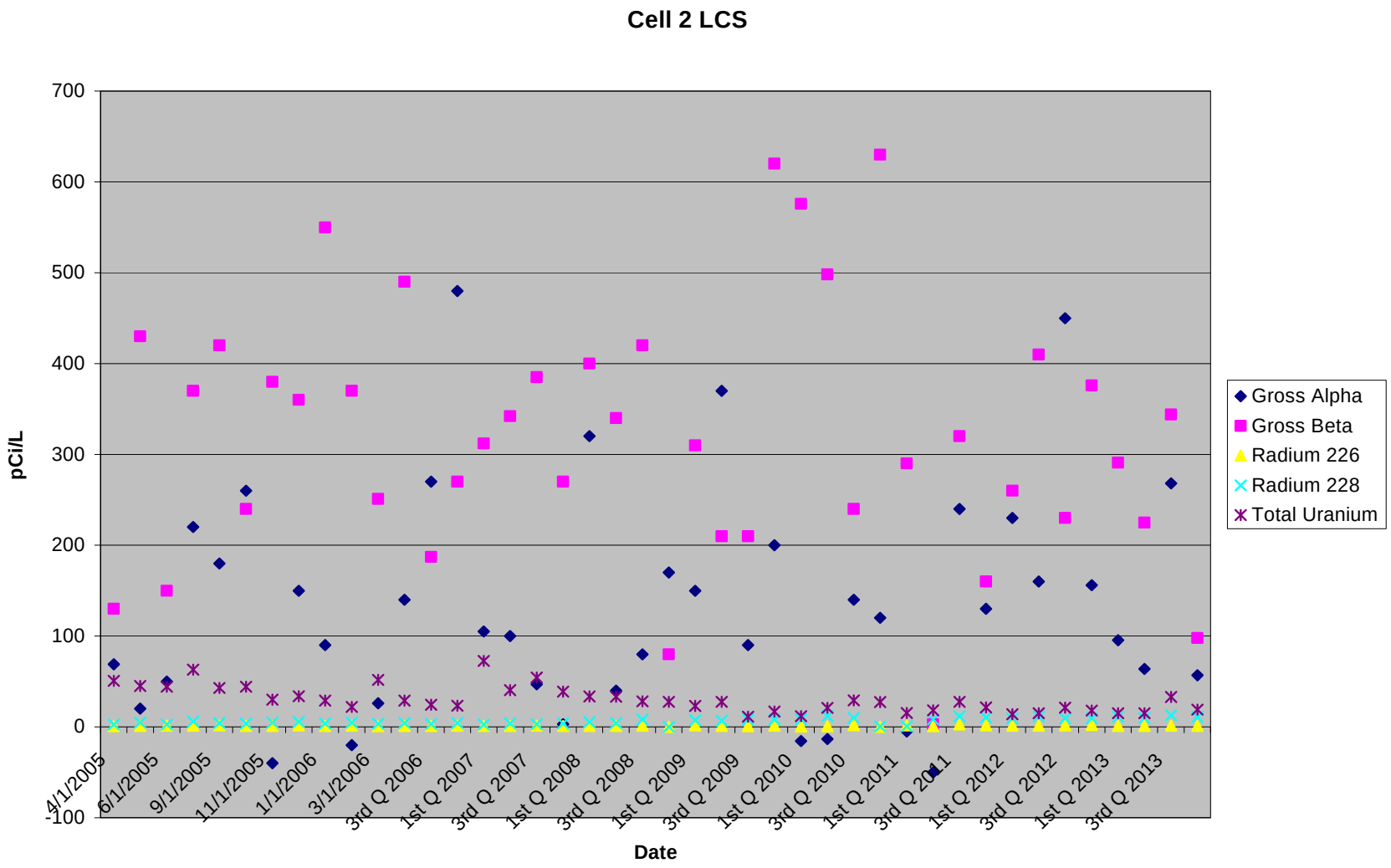


Figure 8 - Groundwater Trending Results – Cell 2 LDS

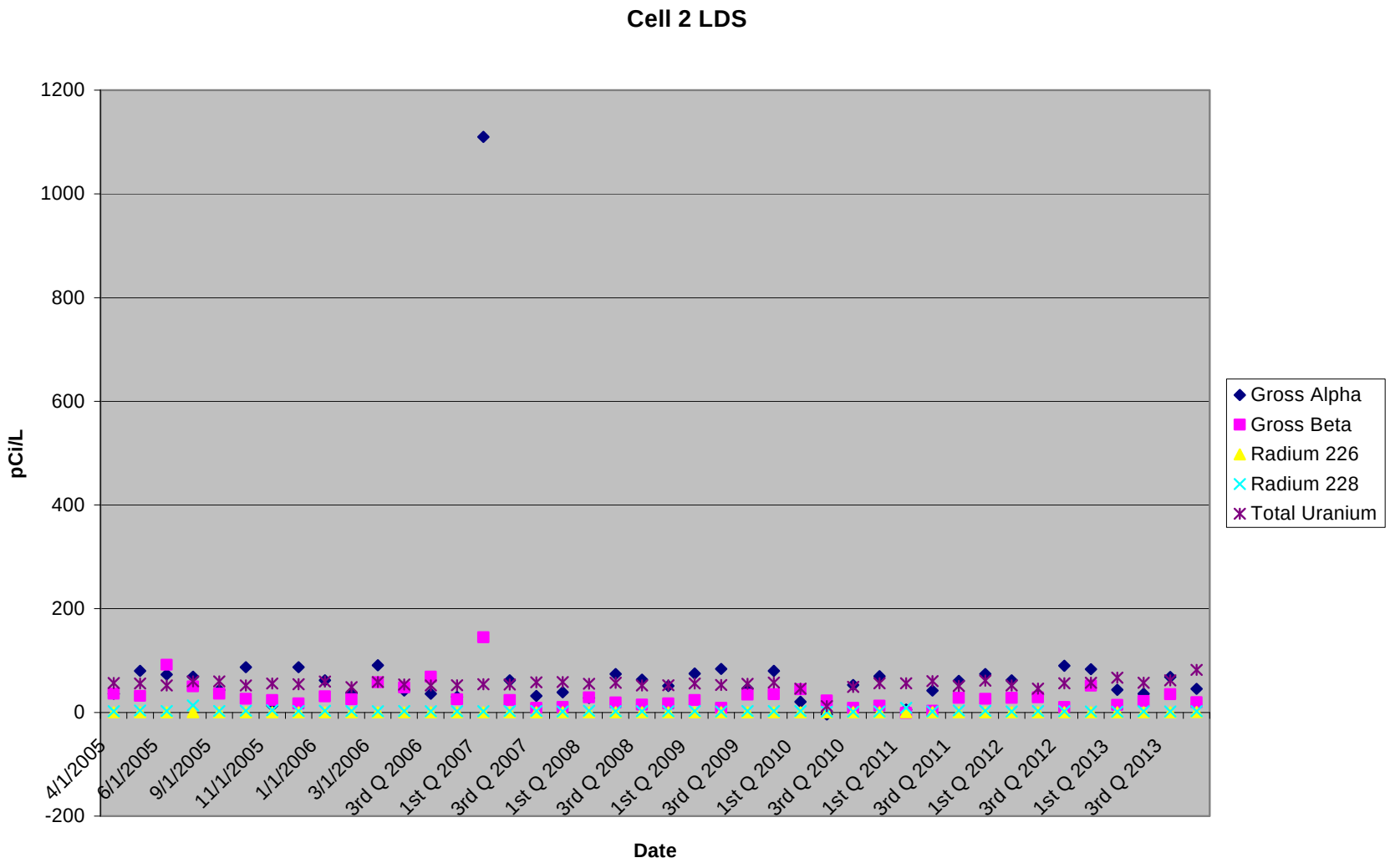


Figure 9 - Groundwater Trending Results – TRB LDS

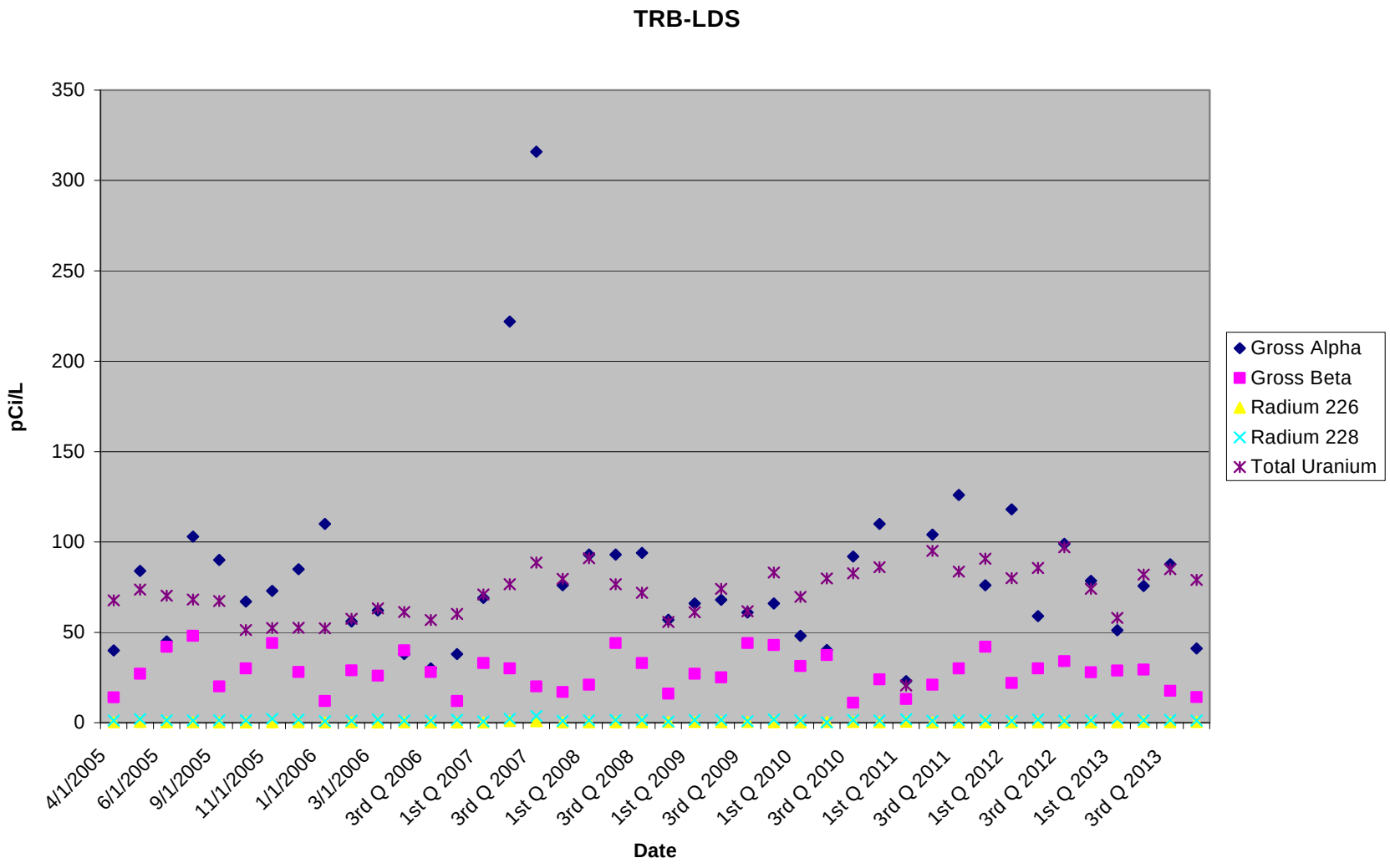


Figure 10 - Groundwater Trending Results – Cell 3 LCS

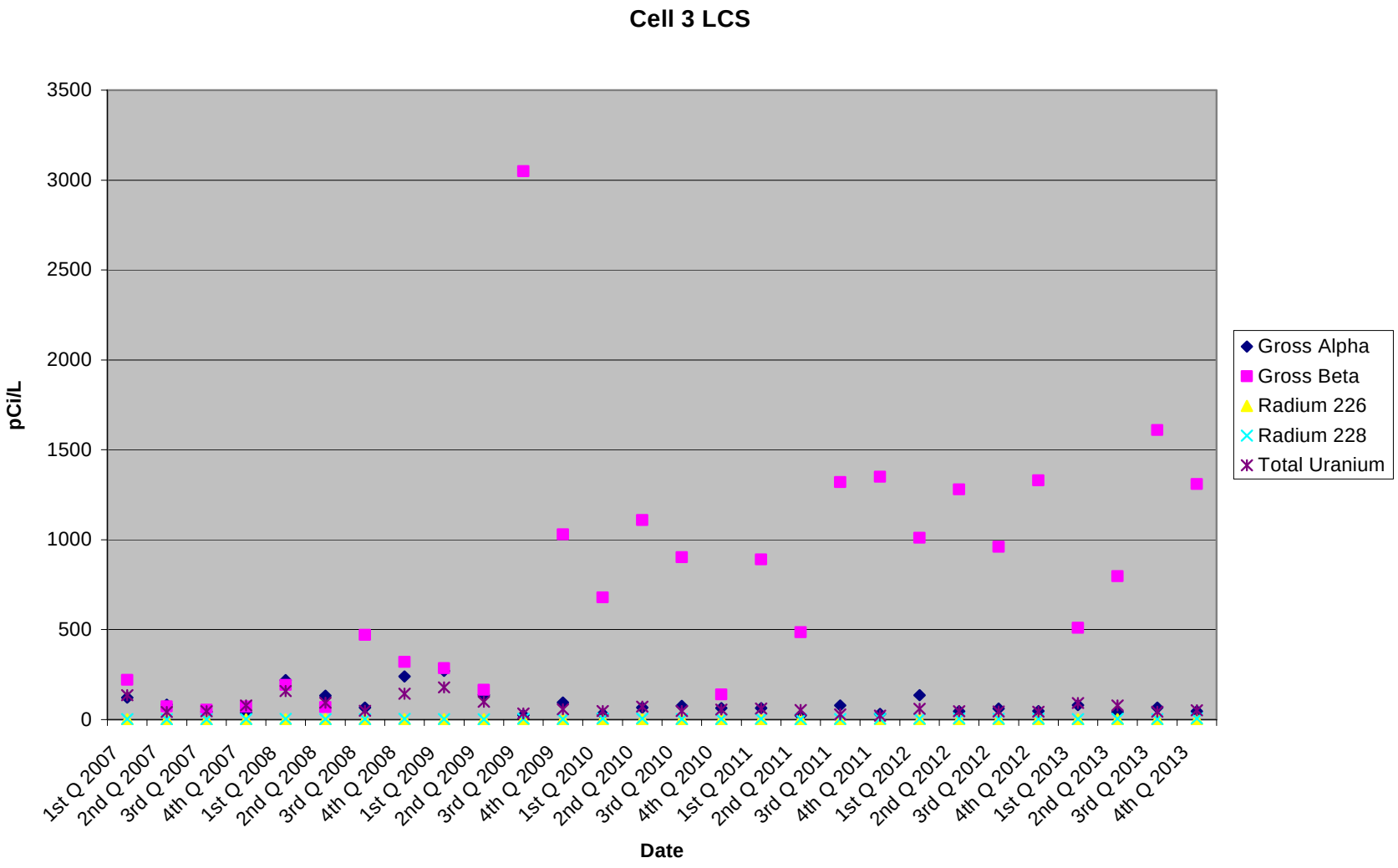


Figure 11 - Groundwater Trending Results – Cell 3 LDS

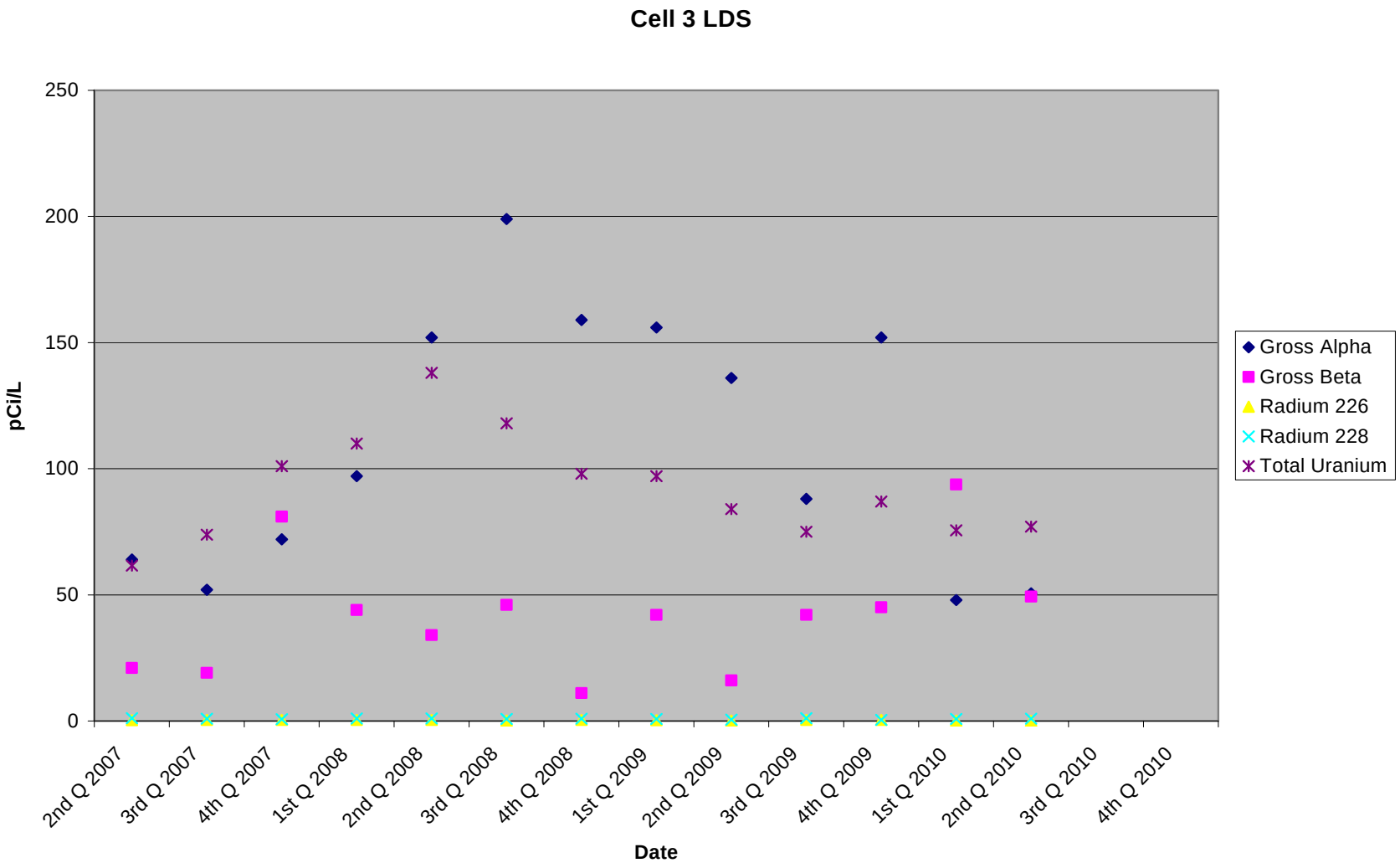


Figure 12 - Groundwater Trending Results – Well L3-42

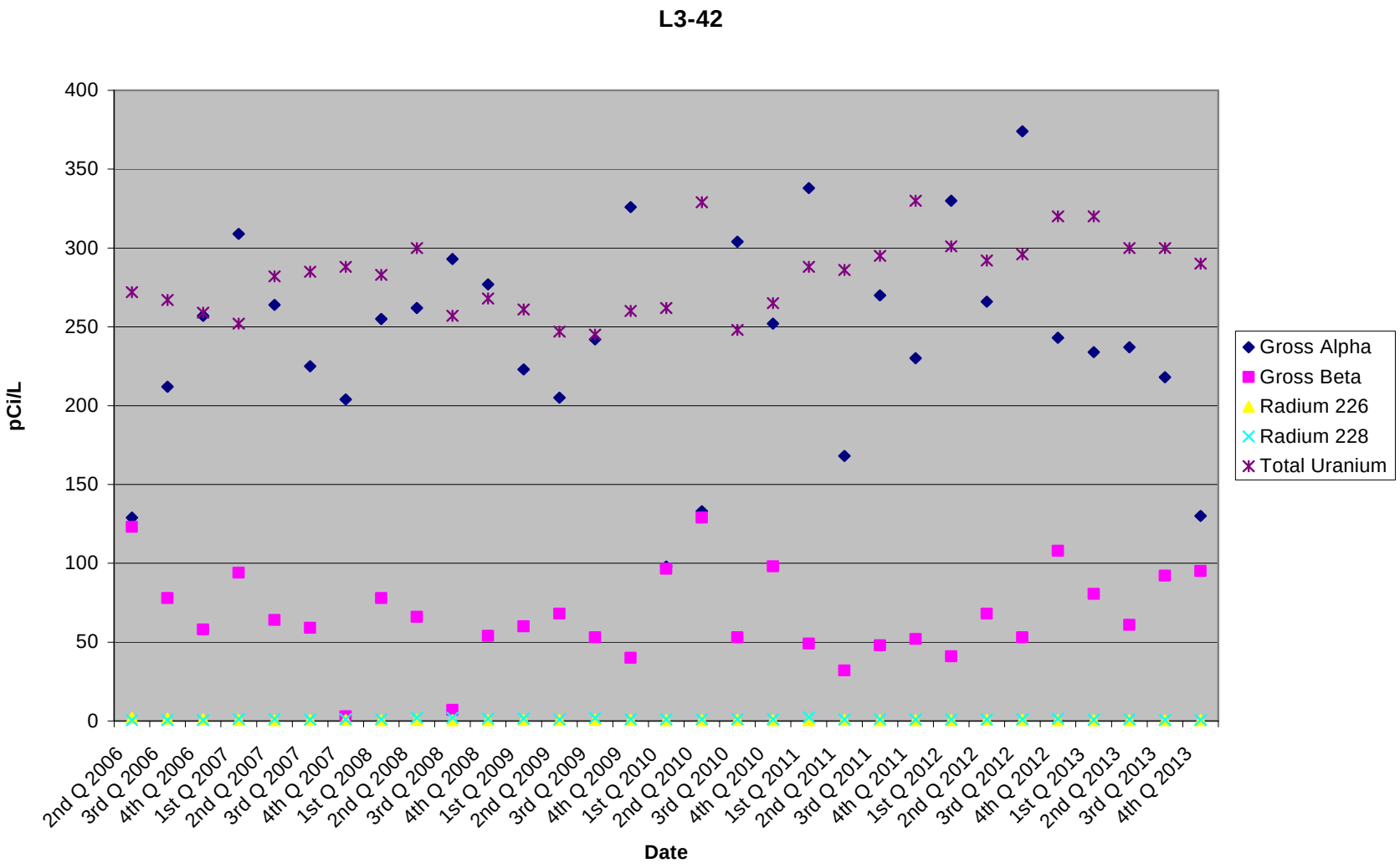


Figure 13 - Groundwater Trending Results – Well L4-16

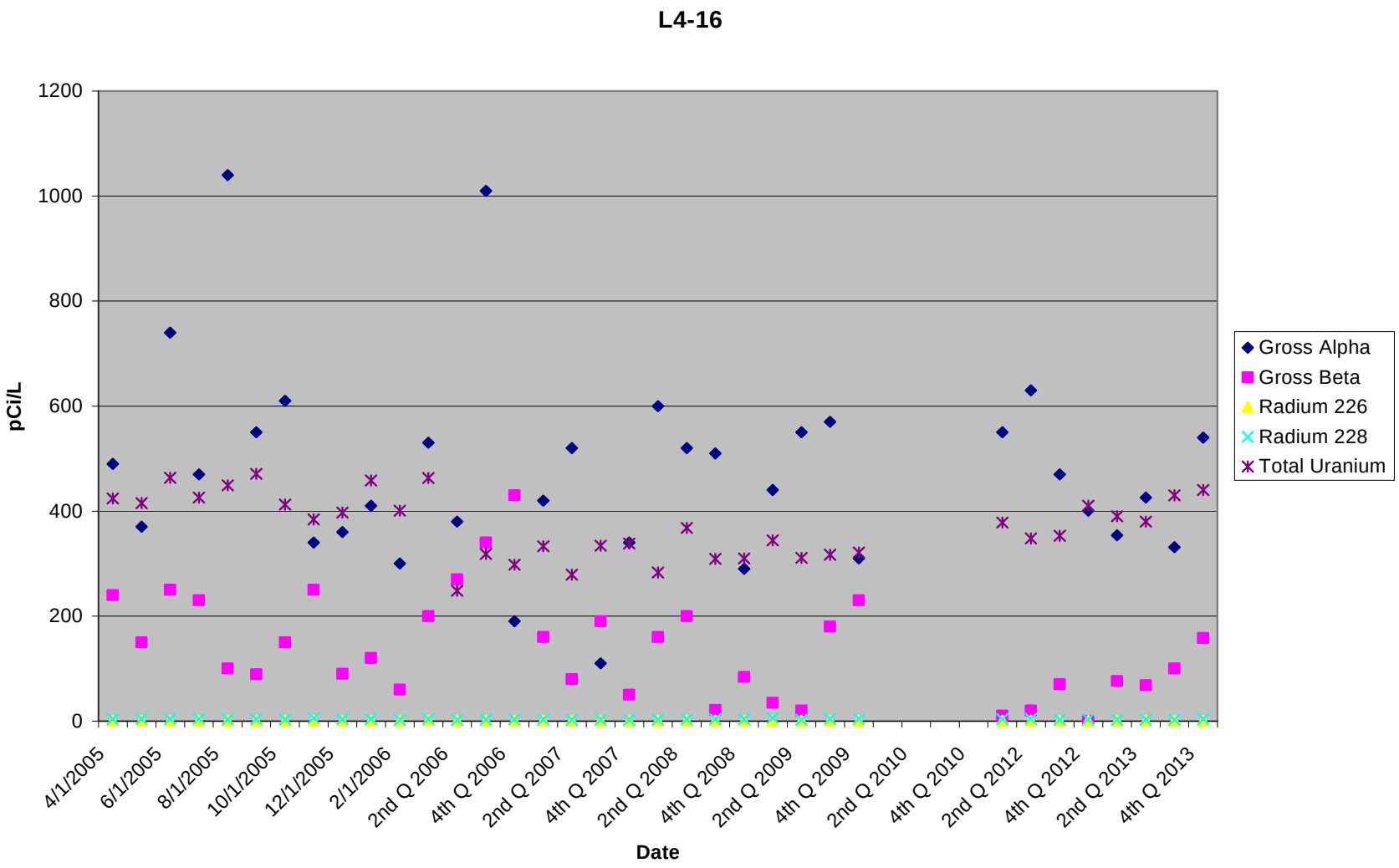


Figure 14 - Groundwater Trending Results – Well L4-32A

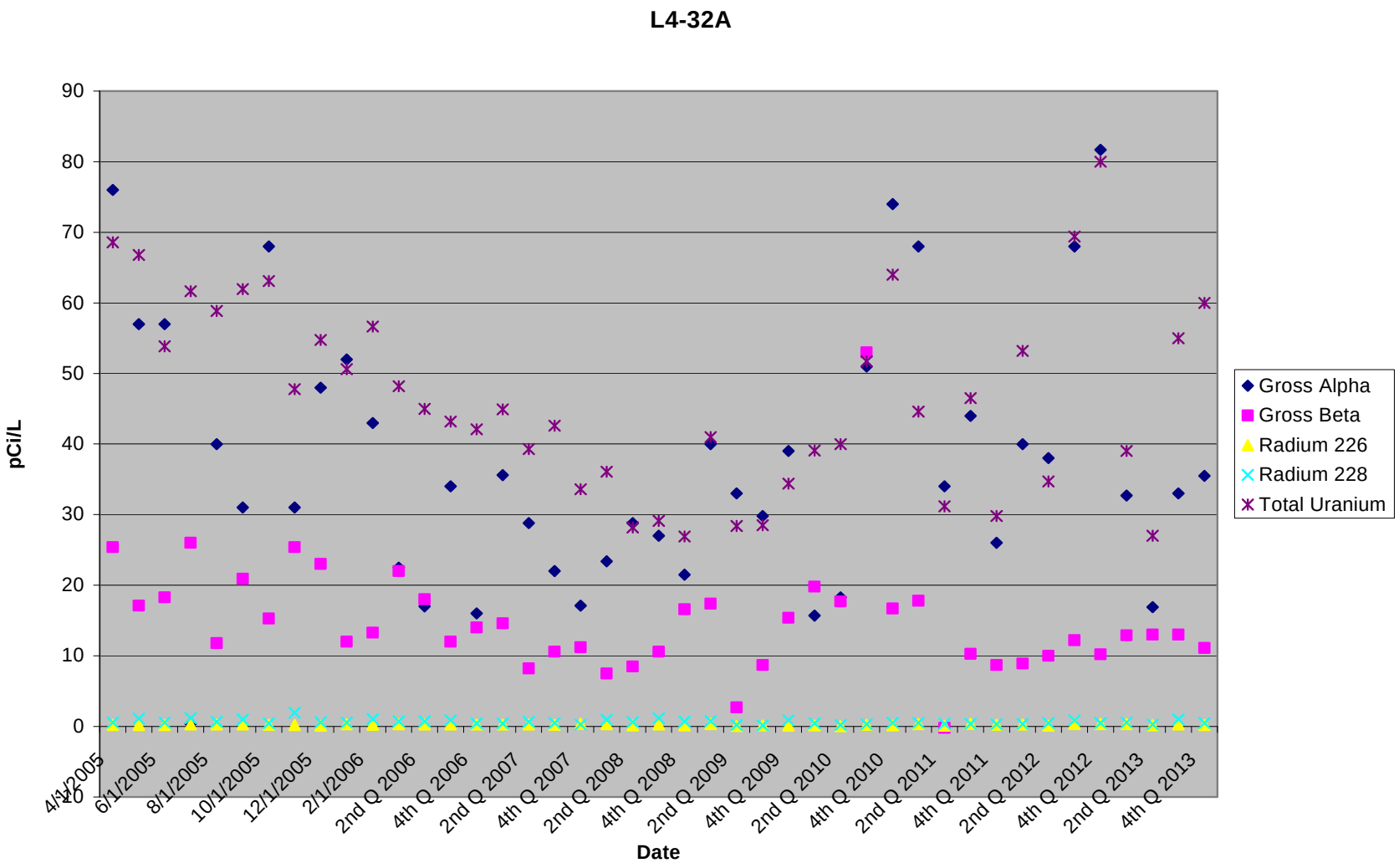


Figure 15 - Groundwater Trending Results – Well L4-32WA

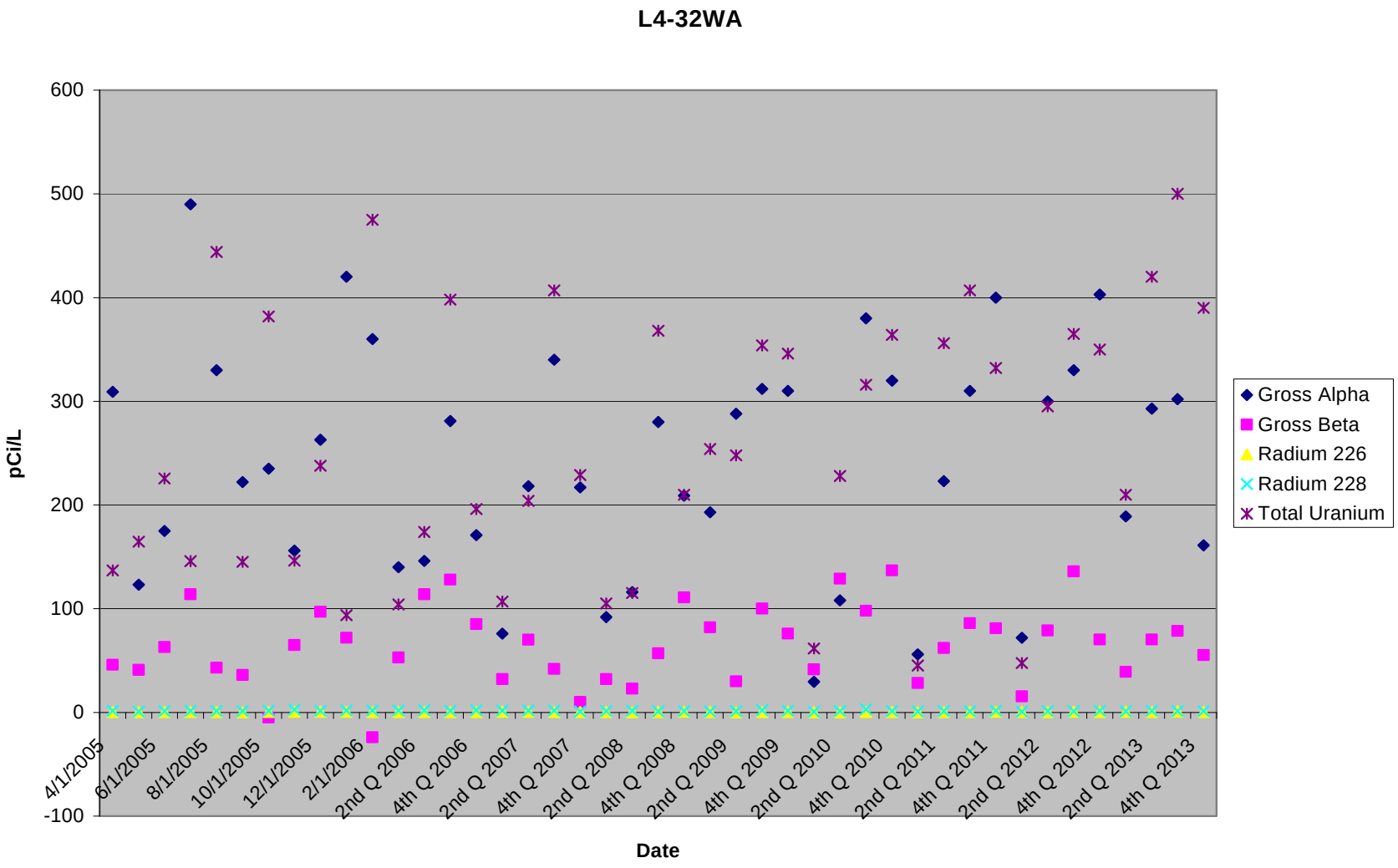


Figure 16 - Groundwater Trending Results – Well L4-33

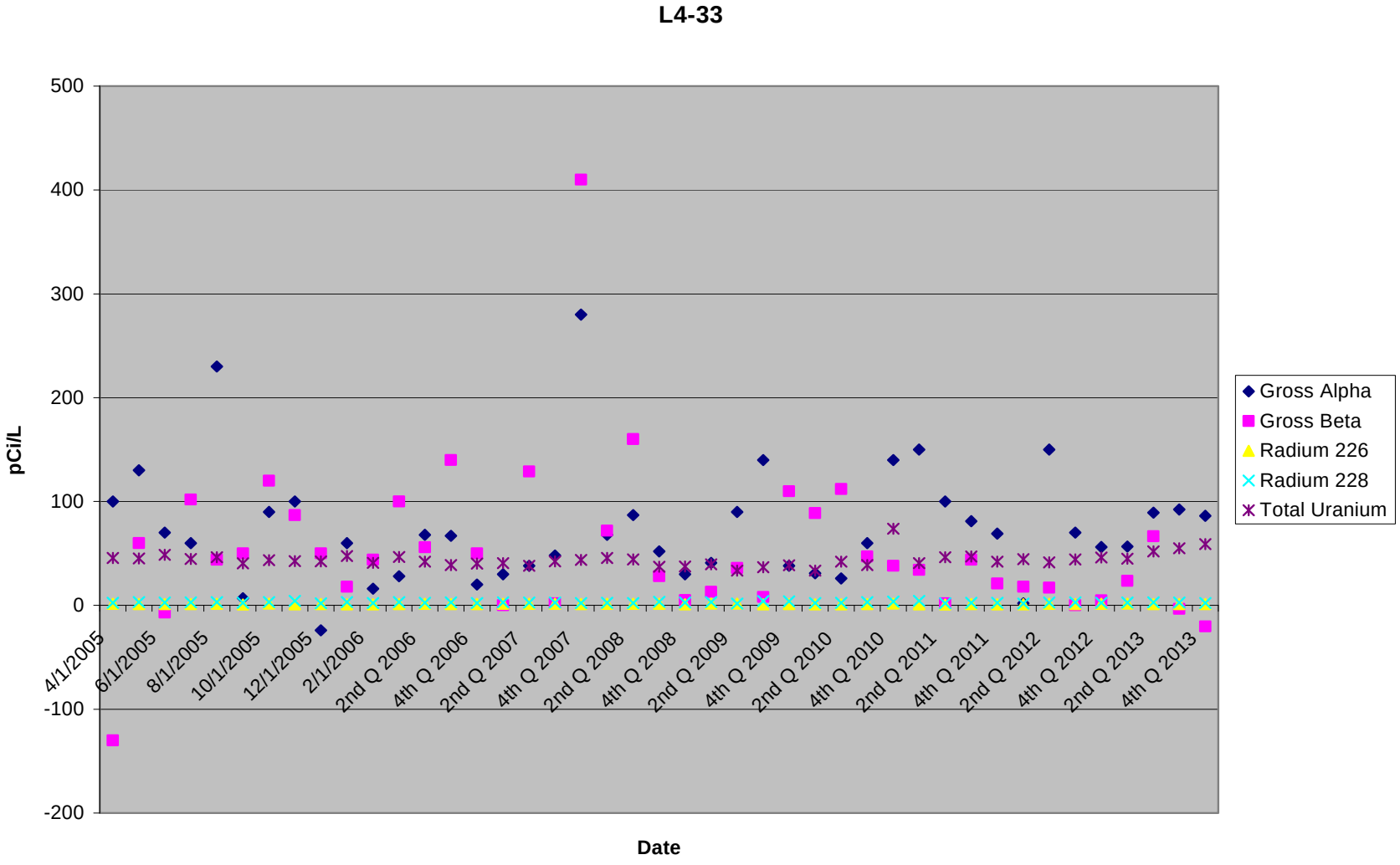


Figure 17 - Groundwater Trending Results – Well L4-41

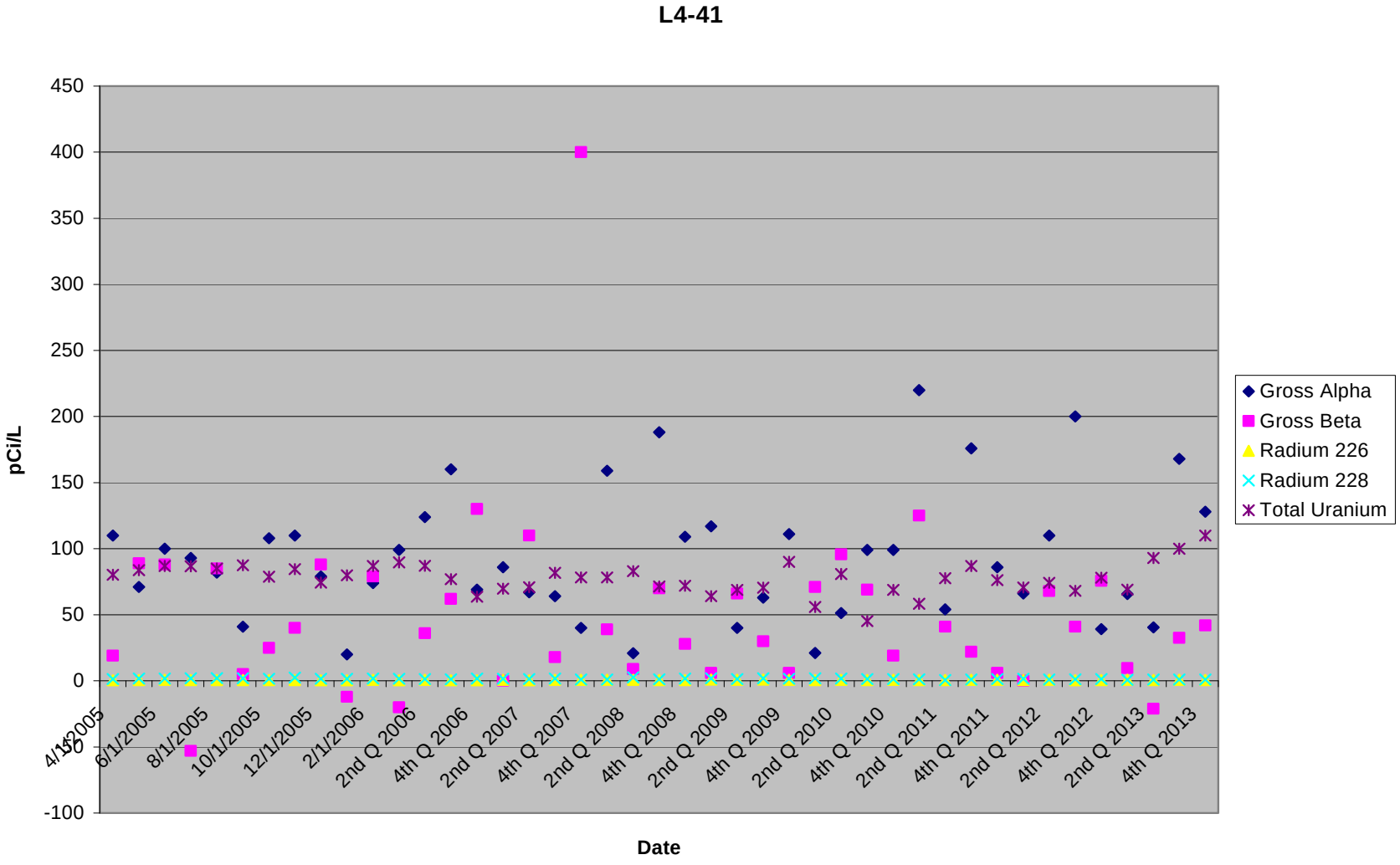


Figure 18 - Groundwater Trending Results – Well L4-8

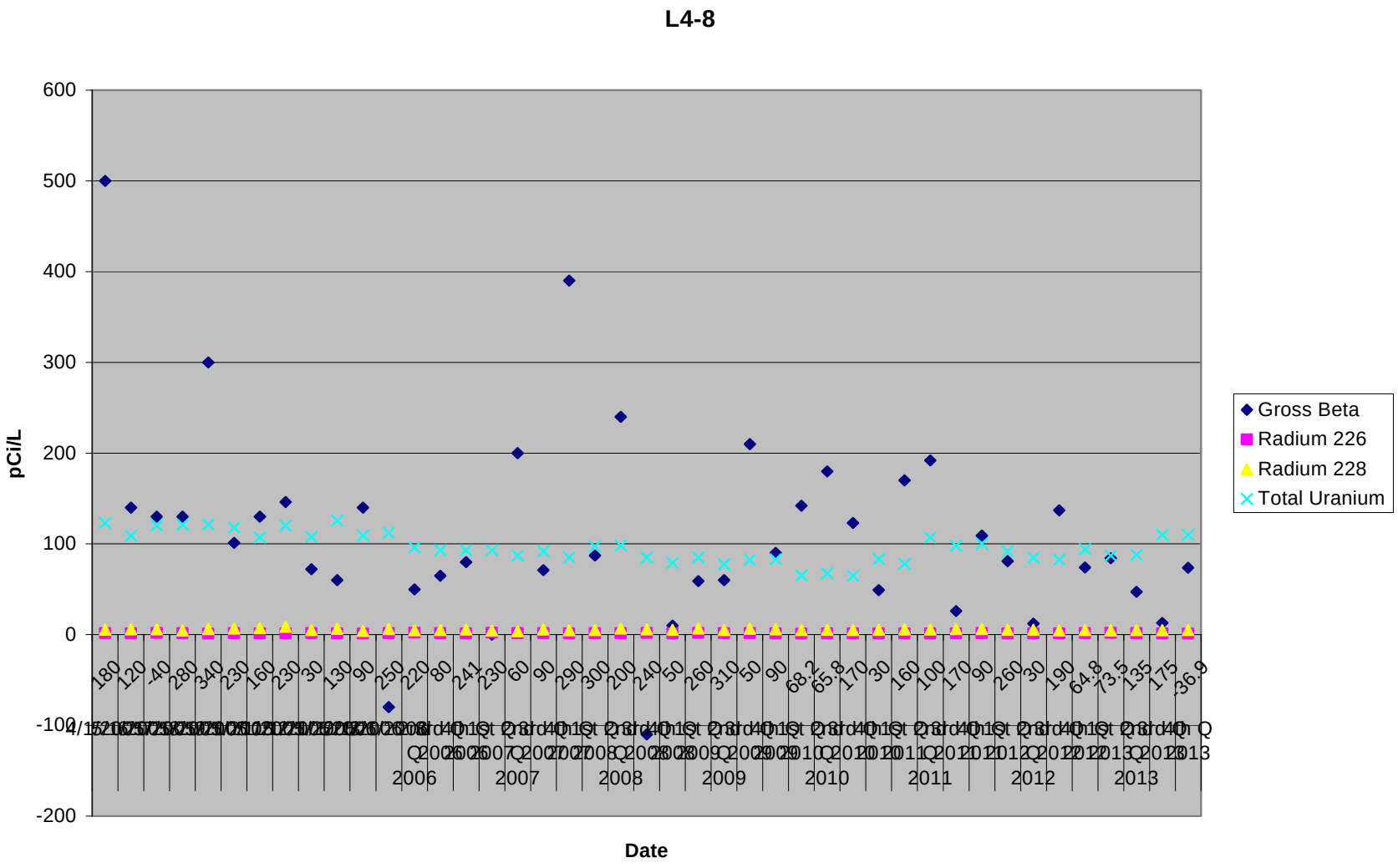


Figure 19 - Groundwater Trending Results – Well L4-8N

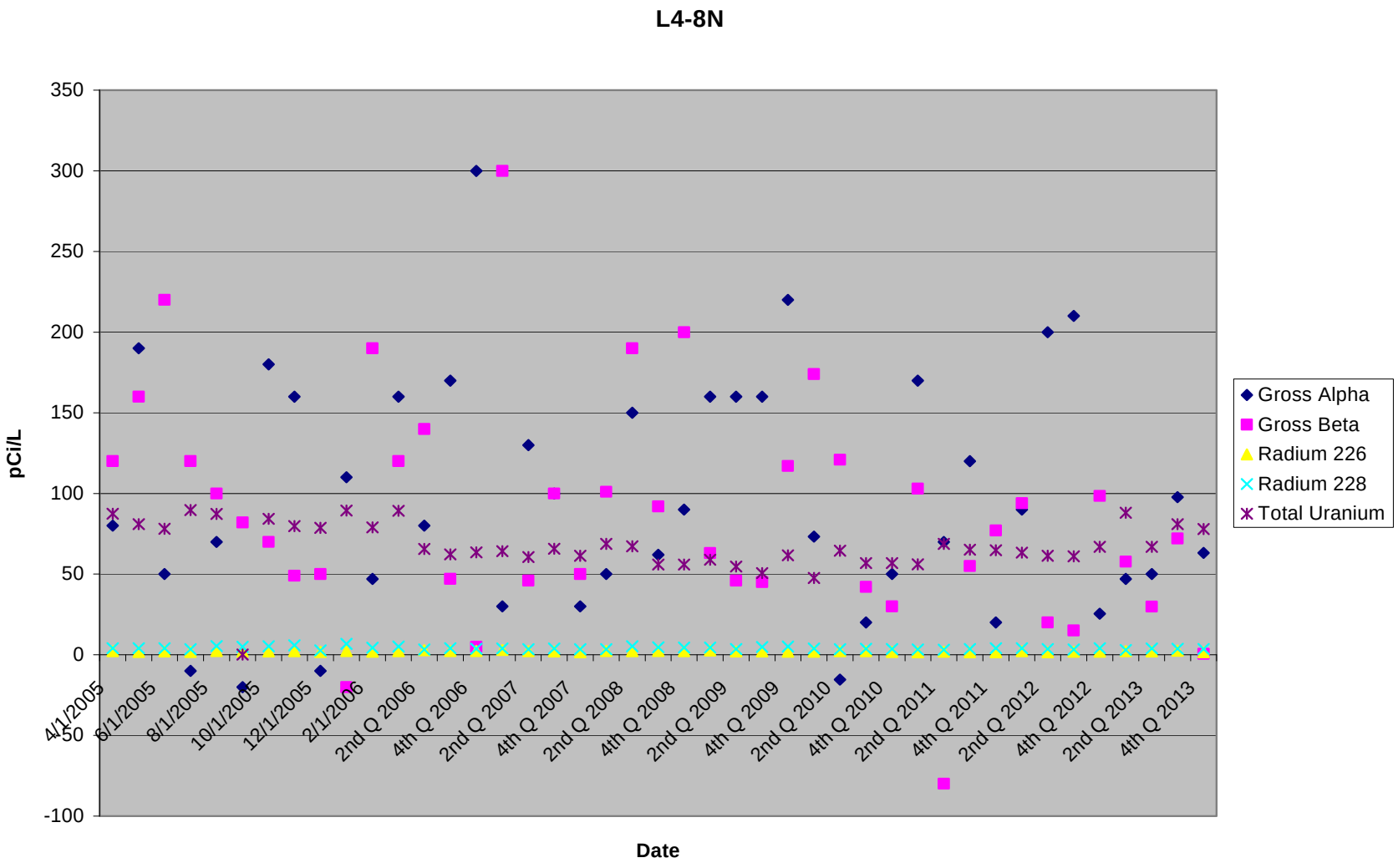


Figure 20 - Groundwater Trending Results – Well L4-9N

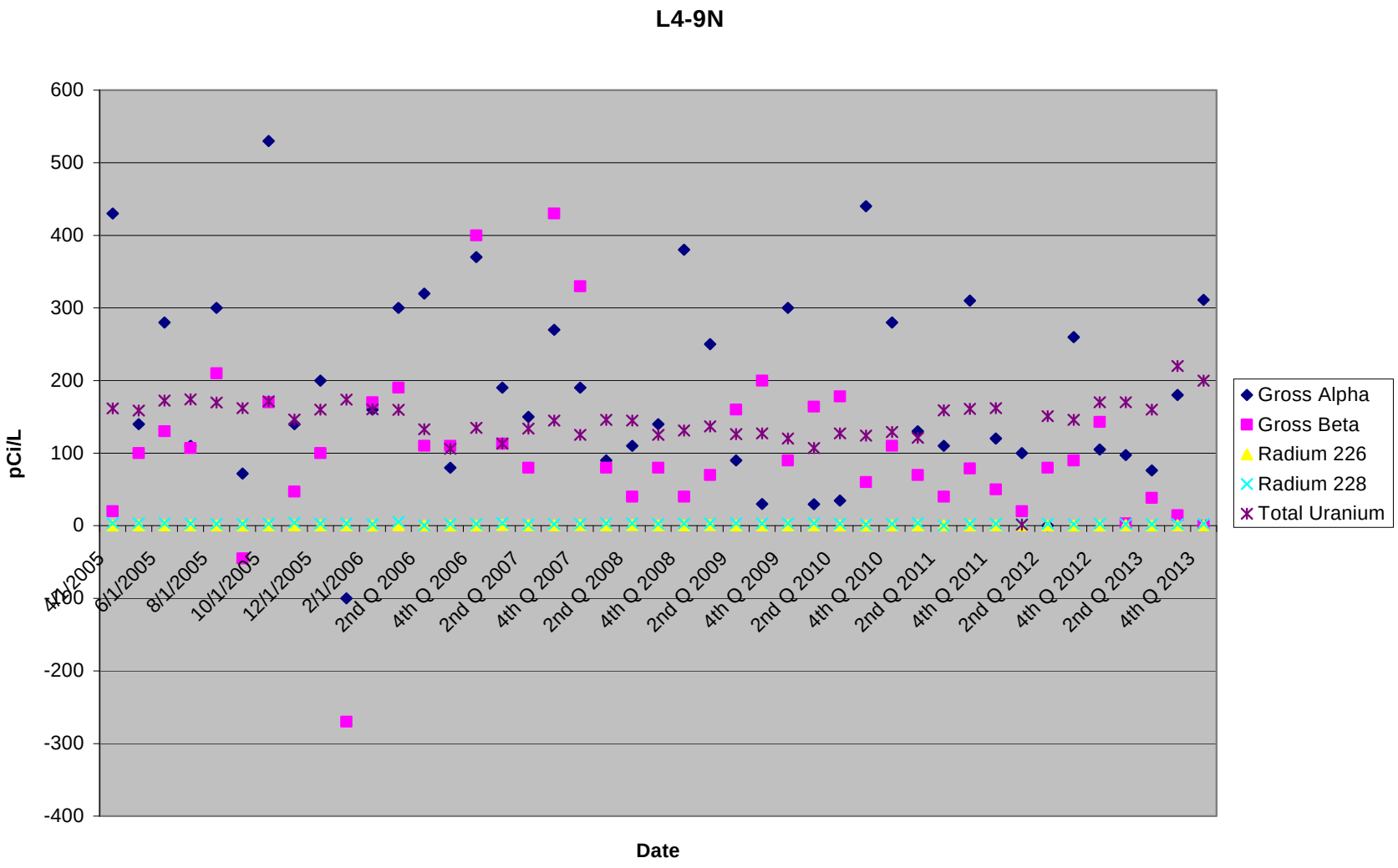


Figure 21-Groundwater Trending Results–Well L4-9W

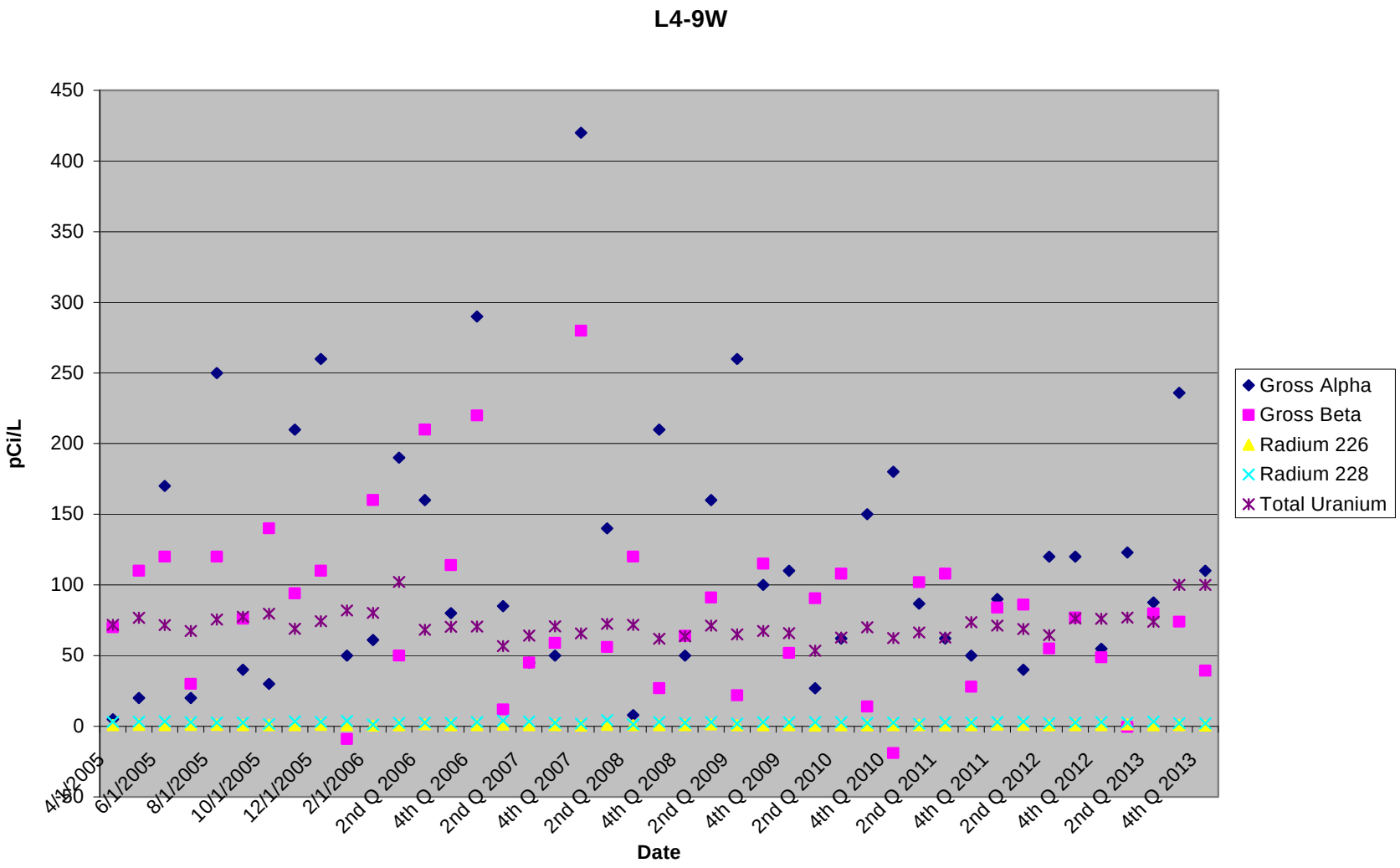


Figure 22 - Groundwater Trending Results – Well L4-28

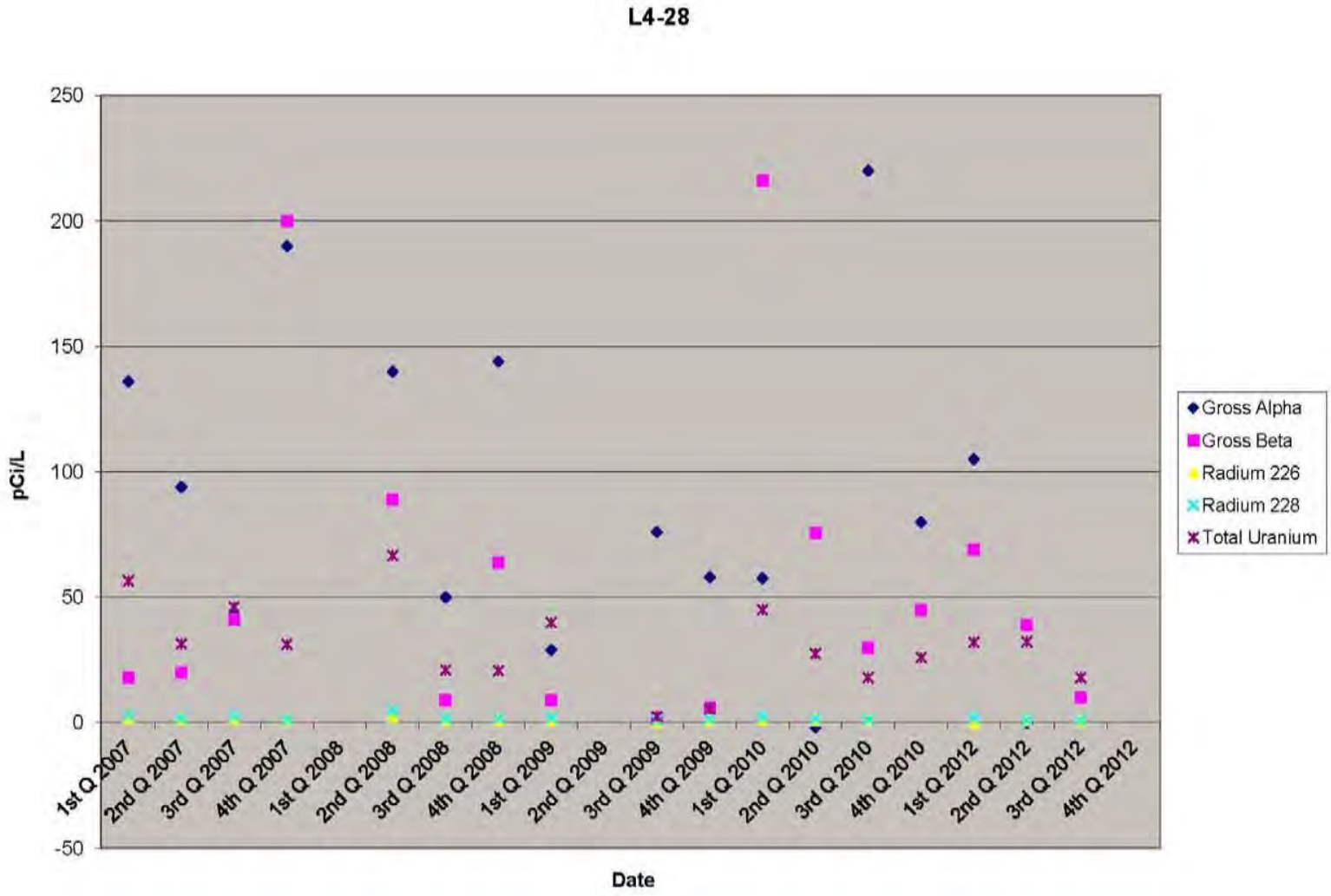


Figure 23 - Groundwater Trending Results Well L5-10A

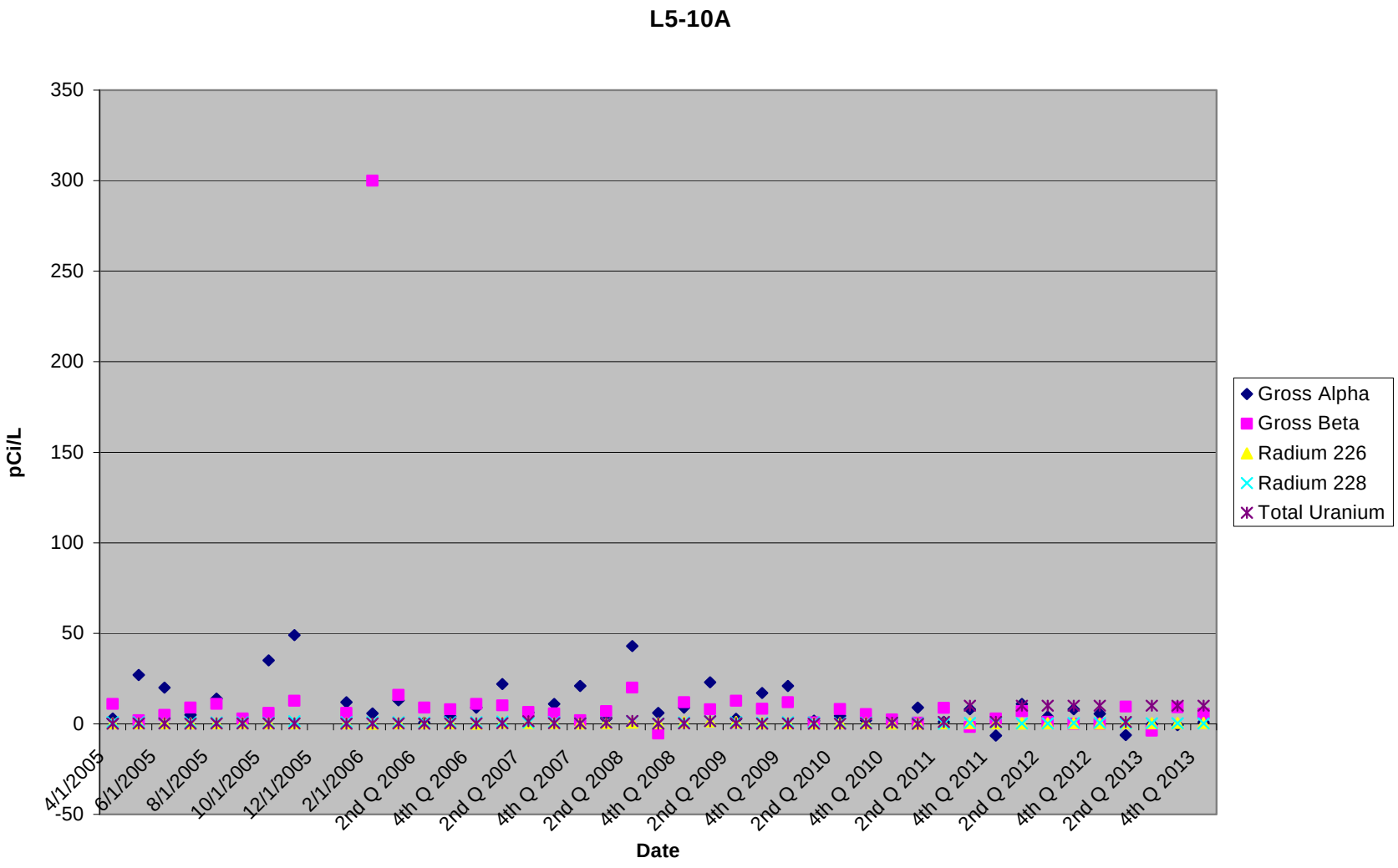


Figure 24 - Groundwater Trending Results – Well L5-4

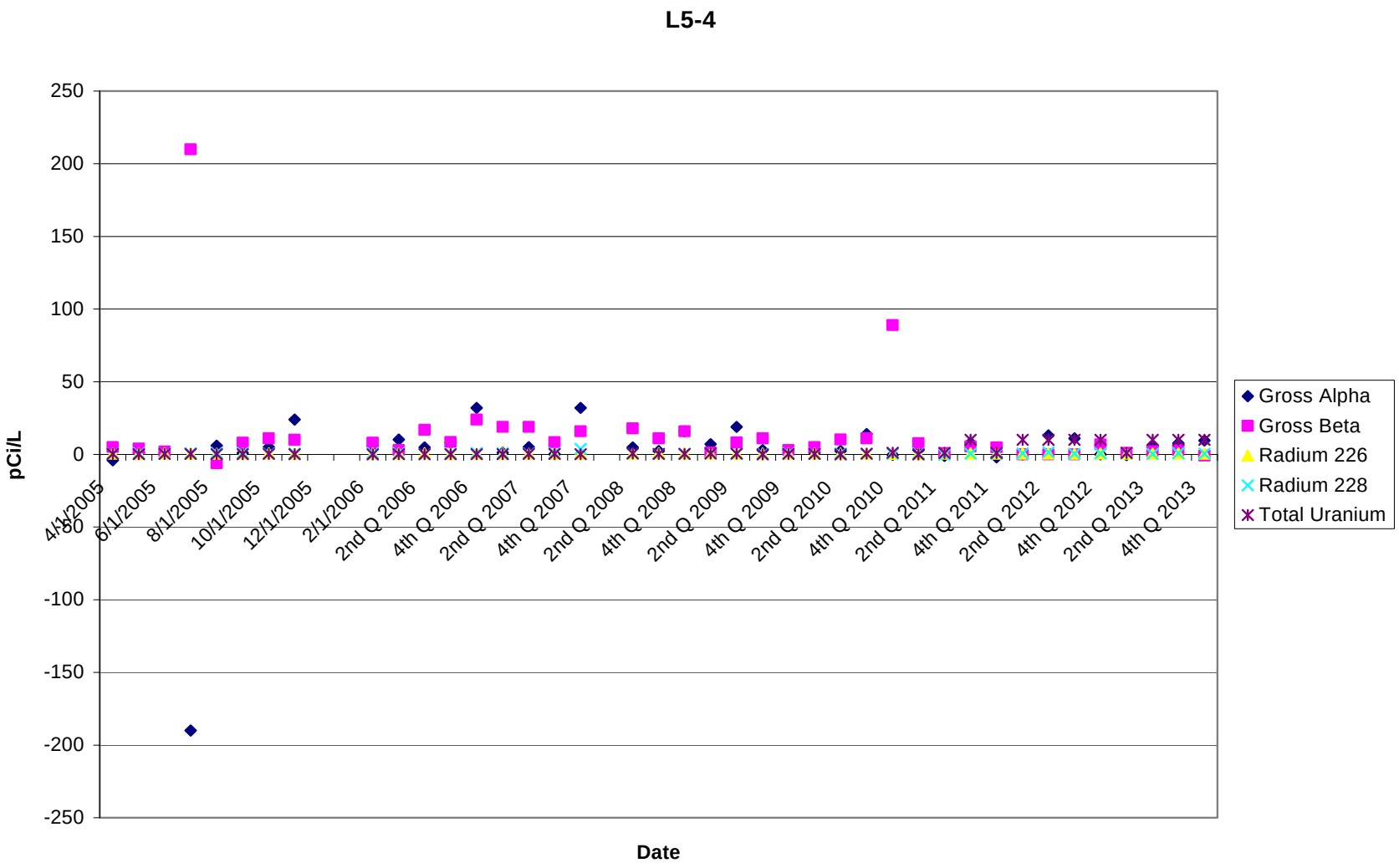


Figure 25 - Groundwater Trending Results – Well L5-5

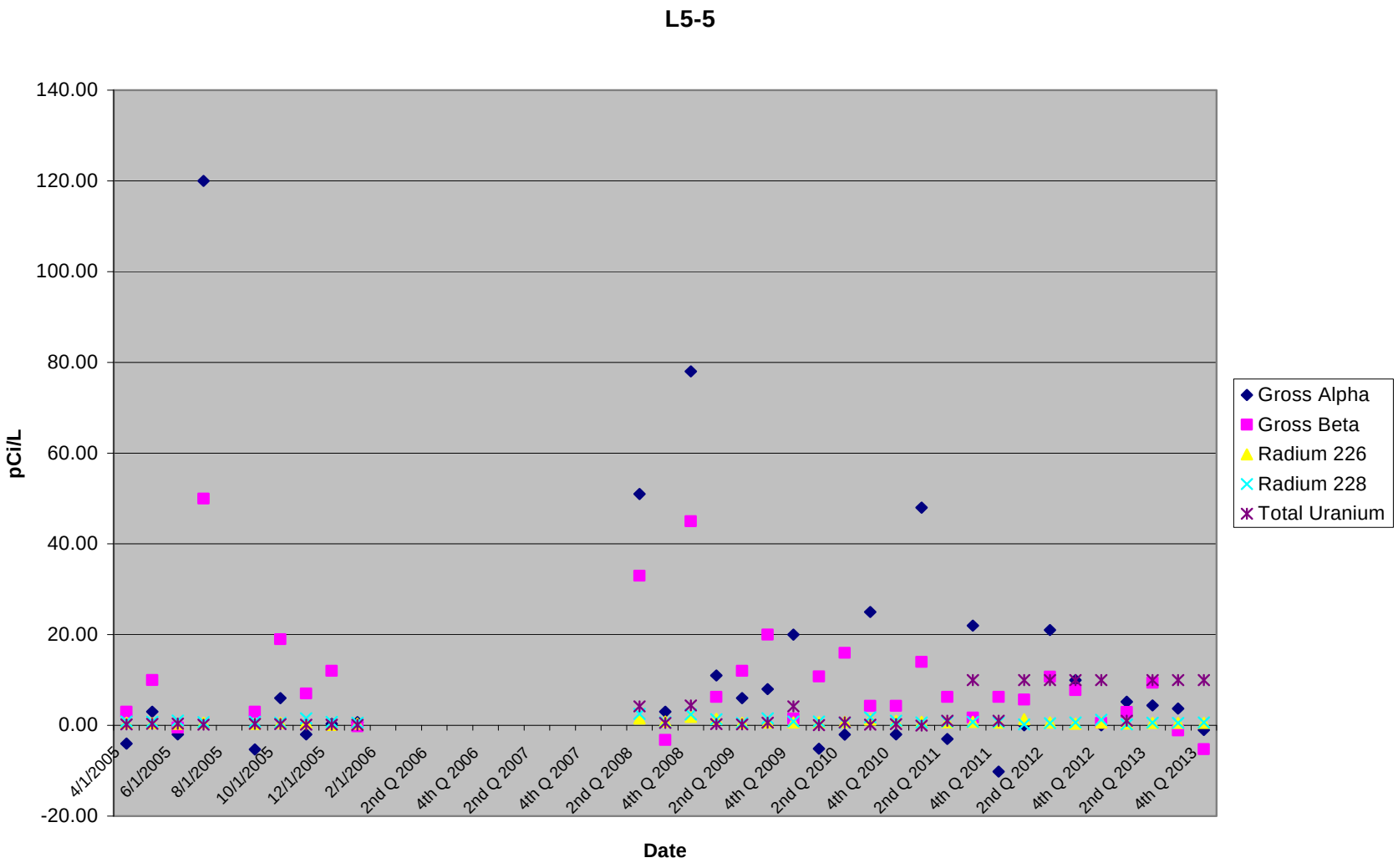


Figure 26 - Groundwater Trending Results – Well L5-6

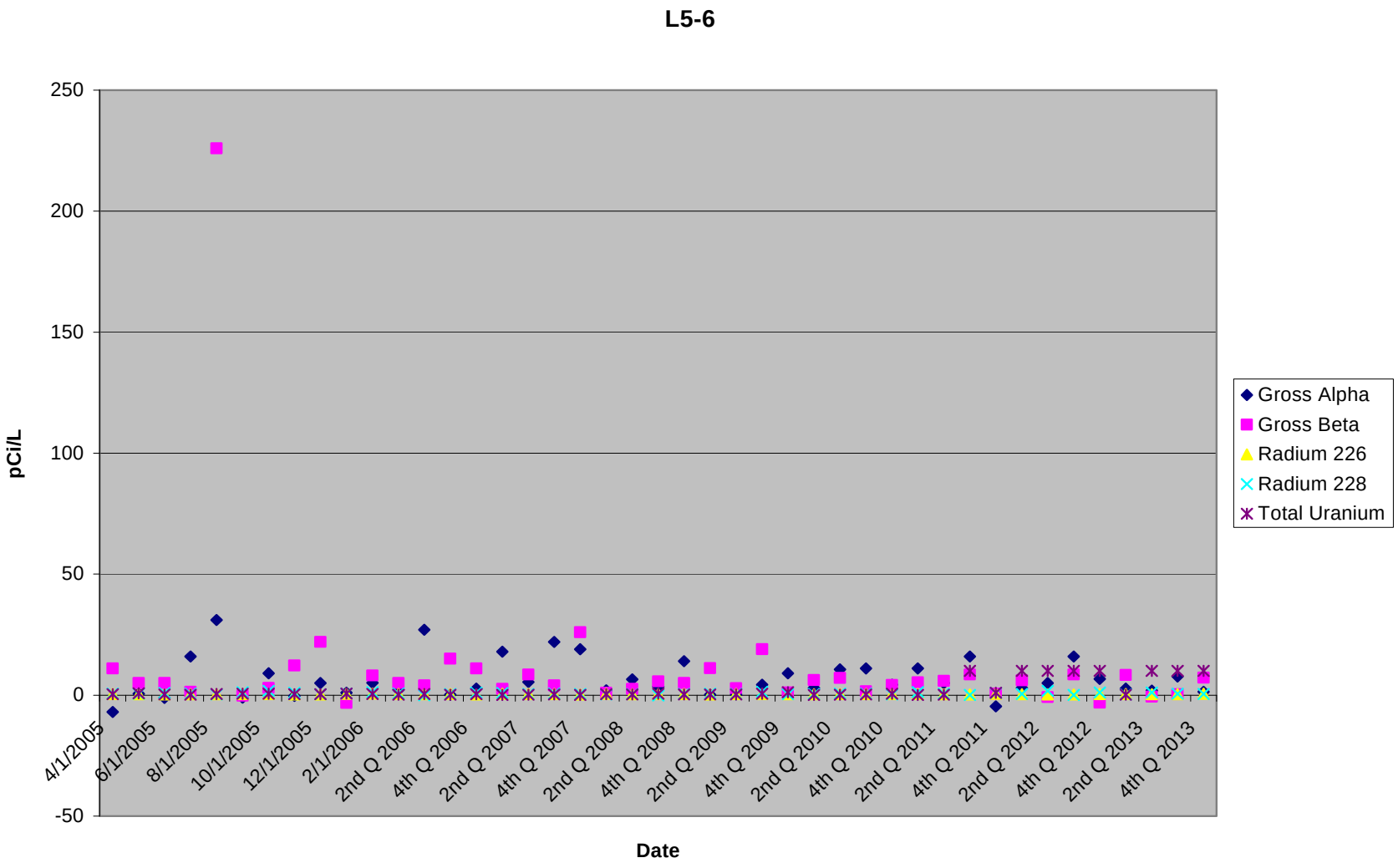


Figure 27 - Groundwater Trending Results – Well L5-7

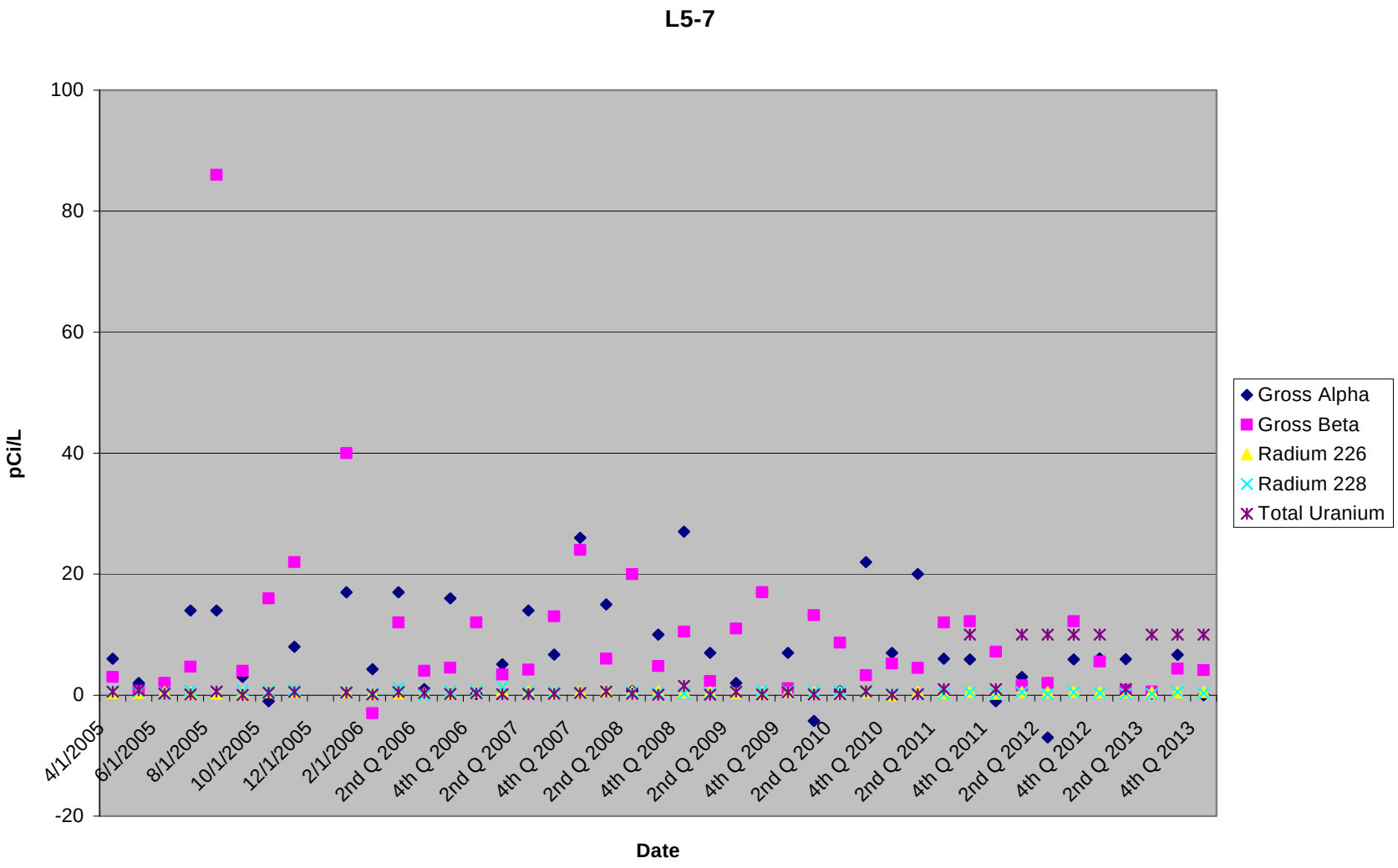


Figure 28 - Groundwater Trending Results – Well L5-8

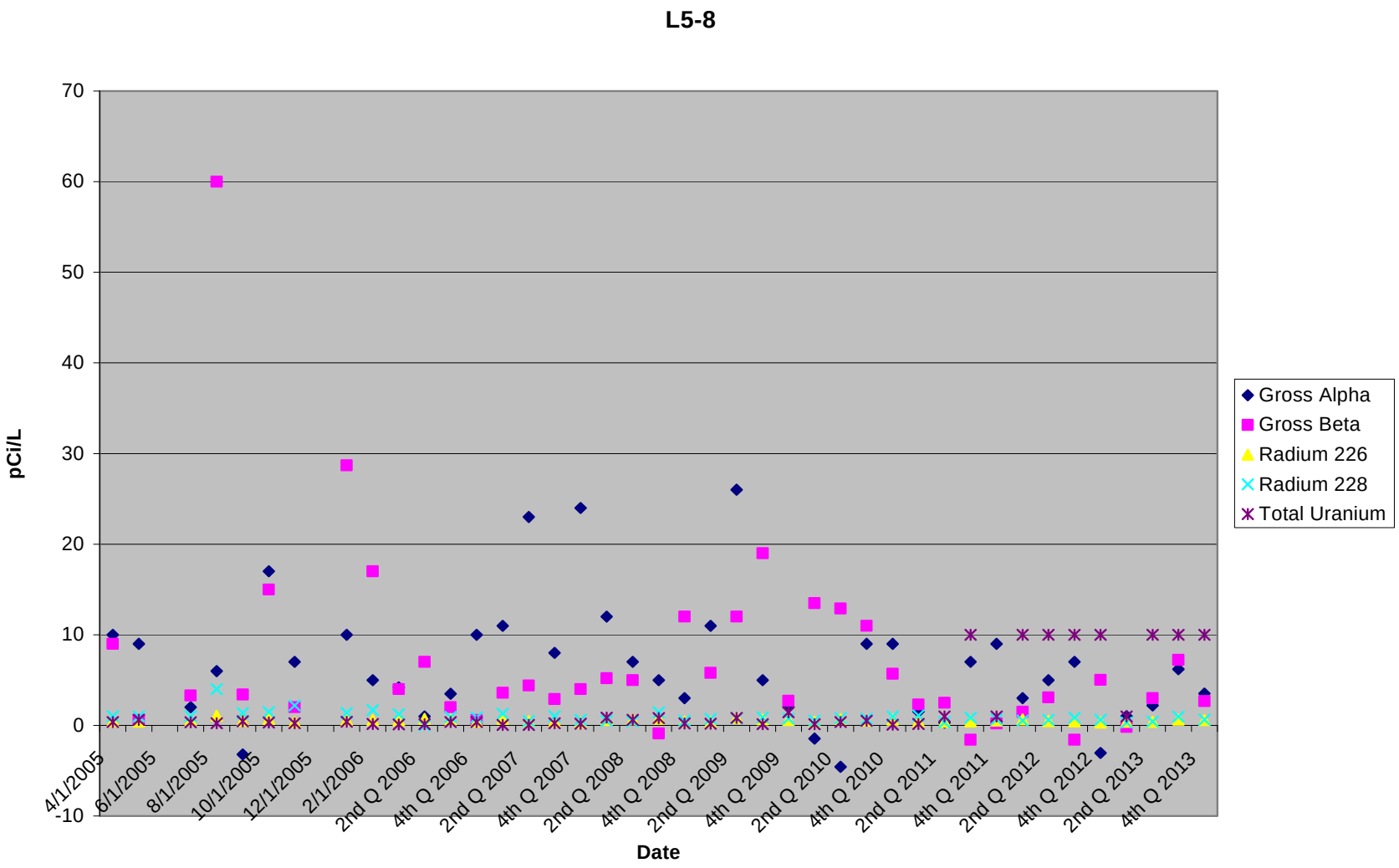


Figure 29 - Groundwater Trending Results – Well L5-9

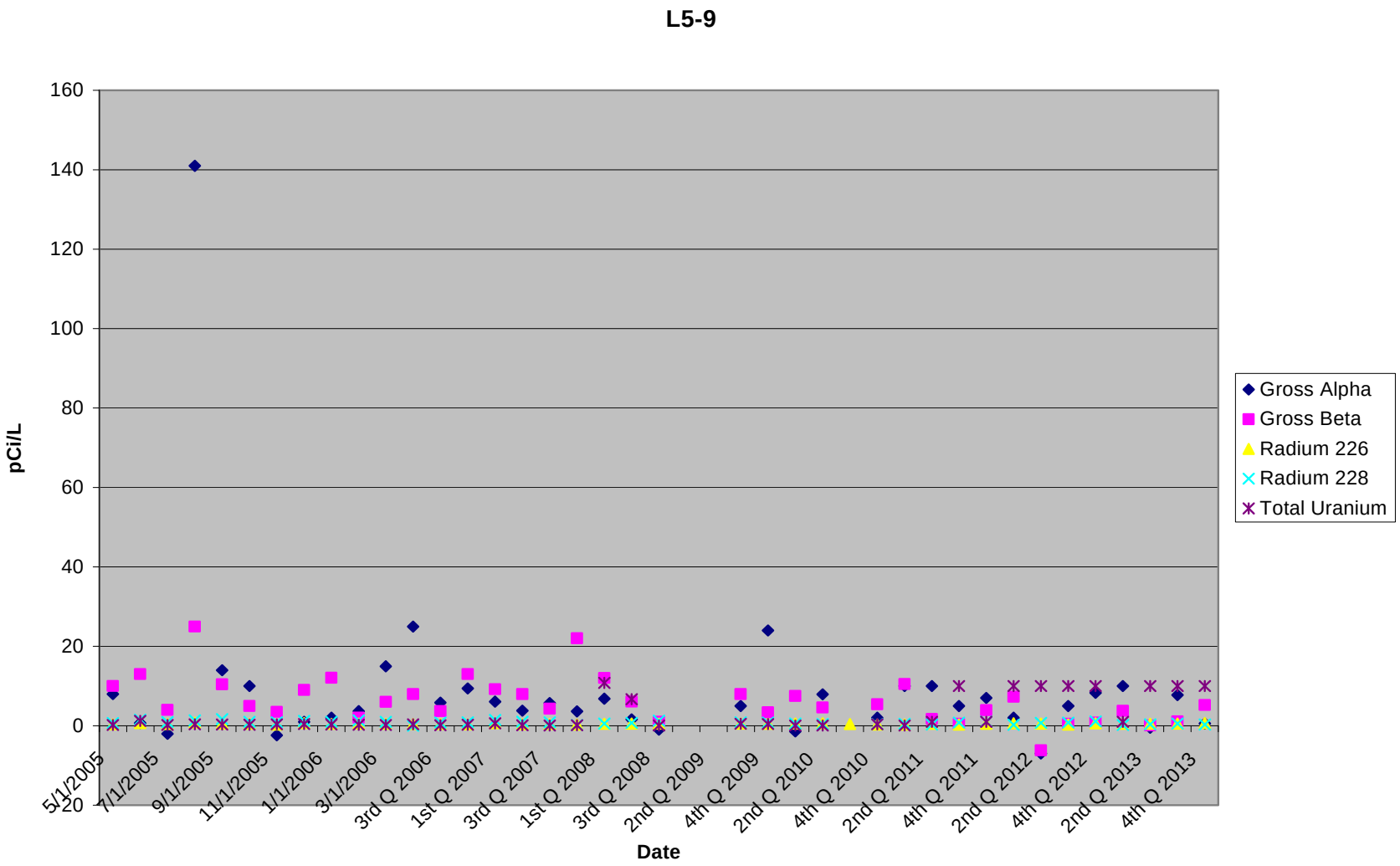


Figure 30 - Groundwater Trending Results – Well L6-3A

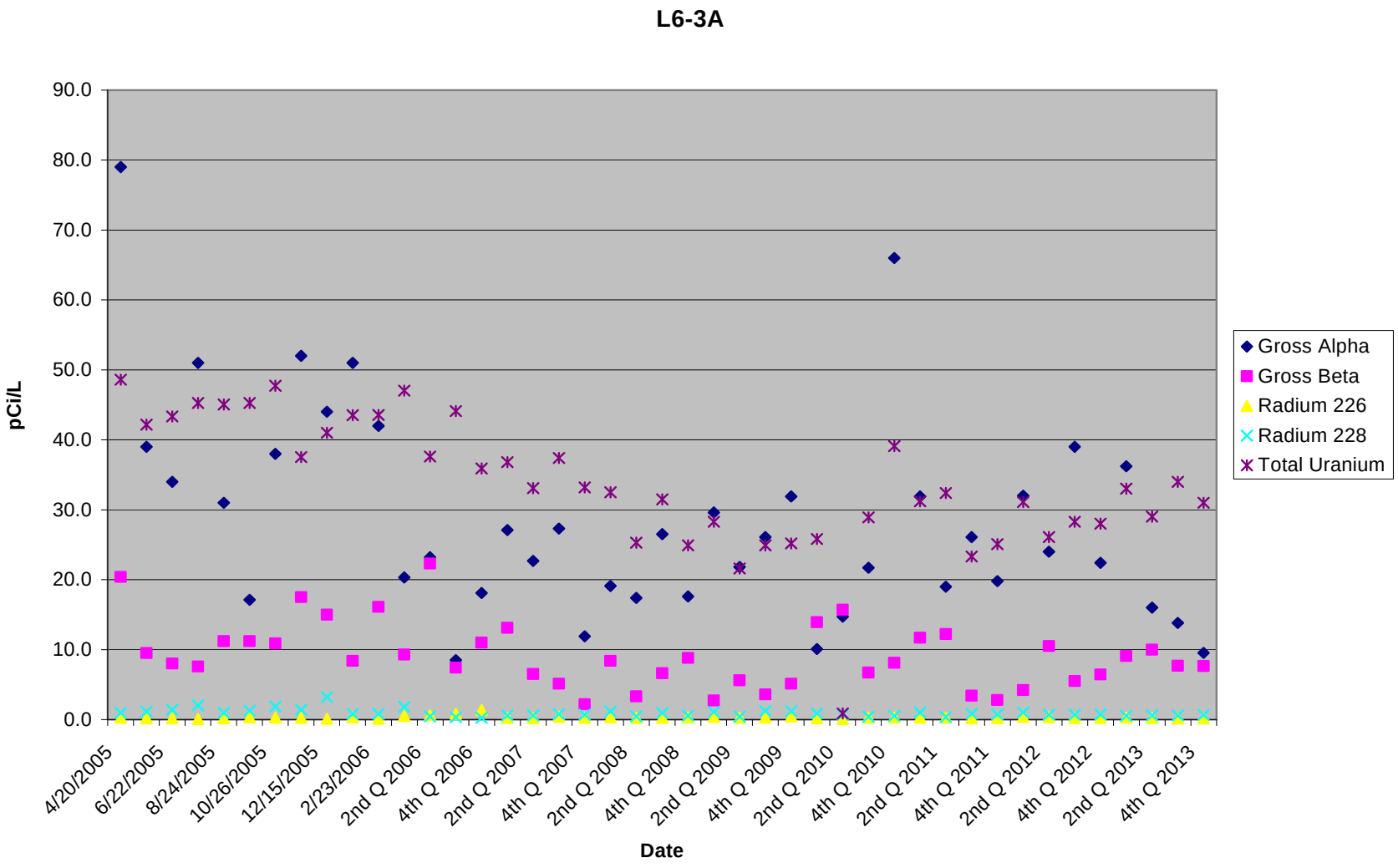


Figure 31 - CHDT Radon Monitoring Stations

Location Description
Disposal Cell A
Disposal Cell B
Treatment Building North
Treatment Building South
South Air Sampler (B)
North Air Sampler (A)
North Perimeter Fence
East Perimeter Fence
Gate 8
West Perimeter Fence

Figure 32 - CHDT Thermoluminescent Dosimeter Monitoring Stations

Location	Id Number	Gross (millirem) Q1 - 2013	Q2 - 2013	Q3 - 2013	Q4 - 2013	Total
Deploy Control	X9	42.3	44.5	44	47.2	178
Admin Bldg	1	40.6	39	45.1	47.1	171.8
Scale	2	32.6	40.6	37.4	38.2	148.8
West Fence	3	36	42.3	41.6	44.2	164.1
Gate 8	4	35.1	43.8	42.2	42.7	163.8
East Fence	5	38.8	42.7	43.6	48.9	174
North Fence	6	34.1	40.4	42.4	42.8	159.7
Gate 4	7	35.6	36.9	39.2	41.1	152.8
Lunch Room	8	36.6	38	42.2	42.4	159.2
Laboratory	9	34.4	37.8	34.7	36.1	143
Sample Bay	10	34.8	39.4	40.7	42.1	157
Maintenance	11	38.6	42.1	42.2	41	163.9
Treatment Building	12	36.5	38.1	34.1	37.8	146.5
Haul Road	13	38.8	42.6	42.1	47.1	170.6
South Air Sampler	14	38	36.6	40.5	40.7	155.8
Disposal Cell	15	31.7	34.3	37.8	36.4	140.2
North Air Sampler	16	37.6	38.8	43.4	42.5	162.3

Tables

Table 1 – 2013 CHDT Airborne Monitoring Results (uCi/ml)

Air Station A (uCi/ml)

	January	February	March	April	May	June	July	August	September	October	November	December	Average	Maximum
Air (ml)	7.67E+08	1.65E+09	2.52E+09	1.83E+09	2.73E+09	2.76E+09	2.74E+09	2.46E+09	1.02E+09	2.24E+09	2.40E+09	2.17E+09	2.11E+09	2.76E+09
Gross Alpha	3.72E-15	1.14E-15	2.53E-15	8.67E-16	1.07E-15	1.25E-15	1.10E-15	7.82E-16	8.23E-16	9.03E-16	3.48E-15	1.79E-15	1.62E-15	3.72E-15
Gross Beta	6.14E-14	1.90E-14	2.24E-14	1.60E-14	1.84E-14	1.12E-14	2.02E-14	2.50E-14	1.37E-14	1.49E-14	2.36E-14	2.39E-14	2.25E-14	6.14E-14
Th-232	1.04E-16	4.86E-17	0.00E+00	4.36E-17	2.57E-17	6.16E-17	6.21E-17	1.22E-17	2.55E-16	5.81E-17	4.58E-17	4.61E-18	6.01E-17	2.55E-16
Th-230	1.55E-15	1.34E-16	2.06E-16	2.73E-16	1.83E-16	2.50E-16	3.18E-16	8.55E-17	5.98E-16	1.70E-16	1.25E-16	1.47E-16	3.37E-16	1.55E-15
Th-228	1.30E-16	2.67E-16	5.15E-17	9.27E-17	1.03E-16	5.07E-17	0.00E+00	7.73E-17	6.86E-17	3.80E-16	4.16E-17	6.45E-17	1.11E-16	3.80E-16
U-238	1.30E-17	1.82E-17	2.77E-17	4.36E-17	4.40E-17	1.81E-17	0.00E+00	5.70E-17	3.92E-17	8.94E-17	2.91E-17	4.15E-17	3.51E-17	8.94E-17
U-235	0.00E+00	0.00E+00	0.00E+00	4.36E-17	1.10E-17	0.00E+00	7.31E-18	4.07E-18	3.92E-17	0.00E+00	8.32E-18	1.84E-17	1.10E-17	4.36E-17
U-234	1.44E-16	1.22E-17	2.38E-17	9.27E-17	0.00E+00	6.16E-17	3.29E-17	8.14E-18	1.96E-17	0.00E+00	3.33E-17	4.61E-17	3.95E-17	1.44E-16
Ra-226	4.04E-16	5.47E-17	1.58E-16	3.82E-17	8.06E-17	1.20E-16	9.50E-17	4.48E-16	1.47E-16	8.94E-18	1.21E-16	9.21E-17	1.47E-16	4.48E-16

Air Station B (uCi/ml)

	January	February	March	April	May	June	July	August	September	October	November	December	Average (μCi/ml)	Maximum (μCi/ml)
Air (ml)	7.97E+07	1.77E+09	5.34E+09	3.75E+09	5.40E+09	5.81E+09	6.70E+09	6.81E+09	5.12E+09	4.28E+09	4.02E+09	3.40E+09	4.37E+09	6.81E+09
Gross Alpha	3.79E-14	1.02E-15	1.04E-15	1.46E-15	5.39E-16	4.16E-16	7.28E-16	8.75E-16	6.74E-16	9.82E-16	9.06E-16	1.27E-15	3.98E-15	3.79E-14
Gross Beta	3.75E-13	1.93E-14	1.70E-14	1.33E-14	1.45E-14	1.04E-14	1.49E-14	1.98E-14	1.28E-14	1.40E-14	2.00E-14	2.28E-14	4.62E-14	3.75E-13
Th-232	1.00E-15	1.69E-17	2.06E-17	2.40E-17	4.07E-17	3.61E-17	8.95E-18	1.03E-17	4.10E-17	2.10E-17	3.23E-17	2.06E-17	1.06E-16	1.00E-15
Th-230	1.66E-14	6.20E-17	1.57E-16	1.60E-16	8.14E-17	9.98E-17	5.97E-17	2.79E-17	1.54E-16	1.01E-16	9.95E-17	7.65E-17	1.47E-15	1.66E-14
Th-228	1.25E-15	2.37E-16	7.49E-18	3.47E-17	2.22E-17	6.02E-17	1.94E-17	4.55E-17	3.32E-17	1.96E-16	6.47E-17	1.76E-17	1.66E-16	1.25E-15
U-238	7.53E-16	2.26E-17	1.31E-17	2.13E-17	0.00E+00	2.24E-17	1.49E-17	7.34E-18	1.56E-17	3.04E-17	1.99E-17	3.82E-17	7.99E-17	7.53E-16
U-235	2.51E-16	0.00E+00	7.49E-18	0.00E+00	7.40E-18	0.00E+00	0.00E+00	8.81E-18	7.81E-18	0.00E+00	2.49E-18	1.18E-17	2.47E-17	2.51E-16
U-234	5.02E-16	3.38E-17	3.74E-18	3.47E-17	1.11E-17	2.92E-17	3.13E-17	1.91E-17	1.95E-18	1.64E-17	1.49E-17	8.82E-18	5.89E-17	5.02E-16
Ra-226	5.65E-15	1.18E-16	0.00E+00	2.40E-17	7.22E-17	3.10E-17	3.88E-17	5.73E-17	7.03E-17	1.17E-17	2.99E-17	1.03E-16	5.17E-16	5.65E-15

Air Station C (uCi/ml)

	January	February	March	April	May	June	July	August	September	October	November	December	Average (μCi/ml)	Maximum (μCi/ml)
Air (ml)	1.99E+09	*2.08E+09*	2.17E+09	1.68E+08	3.13E+09	*3.62E+09*	4.12E+09	3.29E+09	2.56E+09	2.59E+09	2.37E+09	2.04E+09	2.51E+09	4.12E+09
Gross Alpha	8.39E-16	*1.02E-15*	1.19E-15	2.70E-14	4.64E-16	*5.57E-16*	6.50E-16	1.02E-15	1.64E-15	9.05E-16	2.95E-15	1.47E-15	3.31E-15	2.70E-14
Gross Beta	1.79E-14	*1.89E-14*	2.00E-14	2.82E-13	1.62E-14	*1.66E-14*	1.69E-14	1.75E-14	1.33E-14	1.62E-14	2.31E-14	2.26E-14	4.01E-14	2.82E-13
Th-232	9.54E-17	*7.08E-17*	4.61E-17	4.76E-16	2.24E-17	*2.33E-17*	2.43E-17	2.13E-17	2.73E-17	4.25E-17	7.18E-17	2.95E-17	7.92E-17	4.76E-16
Th-230	2.16E-16	*2.26E-16*	2.35E-16	2.20E-15	8.96E-17	*9.45E-17*	9.95E-17	1.22E-16	1.37E-16	7.73E-17	1.56E-16	1.57E-16	3.18E-16	2.20E-15
Th-228	2.01E-17	*1.00E-17*	0.00E+00	4.76E-16	7.36E-17	*7.08E-17*	6.79E-17	5.77E-17	8.20E-17	3.44E-16	7.18E-17	8.35E-17	1.13E-16	4.76E-16
U-238	5.02E-18	*2.56E-17*	4.61E-17	5.95E-16	6.08E-17	*4.37E-17*	2.67E-17	3.04E-17	5.47E-17	4.64E-17	3.38E-17	5.89E-17	8.56E-17	5.95E-16
U-235	5.02E-18	*1.17E-17*	1.84E-17	1.79E-16	0.00E+00	*0.00E+00*	0.00E+00	0.00E+00	7.81E-18	0.00E+00	4.22E-18	0.00E+00	1.88E-17	1.79E-16
U-234	3.52E-17	*3.37E-17*	3.23E-17	2.98E-16	4.48E-17	*3.09E-17*	1.70E-17	3.34E-17	4.69E-17	6.19E-17	4.22E-17	4.91E-17	6.04E-17	2.98E-16
Ra-226	1.46E-16	*1.37E-16*	1.29E-16	2.68E-15	1.86E-16	*1.19E-16*	5.34E-17	2.28E-16	1.17E-16	1.70E-16	1.27E-16	1.42E-16	3.53E-16	2.68E-15

Air Station D

	January	February	March	April	May	June	July	August	September	October	November	December	Average (μCi/ml)	Maximum (μCi/ml)
Air (ml)	6.48E+08	2.21E+09	5.28E+09	3.62E+09	5.29E+09	6.43E+09	5.69E+09	4.08E+09	3.28E+09	3.68E+09	3.82E+09	2.68E+08	3.69E+09	6.43E+09
Gross Alpha	2.67E-15	8.65E-16	1.51E-15	7.46E-17	3.59E-16	3.73E-16	5.25E-16	7.94E-16	1.30E-15	7.45E-16	2.11E-15	2.76E-15	1.17E-15	2.76E-15
Gross Beta	2.51E-14	1.46E-14	1.44E-14	8.73E-16	1.25E-14	8.57E-15	1.35E-14	1.52E-14	1.22E-14	1.27E-14	1.86E-14	2.44E-14	1.44E-14	2.51E-14
Th-232	9.26E-17	2.26E-17	0.00E+00	8.29E-18	3.78E-17	9.33E-18	3.87E-17	7.84E-17	4.26E-17	3.26E-17	3.40E-17	2.61E-16	5.49E-17	2.61E-16
Th-230	7.87E-16	1.36E-16	1.89E-16	7.46E-17	8.89E-17	3.27E-17	3.51E-17	1.86E-16	1.37E-16	1.44E-16	1.68E-16	1.34E-15	2.77E-16	1.34E-15
Th-228	0.00E+00	1.45E-16	0.00E+00	1.93E-17	5.67E-17	6.22E-17	4.57E-17	1.15E-16	6.09E-17	1.28E-16	2.62E-18	1.05E-15	1.40E-16	1.05E-15
U-238	0.00E+00	9.06E-18	3.79E-18	0.00E+00	1.13E-17	2.33E-17	2.81E-17	3.19E-17	2.44E-17	3.26E-17	1.05E-17	0.00E+00	1.46E-17	3.26E-17
U-235	6.17E-17	1.81E-17	0.00E+00	0.00E+00	0.00E+00	9.33E-18	0.00E+00	4.90E-18	0.00E+00	8.16E-18	1.31E-17	2.61E-16	3.14E-17	2.61E-16
U-234	1.08E-16	3.62E-17	0.00E+00	0.00E+00	1.51E-17	4.20E-17	3.87E-17	6.13E-17	3.96E-17	4.35E-17	1.57E-17	1.12E-16	4.27E-17	1.12E-16
Ra-226	9.10E-16	2.26E-16	4.73E-17	8.29E-17	1.12E-16	8.09E-17	5.27E-17	2.13E-16	1.52E-16	1.30E-16	5.76E-17	4.48E-16	2.09E-16	9.10E-16

Table 2 – CHDT 2013 Wastewater Discharge Monitoring Results
(All Discharged Water Was Recycled for Plant Use)

	January	February	March	April	May	June	July	August	September	October	November	December	Average *	Total
Gallons	260000	0	0	0	0	331000	445000	207500	0	230000	243000	0		1716500
Gross Alpha (pCi/L)	2.9	-	-	-	-	0.30	1.50	1.29	-	2.66	1.70	-	1.20	
Gross Beta (pCi/L)	17.1	-	-	-	-	23.60	20.10	21.35	-	111.00	51.50	-	34.51	
Ra-226 (pCi/L)	0.1743	-	-	-	-	0.17	0.14	0.15	-	0.12	0.10	-	0.12	
Ra-228 (pCi/L)	0.0323	-	-	-	-	0.07	0.07	0.11	-	0.39	0.25	-	0.13	

(* weighted average)

Table 3 - CHDT Groundwater Monitoring Results – Cell Group

Parameter	Method	CDPHE GW Standard	Units	1st Quarter 2013					
				Cell 1-LCS	Cell 2-LCS	Cell 3-LCS	Cell 1-LDS	Cell 2-LDS	TRB-LDS
Gross Alpha [1]	9310 MOD	15	pCi/L	132U	95.4U	80	7.49U	43.3	51.1
Gross Beta [2]	9310 MOD	50	pCi/L	70.7U	291	510	3.23U	14.3U	28.8
Radium 226 [3]	9315 MOD	5	pCi/L	0.393	1.12	1.11	0.315	.141U	0.307
Radium 228 [3]	9320 MOD	5	pCi/L	1.6	11	2.66	.353U	1.25	2.31
Uranium	D5174-91	30	ug/L	200	15	92	8.3	67	58
Parameter	Method	CDPHE GW Standard	Units	2nd Quarter 2013					
				Cell 1-LCS	Cell 2-LCS	Cell 3-LCS	Cell 1-LDS	Cell 2-LDS	TRB-LDS
Gross Alpha [1]	9310 MOD	15	pCi/L	131	63.7U	42.5U	1.30U	35.9	75.6
Gross Beta [2]	9310 MOD	50	pCi/L	140	225U	797	8.37U	21.7	29.3
Radium 226 [3]	9315 MOD	5	pCi/L	0.485	0.962	1.39	0.0883U	0.43	0.35
Radium 228 [3]	9320 MOD	5	pCi/L	2.6	9.61	4.34	0.144U	1.98	1.37
Uranium	D5174-91	30	ug/L	190	15	78	14	57	82
Parameter	Method	CDPHE GW Standard	Units	3rd Quarter 2013					
				Cell 1-LCS	Cell 2-LCS	Cell 3-LCS	Cell 1-LDS	Cell 2-LDS	TRB-LDS
Gross Alpha [1]	9310 MOD	15	pCi/L	160	268U	65.8	19.3U	68.2	87.7
Gross Beta [2]	9310 MOD	50	pCi/L	49U	344	1610	18.8	35.2	17.6
Radium 226 [3]	9315 MOD	5	pCi/L	0.444	1.39	1.17	0.246	0.236	0.263
Radium 228 [3]	9320 MOD	5	pCi/L	2.38	13	2.6	0.492	1.58	1.5
Uranium	D5174-91	30	ug/L	190	33	43	10U	62	85
Parameter	Method	CDPHE GW Standard	Units	4th Quarter 2013					
				Cell 1-LCS	Cell 2-LCS	Cell 3-LCS	Cell 1-LDS	Cell 2-LDS	TRB-LDS
Gross Alpha [1]	9310 MOD	15	pCi/L	48U	56.9U	45.7U	1.28U	45.5	41
Gross Beta [2]	9310 MOD	50	pCi/L	121	97.8U	1310	4.51	19.7U	14.2U
Radium 226 [3]	9315 MOD	5	pCi/L	0.64	0.95	1.53	0.252	0.579	0.427
Radium 228 [3]	9320 MOD	5	pCi/L	3.21	11.1	5.07	0.507	2.4	1.2
Uranium	D5174-91	30	ug/L	210	19	51	10U	82	79

Notes:
[1] CDPHE GW standard for Gross Alpha excludes U and Rn.
[2] CDPHE GW standard for Gross Beta is a screening level.
[3] CDPHE GW standard for Radium 226 and 228 is a combined value of 5 pc/l.

Units	pCi/L	picocuries per liter
	ug/L	micrograms per liter
Lab Flags	J	result is greater than the sample detection limit but less than the stated reporting limit
	U	result is less than the sample detection limit

Table 4 - CHDT Groundwater Monitoring Results – L3-42

Parameter	Method	CDPHE GW Standard	Units	1st Q 2013 L3-42	1st Q 2013 L3-42 Duplicate	2nd Q 2013 L3-42	3rd Q 2013 L3-42	4th Q 2013 L3-42	4th Q 2013 L3-42 Duplicate
Gross Alpha [1]	9310 MOD	15	pCi/L	234	226	237	218	130	200
Gross Beta [2]	9310 MOD	50	pCi/L	80.6	5.12U	60.9	92.1	95.1	71.4
Radium 226 [3]	9315 MOD	5	pCi/L	0.471	0.425	0.531	0.423	0.482	0.613
Radium 228 [3]	9320 MOD	5	pCi/L	0.754	0.552	1.11	0.643	0.632	0.66
Uranium	D5174	30	ug/L	320	320	300	300	290	360

Notes:
[1] CDPHE GW standard for Gross Alpha excludes U and Rn.
[2] CDPHE GW standard for Gross Beta is a screening level.
[3] CDPHE GW standard for Radium 226 and 228 is a combined value of 5 pc/l.

Units
pCi/L picocuries per liter
ug/L micrograms per liter

Lab Flags
J result is greater than the sample detection limit but less than the stated reporting limit
U result is less than the sample detection limit

Table 5 - CHDT Groundwater Monitoring Results – L4 Group

1st Quarter 2013

Units	L4-32A	L4-32A Duplicate	L4-32EA	L4-32WA	L4-33	L4-33WA	L4-41	L4-8	L4-8 Duplicate	L4-8N	L4-8N Duplicate	L4-9N	L4-9W	L4-16
pCi/L	32.7		124	189	56.6U	92	65.7U	73.5U		47U	28.2U	97.4U	123U	354
pCi/L	12.9		24.5	39.2	23.5U	24.5	9.62U	84.1U		57.7U	31.8U	3.06U	-.423U'	75.9U
pCi/L	0.361		0.303	0.672	1.78	0.448	0.731	1.95		2.27	2.07	0.839	1.35	0.863
pCi/L	0.572		0.93	1.19	2.76	0.607	0.8	4.57		3.03	3.03	2.19	2.62	2.35
ug/L	39		170	210	45	120	69	87		66	66	170	77	390

2nd Quarter 2013

Units	L4-32A	L4-32A Duplicate	L4-32EA	L4-32WA	L4-33	L4-33WA	L4-41	L4-8	L4-8 Duplicate	L4-8N	L4-8N Duplicate	L4-9N	L4-9W	L4-16
pCi/L	16.9	22.9	66.9	293	89.2U	62.2	40.5U	135U	134U	50U		76.3U	87.6U	426
pCi/L	13	8.03	34.7	70.2	66.4U	35.1	-21.1U	47.2U	100	29.8U		38.4U	79.9U	68.3U
pCi/L	0.187	0.172	0.35	0.386	1.32	0.465	0.566	1.56	1.5	2.11		0.496	0.675	0.761
pCi/L	.279U	.149U	0.544	1.62	3	0.916	1.07	5.16	4.52	3.86		2.25	3.26	2.66
ug/L	27	31	110	420	52	88	91	88	87	67		160	74	380

3rd Quarter 2013

Units	L4-32A	L4-32A Duplicate	L4-32EA	L4-32WA	L4-33	L4-33WA	L4-41	L4-8	L4-8 Duplicate	L4-8N	L4-8N Duplicate	L4-9N	L4-9W	L4-16
pCi/L	33	43.7	72.3U	302	92.4U	68.2	168	175U	272U	97.7U		180U	236	331U
pCi/L	13	17.4	63.7U	78.5	-3.46U	28.2	32.6U	12.9U	41.3U	72.1U		14.6U	74U	100U
pCi/L	0.283	0.406	1.27	0.759	1.37	0.549	0.883	1.27	1.34	2.48		0.712	0.883	0.963
pCi/L	0.995	0.353	2.28	1.35	2.71	0.805	1.05	4.91	4.68	3.73		2.03	2.34	2.6
ug/L	55	43	74	500	55	93	100	110	120	81		220	100	430

4th Quarter 2013

Units	L4-32A	L4-32A Duplicate	L4-32EA	L4-32WA	L4-33	L4-33WA	L4-41	L4-8	L4-8 Duplicate	L4-8N	L4-8N Duplicate	L4-9N	L4-9W	L4-16
pCi/L	35.5		110	161	86.1U	74.4	128U	-36.9U	-93.8U	63.1U		311U	110U	540
pCi/L	11.1		60.9	55.3	-20.3U	33.7	42U	73.6U	-14.2U	0.593U		-18.1U	39.4U	158U
pCi/L	0.223		0.303	0.47	1.19	0.301	0.702	1.12	1.7	1.68		0.566	0.601	0.699
pCi/L	0.481		0.847	1.31	2.24	0.744	1.07	5.1	5.38	3.56		2.7	2.05	3.61
ug/L	60		190	390	59	120	110	110	100	78		200	100	440

Table 6 - CHDT Groundwater Monitoring Results – L5 Group

1st Quarter 2013

Parameter	Method	CDPHE GW Standard	Units	L5-3	L5-4	L5-5	L5-5 Duplicate	L5-6	L5-7	L5-8	L5-9	L5-10A
Gross Alpha [1]	9310 MOD	15	pCi/L	6.09U	-.5U	5.19U	8.56U	2.7U	5.94U	1.03U	10U	-6.25U
Gross Beta [2]	9310 MOD	50	pCi/L	.652U	.939U	2.94U	2.91U	8.36U	.855U	-.153U	3.75U	9.58
Radium 226 [3]	9315 MOD	5	pCi/L	0.268	0.474	0.415	0.521	0.422	0.488	0.399	0.506	0.475
Radium 228 [3]	9320 MOD	5	pCi/L	0.587	0.718	.23U	.35U	.26U	.177U	.306U	.213U	0.397
Uranium	D5174-91	30	ug/L	0.2	1U	1U	1U	0.19	1U	1U	1U	1U

2nd Quarter 2013

Parameter	Method	CDPHE GW Standard	Units	L5-3	L5-4	L5-5	L5-5 Duplicate	L5-6	L5-7	L5-8	L5-9	L5-10A
Gross Alpha [1]	9310 MOD	15	pCi/L	3.61U	5.94U	4.37U		1.91U	0.255U	2.19U	-0.488U	-0.258U
Gross Beta [2]	9310 MOD	50	pCi/L	3.3U	2.24U	9.36U		-0.637U	0.589U	3.01U	0.0531U	-3.76U
Radium 226 [3]	9315 MOD	5	pCi/L	1.3	0.571	0.52		0.417	0.468	0.413	0.494	0.375
Radium 228 [3]	9320 MOD	5	pCi/L	1.24	.289U	0.594		1.03	0.207U	0.437	0.377	0.395
Uranium	D5174-91	30	ug/L	10U	10U	10U		10U	10U	10U	10U	10U

3rd Quarter 2013

Parameter	Method	CDPHE GW Standard	Units	L5-3	L5-4	L5-5	L5-5 Duplicate	L5-6	L5-7	L5-8	L5-9	L5-10A
Gross Alpha [1]	9310 MOD	15	pCi/L	17.2U	7.67U	3.69U		7.71U	6.65U	6.21U	7.71U	-0.675U
Gross Beta [2]	9310 MOD	50	pCi/L	-6.37U	2.86U	-1.12U		0.382U	4.39U	7.22U	1.12U	9.11U
Radium 226 [3]	9315 MOD	5	pCi/L	0.566	0.679	0.56		0.414	0.513	0.632	0.543	0.568
Radium 228 [3]	9320 MOD	5	pCi/L	0.484	0.763	0.519		0.611	0.553	0.965	0.581	0.362
Uranium	D5174-91	30	ug/L	10U	10U	10U		10U	10U	10U	10U	10U

Parameter	Method	CDPHE GW Standard	Units	4th Quarter 2013								
				L5-3	L5-4	L5-5	L5-5 Duplicate	L5-6	L5-7	L5-8	L5-9	L5-10A
Gross Alpha [1]	9310 MOD	15	pCi/L	11.9U	9.57U	-1.04U		1.35U	0.0U	3.51U	0.577U	0.932U
Gross Beta [2]	9310 MOD	50	pCi/L	0.658U	-0.864U	-5.27U		7.16U	4.12U	2.69U	5.24U	5.62U
Radium 226 [3]	9315 MOD	5	pCi/L	0.555	0.473	0.511		0.618	0.502	0.597	0.647	0.494
Radium 228 [3]	9320 MOD	5	pCi/L	0.504	0.42	0.624		0.444	0.337U	0.631	0.294U	0.317U
Uranium	D5174-91	30	ug/L	10U	10U	10U		10U	10U	10U	10U	10U

Notes:

[1] CDPHE GW standard for Gross Alpha excludes U and Rn.

[2] CDPHE GW standard for Gross Beta is a screening level.

[3] CDPHE GW standard for Radium 226 and 228 is a combined value of 5 pc/l.

Units

pCi/L picocuries per liter

ug/L micrograms per liter

Lab Flags

J result is greater than the sample detection limit but less than the stated reporting limit

U result is less than the sample detection limit

Table 7 - CHDT Groundwater Monitoring Results – L6-3A

Parameter	Method	CDPHE GW Standard	Units	1st Q 2013 L6-3A	2nd Q 2013 L6-3A	3rd Q 2013 L6-3A	4th Q 2013 L6-3A
Gross Alpha [1]	9310 MOD	15	pCi/L	36.2	16	13.8	9.52
Gross Beta [2]	9310 MOD	50	pCi/L	9.09	9.99	7.7	7.67
Radium 226 [3]	9315 MOD	5	pCi/L	0.288	0.217	0.149U	0.166U
Radium 228 [3]	9320 MOD	5	pCi/L	0.511	0.607	0.596	0.655
Uranium	D5174	30	ug/L	33	29	34	31

Notes:
[1] CDPHE GW standard for Gross Alpha excludes U and Rn.
[2] CDPHE GW standard for Gross Beta is a screening level.
[3] CDPHE GW standard for Radium 226 and 228 is a combined value of 5 pc/l.

Units
pCi/L picocuries per liter
ug/L micrograms per liter

Lab Flags
J result is greater than the sample detection limit but less than the stated reporting limit
U result is less than the sample detection limit

Table 8 - CHDT 2013 Radon Monitoring Results

		Reported Radon Concentration (pCi/l)					
Location	ID #	Q1	Q2	Q3	Q4	Average (pCi/L)	Maximum (pCi/L
Disposal Cell A	1	0.3	1.1	0.8	0.6	0.7	1.1
Disposal Cell B	2	0.6	1.3	1.0	0.9	1.0	1.3
Treatment Bldg North	3	0.3	0.3	0.3	0.3	0.3	0.3
Treatment Bldg. South	4	0.3	0.3	0.3	0.3	0.3	0.3
South Air Sampler (B)	5	0.5	1.2	1.1	0.6	0.9	1.2
North Air Sampler (A)	6	0.3	1.0	1.0	0.9	0.8	1.0
North Perimeter Fence	7	0.3	1.2	1.0	0.9	0.9	1.2
East Perimeter Fence	8	0.3	1.3	1.1	0.9	0.9	1.3
Gate 8	9	1.3	1.0	0.6	0.9	1.0	1.3
West Perimeter Fence	10	1.4	0.8	0.5	0.8	0.9	1.4

Table 9 - CHDT 2013 Environmental Dosimeter Monitoring Results

		Gross (millirem)				
Location	Id Number	Q1 - 2013	Q2 - 2013	Q3 - 2013	Q4 - 2013	Total
Deploy Control	X9	42.3	44.5	44	47.2	178
Admin Bldg	1	40.6	39	45.1	47.1	171.8
Scale	2	32.6	40.6	37.4	38.2	148.8
West Fence	3	36	42.3	41.6	44.2	164.1
Gate 8	4	35.1	43.8	42.2	42.7	163.8
East Fence	5	38.8	42.7	43.6	48.9	174
North Fence	6	34.1	40.4	42.4	42.8	159.7
Gate 4	7	35.6	36.9	39.2	41.1	152.8
Lunch Room	8	36.6	38	42.2	42.4	159.2
Laboratory	9	34.4	37.8	34.7	36.1	143
Sample Bay	10	34.8	39.4	40.7	42.1	157
Maintenance	11	38.6	42.1	42.2	41	163.9
Treatment Building	12	36.5	38.1	34.1	37.8	146.5
Haul Road	13	38.8	42.6	42.1	47.1	170.6
South Air Sampler	14	38	36.6	40.5	40.7	155.8
Disposal Cell	15	31.7	34.3	37.8	36.4	140.2
North Air Sampler	16	37.6	38.8	43.4	42.5	162.3

		Net (millirem)				
Location	Id Number	Q1 - 2013	Q2 - 2013	Q3 - 2013	Q4 - 2013	Average
Admin Bldg	1	-1.8	-5.5	1	-0.1	-1.6
Scale	2	-9.7	-4	-6.6	-9	-7.3
West Fence	3	-6.3	-2.3	-2.4	-3	-3.5
Gate 8	4	-7.3	-0.7	-2.1	-4.5	-3.7
East Fence	5	-3.6	-1.8	-0.4	1.7	-1.0
North Fence	6	-8.2	-4.2	-1.6	-4.4	-4.6
Gate 4	7	-7.3	-7.7	-4.9	-6.1	-6.5
Lunch Room	8	-5.8	-6.5	-1.8	-4.8	-4.7
Laboratory	9	-8	-6.8	-9.3	-11.1	-8.8
Sample Bay	10	-7.5	-5.1	-3.3	-5.1	-5.3
Maintenance	11	-3.7	-2.5	-1.8	-6.2	-3.6
Treatment Building	12	-6.8	-6.4	-9.9	-9.4	-8.1
Haul Road	13	-3.6	-1.9	-2	-0.1	-1.9
South Air Sampler	14	-4.3	-7.9	-3.6	-6.5	-5.6
Disposal Cell	15	-10.6	-10.2	-6.2	-10.8	-9.5
North Air Sampler	16	-4.7	-5.8	-0.6	-4.7	-4.0

Table 10 - CHDT Site-Specific CAP-88PC Population File

	Distance (meters)												
Direction	50	100	150	250	350	450	750	1500	2500	3500	4500	5500	7000
N	0	0	0	0	0	0	0	0	0	1	2	2	0
NNW	0	0	0	0	0	0	0	0	0	1	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	3	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	4
NE	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 11 - CHDT 2013 CAP-88PC Source Term

Uranium Series	Air Emission Activity (Ci)
U-238	5.91426E-07
Th-234	5.91426E-07
Pa-234m	5.91426E-07
U-234	5.91426E-07
Th-230	5.91426E-07
Ra-226	5.13227E-06
Rn-222	5.13227E-06
Po-218	5.13227E-06
Pb-214	5.13227E-06
Bi-214	5.13227E-06
Po-214	5.13227E-06
Pb-210	4.98009E-06
Bi-210	4.98009E-06
Po-210	4.98009E-06
Thorium Series	
Th-232	1.50785E-07
Ra-228	2.27527E-06
Ac-228	2.27527E-06
Th-228	2.27527E-06
Ra-224	2.27527E-06
Rn-220	2.27527E-06
Po-216	2.27527E-06
Pb-212	2.27527E-06
Bi-212	2.27527E-06
Po-212	1.45777E-06
Tl-208	8.17505E-07

Table 12 - CHDT 2013 Occupational Thermoluminescent Dosimetry Results

Participant ID	Exposure in millirem					
	Q1	**Q2**	**Q3**	**Q4**	**Average**	**DDE**
00002	0	0	0	0	0	0
00012	0	0	0	0	0	0
00013	0	0	0	0	0	0
00014	0	0	0	0	0	0
00020	0	0	0	0	0	0
00025	0	0	0	0	0	0
00029	0	0	0	0	0	0
00030	0	0	0	0	0	0
00034	0	0	0	0	0	0
00038	0	0	0	0	0	0
00039	0	0	0	0	0	0
00040	0	0	0	0	0	0
00049	0	0	0	0	0	0
00059	0	0	0		0	0
00060	0	0	0	0	0	0
00061			0	0	0	0
00062			0	0	0	0

Table 13 – CHDT 2013 CEDE Calculations

2013 internal dose calculations for workers were determined using the results of lapel air sampling in the treatment building and active disposal cell work face during peak disposal activities.

Treatment Building

Radionuclide	Total (pCi)	Total - Accounting for respirator use (APF = 50) (pCi)	DCF (mrem/pCi)	CEDE (mrem)
U-234	0.0	0.0	1.32E-01	0.0
U-238	139.0	2.8	1.18E-01	0.329
Th-228	0.0	0.0	3.42E-01	0.0
Th-230	711.0	14.2	3.26E-01	4.64
Th-232	0.0	0.0	1.64E+00	0.0
Ra-226	0.0	0.0	8.58E-03	0.0
			Total	4.97

Disposal Cell

Radionuclide	Total (pCi)	Total - Accounting for respirator use (APF = 50) (pCi)	DCF (mrem/pCi)	CEDE (mrem)
U-234	0.0	0.0	1.32E-01	0.0
U-238	0.0	0.0	1.18E-01	0.0
Th-228	0.0	0.0	3.42E-01	0.0
Th-230	651.0	13.0	3.26E-01	4.25
Th-232	0.0	0.0	1.64E+00	0.0
Ra-226	0.0	0.0	8.53E-03	0.0
			Total	4.25

7.0 APPENDIX 1 – ALARA PROGRAM AUDIT

2013 ALARA Program Audit and 2014 ALARA Goals

Approvals

C E Christman

Clyde E. Christman, RRPT, Clean Harbors RSO

John H. Kehoe

John Kehoe, Clean Harbors General Manager

Clean Harbors Deer Trail, LLC (CHDT) performs an annual program audit of the As Low As Reasonably Achievable (ALARA) Program as a condition of the Colorado Department of Public Health and Environment (CDPHE) Radioactive Materials License number 1102-01. The audit consists of a review of operations of the past year and the establishment of the facility ALARA goals for the upcoming year.

A stand-alone procedure, *SOP 15.RPP.07, ALARA, Revision 1* defines specific requirements for conducting ALARA program reviews, briefings and audits. The procedure requires an ALARA Review whenever predetermined thresholds are exceeded or are anticipated to be exceeded.

Review of the 2013 Operations

CHDT received and disposed of over 22,800 tons of radioactive materials in 2013. The materials were dispositioned by both direct burial and through treatment prior to burial.

2013 Occupational Exposure ALARA Goal

The ALARA goal for occupational exposure at CHDT is 25 millirem (mrem) per year. The highest occupational exposure for 2013 was 3.7 mrem. This goal was met.

Personnel Contamination Events

The CHDT ALARA goal for personnel contaminations in 2013 was zero (0). This goal was met.

Spills

The CHDT ALARA goal for spills in 2013 was zero (0). This goal was met.

2014 OPERATIONS

Disposal Cell #4 construction is scheduled for 2014. No additional facility changes, other than maintenance or information technology upgrades, are anticipated in 2014. Radioactive material waste streams containing NORM and TENORM are expected to continue as a portion of the overall waste acceptance at CHDT.

2014 ALARA Goals

Occupational Exposure

The 2014 ALARA goal for occupational exposure is unchanged from 2013 and remains 25 mrem for any individual.

Personnel Contamination Events

The CHDT ALARA goal for personnel contaminations in 2014 is zero (0). Personnel requiring decontamination in accordance with Section 5.2 of *Standard Operating Procedure (SOP) 15.OPS.12, Personnel Contamination Surveys, Revision 2* defines personnel contaminations.

Spills

The CHDT ALARA goal for spills in 2014 is zero (0). Spill events, surveys and responses are defined in *SOP 15.Ops.14, Spill Surveys, Revision 1*

8.0 APPENDIX 2 – 2013 CAP-88PC REPORT

C A P 8 8 - P C

Version 3.0

Clean Air Act Assessment Package - 1988

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

Non-Radon Population Assessment
Apr 22, 2014 12:09 pm

Facility: Clean Harbors Deer Trail
Address: 108555 East Highway 36
City: Deer Trail
State: CO Zip: 80105

Source Category: Secure Cell Disposal
Source Type: Area
Emission Year: 2013

Comments: 2013 Emmissions
2013 Emmissions

Effective Dose Equivalent (mrem/year)
1.88E-04

At This Location: 3500 Meters North

Dataset Name: CH2013
Dataset Date: 4/22/2014 11:54:00 AM
Wind File: C:\Program Files (x86)\CAP88-PC30\WindLib\23
Population File: C:\Users\kehoej1\Documents\Documents 020712\

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 3500 Meters North
Lifetime Fatal Cancer Risk: 1.33E-10

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
Adrenals	1.02E-06	5.59E-09
B Surfac	8.82E-05	5.09E-07
Breasts	1.13E-06	6.14E-09
St Wall	1.08E-06	5.86E-09
ULI Wall	1.18E-06	6.45E-09
Kidneys	7.99E-06	4.63E-08
Lungs	5.78E-05	2.98E-07
Ovaries	1.23E-06	6.69E-09
R Marrow	8.53E-06	4.92E-08
Spleen	6.02E-06	3.50E-08
Thymus	1.07E-06	5.82E-09
Uterus	1.06E-06	5.76E-09
Bld Wall	1.10E-06	5.98E-09
Brain	1.07E-06	5.81E-09
Esophagu	1.72E-05	8.91E-08
SI Wall	1.07E-06	5.86E-09
LLI Wall	1.46E-06	8.10E-09
Liver	5.73E-06	3.30E-08
Muscle	1.16E-06	6.27E-09
Pancreas	1.03E-06	5.64E-09
Skin	5.74E-06	3.01E-08
Testes	1.34E-06	7.26E-09
Thyroid	1.09E-06	5.95E-09
EFFEC	1.88E-04	1.00E-06

FREQUENCY DISTRIBUTION OF LIFETIME FATAL CANCER RISKS

Risk Range	# of People	# of People in This Risk Range or Higher	Deaths/Year in This Risk Range	Deaths/Year in This Risk Range or Higher
1.0E+00 TO 1.0E-01	0	0	0.00E+00	0.00E+00
1.0E-01 TO 1.0E-02	0	0	0.00E+00	0.00E+00
1.0E-02 TO 1.0E-03	0	0	0.00E+00	0.00E+00
1.0E-03 TO 1.0E-04	0	0	0.00E+00	0.00E+00
1.0E-04 TO 1.0E-05	0	0	0.00E+00	0.00E+00
1.0E-05 TO 1.0E-06	0	0	0.00E+00	0.00E+00
LESS THAN 1.0E-06	13	13	9.07E-12	9.07E-12

RADIONUCLIDE EMISSIONS DURING THE YEAR 2013

Nuclide	Type	Size	Source #1 Ci/y	TOTAL Ci/y
U-238	M	1	5.9E-07	5.9E-07
Th-234	S	1	5.9E-07	5.9E-07
Pa-234m	M	1	5.9E-07	5.9E-07
Pa-234	M	1	5.9E-07	5.9E-07
U-234	M	1	5.9E-07	5.9E-07
Th-230	S	1	5.9E-07	5.9E-07
Ra-226	M	1	5.1E-06	5.1E-06
Rn-222	G	0	5.1E-06	5.1E-06
Po-218	M	1	5.1E-06	5.1E-06
Pb-214	M	1	5.1E-06	5.1E-06
Bi-214	M	1	5.1E-06	5.1E-06
Po-214	M	1	5.1E-06	5.1E-06
Pb-210	M	1	5.0E-06	5.0E-06
Bi-210	M	1	5.0E-06	5.0E-06
Po-210	M	1	5.0E-06	5.0E-06
Th-232	S	1	1.5E-07	1.5E-07
Ra-228	M	1	2.3E-06	2.3E-06
Ac-228	M	1	2.3E-06	2.3E-06
Th-228	S	1	2.3E-06	2.3E-06
Ra-224	M	1	2.3E-06	2.3E-06
Rn-220	G	0	2.3E-06	2.3E-06
Po-216	M	1	2.3E-06	2.3E-06
Pb-212	M	1	2.3E-06	2.3E-06
Bi-212	M	1	2.3E-06	2.3E-06
Po-212	M	1	1.5E-06	1.5E-06
Tl-208	M	1	8.2E-07	8.2E-07

SITE INFORMATION

Temperature:	10	degrees C
Precipitation:	36	cm/y
Humidity:	8	g/cu m
Mixing Height:	10000	m

SOURCE INFORMATION

Source Number: 1

Source Height (m): 1.00
Area (sq m): 1000.00

Plume Rise Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.00	0.00	0.00	0.00	0.00	0.00	0.00

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.700	0.400	0.440
Fraction From Assessment Area:	0.300	0.600	0.560
Fraction Imported:	0.000	0.000	0.000

Beef Cattle Density: 1.13E-02
Milk Cattle Density: 3.50E-03
Land Fraction Cultivated
for Vegetable Crops: 1.39E-02

POPULATION DATA

Direction	Distance (m) 50	100	150	250	350	450	750
N	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0

Direction	Distance (m) 1500	2500	3500	4500	5500	7000
N	0	0	1	2	2	0
NNW	0	0	1	0	0	0
NW	0	0	0	0	0	0
WNW	0	0	0	0	0	0
W	0	0	0	0	0	0
WSW	0	0	0	0	0	0
SW	0	0	0	0	0	0
SSW	0	0	0	0	0	0
S	0	0	0	0	0	0
SSE	0	0	0	0	0	0
SE	0	0	0	0	0	0
ESE	3	0	0	0	0	0
E	0	0	0	0	0	0
ENE	0	0	0	0	0	4
NE	0	0	0	0	0	0
NNE	0	0	0	0	0	0

C A P 8 8 - P C

Version 3.0

Clean Air Act Assessment Package - 1988

G E N E R A L D A T A

Non-Radon Population Assessment
Apr 22, 2014 12:09 pm

Facility: Clean Harbors Deer Trail
Address: 108555 East Highway 36
City: Deer Trail
State: CO Zip: 80105

Source Category: Secure Cell Disposal
Source Type: Area
Emission Year: 2013

Comments: 2013 Emmissions
2013 Emmissions

Dataset Name: CH2013
Dataset Date: 4/22/2014 11:54:00 AM
Wind File: C:\Program Files (x86)\CAP88-PC30\WindLib\23062.WND
Population File: C:\Users\kehoej1\Documents\Documents 020712\John Hackett Documents\CHDT Li

VALUES FOR RADIONUCLIDE-DEPENDENT PARAMETERS

Nuclide	Clearance Type	Particle Size (microns)	Scavenging Coefficient (per second)	Dry Deposition Velocity (m/s)
U-238	M	1	3.56E-06	1.80E-03
Th-234	S	1	3.56E-06	1.80E-03
Pa-234m	M	1	3.56E-06	1.80E-03
Pa-234	M	1	3.56E-06	1.80E-03
U-234	M	1	3.56E-06	1.80E-03
Th-230	S	1	3.56E-06	1.80E-03
Ra-226	M	1	3.56E-06	1.80E-03
Rn-222	G	0	0.00E+00	0.00E+00
Po-218	M	1	3.56E-06	1.80E-03
Pb-214	M	1	3.56E-06	1.80E-03
Bi-214	M	1	3.56E-06	1.80E-03
Po-214	M	1	3.56E-06	1.80E-03
Pb-210	M	1	3.56E-06	1.80E-03
Bi-210	M	1	3.56E-06	1.80E-03
Po-210	M	1	3.56E-06	1.80E-03
At-218	M	1	3.56E-06	1.80E-03
Th-232	S	1	3.56E-06	1.80E-03
Ra-228	M	1	3.56E-06	1.80E-03
Ac-228	M	1	3.56E-06	1.80E-03
Th-228	S	1	3.56E-06	1.80E-03
Ra-224	M	1	3.56E-06	1.80E-03
Rn-220	G	0	0.00E+00	0.00E+00
Po-216	M	1	3.56E-06	1.80E-03
Pb-212	M	1	3.56E-06	1.80E-03
Bi-212	M	1	3.56E-06	1.80E-03
Po-212	M	1	3.56E-06	1.80E-03
Tl-208	M	1	3.56E-06	1.80E-03

VALUES FOR RADIONUCLIDE-DEPENDENT PARAMETERS

	DECAY CONSTANT (PER DAY)			TRANSFER COEFFICIENT	
Nuclide	Radio-active (1)	Surface	Water	Milk (2)	Meat (3)
U-238	4.25E-13	5.48E-05	0.00E+00	4.00E-04	8.00E-04
Th-234	2.88E-02	5.48E-05	0.00E+00	5.00E-06	1.00E-04
Pa-234m	8.53E+02	5.48E-05	0.00E+00	5.00E-06	5.00E-06
Pa-234	2.48E+00	5.48E-05	0.00E+00	5.00E-06	5.00E-06
U-234	7.76E-09	5.48E-05	0.00E+00	4.00E-04	8.00E-04
Th-230	2.46E-08	5.48E-05	0.00E+00	5.00E-06	1.00E-04
Ra-226	1.19E-06	5.48E-05	0.00E+00	1.00E-03	2.00E-03
Rn-222	1.81E-01	5.48E-05	0.00E+00	0.00E+00	0.00E+00
Po-218	3.27E+02	5.48E-05	0.00E+00	4.00E-04	5.00E-03
Pb-214	3.72E+01	5.48E-05	0.00E+00	3.00E-04	8.00E-04
Bi-214	5.02E+01	5.48E-05	0.00E+00	1.00E-03	2.00E-03
Po-214	3.64E+08	5.48E-05	0.00E+00	4.00E-04	5.00E-03
Pb-210	8.51E-05	5.48E-05	0.00E+00	3.00E-04	8.00E-04
Bi-210	1.38E-01	5.48E-05	0.00E+00	1.00E-03	2.00E-03
Po-210	5.01E-03	5.48E-05	0.00E+00	4.00E-04	5.00E-03
At-218	2.99E+04	5.48E-05	0.00E+00	1.00E-02	1.00E-02
Th-232	1.35E-13	5.48E-05	0.00E+00	5.00E-06	1.00E-04
Ra-228	3.30E-04	5.48E-05	0.00E+00	1.00E-03	2.00E-03
Ac-228	2.71E+00	5.48E-05	0.00E+00	2.00E-06	2.00E-05
Th-228	9.92E-04	5.48E-05	0.00E+00	5.00E-06	1.00E-04
Ra-224	1.89E-01	5.48E-05	0.00E+00	1.00E-03	2.00E-03
Rn-220	1.08E+03	5.48E-05	0.00E+00	0.00E+00	0.00E+00
Po-216	3.99E+05	5.48E-05	0.00E+00	4.00E-04	5.00E-03
Pb-212	1.56E+00	5.48E-05	0.00E+00	3.00E-04	8.00E-04
Bi-212	1.65E+01	5.48E-05	0.00E+00	1.00E-03	2.00E-03
Po-212	1.96E+11	5.48E-05	0.00E+00	4.00E-04	5.00E-03
Tl-208	3.25E+02	5.48E-05	0.00E+00	3.00E-03	2.00E-02

FOOTNOTES:

(1) Fraction of animal's daily intake of nuclide which appears in each L of milk (days/L)

(2) Fraction of animal's daily intake of nuclide which appears in each kg of meat (days/kg)

VALUES FOR RADIONUCLIDE-DEPENDENT PARAMETERS

	CONCENTRATION UPTAKE FACTOR		GI UPTAKE FRACTION	
Nuclide	Forage (1)	Edible (2)	Inhalation	Ingestion
U-238	1.00E-01	2.00E-03	2.00E-02	2.00E-02
Th-234	1.00E-01	1.00E-03	5.00E-04	5.00E-04
Pa-234m	1.00E-01	1.00E-02	5.00E-04	5.00E-04
Pa-234	1.00E-01	1.00E-02	5.00E-04	5.00E-04
U-234	1.00E-01	2.00E-03	2.00E-02	2.00E-02
Th-230	1.00E-01	1.00E-03	5.00E-04	5.00E-04
Ra-226	2.00E-01	4.00E-02	2.00E-01	2.00E-01
Rn-222	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Po-218	1.00E-01	1.00E-03	1.00E-01	1.00E-01
Pb-214	1.00E-01	4.00E-03	2.00E-01	2.00E-01
Bi-214	5.00E-01	1.00E-01	5.00E-02	5.00E-02
Po-214	1.00E-01	1.00E-03	1.00E-01	1.00E-01
Pb-210	1.00E-01	4.00E-03	2.00E-01	2.00E-01
Bi-210	5.00E-01	1.00E-01	5.00E-02	5.00E-02
Po-210	1.00E-01	1.00E-03	1.00E-01	1.00E-01
At-218	9.00E-01	2.00E-01	1.00E+00	1.00E+00
Th-232	1.00E-01	1.00E-03	5.00E-04	5.00E-04
Ra-228	2.00E-01	4.00E-02	2.00E-01	2.00E-01
Ac-228	1.00E-01	1.00E-03	5.00E-04	5.00E-04
Th-228	1.00E-01	1.00E-03	5.00E-04	5.00E-04
Ra-224	2.00E-01	4.00E-02	2.00E-01	2.00E-01
Rn-220	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Po-216	1.00E-01	1.00E-03	1.00E-01	1.00E-01
Pb-212	1.00E-01	4.00E-03	2.00E-01	2.00E-01
Bi-212	5.00E-01	1.00E-01	5.00E-02	5.00E-02
Po-212	1.00E-01	1.00E-03	1.00E-01	1.00E-01
Tl-208	6.00E-01	2.00E-01	1.00E+00	1.00E+00

FOOTNOTES: (1) Concentration factor for uptake of nuclide from soil for pasture and forage (in pCi/kg dry weight per pCi/kg dry soil)

(2) Concentration factor for uptake of nuclide from soil by edible parts of crops (in pCi/kg wet weight per pCi/kg dry soil)

DECAY CHAIN ACTIVITIES

Nuclide	Stack	Activity at 500. seconds	Activity at 100.00 years
U-238	1	5.9140E-07	2.7260E-07
Th-234	1	5.9140E-07	2.7260E-07
Pa-234m	1	5.9020E-07	2.7210E-07
Pa-234	1	5.8300E-07	0.0000E+00
U-234	1	5.9140E-07	2.7260E-07
Th-230	1	5.9140E-07	2.7260E-07
Ra-226	1	5.1320E-06	2.3650E-06
Rn-222	1	5.1320E-06	2.3650E-06
Po-218	1	5.1320E-06	2.3650E-06
Pb-214	1	5.1320E-06	2.3650E-06
Bi-214	1	5.1320E-06	2.3650E-06
Po-214	1	5.1310E-06	2.3650E-06
Pb-210	1	4.9800E-06	2.2960E-06
Bi-210	1	4.9800E-06	2.2960E-06
Po-210	1	4.9800E-06	2.2960E-06
At-218	1	1.0260E-09	0.0000E+00
Th-232	1	1.5080E-07	0.0000E+00
Ra-228	1	2.2750E-06	1.0150E-06
Ac-228	1	2.2750E-06	1.0150E-06
Th-228	1	2.2750E-06	1.0460E-06
Ra-224	1	2.2750E-06	1.0460E-06
Rn-220	1	2.2750E-06	1.0460E-06
Po-216	1	2.2750E-06	1.0460E-06
Pb-212	1	2.2750E-06	1.0460E-06
Bi-212	1	2.2750E-06	1.0460E-06
Po-212	1	1.4580E-06	6.7030E-07
Tl-208	1	8.1740E-07	3.7590E-07

NUMBER OF BEEF CATTLE

Direction	Distance (meters) 50	100	150	250	350	450	750
N	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0

Direction	Distance (meters) 1500	2500	3500	4500	5500	7000
N	1	1	2	2	2	6
NNW	1	1	2	2	2	6
NW	1	1	2	2	2	6
WNW	1	1	2	2	2	6
W	1	1	2	2	2	6
WSW	1	1	2	2	2	6
SW	1	1	2	2	2	6
SSW	1	1	2	2	2	6
S	1	1	2	2	2	6
SSE	1	1	2	2	2	6
SE	1	1	2	2	2	6
ESE	1	1	2	2	2	6
E	1	1	2	2	2	6
ENE	1	1	2	2	2	6
NE	1	1	2	2	2	6
NNE	1	1	2	2	2	6

NUMBER OF MILK CATTLE

Direction	Distance (meters) 50	100	150	250	350	450	750
N	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0

Direction	Distance (meters) 1500	2500	3500	4500	5500	7000
N	0	0	0	1	1	2
NNW	0	0	0	1	1	2
NW	0	0	0	1	1	2
WNW	0	0	0	1	1	2
W	0	0	0	1	1	2
WSW	0	0	0	1	1	2
SW	0	0	0	1	1	2
SSW	0	0	0	1	1	2
S	0	0	0	1	1	2
SSE	0	0	0	1	1	2
SE	0	0	0	1	1	2
ESE	0	0	0	1	1	2
E	0	0	0	1	1	2
ENE	0	0	0	1	1	2
NE	0	0	0	1	1	2
NNE	0	0	0	1	1	2

AREA OF VEGETABLE CROP PRODUCTION (M**2)

Direction	Distance (meters) 50	100	150	250	350	450	750
N	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.0E+03
NNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.0E+03
NW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.0E+03
WNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.0E+03
W	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.0E+03
WSW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.0E+03
SW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.0E+03
SSW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.0E+03
S	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.0E+03
SSE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.0E+03
SE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.0E+03
ESE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.0E+03
E	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.0E+03
ENE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.0E+03
NE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.0E+03
NNE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.0E+03

Direction	Distance (meters) 1500	2500	3500	4500	5500	7000
N	8.2E+03	1.4E+04	1.9E+04	2.5E+04	3.0E+04	7.6E+04
NNW	8.2E+03	1.4E+04	1.9E+04	2.5E+04	3.0E+04	7.6E+04
NW	8.2E+03	1.4E+04	1.9E+04	2.5E+04	3.0E+04	7.6E+04
WNW	8.2E+03	1.4E+04	1.9E+04	2.5E+04	3.0E+04	7.6E+04
W	8.2E+03	1.4E+04	1.9E+04	2.5E+04	3.0E+04	7.6E+04
WSW	8.2E+03	1.4E+04	1.9E+04	2.5E+04	3.0E+04	7.6E+04
SW	8.2E+03	1.4E+04	1.9E+04	2.5E+04	3.0E+04	7.6E+04
SSW	8.2E+03	1.4E+04	1.9E+04	2.5E+04	3.0E+04	7.6E+04
S	8.2E+03	1.4E+04	1.9E+04	2.5E+04	3.0E+04	7.6E+04
SSE	8.2E+03	1.4E+04	1.9E+04	2.5E+04	3.0E+04	7.6E+04
SE	8.2E+03	1.4E+04	1.9E+04	2.5E+04	3.0E+04	7.6E+04
ESE	8.2E+03	1.4E+04	1.9E+04	2.5E+04	3.0E+04	7.6E+04
E	8.2E+03	1.4E+04	1.9E+04	2.5E+04	3.0E+04	7.6E+04
ENE	8.2E+03	1.4E+04	1.9E+04	2.5E+04	3.0E+04	7.6E+04
NE	8.2E+03	1.4E+04	1.9E+04	2.5E+04	3.0E+04	7.6E+04
NNE	8.2E+03	1.4E+04	1.9E+04	2.5E+04	3.0E+04	7.6E+04

VALUES FOR RADIONUCLIDE-INDEPENDENT PARAMETERS

HUMAN INHALATION RATE	
Cubic centimeters/hr	9.17E+05
SOIL PARAMETERS	
Effective surface density (kg/sq m, dry weight) (Assumes 15 cm plow layer)	2.15E+02
BUILDUP TIMES	
For activity in soil (years)	1.00E+02
For radionuclides deposited on ground/water (days)	3.65E+02
DELAY TIMES	
Ingestion of pasture grass by animals (hr)	0.00E+00
Ingestion of stored feed by animals (hr)	2.16E+03
Ingestion of leafy vegetables by man (hr)	3.36E+02
Ingestion of produce by man (hr)	3.36E+02
Transport time from animal feed-milk-man (day)	2.00E+00
Time from slaughter to consumption (day)	2.00E+01
WEATHERING	
Removal rate constant for physical loss (per hr)	2.90E-03
CROP EXPOSURE DURATION	
Pasture grass (hr)	7.20E+02
Crops/leafy vegetables (hr)	1.44E+03
AGRICULTURAL PRODUCTIVITY	
Grass-cow-milk-man pathway (kg/sq m)	2.80E-01
Produce/leafy veg for human consumption (kg/sq m)	7.16E-01
FALLOUT INTERCEPTION FRACTIONS	
Vegetables	2.00E-01
Pasture	5.70E-01
GRAZING PARAMETERS	
Fraction of year animals graze on pasture	4.00E-01
Fraction of daily feed that is pasture grass when animal grazes on pasture	4.30E-01

VALUES FOR RADIONUCLIDE-INDEPENDENT PARAMETERS

ANIMAL FEED CONSUMPTION FACTORS	
Contaminated feed/forage (kg/day, dry weight)	1.56E+01
DAIRY PRODUCTIVITY	
Milk production of cow (L/day)	1.10E+01
MEAT ANIMAL SLAUGHTER PARAMETERS	
Muscle mass of animal at slaughter (kg)	2.00E+02
Fraction of herd slaughtered (per day)	3.81E-03
DECONTAMINATION	
Fraction of radioactivity retained after washing for leafy vegetables and produce	5.00E-01
FRACTIONS GROWN IN GARDEN OF INTEREST	
Produce ingested	1.00E+00
Leafy vegetables ingested	1.00E+00
INGESTION RATIOS:	
IMMEDIATE SURROUNDING AREA/TOTAL WITHIN AREA	
Vegetables	7.00E-01
Meat	4.40E-01
Milk	4.00E-01
MINIMUM INGESTION FRACTIONS FROM OUTSIDE AREA (Actual fractions of food types from outside area can be greater than the minimum fractions listed below.)	
Vegetables	0.00E+00
Meat	0.00E+00
Milk	0.00E+00
HUMAN FOOD UTILIZATION FACTORS	
Produce ingestion (kg/y)	1.76E+02
Milk ingestion (L/y)	1.12E+02
Meat ingestion (kg/y)	8.50E+01
Leafy vegetable ingestion (kg/y)	1.80E+01
SWIMMING PARAMETERS	
Fraction of time spent swimming	0.00E+00
Dilution factor for water (cm)	1.00E+00

C A P 8 8 - P C

Version 3.0

Clean Air Act Assessment Package - 1988

W E A T H E R D A T A

Non-Radon Population Assessment
Apr 22, 2014 12:09 pm

Facility: Clean Harbors Deer Trail
Address: 108555 East Highway 36
City: Deer Trail
State: CO Zip: 80105

Source Category: Secure Cell Disposal
Source Type: Area
Emission Year: 2013

Comments: 2013 Emmissions
2013 Emmissions

Dataset Name: CH2013
Dataset Date: 4/22/2014 11:54:00 AM
Wind File: C:\Program Files (x86)\CAP88-PC30\WindLib\23062.WND
Population File: C:\Users\kehoej1\Documents\Documents 020712\John Hackett Documents\CHDT Li

HARMONIC AVERAGE WIND SPEEDS (WIND TOWARDS)

	Pasquill Stability Class							
Dir	A	B	C	D	E	F	G	Wind Freq
N	1.220	1.600	2.830	4.100	3.420	1.500	0.000	0.201
NNW	1.240	1.670	2.560	4.250	3.090	1.370	0.000	0.078
NW	1.160	1.520	2.610	3.270	2.990	1.370	0.000	0.067
WNW	1.310	1.630	2.760	2.920	3.030	1.360	0.000	0.058
W	1.240	1.710	2.870	3.150	3.050	1.280	0.000	0.055
WSW	1.280	1.820	3.120	3.170	2.960	1.130	0.000	0.037
SW	1.370	1.860	3.080	3.280	2.990	1.150	0.000	0.040
SSW	1.220	1.750	2.920	3.380	2.970	1.140	0.000	0.038
S	1.300	1.750	2.860	3.640	2.980	1.180	0.000	0.105
SSE	1.230	1.420	2.660	3.460	3.010	1.200	0.000	0.046
SE	1.260	1.530	2.940	4.070	3.150	1.110	0.000	0.041
ESE	1.100	1.350	2.550	5.590	3.280	1.230	0.000	0.039
E	1.170	1.250	2.570	4.850	3.330	1.200	0.000	0.036
ENE	1.120	1.400	2.140	3.750	3.040	1.200	0.000	0.020
NE	1.270	1.290	2.440	3.520	3.070	1.360	0.000	0.041
NNE	1.200	1.410	2.720	3.830	3.440	1.470	0.000	0.100

ARITHMETIC AVERAGE WIND SPEEDS (WIND TOWARDS)

	Pasquill Stability Class						
Dir	A	B	C	D	E	F	G
N	1.720	2.420	3.640	5.140	3.660	2.020	0.000
NNW	1.740	2.550	3.630	5.770	3.300	1.900	0.000
NW	1.630	2.370	3.590	4.610	3.180	1.890	0.000
WNW	1.820	2.430	3.610	4.150	3.230	1.880	0.000
W	1.750	2.550	3.750	4.320	3.250	1.790	0.000
WSW	1.800	2.740	3.810	4.270	3.150	1.580	0.000
SW	1.890	2.760	3.810	4.530	3.180	1.610	0.000
SSW	1.720	2.610	3.680	4.810	3.150	1.600	0.000
S	1.820	2.590	3.770	5.140	3.170	1.660	0.000
SSE	1.730	2.180	3.500	5.150	3.210	1.690	0.000
SE	1.760	2.330	3.810	5.920	3.370	1.560	0.000
ESE	1.530	2.030	3.620	7.210	3.520	1.730	0.000
E	1.650	1.880	3.440	6.490	3.560	1.690	0.000
ENE	1.570	2.050	3.160	5.370	3.240	1.690	0.000
NE	1.780	1.960	3.250	4.710	3.280	1.880	0.000
NNE	1.690	2.140	3.510	4.730	3.670	2.000	0.000

FREQUENCIES OF STABILITY CLASSES (WIND TOWARDS)

	Pasquill Stability Class						
Dir	A	B	C	D	E	F	G
N	0.0076	0.0493	0.1164	0.2326	0.2447	0.3493	0.0000
NNW	0.0131	0.0809	0.1006	0.2666	0.1833	0.3554	0.0000
NW	0.0173	0.1044	0.1340	0.2340	0.1811	0.3292	0.0000
WNW	0.0255	0.1147	0.1232	0.2805	0.1846	0.2715	0.0000
W	0.0222	0.1445	0.1634	0.3959	0.1198	0.1542	0.0000
WSW	0.0348	0.1502	0.1529	0.4644	0.0948	0.1029	0.0000
SW	0.0333	0.1574	0.1818	0.4653	0.0893	0.0729	0.0000
SSW	0.0215	0.1380	0.1632	0.5222	0.0779	0.0771	0.0000
S	0.0131	0.0912	0.1529	0.5673	0.0889	0.0865	0.0000
SSE	0.0160	0.1148	0.1418	0.5126	0.1054	0.1094	0.0000
SE	0.0120	0.1023	0.1310	0.5153	0.1114	0.1279	0.0000
ESE	0.0153	0.0948	0.1078	0.5585	0.1135	0.1101	0.0000
E	0.0121	0.1132	0.0953	0.5042	0.1555	0.1197	0.0000
ENE	0.0177	0.1643	0.1599	0.2863	0.1392	0.2327	0.0000
NE	0.0161	0.1091	0.1604	0.2494	0.1815	0.2834	0.0000
NNE	0.0063	0.0582	0.1561	0.2464	0.2357	0.2973	0.0000
TOTAL	0.0151	0.0951	0.1362	0.3607	0.1652	0.2274	0.0000

ADDITIONAL WEATHER INFORMATION

Average Air Temperature: 10.0 degrees C
283.16 K
Precipitation: 35.6 cm/y
Humidity: 8.0 g/cu m
Lid Height: 10000 meters
Surface Roughness Length: 0.010 meters
Height Of Wind Measurements: 10.0 meters
Average Wind Speed: 3.614 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 3.0

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 Population Assessment
Apr 22, 2014 12:09 pm

Facility: Clean Harbors Deer Trail
Address: 108555 East Highway 36
City: Deer Trail
State: CO Zip: 80105

Source Category: Secure Cell Disposal
Source Type: Area
Emission Year: 2013

Comments: 2013 Emmissions
2013 Emmissions

Dataset Name: CH2013
Dataset Date: 4/22/2014 11:54:00 AM
Wind File: C:\Program Files (x86)\CAP88-PC30\WindLib\23062.WND
Population File: C:\Users\kehoej1\Documents\Documents 020712\John Hackett Documents\CHDT

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
Adrenals	1.02E-06	5.59E-09
B Surfac	8.82E-05	5.09E-07
Breasts	1.13E-06	6.14E-09
St Wall	1.08E-06	5.86E-09
ULI Wall	1.18E-06	6.45E-09
Kidneys	7.99E-06	4.63E-08
Lungs	5.78E-05	2.98E-07
Ovaries	1.23E-06	6.69E-09
R Marrow	8.53E-06	4.92E-08
Spleen	6.02E-06	3.50E-08
Thymus	1.07E-06	5.82E-09
Uterus	1.06E-06	5.76E-09
Bld Wall	1.10E-06	5.98E-09
Brain	1.07E-06	5.81E-09
Esophagu	1.72E-05	8.91E-08
SI Wall	1.07E-06	5.86E-09
LLI Wall	1.46E-06	8.10E-09
Liver	5.73E-06	3.30E-08
Muscle	1.16E-06	6.27E-09
Pancreas	1.03E-06	5.64E-09
Skin	5.74E-06	3.01E-08
Testes	1.34E-06	7.26E-09
Thyroid	1.09E-06	5.95E-09
EFFEC	1.88E-04	1.00E-06

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)	Collective Population (person-rem/y)
INGESTION	3.91E-05	2.35E-07
INHALATION	1.48E-04	7.64E-07
AIR IMMERSION	2.77E-09	1.43E-11
GROUND SURFACE	7.43E-07	3.86E-09
INTERNAL	1.87E-04	9.99E-07
EXTERNAL	7.46E-07	3.88E-09
TOTAL	1.88E-04	1.00E-06

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclides	Selected Individual (mrem/y)	Collective Population (person-rem/y)
U-238	1.65E-06	8.60E-09
Th-234	7.21E-09	3.93E-11
Pa-234m	3.33E-09	1.73E-11
Pa-234	3.97E-10	2.05E-12
U-234	2.00E-06	1.04E-08
Th-230	8.04E-06	4.17E-08
Ra-226	2.74E-05	1.51E-07
Rn-222	4.26E-13	2.21E-15
Po-218	2.32E-12	1.21E-14
Pb-214	1.29E-07	6.69E-10
Bi-214	4.56E-07	2.37E-09
Po-214	2.13E-11	1.10E-13
Pb-210	1.68E-05	9.60E-08
Bi-210	4.50E-07	2.33E-09
Po-210	1.90E-05	1.02E-07
At-218	3.65E-16	1.88E-18
Th-232	3.47E-06	1.79E-08
Ra-228	1.71E-05	9.81E-08
Ac-228	1.33E-07	6.92E-10
Th-228	8.43E-05	4.35E-07
Ra-224	6.33E-06	3.27E-08
Rn-220	1.83E-13	9.48E-16
Po-216	1.91E-12	9.95E-15
Pb-212	3.79E-07	1.95E-09
Bi-212	9.19E-08	4.75E-10
Po-212	0.00E+00	0.00E+00
Tl-208	1.27E-07	6.60E-10
TOTAL	1.88E-04	1.00E-06

CANCER RISK SUMMARY

Cancer	Selected Individual Total Lifetime Fatal Cancer Risk	Total Collective Population Fatal Cancer Risk (Deaths/y)
Esophagu	1.40E-13	1.06E-14
Stomach	5.84E-13	4.46E-14
Colon	2.51E-12	1.92E-13
Liver	2.50E-12	1.91E-13
LUNG	1.18E-10	7.93E-12
Bone	2.90E-12	2.21E-13
Skin	1.82E-14	1.35E-15
Breast	3.51E-13	2.66E-14
Ovary	2.47E-13	1.87E-14
Bladder	3.08E-13	2.34E-14
Kidneys	1.18E-12	9.03E-14
Thyroid	4.42E-14	3.37E-15
Leukemia	9.09E-13	6.91E-14
Residual	3.15E-12	2.42E-13
Total	1.33E-10	9.07E-12

PATHWAY RISK SUMMARY

Pathway	Selected Individual Total Lifetime Fatal Cancer Risk	Total Collective Population Fatal Cancer Risk (Deaths/y)
INGESTION	1.39E-11	1.09E-12
INHALATION	1.19E-10	7.95E-12
AIR IMMERSION	1.51E-15	1.01E-16
GROUND SURFACE	3.90E-13	2.62E-14
INTERNAL	1.33E-10	9.04E-12
EXTERNAL	3.91E-13	2.63E-14
TOTAL	1.33E-10	9.07E-12

NUCLIDE RISK SUMMARY

Nuclide	Selected Individual Total Lifetime Fatal Cancer Risk	Total Collective Population Fatal Cancer Risk (Deaths/y)
U-238	1.34E-12	8.96E-14
Th-234	8.13E-15	5.84E-16
Pa-234m	5.34E-16	3.60E-17
Pa-234	2.53E-16	1.69E-17
U-234	1.62E-12	1.09E-13
Th-230	4.01E-12	2.68E-13
Ra-226	1.77E-11	1.22E-12
Rn-222	2.32E-19	1.56E-20
Po-218	1.27E-18	8.58E-20
Pb-214	7.88E-14	5.28E-15
Bi-214	2.41E-13	1.62E-14
Po-214	1.17E-17	7.85E-19
Pb-210	7.03E-12	5.11E-13
Bi-210	3.92E-13	2.63E-14
Po-210	1.43E-11	9.72E-13
At-218	1.77E-22	1.18E-23
Th-232	1.54E-12	1.03E-13
Ra-228	7.20E-12	5.31E-13
Ac-228	7.36E-14	4.95E-15
Th-228	7.20E-11	4.81E-12
Ra-224	5.44E-12	3.64E-13
Rn-220	9.98E-20	6.71E-21
Po-216	1.05E-18	7.06E-20
Pb-212	3.21E-13	2.15E-14
Bi-212	5.40E-14	3.62E-15
Po-212	0.00E+00	0.00E+00
Tl-208	6.92E-14	4.66E-15
TOTAL	1.33E-10	9.07E-12

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

	Distance (m)						
Direction	50	100	150	250	350	450	750
N	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
WNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
W	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
WSW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SSW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
S	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SSE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
ESE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
E	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
ENE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NNE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

	Distance (m)					
Direction	1500	2500	3500	4500	5500	7000
N	0.0E+00	0.0E+00	1.9E-04	1.3E-04	9.7E-05	0.0E+00
NNW	0.0E+00	0.0E+00	7.9E-05	0.0E+00	0.0E+00	0.0E+00
NW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
WNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
W	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
WSW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SSW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
S	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SSE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
ESE	8.2E-05	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
E	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
ENE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	9.4E-06
NE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NNE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

COLLECTIVE EFFECTIVE DOSE EQUIVALENT (person rem/y)
(All Radionuclides and Pathways)

	Distance (m)						
Direction	50	100	150	250	350	450	750
N	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
WNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
W	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
WSW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SSW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
S	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SSE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
ESE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
E	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
ENE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NNE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

	Distance (m)					
Direction	1500	2500	3500	4500	5500	7000
N	0.0E+00	0.0E+00	1.9E-07	2.6E-07	1.9E-07	0.0E+00
NNW	0.0E+00	0.0E+00	7.9E-08	0.0E+00	0.0E+00	0.0E+00
NW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
WNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
W	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
WSW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SSW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
S	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SSE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
ESE	2.5E-07	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
E	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
ENE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	3.8E-08
NE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NNE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

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

	Distance (m)						
Direction	50	100	150	250	350	450	750
N	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
WNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
W	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
WSW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SSW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
S	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SSE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
ESE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
E	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
ENE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NNE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

	Distance (m)					
Direction	1500	2500	3500	4500	5500	7000
N	0.0E+00	0.0E+00	1.3E-10	9.2E-11	6.8E-11	0.0E+00
NNW	0.0E+00	0.0E+00	5.5E-11	0.0E+00	0.0E+00	0.0E+00
NW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
WNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
W	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
WSW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SSW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
S	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SSE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
ESE	5.7E-11	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
E	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
ENE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	5.2E-12
NE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NNE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

COLLECTIVE FATAL CANCER RATE (deaths/y)
(All Radionuclides and Pathways)

	Distance (m)						
Direction	50	100	150	250	350	450	750
N	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
WNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
W	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
WSW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SSW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
S	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SSE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
ESE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
E	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
ENE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NNE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

	Distance (m)					
Direction	1500	2500	3500	4500	5500	7000
N	0.0E+00	0.0E+00	1.7E-12	2.4E-12	1.8E-12	0.0E+00
NNW	0.0E+00	0.0E+00	7.1E-13	0.0E+00	0.0E+00	0.0E+00
NW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
WNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
W	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
WSW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SSW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
S	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SSE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
SE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
ESE	2.2E-12	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
E	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
ENE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.7E-13
NE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NNE	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

C A P 8 8 - P C

Version 3.0

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 Population Assessment
Apr 22, 2014 12:09 pm

Facility: Clean Harbors Deer Trail
Address: 108555 East Highway 36
City: Deer Trail
State: CO Zip: 80105

Source Category: Secure Cell Disposal
Source Type: Area
Emission Year: 2013

Comments: 2013 Emmissions
2013 Emmissions

Dataset Name: CH2013
Dataset Date: 4/22/2014 11:54:00 AM
Wind File: C:\Program Files (x86)\CAP88-PC30\WindLib\23062.WND
Population File: C:\Users\kehoej1\Documents\Documents 020712\John Hackett Documents\CHDT

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

```
************************
*   NUCLIDE  U-238     *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	4.492E-06	2.222E-05	6.850E+04	4.520E+01
B Surfac	1.301E-04	6.457E-04	8.621E+05	9.425E+02
Breasts	4.492E-06	2.222E-05	9.949E+05	1.503E+03
St Wall	4.669E-06	2.226E-05	9.623E+04	6.151E+01
ULI Wall	7.145E-06	2.286E-05	6.559E+04	3.134E+01
Kidneys	4.666E-05	2.321E-04	1.247E+05	1.075E+02
Lungs	4.492E-06	4.089E-03	1.160E+05	6.512E+01
Ovaries	4.492E-06	2.222E-05	5.079E+04	8.050E+01
R Marrow	1.320E-05	6.553E-05	1.445E+05	1.491E+02
Spleen	4.492E-06	2.222E-05	8.738E+04	4.310E+01
Thymus	4.492E-06	2.222E-05	1.375E+05	9.600E+01
Uterus	4.492E-06	2.222E-05	5.324E+04	2.645E+01
Bld Wall	4.507E-06	2.229E-05	9.227E+04	6.687E+01
Brain	4.492E-06	2.222E-05	9.262E+04	2.843E+01
Esophagu	4.492E-06	9.624E-04	4.905E+04	1.876E+01
SI Wall	4.928E-06	2.232E-05	5.685E+04	2.738E+01
LLI Wall	1.228E-05	2.411E-05	5.790E+04	3.146E+01
Liver	1.749E-05	8.691E-05	9.436E+04	5.557E+01
Muscle	4.492E-06	2.222E-05	4.299E+05	9.134E+02
Pancreas	4.492E-06	2.222E-05	5.091E+04	2.283E+01
Skin	4.492E-06	2.222E-05	3.390E+06	8.644E+03
Testes	4.492E-06	2.222E-05	5.114E+05	1.124E+03
Thyroid	4.492E-06	2.222E-05	3.169E+05	2.377E+02
EFFEC	1.648E-04	1.057E-02	2.924E+05	4.940E+02

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	7.067E-08	3.119E-07	5.639E-05	2.155E-08
Stomach	2.013E-07	7.289E-07	3.879E-04	2.481E-07
Colon	2.283E-06	1.950E-06	6.431E-04	3.239E-07
Liver	4.921E-07	2.116E-06	1.433E-04	8.423E-08
LUNG	4.995E-07	8.658E-04	1.135E-03	6.373E-07
Bone	3.104E-07	1.362E-06	8.190E-05	8.947E-08
Skin	5.106E-09	2.091E-08	3.378E-04	8.621E-07
Breast	9.953E-08	4.144E-07	4.811E-03	7.258E-06
Ovary	8.103E-08	3.737E-07	7.223E-05	1.145E-07
Bladder	1.732E-07	7.363E-07	2.237E-04	1.619E-07
Kidneys	5.624E-07	2.427E-06	6.489E-05	5.592E-08
Thyroid	1.436E-08	5.846E-08	1.009E-04	7.572E-08
Leukemia	1.502E-07	7.326E-07	8.108E-04	8.365E-07
Residual	6.401E-07	2.527E-06	2.726E-03	4.870E-06
Total	5.587E-06	8.806E-04	1.159E-02	1.561E-05

```
************************
*   NUCLIDE  Th-234    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	2.006E-13	1.020E-12	2.540E+07	6.652E+03
B Surfac	4.684E-12	2.988E-11	1.305E+08	3.064E+04
Breasts	2.006E-13	1.020E-12	4.695E+07	1.066E+04
St Wall	2.007E-13	1.025E-12	2.959E+07	7.607E+03
ULI Wall	2.184E-13	1.101E-12	2.563E+07	7.153E+03
Kidneys	3.101E-12	1.321E-11	3.087E+07	7.747E+03
Lungs	2.006E-13	3.132E-09	3.507E+07	8.283E+03
Ovaries	1.803E-12	3.357E-12	2.225E+07	6.792E+03
R Marrow	4.939E-13	3.067E-12	2.901E+07	7.456E+03
Spleen	2.006E-13	1.020E-12	3.017E+07	7.736E+03
Thymus	2.006E-13	1.020E-12	3.344E+07	7.794E+03
Uterus	2.006E-13	1.020E-12	2.307E+07	6.792E+03
Bld Wall	2.007E-13	1.023E-12	2.784E+07	7.666E+03
Brain	2.006E-13	1.020E-12	3.378E+07	6.967E+03
Esophagu	2.006E-13	1.722E-09	2.283E+07	5.965E+03
SI Wall	2.014E-13	1.033E-12	2.377E+07	6.780E+03
LLI Wall	3.193E-13	1.275E-12	2.412E+07	7.060E+03
Liver	5.946E-13	3.992E-12	3.017E+07	7.666E+03
Muscle	2.006E-13	1.020E-12	3.530E+07	9.670E+03
Pancreas	2.006E-13	1.020E-12	2.307E+07	6.524E+03
Skin	2.006E-13	1.020E-12	8.737E+07	2.004E+04
Testes	1.831E-12	3.398E-12	3.938E+07	1.037E+04
Thyroid	2.006E-13	1.020E-12	3.786E+07	8.551E+03
EFFEC	1.259E-05	2.847E-05	3.437E+07	8.738E+03

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	4.514E-12	8.806E-11	2.633E-02	6.862E-06
Stomach	2.187E-08	4.958E-09	1.200E-01	3.076E-05
Colon	1.854E-06	3.959E-07	2.575E-01	7.340E-05
Liver	5.809E-11	1.332E-10	4.578E-02	1.162E-05
LUNG	6.179E-11	2.227E-06	3.425E-01	8.097E-05
Bone	2.338E-11	3.101E-11	1.235E-02	2.912E-06
Skin	8.917E-13	1.728E-12	8.714E-03	2.004E-06
Breast	2.535E-11	3.252E-10	2.272E-01	5.149E-05
Ovary	2.035E-10	6.623E-11	3.169E-02	9.658E-06
Bladder	1.169E-10	3.774E-11	6.734E-02	1.852E-05
Kidneys	4.403E-11	5.661E-11	1.608E-02	4.031E-06
Thyroid	1.284E-12	9.805E-12	1.200E-02	2.726E-06
Leukemia	1.110E-09	1.262E-09	1.631E-01	4.182E-05
Residual	2.756E-10	7.992E-10	4.159E-01	1.134E-04
Total	1.876E-06	2.631E-06	1.748E+00	4.497E-04

****
* NUCLIDE Pa-234m *
****

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	0.000E+00	0.000E+00	6.652E+07	1.480E+04
B Surfac	0.000E+00	0.000E+00	1.445E+08	2.936E+04
Breasts	0.000E+00	0.000E+00	9.378E+07	1.817E+04
St Wall	0.000E+00	0.000E+00	7.176E+07	1.584E+04
ULI Wall	0.000E+00	0.000E+00	6.699E+07	1.561E+04
Kidneys	0.000E+00	0.000E+00	7.258E+07	1.608E+04
Lungs	0.000E+00	0.000E+00	8.085E+07	1.666E+04
Ovaries	0.000E+00	0.000E+00	6.571E+07	1.503E+04
R Marrow	0.000E+00	0.000E+00	7.806E+07	1.678E+04
Spleen	0.000E+00	0.000E+00	7.305E+07	1.596E+04
Thymus	0.000E+00	0.000E+00	7.584E+07	1.549E+04
Uterus	0.000E+00	0.000E+00	6.291E+07	1.515E+04
Bld Wall	0.000E+00	0.000E+00	6.664E+07	1.596E+04
Brain	0.000E+00	0.000E+00	8.586E+07	1.549E+04
Esophagu	0.000E+00	0.000E+00	6.710E+07	1.398E+04
SI Wall	0.000E+00	0.000E+00	6.466E+07	1.538E+04
LLI Wall	0.000E+00	0.000E+00	6.594E+07	1.596E+04
Liver	0.000E+00	0.000E+00	7.281E+07	1.584E+04
Muscle	0.000E+00	0.000E+00	7.922E+07	1.841E+04
Pancreas	0.000E+00	0.000E+00	6.373E+07	1.445E+04
Skin	0.000E+00	0.000E+00	6.384E+09	1.094E+07
Testes	0.000E+00	0.000E+00	8.213E+07	1.876E+04
Thyroid	0.000E+00	0.000E+00	8.365E+07	1.713E+04
EFFEC	0.000E+00	0.000E+00	1.410E+08	1.258E+05

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	0.000E+00	0.000E+00	7.724E-02	1.608E-05
Stomach	0.000E+00	0.000E+00	2.901E-01	6.396E-05
Colon	0.000E+00	0.000E+00	6.874E-01	1.631E-04
Liver	0.000E+00	0.000E+00	1.103E-01	2.400E-05
LUNG	0.000E+00	0.000E+00	7.910E-01	1.631E-04
Bone	0.000E+00	0.000E+00	1.375E-02	2.784E-06
Skin	0.000E+00	0.000E+00	6.373E-01	1.092E-03
Breast	0.000E+00	0.000E+00	4.532E-01	8.784E-05
Ovary	0.000E+00	0.000E+00	9.343E-02	2.144E-05
Bladder	0.000E+00	0.000E+00	1.608E-01	3.856E-05
Kidneys	0.000E+00	0.000E+00	3.775E-02	8.365E-06
Thyroid	0.000E+00	0.000E+00	2.668E-02	5.452E-06
Leukemia	0.000E+00	0.000E+00	4.380E-01	9.413E-05
Residual	0.000E+00	0.000E+00	1.039E+00	2.365E-04
Total	0.000E+00	0.000E+00	4.858E+00	2.015E-03

```
************************
*   NUCLIDE  Pa-234    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	6.449E-15	1.119E-13	8.796E+09	1.841E+06
B Surfac	1.833E-13	2.994E-12	1.747E+10	3.122E+06
Breasts	6.449E-15	1.119E-13	1.212E+10	2.155E+06
St Wall	6.512E-15	1.120E-13	9.425E+09	1.957E+06
ULI Wall	1.341E-14	1.138E-13	8.842E+09	1.934E+06
Kidneys	7.012E-14	1.401E-12	9.506E+09	1.969E+06
Lungs	6.449E-15	1.553E-11	1.059E+10	2.050E+06
Ovaries	1.117E-14	4.651E-13	8.691E+09	1.887E+06
R Marrow	1.863E-14	3.053E-13	1.032E+10	2.085E+06
Spleen	6.449E-15	1.119E-13	9.611E+09	1.969E+06
Thymus	6.449E-15	1.119E-13	9.891E+09	1.899E+06
Uterus	6.449E-15	1.119E-13	8.318E+09	1.899E+06
Bld Wall	6.471E-15	1.122E-13	8.749E+09	1.957E+06
Brain	6.449E-15	1.119E-13	1.132E+10	1.934E+06
Esophagu	6.449E-15	3.517E-12	8.924E+09	1.759E+06
SI Wall	7.008E-15	1.121E-13	8.563E+09	1.911E+06
LLI Wall	3.227E-14	1.183E-13	8.726E+09	1.992E+06
Liver	2.422E-14	3.700E-13	9.565E+09	1.957E+06
Muscle	6.449E-15	1.119E-13	1.035E+10	2.225E+06
Pancreas	6.449E-15	1.119E-13	8.435E+09	1.806E+06
Skin	6.449E-15	1.119E-13	1.445E+10	4.532E+06
Testes	1.125E-14	4.714E-13	1.065E+10	2.248E+06
Thyroid	6.449E-15	1.119E-13	1.089E+10	2.097E+06
EFFEC	1.937E-06	1.444E-06	1.017E+10	2.097E+06

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	3.563E-11	1.528E-10	1.026E+01	2.027E-03
Stomach	1.650E-08	3.060E-09	3.810E+01	7.899E-03
Colon	1.850E-07	3.271E-08	9.075E+01	2.027E-02
Liver	4.551E-10	1.735E-10	1.445E+01	2.971E-03
LUNG	7.992E-10	6.364E-08	1.036E+02	2.004E-02
Bone	1.495E-11	1.839E-11	1.654E+00	2.959E-04
Skin	9.398E-12	4.810E-12	1.445E+00	4.520E-04
Breast	2.716E-10	4.440E-10	5.848E+01	1.042E-02
Ovary	2.087E-09	4.218E-10	1.235E+01	2.680E-03
Bladder	1.099E-09	2.290E-10	2.120E+01	4.730E-03
Kidneys	1.972E-10	5.920E-11	4.951E+00	1.024E-03
Thyroid	4.366E-12	2.068E-11	3.472E+00	6.675E-04
Leukemia	1.702E-09	7.030E-10	5.790E+01	1.165E-02
Residual	4.995E-09	1.850E-09	1.363E+02	2.912E-02
Total	2.135E-07	1.036E-07	5.557E+02	1.143E-01

```
************************
*   NUCLIDE  U-234     *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	5.106E-06	2.526E-05	3.577E+05	1.235E+02
B Surfac	1.453E-04	7.211E-04	2.318E+06	1.421E+03
Breasts	5.106E-06	2.526E-05	1.678E+06	1.911E+03
St Wall	5.310E-06	2.531E-05	4.310E+05	1.526E+02
ULI Wall	8.125E-06	2.600E-05	3.565E+05	1.117E+02
Kidneys	5.306E-05	2.638E-04	4.765E+05	2.085E+02
Lungs	5.106E-06	5.036E-03	5.103E+05	1.631E+02
Ovaries	5.106E-06	2.526E-05	3.076E+05	1.666E+02
R Marrow	1.500E-05	7.448E-05	4.893E+05	2.575E+02
Spleen	5.106E-06	2.526E-05	4.264E+05	1.316E+02
Thymus	5.106E-06	2.526E-05	5.184E+05	1.934E+02
Uterus	5.106E-06	2.526E-05	3.157E+05	1.029E+02
Bld Wall	5.125E-06	2.534E-05	4.078E+05	1.596E+02
Brain	5.106E-06	2.526E-05	4.742E+05	1.069E+02
Esophagu	5.106E-06	1.117E-03	3.122E+05	8.574E+01
SI Wall	5.606E-06	2.539E-05	3.274E+05	1.033E+02
LLI Wall	1.395E-05	2.741E-05	3.320E+05	1.114E+02
Liver	1.989E-05	9.879E-05	4.357E+05	1.456E+02
Muscle	5.106E-06	2.526E-05	8.889E+05	1.200E+03
Pancreas	5.106E-06	2.526E-05	3.146E+05	9.541E+01
Skin	5.106E-06	2.526E-05	4.951E+06	1.059E+04
Testes	5.106E-06	2.526E-05	1.024E+06	1.456E+03
Thyroid	5.106E-06	2.526E-05	7.794E+05	3.740E+02
EFFEC	1.832E-04	1.287E-02	7.141E+05	6.827E+02

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	7.955E-08	3.504E-07	3.588E-04	9.868E-08
Stomach	2.268E-07	8.214E-07	1.736E-03	6.163E-07
Colon	2.505E-06	2.135E-06	3.577E-03	1.152E-06
Liver	5.550E-07	2.379E-06	6.606E-04	2.202E-07
LUNG	5.624E-07	1.058E-03	4.986E-03	1.596E-06
Bone	3.456E-07	1.513E-06	2.202E-04	1.351E-07
Skin	5.735E-09	2.349E-08	4.940E-04	1.057E-06
Breast	1.106E-07	4.625E-07	8.108E-03	9.227E-06
Ovary	9.065E-08	4.181E-07	4.380E-04	2.365E-07
Bladder	1.950E-07	8.288E-07	9.856E-04	3.856E-07
Kidneys	6.364E-07	2.738E-06	2.481E-04	1.085E-07
Thyroid	1.617E-08	6.586E-08	2.481E-04	1.188E-07
Leukemia	8.917E-08	3.885E-07	2.749E-03	1.445E-06
Residual	7.215E-07	2.834E-06	7.747E-03	7.037E-06
Total	6.142E-06	1.073E-03	3.250E-02	2.342E-05

****
* NUCLIDE Th-230 *
****

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	2.515E-06	5.602E-05	1.212E+06	3.320E+02
B Surfac	2.270E-03	5.158E-02	6.163E+06	1.922E+03
Breasts	2.515E-06	5.602E-05	2.773E+06	1.549E+03
St Wall	2.714E-06	5.609E-05	1.410E+06	3.786E+02
ULI Wall	5.535E-06	5.702E-05	1.212E+06	3.437E+02
Kidneys	3.424E-05	8.055E-04	1.480E+06	4.054E+02
Lungs	2.515E-06	1.417E-02	1.666E+06	4.101E+02
Ovaries	1.831E-05	4.203E-04	1.057E+06	3.751E+02
R Marrow	7.822E-05	1.856E-03	1.421E+06	4.357E+02
Spleen	2.515E-06	5.602E-05	1.433E+06	3.740E+02
Thymus	2.515E-06	5.602E-05	1.596E+06	4.101E+02
Uterus	2.515E-06	5.602E-05	1.089E+06	3.250E+02
Bld Wall	2.515E-06	5.602E-05	1.328E+06	3.798E+02
Brain	2.515E-06	5.602E-05	1.608E+06	3.355E+02
Esophagu	2.515E-06	6.564E-03	1.090E+06	2.808E+02
SI Wall	3.013E-06	5.620E-05	1.128E+06	3.262E+02
LLI Wall	1.137E-05	5.890E-05	1.142E+06	3.402E+02
Liver	2.943E-05	6.808E-04	1.433E+06	3.786E+02
Muscle	2.515E-06	5.602E-05	1.876E+06	1.096E+03
Pancreas	2.515E-06	5.602E-05	1.094E+06	3.134E+02
Skin	2.515E-06	5.602E-05	5.254E+06	8.353E+03
Testes	1.864E-05	4.277E-04	2.097E+06	1.223E+03
Thyroid	2.515E-06	5.602E-05	1.899E+06	5.196E+02
EFFEC	7.911E-04	5.173E-02	1.736E+06	7.421E+02

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	4.292E-08	7.067E-07	1.258E-03	3.227E-07
Stomach	1.399E-07	1.473E-06	5.697E-03	1.526E-06
Colon	2.335E-06	3.334E-06	1.223E-02	3.530E-06
Liver	7.326E-07	1.206E-05	2.167E-03	5.743E-07
LUNG	3.163E-07	2.579E-03	1.631E-02	4.008E-06
Bone	2.745E-06	5.180E-05	5.848E-04	1.829E-07
Skin	3.201E-09	4.403E-08	5.242E-04	8.330E-07
Breast	6.512E-08	8.140E-07	1.340E-02	7.491E-06
Ovary	3.774E-07	6.697E-06	1.503E-03	5.336E-07
Bladder	1.036E-07	1.698E-06	3.215E-03	9.180E-07
Kidneys	3.041E-07	5.069E-06	7.701E-04	2.109E-07
Thyroid	9.324E-09	1.199E-07	6.046E-04	1.654E-07
Leukemia	4.181E-07	7.178E-06	7.980E-03	2.446E-06
Residual	4.144E-07	4.958E-06	2.074E-02	8.644E-06
Total	7.992E-06	2.675E-03	8.691E-02	3.134E-05

****
* NUCLIDE Ra-226 *
****

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	7.267E-06	4.314E-06	2.714E+07	6.244E+03
B Surfac	2.302E-03	1.366E-03	9.262E+07	1.584E+04
Breasts	7.267E-06	4.314E-06	4.124E+07	7.596E+03
St Wall	7.474E-06	4.366E-06	2.982E+07	6.687E+03
ULI Wall	1.178E-05	5.809E-06	2.726E+07	6.477E+03
Kidneys	1.083E-05	6.394E-06	3.041E+07	6.652E+03
Lungs	7.267E-06	5.087E-03	3.437E+07	7.060E+03
Ovaries	7.267E-06	4.314E-06	2.516E+07	6.303E+03
R Marrow	1.601E-04	9.513E-05	3.146E+07	6.932E+03
Spleen	9.846E-06	5.831E-06	3.052E+07	6.745E+03
Thymus	7.267E-06	4.314E-06	3.262E+07	6.408E+03
Uterus	7.267E-06	4.314E-06	2.540E+07	6.314E+03
Bld Wall	7.274E-06	4.322E-06	2.819E+07	6.617E+03
Brain	7.267E-06	4.314E-06	3.507E+07	6.454E+03
Esophagu	7.267E-06	1.150E-03	2.621E+07	5.732E+03
SI Wall	7.729E-06	4.444E-06	2.586E+07	6.268E+03
LLI Wall	2.539E-05	1.035E-05	2.610E+07	6.477E+03
Liver	3.299E-05	1.959E-05	3.052E+07	6.675E+03
Muscle	7.267E-06	4.314E-06	3.367E+07	7.584E+03
Pancreas	7.267E-06	4.314E-06	2.575E+07	6.058E+03
Skin	7.267E-06	4.314E-06	5.580E+07	9.460E+03
Testes	7.267E-06	4.314E-06	3.588E+07	7.736E+03
Thyroid	7.267E-06	4.314E-06	3.600E+07	7.060E+03
EFFEC	1.035E-03	1.281E-02	3.309E+07	7.118E+03

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	2.135E-07	9.509E-08	3.017E-02	6.594E-06
Stomach	8.473E-07	3.101E-07	1.200E-01	2.703E-05
Colon	6.438E-06	1.935E-06	2.761E-01	6.687E-05
Liver	1.654E-06	6.956E-07	4.625E-02	1.011E-05
LUNG	1.954E-06	1.073E-03	3.355E-01	6.908E-05
Bone	8.917E-06	3.511E-06	8.796E-03	1.503E-06
Skin	1.998E-08	7.696E-09	5.569E-03	9.436E-07
Breast	4.736E-07	1.765E-07	1.992E-01	3.670E-05
Ovary	2.523E-07	1.158E-07	3.577E-02	8.970E-06
Bladder	4.736E-07	2.087E-07	6.815E-02	1.596E-05
Kidneys	1.832E-07	7.252E-08	1.584E-02	3.460E-06
Thyroid	6.401E-08	2.327E-08	1.146E-02	2.248E-06
Leukemia	1.820E-06	7.696E-07	1.771E-01	3.891E-05
Residual	1.206E-05	4.625E-06	4.299E-01	9.868E-05
Total	3.537E-05	1.084E-03	1.759E+00	3.868E-04

```
************************
*   NUCLIDE  Rn-222    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	0.000E+00	0.000E+00	1.806E+06	3.879E+02
B Surfac	0.000E+00	0.000E+00	3.856E+06	6.745E+02
Breasts	0.000E+00	0.000E+00	2.493E+06	4.637E+02
St Wall	0.000E+00	0.000E+00	1.922E+06	4.124E+02
ULI Wall	0.000E+00	0.000E+00	1.782E+06	4.101E+02
Kidneys	0.000E+00	0.000E+00	1.934E+06	4.159E+02
Lungs	0.000E+00	0.000E+00	2.167E+06	4.404E+02
Ovaries	0.000E+00	0.000E+00	1.619E+06	4.392E+02
R Marrow	0.000E+00	0.000E+00	2.085E+06	4.439E+02
Spleen	0.000E+00	0.000E+00	1.957E+06	4.147E+02
Thymus	0.000E+00	0.000E+00	2.004E+06	4.229E+02
Uterus	0.000E+00	0.000E+00	1.666E+06	4.019E+02
Bld Wall	0.000E+00	0.000E+00	1.806E+06	4.229E+02
Brain	0.000E+00	0.000E+00	2.307E+06	4.136E+02
Esophagu	0.000E+00	0.000E+00	1.771E+06	3.740E+02
SI Wall	0.000E+00	0.000E+00	1.713E+06	4.019E+02
LLI Wall	0.000E+00	0.000E+00	1.736E+06	4.171E+02
Liver	0.000E+00	0.000E+00	1.946E+06	4.147E+02
Muscle	0.000E+00	0.000E+00	2.109E+06	4.753E+02
Pancreas	0.000E+00	0.000E+00	1.689E+06	3.798E+02
Skin	0.000E+00	0.000E+00	2.656E+06	6.058E+02
Testes	0.000E+00	0.000E+00	2.179E+06	4.835E+02
Thyroid	0.000E+00	0.000E+00	2.214E+06	4.602E+02
EFFEC	0.000E+00	0.000E+00	2.074E+06	4.450E+02

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	0.000E+00	0.000E+00	2.039E-03	4.299E-07
Stomach	0.000E+00	0.000E+00	7.759E-03	1.666E-06
Colon	0.000E+00	0.000E+00	1.817E-02	4.264E-06
Liver	0.000E+00	0.000E+00	2.947E-03	6.291E-07
LUNG	0.000E+00	0.000E+00	2.120E-02	4.310E-06
Bone	0.000E+00	0.000E+00	3.658E-04	6.407E-08
Skin	0.000E+00	0.000E+00	2.645E-04	6.046E-08
Breast	0.000E+00	0.000E+00	1.200E-02	2.237E-06
Ovary	0.000E+00	0.000E+00	2.307E-03	6.244E-07
Bladder	0.000E+00	0.000E+00	4.369E-03	1.023E-06
Kidneys	0.000E+00	0.000E+00	1.007E-03	2.167E-07
Thyroid	0.000E+00	0.000E+00	7.048E-04	1.468E-07
Leukemia	0.000E+00	0.000E+00	1.165E-02	2.493E-06
Residual	0.000E+00	0.000E+00	2.784E-02	6.163E-06
Total	0.000E+00	0.000E+00	1.127E-01	2.435E-05

```
************************
*   NUCLIDE  Po-218    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	0.000E+00	0.000E+00	4.241E+04	9.005E+00
B Surfac	0.000E+00	0.000E+00	7.934E+04	1.421E+01
Breasts	0.000E+00	0.000E+00	5.802E+04	1.035E+01
St Wall	0.000E+00	0.000E+00	4.532E+04	9.483E+00
ULI Wall	0.000E+00	0.000E+00	4.252E+04	9.390E+00
Kidneys	0.000E+00	0.000E+00	4.567E+04	9.576E+00
Lungs	0.000E+00	0.000E+00	5.091E+04	9.903E+00
Ovaries	0.000E+00	0.000E+00	4.229E+04	9.157E+00
R Marrow	0.000E+00	0.000E+00	4.986E+04	1.014E+01
Spleen	0.000E+00	0.000E+00	4.625E+04	9.576E+00
Thymus	0.000E+00	0.000E+00	4.718E+04	9.122E+00
Uterus	0.000E+00	0.000E+00	3.996E+04	9.227E+00
Bld Wall	0.000E+00	0.000E+00	4.171E+04	9.402E+00
Brain	0.000E+00	0.000E+00	5.475E+04	9.413E+00
Esophagu	0.000E+00	0.000E+00	4.322E+04	8.574E+00
SI Wall	0.000E+00	0.000E+00	4.124E+04	9.308E+00
LLI Wall	0.000E+00	0.000E+00	4.229E+04	9.704E+00
Liver	0.000E+00	0.000E+00	4.602E+04	9.483E+00
Muscle	0.000E+00	0.000E+00	4.975E+04	1.075E+01
Pancreas	0.000E+00	0.000E+00	4.054E+04	8.749E+00
Skin	0.000E+00	0.000E+00	8.807E+04	1.363E+01
Testes	0.000E+00	0.000E+00	5.114E+04	1.085E+01
Thyroid	0.000E+00	0.000E+00	5.242E+04	1.029E+01
EFFEC	0.000E+00	0.000E+00	4.905E+04	1.007E+01

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	0.000E+00	0.000E+00	4.975E-05	9.868E-09
Stomach	0.000E+00	0.000E+00	1.829E-04	3.833E-08
Colon	0.000E+00	0.000E+00	4.380E-04	9.833E-08
Liver	0.000E+00	0.000E+00	6.978E-05	1.433E-08
LUNG	0.000E+00	0.000E+00	4.975E-04	9.681E-08
Bone	0.000E+00	0.000E+00	7.538E-06	1.351E-09
Skin	0.000E+00	0.000E+00	8.784E-06	1.363E-09
Breast	0.000E+00	0.000E+00	2.808E-04	4.998E-08
Ovary	0.000E+00	0.000E+00	6.011E-05	1.305E-08
Bladder	0.000E+00	0.000E+00	1.009E-04	2.272E-08
Kidneys	0.000E+00	0.000E+00	2.377E-05	4.986E-09
Thyroid	0.000E+00	0.000E+00	1.666E-05	3.274E-09
Leukemia	0.000E+00	0.000E+00	2.796E-04	5.685E-08
Residual	0.000E+00	0.000E+00	6.582E-04	1.410E-07
Total	0.000E+00	0.000E+00	2.680E-03	5.522E-07

```
************************
*   NUCLIDE  Pb-214    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	1.744E-09	2.562E-09	1.075E+09	2.388E+05
B Surfac	3.484E-08	4.373E-08	2.843E+09	4.940E+05
Breasts	1.744E-09	2.562E-09	1.549E+09	2.878E+05
St Wall	8.873E-08	1.886E-08	1.158E+09	2.540E+05
ULI Wall	2.633E-08	6.264E-09	1.067E+09	2.493E+05
Kidneys	6.009E-08	8.802E-08	1.165E+09	2.551E+05
Lungs	1.744E-09	1.660E-05	1.316E+09	2.703E+05
Ovaries	1.744E-09	2.562E-09	9.739E+08	2.598E+05
R Marrow	4.806E-09	6.327E-09	1.235E+09	2.691E+05
Spleen	2.860E-09	3.468E-09	1.177E+09	2.563E+05
Thymus	1.744E-09	2.562E-09	1.235E+09	2.540E+05
Uterus	1.744E-09	2.562E-09	9.937E+08	2.435E+05
Bld Wall	2.280E-09	3.357E-09	1.090E+09	2.563E+05
Brain	1.744E-09	2.562E-09	1.375E+09	2.505E+05
Esophagu	1.744E-09	2.011E-05	1.047E+09	2.237E+05
SI Wall	6.312E-08	1.209E-08	1.017E+09	2.435E+05
LLI Wall	4.063E-09	2.902E-09	1.032E+09	2.516E+05
Liver	6.793E-09	9.539E-09	1.177E+09	2.551E+05
Muscle	1.744E-09	2.562E-09	1.282E+09	2.912E+05
Pancreas	1.744E-09	2.562E-09	1.012E+09	2.318E+05
Skin	1.744E-09	2.562E-09	3.227E+09	1.060E+06
Testes	1.744E-09	2.562E-09	1.351E+09	2.959E+05
Thyroid	1.744E-09	2.562E-09	1.363E+09	2.761E+05
EFFEC	5.147E-07	5.017E-05	1.282E+09	2.796E+05

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	8.362E-11	8.103E-11	1.200E+00	2.575E-04
Stomach	1.891E-08	3.430E-09	4.672E+00	1.025E-03
Colon	1.043E-08	2.105E-09	1.086E+01	2.586E-03
Liver	4.366E-10	3.497E-10	1.782E+00	3.868E-04
LUNG	1.040E-09	3.434E-06	1.281E+01	2.645E-03
Bone	1.920E-10	1.265E-10	2.703E-01	4.695E-05
Skin	9.509E-12	6.808E-12	3.215E-01	1.058E-04
Breast	2.697E-10	1.924E-10	7.491E+00	1.386E-03
Ovary	1.713E-10	9.842E-11	1.386E+00	3.693E-04
Bladder	2.694E-10	2.224E-10	2.633E+00	6.198E-04
Kidneys	1.158E-09	1.073E-09	6.058E-01	1.328E-04
Thyroid	3.275E-11	2.298E-11	4.345E-01	8.796E-05
Leukemia	1.547E-10	8.399E-11	6.932E+00	1.515E-03
Residual	1.998E-09	1.136E-09	1.666E+01	3.775E-03
Total	3.519E-08	3.445E-06	6.815E+01	1.491E-02

```
************************
*   NUCLIDE  Bi-214    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	1.248E-10	1.215E-09	7.363E+09	1.398E+06
B Surfac	1.248E-10	1.215E-09	1.270E+10	2.190E+06
Breasts	1.248E-10	1.215E-09	9.809E+09	1.631E+06
St Wall	1.073E-07	1.417E-08	7.899E+09	1.514E+06
ULI Wall	6.075E-09	2.210E-09	7.456E+09	1.514E+06
Kidneys	1.077E-08	1.048E-07	7.922E+09	1.538E+06
Lungs	1.248E-10	1.352E-05	8.749E+09	1.584E+06
Ovaries	1.248E-10	1.215E-09	7.363E+09	1.456E+06
R Marrow	1.248E-10	1.215E-09	8.656E+09	1.619E+06
Spleen	1.248E-10	1.215E-09	8.015E+09	1.514E+06
Thymus	1.248E-10	1.215E-09	8.341E+09	1.503E+06
Uterus	1.248E-10	1.215E-09	7.118E+09	1.480E+06
Bld Wall	1.678E-10	1.633E-09	7.456E+09	1.573E+06
Brain	1.248E-10	1.215E-09	9.390E+09	1.503E+06
Esophagu	1.248E-10	4.259E-05	7.538E+09	1.375E+06
SI Wall	2.832E-08	4.655E-09	7.258E+09	1.503E+06
LLI Wall	4.658E-10	1.272E-09	7.363E+09	1.549E+06
Liver	1.248E-10	1.215E-09	8.004E+09	1.514E+06
Muscle	1.248E-10	1.215E-09	8.539E+09	1.701E+06
Pancreas	1.248E-10	1.215E-09	7.200E+09	1.433E+06
Skin	1.248E-10	1.215E-09	1.491E+10	9.879E+06
Testes	1.248E-10	1.215E-09	8.668E+09	1.701E+06
Thyroid	1.248E-10	1.215E-09	8.936E+09	1.549E+06
EFFEC	4.125E-07	5.387E-05	8.446E+09	1.678E+06

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	7.733E-12	4.255E-11	8.668E+00	1.584E-03
Stomach	1.876E-08	2.312E-09	3.192E+01	6.116E-03
Colon	2.368E-09	7.215E-10	7.654E+01	1.584E-02
Liver	2.490E-11	5.217E-11	1.212E+01	2.295E-03
LUNG	1.169E-10	2.749E-06	8.551E+01	1.549E-02
Bone	7.807E-13	3.171E-12	1.212E+00	2.085E-04
Skin	7.918E-13	3.448E-12	1.491E+00	9.856E-04
Breast	3.774E-11	1.025E-10	4.742E+01	7.875E-03
Ovary	3.678E-11	4.662E-11	1.047E+01	2.074E-03
Bladder	3.004E-11	1.099E-10	1.806E+01	3.798E-03
Kidneys	1.561E-10	1.288E-09	4.124E+00	8.004E-04
Thyroid	1.654E-12	1.195E-11	2.843E+00	4.928E-04
Leukemia	4.810E-11	2.890E-11	4.858E+01	9.087E-03
Residual	5.180E-10	5.920E-10	1.146E+02	2.248E-02
Total	2.213E-08	2.756E-06	4.637E+02	8.912E-02

```
************************
*   NUCLIDE  Po-214    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	0.000E+00	0.000E+00	3.868E+05	8.225E+01
B Surfac	0.000E+00	0.000E+00	7.305E+05	1.305E+02
Breasts	0.000E+00	0.000E+00	5.289E+05	9.471E+01
St Wall	0.000E+00	0.000E+00	4.124E+05	8.668E+01
ULI Wall	0.000E+00	0.000E+00	3.868E+05	8.586E+01
Kidneys	0.000E+00	0.000E+00	4.159E+05	8.749E+01
Lungs	0.000E+00	0.000E+00	4.637E+05	9.064E+01
Ovaries	0.000E+00	0.000E+00	3.821E+05	8.446E+01
R Marrow	0.000E+00	0.000E+00	4.532E+05	9.273E+01
Spleen	0.000E+00	0.000E+00	4.206E+05	8.749E+01
Thymus	0.000E+00	0.000E+00	4.299E+05	8.388E+01
Uterus	0.000E+00	0.000E+00	3.635E+05	8.435E+01
Bld Wall	0.000E+00	0.000E+00	3.798E+05	8.609E+01
Brain	0.000E+00	0.000E+00	4.986E+05	8.609E+01
Esophagu	0.000E+00	0.000E+00	3.926E+05	7.840E+01
SI Wall	0.000E+00	0.000E+00	3.751E+05	8.505E+01
LLI Wall	0.000E+00	0.000E+00	3.833E+05	8.866E+01
Liver	0.000E+00	0.000E+00	4.182E+05	8.668E+01
Muscle	0.000E+00	0.000E+00	4.520E+05	9.844E+01
Pancreas	0.000E+00	0.000E+00	3.681E+05	7.992E+01
Skin	0.000E+00	0.000E+00	5.487E+05	1.270E+02
Testes	0.000E+00	0.000E+00	4.660E+05	9.926E+01
Thyroid	0.000E+00	0.000E+00	4.765E+05	9.437E+01
EFFEC	0.000E+00	0.000E+00	4.439E+05	9.215E+01

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	0.000E+00	0.000E+00	4.520E-04	9.017E-08
Stomach	0.000E+00	0.000E+00	1.666E-03	3.495E-07
Colon	0.000E+00	0.000E+00	3.973E-03	8.994E-07
Liver	0.000E+00	0.000E+00	6.338E-04	1.316E-07
LUNG	0.000E+00	0.000E+00	4.532E-03	8.866E-07
Bone	0.000E+00	0.000E+00	6.932E-05	1.235E-08
Skin	0.000E+00	0.000E+00	5.476E-05	1.270E-08
Breast	0.000E+00	0.000E+00	2.551E-03	4.578E-07
Ovary	0.000E+00	0.000E+00	5.441E-04	1.200E-07
Bladder	0.000E+00	0.000E+00	9.180E-04	2.085E-07
Kidneys	0.000E+00	0.000E+00	2.167E-04	4.555E-08
Thyroid	0.000E+00	0.000E+00	1.514E-04	3.006E-08
Leukemia	0.000E+00	0.000E+00	2.540E-03	5.208E-07
Residual	0.000E+00	0.000E+00	5.988E-03	1.293E-06
Total	0.000E+00	0.000E+00	2.435E-02	5.056E-06

```
************************
*   NUCLIDE  Pb-210    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	1.611E-05	1.188E-05	3.099E+06	1.305E+03
B Surfac	4.155E-03	2.398E-03	2.272E+07	9.681E+03
Breasts	1.611E-05	1.188E-05	9.530E+06	4.182E+03
St Wall	1.611E-05	1.188E-05	3.973E+06	1.678E+03
ULI Wall	1.638E-05	1.212E-05	3.017E+06	1.375E+03
Kidneys	6.841E-04	5.139E-04	4.544E+06	1.841E+03
Lungs	1.611E-05	1.013E-03	4.951E+06	1.911E+03
Ovaries	1.611E-05	1.188E-05	2.318E+06	1.150E+03
R Marrow	4.495E-04	2.841E-04	3.658E+06	1.480E+03
Spleen	5.210E-04	4.003E-04	3.938E+06	1.689E+03
Thymus	1.611E-05	1.188E-05	4.940E+06	1.806E+03
Uterus	1.611E-05	1.188E-05	2.412E+06	1.177E+03
Bld Wall	1.614E-05	1.191E-05	3.681E+06	1.631E+03
Brain	1.611E-05	1.188E-05	4.369E+06	1.363E+03
Esophagu	1.611E-05	5.162E-04	2.225E+06	9.145E+02
SI Wall	1.611E-05	1.188E-05	2.610E+06	1.223E+03
LLI Wall	1.693E-05	1.259E-05	2.656E+06	1.293E+03
Liver	3.522E-04	2.616E-04	4.031E+06	1.666E+03
Muscle	1.611E-05	1.188E-05	5.953E+06	3.250E+03
Pancreas	1.611E-05	1.188E-05	2.342E+06	1.101E+03
Skin	1.611E-05	1.188E-05	1.491E+07	2.307E+04
Testes	1.611E-05	1.188E-05	7.211E+06	3.518E+03
Thyroid	1.611E-05	1.188E-05	6.314E+06	2.179E+03
EFFEC	2.576E-03	4.085E-03	5.254E+06	2.481E+03

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	6.845E-07	3.004E-07	2.563E-03	1.052E-06
Stomach	3.115E-06	1.088E-06	1.608E-02	6.769E-06
Colon	9.768E-06	2.993E-06	2.959E-02	1.386E-05
Liver	2.013E-05	8.806E-06	6.105E-03	2.528E-06
LUNG	7.511E-06	2.224E-04	4.846E-02	1.864E-05
Bone	9.990E-06	3.774E-06	2.155E-03	9.192E-07
Skin	7.289E-08	2.649E-08	1.491E-03	2.307E-06
Breast	1.902E-06	6.475E-07	4.602E-02	2.015E-05
Ovary	8.066E-07	3.626E-07	3.297E-03	1.631E-06
Bladder	1.480E-06	6.549E-07	8.901E-03	3.949E-06
Kidneys	1.306E-05	5.809E-06	2.365E-03	9.576E-07
Thyroid	2.527E-07	8.473E-08	2.015E-03	6.932E-07
Leukemia	4.921E-06	2.109E-06	2.050E-02	8.306E-06
Residual	1.188E-05	3.996E-06	5.650E-02	2.808E-05
Total	8.547E-05	2.531E-04	2.458E-01	1.099E-04

```
************************
*   NUCLIDE  Bi-210    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	3.317E-09	8.314E-09	2.610E+06	8.330E+02
B Surfac	3.317E-09	8.314E-09	1.046E+07	3.192E+03
Breasts	3.317E-09	8.314E-09	4.602E+06	1.398E+03
St Wall	3.363E-09	8.591E-09	2.947E+06	9.448E+02
ULI Wall	1.546E-08	1.742E-08	2.610E+06	8.726E+02
Kidneys	9.694E-07	2.408E-06	3.064E+06	9.902E+02
Lungs	3.317E-09	1.415E-04	3.437E+06	1.025E+03
Ovaries	3.317E-09	8.314E-09	2.318E+06	8.295E+02
R Marrow	3.317E-09	8.314E-09	3.029E+06	9.448E+02
Spleen	3.317E-09	8.314E-09	2.994E+06	9.483E+02
Thymus	3.317E-09	8.314E-09	3.274E+06	9.704E+02
Uterus	3.317E-09	8.314E-09	2.365E+06	8.237E+02
Bld Wall	3.497E-09	9.109E-09	2.773E+06	9.483E+02
Brain	3.317E-09	8.314E-09	3.413E+06	8.598E+02
Esophagu	3.317E-09	2.220E-05	2.423E+06	7.235E+02
SI Wall	3.841E-09	9.054E-09	2.446E+06	8.272E+02
LLI Wall	7.733E-08	4.307E-08	2.470E+06	8.586E+02
Liver	3.317E-09	8.314E-09	3.006E+06	9.448E+02
Muscle	3.317E-09	8.314E-09	3.507E+06	1.247E+03
Pancreas	3.317E-09	8.314E-09	2.388E+06	7.817E+02
Skin	3.317E-09	8.314E-09	2.680E+09	3.984E+06
Testes	3.317E-09	8.314E-09	3.868E+06	1.363E+03
Thyroid	3.317E-09	8.314E-09	3.751E+06	1.111E+03
EFFEC	4.836E-06	3.442E-04	3.006E+07	4.089E+04

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	1.136E-10	2.335E-10	2.784E-03	8.318E-07
Stomach	1.014E-08	2.727E-09	1.188E-02	3.810E-06
Colon	6.919E-07	1.436E-07	2.633E-02	8.947E-06
Liver	1.584E-10	3.141E-10	4.555E-03	1.433E-06
LUNG	1.151E-09	2.978E-05	3.355E-02	1.002E-05
Bone	9.694E-12	1.950E-11	9.937E-04	3.029E-07
Skin	1.154E-11	2.153E-11	2.668E-01	3.973E-04
Breast	3.101E-10	5.550E-10	2.225E-02	6.757E-06
Ovary	1.317E-10	2.823E-10	3.297E-03	1.177E-06
Bladder	6.475E-10	8.214E-10	6.699E-03	2.295E-06
Kidneys	1.473E-08	2.949E-08	1.596E-03	5.149E-07
Thyroid	3.885E-11	7.104E-11	1.200E-03	3.542E-07
Leukemia	9.398E-11	1.029E-10	1.701E-02	5.301E-06
Residual	1.780E-09	3.267E-09	4.217E-02	1.421E-05
Total	7.215E-07	2.997E-05	4.415E-01	4.532E-04

```
************************
*   NUCLIDE  Po-210    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	1.033E-05	9.076E-06	3.949E+04	8.388E+00
B Surfac	5.905E-05	5.187E-05	7.444E+04	1.328E+01
Breasts	1.033E-05	9.076E-06	5.394E+04	9.669E+00
St Wall	1.056E-05	9.128E-06	4.206E+04	8.842E+00
ULI Wall	1.357E-05	9.934E-06	3.949E+04	8.761E+00
Kidneys	4.718E-04	4.144E-04	4.241E+04	8.936E+00
Lungs	1.033E-05	4.806E-03	4.730E+04	9.250E+00
Ovaries	1.033E-05	9.076E-06	3.903E+04	8.609E+00
R Marrow	9.790E-05	8.599E-05	4.625E+04	9.460E+00
Spleen	4.063E-04	3.567E-04	4.299E+04	8.924E+00
Thymus	1.033E-05	9.076E-06	4.380E+04	8.551E+00
Uterus	1.033E-05	9.076E-06	3.705E+04	8.609E+00
Bld Wall	1.036E-05	9.095E-06	3.879E+04	8.784E+00
Brain	1.033E-05	9.076E-06	5.091E+04	8.784E+00
Esophagu	1.033E-05	6.486E-04	4.008E+04	8.004E+00
SI Wall	1.084E-05	9.195E-06	3.833E+04	8.679E+00
LLI Wall	1.979E-05	1.158E-05	3.914E+04	9.040E+00
Liver	2.437E-04	2.141E-04	4.276E+04	8.842E+00
Muscle	1.033E-05	9.076E-06	4.613E+04	1.004E+01
Pancreas	1.033E-05	9.076E-06	3.763E+04	8.155E+00
Skin	1.033E-05	9.076E-06	5.604E+04	1.293E+01
Testes	1.033E-05	9.076E-06	4.753E+04	1.012E+01
Thyroid	1.033E-05	9.076E-06	4.870E+04	9.623E+00
EFFEC	9.065E-04	1.210E-02	4.532E+04	9.402E+00

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	3.115E-07	2.490E-07	4.613E-05	9.204E-09
Stomach	1.269E-06	9.324E-07	1.701E-04	3.565E-08
Colon	5.809E-06	3.101E-06	4.066E-04	9.169E-08
Liver	9.953E-06	7.733E-06	6.477E-05	1.340E-08
LUNG	3.145E-06	9.990E-04	4.625E-04	9.040E-08
Bone	1.917E-07	1.443E-07	7.072E-06	1.258E-09
Skin	3.152E-08	2.316E-08	5.592E-06	1.293E-09
Breast	7.585E-07	5.772E-07	2.610E-04	4.672E-08
Ovary	3.615E-07	3.019E-07	5.557E-05	1.223E-08
Bladder	6.882E-07	5.328E-07	9.378E-05	2.120E-08
Kidneys	6.327E-06	4.958E-06	2.202E-05	4.648E-09
Thyroid	1.054E-07	7.696E-08	1.549E-05	3.064E-09
Leukemia	8.621E-07	6.475E-07	2.598E-04	5.312E-08
Residual	4.847E-06	3.519E-06	6.116E-04	1.316E-07
Total	3.471E-05	1.021E-03	2.481E-03	5.161E-07

```
************************
*   NUCLIDE  At-218    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	0.000E+00	0.000E+00	7.386E+06	2.633E+03
B Surfac	0.000E+00	0.000E+00	4.928E+07	1.736E+04
Breasts	0.000E+00	0.000E+00	1.864E+07	6.221E+03
St Wall	0.000E+00	0.000E+00	9.180E+06	3.285E+03
ULI Wall	0.000E+00	0.000E+00	7.293E+06	2.831E+03
Kidneys	0.000E+00	0.000E+00	1.009E+07	3.448E+03
Lungs	0.000E+00	0.000E+00	1.127E+07	3.693E+03
Ovaries	0.000E+00	0.000E+00	5.965E+06	2.516E+03
R Marrow	0.000E+00	0.000E+00	8.446E+06	2.901E+03
Spleen	0.000E+00	0.000E+00	9.215E+06	3.320E+03
Thymus	0.000E+00	0.000E+00	1.100E+07	3.483E+03
Uterus	0.000E+00	0.000E+00	6.105E+06	2.528E+03
Bld Wall	0.000E+00	0.000E+00	8.504E+06	3.192E+03
Brain	0.000E+00	0.000E+00	1.028E+07	2.819E+03
Esophagu	0.000E+00	0.000E+00	5.767E+06	2.062E+03
SI Wall	0.000E+00	0.000E+00	6.489E+06	2.598E+03
LLI Wall	0.000E+00	0.000E+00	6.606E+06	2.738E+03
Liver	0.000E+00	0.000E+00	9.320E+06	3.285E+03
Muscle	0.000E+00	0.000E+00	1.247E+07	5.149E+03
Pancreas	0.000E+00	0.000E+00	6.023E+06	2.412E+03
Skin	0.000E+00	0.000E+00	2.470E+07	2.703E+04
Testes	0.000E+00	0.000E+00	1.468E+07	5.522E+03
Thyroid	0.000E+00	0.000E+00	1.328E+07	3.914E+03
EFFEC	0.000E+00	0.000E+00	1.137E+07	4.252E+03

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	0.000E+00	0.000E+00	6.641E-03	2.377E-06
Stomach	0.000E+00	0.000E+00	3.705E-02	1.328E-05
Colon	0.000E+00	0.000E+00	7.223E-02	2.878E-05
Liver	0.000E+00	0.000E+00	1.410E-02	4.975E-06
LUNG	0.000E+00	0.000E+00	1.102E-01	3.611E-05
Bone	0.000E+00	0.000E+00	4.683E-03	1.643E-06
Skin	0.000E+00	0.000E+00	2.470E-03	2.691E-06
Breast	0.000E+00	0.000E+00	9.005E-02	3.006E-05
Ovary	0.000E+00	0.000E+00	8.481E-03	3.577E-06
Bladder	0.000E+00	0.000E+00	2.062E-02	7.724E-06
Kidneys	0.000E+00	0.000E+00	5.254E-03	1.794E-06
Thyroid	0.000E+00	0.000E+00	4.229E-03	1.247E-06
Leukemia	0.000E+00	0.000E+00	4.742E-02	1.631E-05
Residual	0.000E+00	0.000E+00	1.282E-01	5.056E-05
Total	0.000E+00	0.000E+00	5.522E-01	2.015E-04

```
************************
*   NUCLIDE  Th-232    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	6.545E-06	1.502E-04	5.266E+05	1.596E+02
B Surfac	2.186E-03	5.291E-02	3.029E+06	1.235E+03
Breasts	6.545E-06	1.502E-04	1.584E+06	1.305E+03
St Wall	6.716E-06	1.503E-04	6.233E+05	1.864E+02
ULI Wall	9.246E-06	1.573E-04	5.277E+05	1.596E+02
Kidneys	3.397E-05	8.817E-04	6.664E+05	2.132E+02
Lungs	6.545E-06	2.956E-02	7.421E+05	2.027E+02
Ovaries	1.985E-05	4.773E-04	4.543E+05	1.911E+02
R Marrow	8.610E-05	2.293E-03	6.431E+05	2.435E+02
Spleen	6.553E-06	1.504E-04	6.279E+05	1.782E+02
Thymus	6.545E-06	1.502E-04	7.223E+05	2.097E+02
Uterus	6.545E-06	1.502E-04	4.672E+05	1.491E+02
Bld Wall	6.549E-06	1.503E-04	5.860E+05	1.887E+02
Brain	6.545E-06	1.502E-04	7.037E+05	1.561E+02
Esophagu	6.545E-06	9.387E-03	4.613E+05	1.270E+02
SI Wall	6.971E-06	1.503E-04	4.858E+05	1.503E+02
LLI Wall	1.445E-05	1.701E-04	4.916E+05	1.584E+02
Liver	3.418E-05	9.313E-04	6.338E+05	1.841E+02
Muscle	6.545E-06	1.502E-04	9.658E+05	8.656E+02
Pancreas	6.545E-06	1.502E-04	4.672E+05	1.421E+02
Skin	6.545E-06	1.502E-04	4.008E+06	7.992E+03
Testes	2.014E-05	4.843E-04	1.088E+06	9.868E+02
Thyroid	6.545E-06	1.502E-04	9.204E+05	3.122E+02
EFFEC	8.536E-04	9.172E-02	8.470E+05	5.301E+02

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	9.879E-08	1.776E-06	5.312E-04	1.456E-07
Stomach	2.398E-07	3.138E-06	2.516E-03	7.526E-07
Colon	2.231E-06	6.549E-06	5.289E-03	1.643E-06
Liver	8.325E-07	1.650E-05	9.600E-04	2.784E-07
LUNG	6.549E-07	3.959E-03	7.258E-03	1.980E-06
Bone	2.694E-06	5.402E-05	2.878E-04	1.177E-07
Skin	6.512E-09	1.003E-07	3.996E-04	7.969E-07
Breast	1.202E-07	1.843E-06	7.654E-03	6.303E-06
Ovary	3.922E-07	7.400E-06	6.466E-04	2.714E-07
Bladder	2.457E-07	4.255E-06	1.421E-03	4.567E-07
Kidneys	2.949E-07	5.476E-06	3.472E-04	1.109E-07
Thyroid	1.791E-08	2.686E-07	2.936E-04	9.937E-08
Leukemia	4.625E-07	9.139E-06	3.611E-03	1.363E-06
Residual	7.585E-07	1.040E-05	9.728E-03	5.790E-06
Total	9.065E-06	4.070E-03	4.089E-02	2.015E-05

```
************************
*   NUCLIDE  Ra-228    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	2.797E-05	3.774E-05	0.000E+00	0.000E+00
B Surfac	4.155E-03	1.042E-02	0.000E+00	0.000E+00
Breasts	2.797E-05	3.774E-05	0.000E+00	0.000E+00
St Wall	2.797E-05	3.774E-05	0.000E+00	0.000E+00
ULI Wall	3.040E-05	4.717E-05	0.000E+00	0.000E+00
Kidneys	7.948E-05	2.671E-04	0.000E+00	0.000E+00
Lungs	2.797E-05	1.776E-03	0.000E+00	0.000E+00
Ovaries	3.915E-05	9.342E-05	0.000E+00	0.000E+00
R Marrow	4.222E-04	8.717E-04	0.000E+00	0.000E+00
Spleen	2.813E-05	3.796E-05	0.000E+00	0.000E+00
Thymus	2.797E-05	3.774E-05	0.000E+00	0.000E+00
Uterus	2.797E-05	3.774E-05	0.000E+00	0.000E+00
Bld Wall	2.802E-05	3.789E-05	0.000E+00	0.000E+00
Brain	2.797E-05	3.774E-05	0.000E+00	0.000E+00
Esophagu	2.797E-05	8.125E-04	0.000E+00	0.000E+00
SI Wall	2.797E-05	3.774E-05	0.000E+00	0.000E+00
LLI Wall	3.477E-05	6.416E-05	0.000E+00	0.000E+00
Liver	1.925E-04	4.440E-04	0.000E+00	0.000E+00
Muscle	2.797E-05	3.774E-05	0.000E+00	0.000E+00
Pancreas	2.797E-05	3.774E-05	0.000E+00	0.000E+00
Skin	2.797E-05	3.774E-05	0.000E+00	0.000E+00
Testes	3.933E-05	9.439E-05	0.000E+00	0.000E+00
Thyroid	2.797E-05	3.774E-05	0.000E+00	0.000E+00
EFFEC	2.579E-03	9.761E-03	0.000E+00	0.000E+00

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	1.040E-06	9.028E-07	0.000E+00	0.000E+00
Stomach	4.625E-06	3.115E-06	0.000E+00	0.000E+00
Colon	1.528E-05	1.032E-05	0.000E+00	0.000E+00
Liver	1.328E-05	1.473E-05	0.000E+00	0.000E+00
LUNG	9.361E-06	3.848E-04	0.000E+00	0.000E+00
Bone	2.412E-05	2.379E-05	0.000E+00	0.000E+00
Skin	1.010E-07	7.437E-08	0.000E+00	0.000E+00
Breast	2.442E-06	1.761E-06	0.000E+00	0.000E+00
Ovary	2.424E-06	2.893E-06	0.000E+00	0.000E+00
Bladder	2.279E-06	1.957E-06	0.000E+00	0.000E+00
Kidneys	2.390E-06	3.078E-06	0.000E+00	0.000E+00
Thyroid	3.197E-07	2.257E-07	0.000E+00	0.000E+00
Leukemia	6.660E-06	6.475E-06	0.000E+00	0.000E+00
Residual	1.695E-05	1.129E-05	0.000E+00	0.000E+00
Total	1.014E-04	4.662E-04	0.000E+00	0.000E+00

****
* NUCLIDE Ac-228 *
****

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	4.170E-10	7.407E-08	4.520E+09	9.320E+05
B Surfac	1.346E-07	2.579E-05	8.609E+09	1.514E+06
Breasts	4.170E-10	7.407E-08	6.174E+09	1.083E+06
St Wall	4.255E-10	7.411E-08	4.846E+09	9.891E+05
ULI Wall	1.943E-09	1.007E-07	4.555E+09	9.833E+05
Kidneys	3.689E-09	6.875E-07	4.881E+09	1.002E+06
Lungs	4.170E-10	1.208E-05	5.429E+09	1.035E+06
Ovaries	1.365E-09	2.338E-07	4.520E+09	9.518E+05
R Marrow	1.042E-08	1.989E-06	5.312E+09	1.058E+06
Spleen	4.177E-10	7.418E-08	4.940E+09	9.961E+05
Thymus	4.170E-10	7.407E-08	5.091E+09	9.600E+05
Uterus	4.170E-10	7.407E-08	4.299E+09	9.635E+05
Bld Wall	4.196E-10	7.455E-08	4.497E+09	9.961E+05
Brain	4.170E-10	7.407E-08	5.825E+09	9.798E+05
Esophagu	4.170E-10	1.902E-06	4.613E+09	8.936E+05
SI Wall	5.051E-10	7.415E-08	4.415E+09	9.728E+05
LLI Wall	7.877E-09	1.491E-07	4.509E+09	1.011E+06
Liver	2.518E-08	2.589E-06	4.916E+09	9.914E+05
Muscle	4.170E-10	7.407E-08	5.301E+09	1.122E+06
Pancreas	4.170E-10	7.407E-08	4.357E+09	9.192E+05
Skin	4.170E-10	7.407E-08	9.180E+09	5.534E+06
Testes	1.373E-09	2.361E-07	5.441E+09	1.131E+06
Thyroid	4.170E-10	7.407E-08	5.580E+09	1.052E+06
EFFEC	1.485E-06	4.403E-05	5.231E+09	1.093E+06

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	2.901E-11	1.765E-09	5.312E+00	1.028E-03
Stomach	1.328E-08	8.066E-09	1.957E+01	3.996E-03
Colon	1.458E-07	4.699E-08	4.683E+01	1.028E-02
Liver	1.029E-09	7.548E-08	7.456E+00	1.503E-03
LUNG	4.921E-10	2.572E-06	5.312E+01	1.011E-02
Bone	3.249E-10	5.069E-08	8.178E-01	1.433E-04
Skin	5.550E-12	1.447E-10	9.157E-01	5.522E-04
Breast	1.584E-10	3.541E-09	2.982E+01	5.231E-03
Ovary	9.842E-10	6.845E-09	6.431E+00	1.351E-03
Bladder	5.217E-10	3.848E-09	1.087E+01	2.412E-03
Kidneys	1.410E-10	7.326E-09	2.540E+00	5.208E-04
Thyroid	5.809E-12	4.514E-10	1.782E+00	3.355E-04
Leukemia	8.732E-10	1.384E-08	2.982E+01	5.941E-03
Residual	2.531E-09	2.179E-08	7.037E+01	1.480E-02
Total	1.661E-07	2.812E-06	2.854E+02	5.813E-02

```
************************
*   NUCLIDE  Th-228    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	1.308E-06	1.214E-05	7.386E+06	1.794E+03
B Surfac	4.655E-04	4.433E-03	3.076E+07	6.606E+03
Breasts	1.308E-06	1.214E-05	1.270E+07	3.483E+03
St Wall	1.545E-06	1.229E-05	8.318E+06	1.969E+03
ULI Wall	7.082E-06	1.927E-05	7.433E+06	1.876E+03
Kidneys	1.204E-05	1.157E-04	8.563E+06	2.004E+03
Lungs	1.308E-06	6.016E-02	9.704E+06	2.109E+03
Ovaries	3.837E-06	3.685E-05	6.664E+06	1.864E+03
R Marrow	3.603E-05	3.413E-04	8.528E+06	2.062E+03
Spleen	1.310E-06	1.216E-05	8.481E+06	1.992E+03
Thymus	1.308E-06	1.214E-05	9.203E+06	1.969E+03
Uterus	1.308E-06	1.214E-05	6.815E+06	1.817E+03
Bld Wall	1.317E-06	1.222E-05	7.852E+06	1.980E+03
Brain	1.308E-06	1.214E-05	9.646E+06	1.852E+03
Esophagu	1.308E-06	1.885E-02	6.943E+06	1.631E+03
SI Wall	1.948E-06	1.254E-05	6.990E+06	1.806E+03
LLI Wall	2.492E-05	3.390E-05	7.060E+06	1.876E+03
Liver	1.921E-05	1.841E-04	8.493E+06	1.980E+03
Muscle	1.308E-06	1.214E-05	9.774E+06	2.971E+03
Pancreas	1.308E-06	1.214E-05	6.874E+06	1.748E+03
Skin	1.308E-06	1.214E-05	1.748E+07	1.135E+04
Testes	3.885E-06	3.733E-05	1.062E+07	3.157E+03
Thyroid	1.308E-06	1.214E-05	1.035E+07	2.237E+03
EFFEC	2.665E-04	1.468E-01	9.471E+06	2.481E+03

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	3.545E-08	3.019E-07	7.992E-03	1.876E-06
Stomach	1.624E-07	9.213E-07	3.355E-02	7.945E-06
Colon	5.513E-06	4.921E-06	7.503E-02	1.934E-05
Liver	7.104E-07	5.365E-06	1.282E-02	3.006E-06
LUNG	3.345E-07	1.254E-02	9.483E-02	2.062E-05
Bone	1.080E-06	8.251E-06	2.924E-03	6.268E-07
Skin	3.415E-09	2.183E-08	1.747E-03	1.132E-06
Breast	8.066E-08	6.290E-07	6.140E-02	1.678E-05
Ovary	1.221E-07	1.006E-06	9.483E-03	2.656E-06
Bladder	8.029E-08	5.846E-07	1.899E-02	4.788E-06
Kidneys	1.547E-07	1.165E-06	4.450E-03	1.043E-06
Thyroid	1.110E-08	6.771E-08	3.297E-03	7.118E-07
Leukemia	3.149E-07	2.231E-06	4.788E-02	1.158E-05
Residual	5.180E-07	3.371E-06	1.188E-01	3.227E-05
Total	9.102E-06	1.258E-02	4.940E-01	1.247E-04

```
************************
*   NUCLIDE  Ra-224    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	1.787E-06	4.225E-07	4.206E+07	9.436E+03
B Surfac	3.201E-04	7.629E-05	1.247E+08	2.050E+04
Breasts	1.787E-06	4.225E-07	6.151E+07	1.130E+04
St Wall	2.577E-06	5.846E-07	4.555E+07	1.003E+04
ULI Wall	1.402E-05	3.205E-06	4.194E+07	9.763E+03
Kidneys	7.433E-06	1.745E-06	4.613E+07	9.972E+03
Lungs	1.787E-06	4.558E-03	5.208E+07	1.057E+04
Ovaries	1.787E-06	4.225E-07	3.879E+07	9.786E+03
R Marrow	3.053E-05	7.274E-06	4.858E+07	1.054E+04
Spleen	1.788E-06	4.225E-07	4.648E+07	1.010E+04
Thymus	1.787E-06	4.225E-07	4.905E+07	9.693E+03
Uterus	1.787E-06	4.225E-07	3.914E+07	9.553E+03
Bld Wall	1.812E-06	4.285E-07	4.299E+07	9.937E+03
Brain	1.787E-06	4.225E-07	5.394E+07	9.798E+03
Esophagu	1.787E-06	4.977E-04	4.089E+07	8.726E+03
SI Wall	3.446E-06	8.003E-07	3.984E+07	9.495E+03
LLI Wall	3.533E-05	8.003E-06	4.043E+07	9.809E+03
Liver	9.994E-06	2.357E-06	4.648E+07	1.001E+04
Muscle	1.787E-06	4.225E-07	5.079E+07	1.138E+04
Pancreas	1.787E-06	4.225E-07	3.984E+07	9.145E+03
Skin	1.787E-06	4.225E-07	7.398E+07	1.351E+04
Testes	1.787E-06	4.225E-07	5.371E+07	1.158E+04
Thyroid	1.787E-06	4.225E-07	5.406E+07	1.064E+04
EFFEC	2.386E-04	1.100E-02	5.010E+07	1.066E+04

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	6.438E-08	1.232E-08	4.707E-02	1.004E-05
Stomach	3.689E-07	6.327E-08	1.841E-01	4.054E-05
Colon	9.139E-06	1.965E-06	4.264E-01	1.010E-04
Liver	4.551E-07	8.251E-08	7.048E-02	1.514E-05
LUNG	7.104E-07	9.435E-04	5.091E-01	1.033E-04
Bone	1.598E-06	2.609E-07	1.188E-02	1.946E-06
Skin	6.919E-09	1.110E-09	7.386E-03	1.351E-06
Breast	1.746E-07	2.967E-08	2.971E-01	5.464E-05
Ovary	8.029E-08	1.532E-08	5.522E-02	1.386E-05
Bladder	1.439E-07	2.608E-08	1.039E-01	2.400E-05
Kidneys	1.498E-07	2.512E-08	2.400E-02	5.184E-06
Thyroid	2.409E-08	3.737E-09	1.724E-02	3.390E-06
Leukemia	3.556E-07	6.253E-08	2.726E-01	5.918E-05
Residual	1.088E-06	1.717E-07	6.582E-01	1.491E-04
Total	1.436E-05	9.472E-04	2.680E+00	5.825E-04

```
************************
*   NUCLIDE  Rn-220    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	0.000E+00	0.000E+00	1.759E+06	3.751E+02
B Surfac	0.000E+00	0.000E+00	3.646E+06	6.419E+02
Breasts	0.000E+00	0.000E+00	2.412E+06	4.474E+02
St Wall	0.000E+00	0.000E+00	1.864E+06	3.984E+02
ULI Wall	0.000E+00	0.000E+00	1.736E+06	3.973E+02
Kidneys	0.000E+00	0.000E+00	1.876E+06	4.031E+02
Lungs	0.000E+00	0.000E+00	2.097E+06	4.252E+02
Ovaries	0.000E+00	0.000E+00	1.584E+06	4.217E+02
R Marrow	0.000E+00	0.000E+00	2.027E+06	4.299E+02
Spleen	0.000E+00	0.000E+00	1.899E+06	4.019E+02
Thymus	0.000E+00	0.000E+00	1.946E+06	4.078E+02
Uterus	0.000E+00	0.000E+00	1.619E+06	3.891E+02
Bld Wall	0.000E+00	0.000E+00	1.748E+06	4.078E+02
Brain	0.000E+00	0.000E+00	2.237E+06	3.996E+02
Esophagu	0.000E+00	0.000E+00	1.736E+06	3.623E+02
SI Wall	0.000E+00	0.000E+00	1.666E+06	3.891E+02
LLI Wall	0.000E+00	0.000E+00	1.701E+06	4.043E+02
Liver	0.000E+00	0.000E+00	1.887E+06	4.008E+02
Muscle	0.000E+00	0.000E+00	2.050E+06	4.590E+02
Pancreas	0.000E+00	0.000E+00	1.643E+06	3.681E+02
Skin	0.000E+00	0.000E+00	2.563E+06	6.070E+02
Testes	0.000E+00	0.000E+00	2.109E+06	4.660E+02
Thyroid	0.000E+00	0.000E+00	2.155E+06	4.439E+02
EFFEC	0.000E+00	0.000E+00	2.004E+06	4.299E+02

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	0.000E+00	0.000E+00	1.992E-03	4.171E-07
Stomach	0.000E+00	0.000E+00	7.526E-03	1.608E-06
Colon	0.000E+00	0.000E+00	1.782E-02	4.136E-06
Liver	0.000E+00	0.000E+00	2.866E-03	6.070E-07
LUNG	0.000E+00	0.000E+00	2.050E-02	4.159E-06
Bone	0.000E+00	0.000E+00	3.460E-04	6.093E-08
Skin	0.000E+00	0.000E+00	2.563E-04	6.058E-08
Breast	0.000E+00	0.000E+00	1.165E-02	2.167E-06
Ovary	0.000E+00	0.000E+00	2.248E-03	6.000E-07
Bladder	0.000E+00	0.000E+00	4.229E-03	9.856E-07
Kidneys	0.000E+00	0.000E+00	9.763E-04	2.097E-07
Thyroid	0.000E+00	0.000E+00	6.862E-04	1.410E-07
Leukemia	0.000E+00	0.000E+00	1.138E-02	2.412E-06
Residual	0.000E+00	0.000E+00	2.703E-02	5.965E-06
Total	0.000E+00	0.000E+00	1.095E-01	2.353E-05

```
************************
*   NUCLIDE  Po-216    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	0.000E+00	0.000E+00	7.864E+04	1.666E+01
B Surfac	0.000E+00	0.000E+00	1.480E+05	2.645E+01
Breasts	0.000E+00	0.000E+00	1.075E+05	1.922E+01
St Wall	0.000E+00	0.000E+00	8.388E+04	1.759E+01
ULI Wall	0.000E+00	0.000E+00	7.875E+04	1.748E+01
Kidneys	0.000E+00	0.000E+00	8.446E+04	1.782E+01
Lungs	0.000E+00	0.000E+00	9.425E+04	1.841E+01
Ovaries	0.000E+00	0.000E+00	7.771E+04	1.713E+01
R Marrow	0.000E+00	0.000E+00	9.215E+04	1.887E+01
Spleen	0.000E+00	0.000E+00	8.551E+04	1.771E+01
Thymus	0.000E+00	0.000E+00	8.726E+04	1.701E+01
Uterus	0.000E+00	0.000E+00	7.386E+04	1.713E+01
Bld Wall	0.000E+00	0.000E+00	7.724E+04	1.748E+01
Brain	0.000E+00	0.000E+00	1.014E+05	1.748E+01
Esophagu	0.000E+00	0.000E+00	7.992E+04	1.596E+01
SI Wall	0.000E+00	0.000E+00	7.631E+04	1.724E+01
LLI Wall	0.000E+00	0.000E+00	7.806E+04	1.806E+01
Liver	0.000E+00	0.000E+00	8.504E+04	1.759E+01
Muscle	0.000E+00	0.000E+00	9.204E+04	2.004E+01
Pancreas	0.000E+00	0.000E+00	7.491E+04	1.619E+01
Skin	0.000E+00	0.000E+00	1.115E+05	2.563E+01
Testes	0.000E+00	0.000E+00	9.460E+04	2.015E+01
Thyroid	0.000E+00	0.000E+00	9.693E+04	1.911E+01
EFFEC	0.000E+00	0.000E+00	9.029E+04	1.876E+01

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	0.000E+00	0.000E+00	9.192E-05	1.841E-08
Stomach	0.000E+00	0.000E+00	3.390E-04	7.106E-08
Colon	0.000E+00	0.000E+00	8.097E-04	1.829E-07
Liver	0.000E+00	0.000E+00	1.293E-04	2.668E-08
LUNG	0.000E+00	0.000E+00	9.215E-04	1.794E-07
Bone	0.000E+00	0.000E+00	1.410E-05	2.516E-09
Skin	0.000E+00	0.000E+00	1.113E-05	2.563E-09
Breast	0.000E+00	0.000E+00	5.196E-04	9.285E-08
Ovary	0.000E+00	0.000E+00	1.106E-04	2.435E-08
Bladder	0.000E+00	0.000E+00	1.864E-04	4.229E-08
Kidneys	0.000E+00	0.000E+00	4.392E-05	9.273E-09
Thyroid	0.000E+00	0.000E+00	3.087E-05	6.081E-09
Leukemia	0.000E+00	0.000E+00	5.173E-04	1.059E-07
Residual	0.000E+00	0.000E+00	1.223E-03	2.621E-07
Total	0.000E+00	0.000E+00	4.940E-03	1.028E-06

```
************************
*   NUCLIDE  Pb-212    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	3.822E-07	9.502E-08	5.976E+08	1.375E+05
B Surfac	9.609E-06	2.382E-06	1.957E+09	3.507E+05
Breasts	3.822E-07	9.502E-08	9.040E+08	1.678E+05
St Wall	5.095E-07	1.254E-07	6.547E+08	1.480E+05
ULI Wall	2.176E-06	4.669E-07	5.976E+08	1.433E+05
Kidneys	8.103E-06	2.053E-06	6.664E+08	1.468E+05
Lungs	3.822E-07	2.622E-04	7.526E+08	1.561E+05
Ovaries	3.822E-07	9.502E-08	5.464E+08	1.433E+05
R Marrow	1.206E-06	2.991E-07	6.897E+08	1.538E+05
Spleen	3.822E-07	9.502E-08	6.687E+08	1.491E+05
Thymus	3.822E-07	9.502E-08	7.106E+08	1.445E+05
Uterus	3.822E-07	9.502E-08	5.545E+08	1.398E+05
Bld Wall	3.996E-07	9.964E-08	6.186E+08	1.468E+05
Brain	3.822E-07	9.502E-08	7.712E+08	1.433E+05
Esophagu	3.822E-07	9.350E-05	5.767E+08	1.258E+05
SI Wall	8.403E-07	1.922E-07	5.662E+08	1.386E+05
LLI Wall	2.500E-06	5.328E-07	5.732E+08	1.433E+05
Liver	2.509E-06	6.231E-07	6.675E+08	1.480E+05
Muscle	3.822E-07	9.502E-08	7.374E+08	1.678E+05
Pancreas	3.822E-07	9.502E-08	5.639E+08	1.340E+05
Skin	3.822E-07	9.502E-08	1.573E+09	2.190E+05
Testes	3.822E-07	9.502E-08	7.864E+08	1.713E+05
Thyroid	3.822E-07	9.502E-08	7.864E+08	1.573E+05
EFFEC	2.213E-05	6.353E-04	7.293E+08	1.573E+05

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	1.576E-08	2.731E-09	6.640E-01	1.445E-04
Stomach	9.694E-08	1.576E-08	2.645E+00	5.976E-04
Colon	1.165E-06	2.505E-07	6.058E+00	1.480E-03
Liver	1.358E-07	2.216E-08	1.011E+00	2.237E-04
LUNG	1.835E-07	5.439E-05	7.363E+00	1.526E-03
Bone	5.402E-08	7.437E-09	1.864E-01	3.332E-05
Skin	1.750E-09	2.435E-10	1.573E-01	2.190E-05
Breast	4.551E-08	6.401E-09	4.369E+00	8.108E-04
Ovary	2.028E-08	3.530E-09	7.771E-01	2.039E-04
Bladder	3.637E-08	6.142E-09	1.491E+00	3.553E-04
Kidneys	1.410E-07	2.438E-08	3.472E-01	7.631E-05
Thyroid	6.253E-09	8.140E-10	2.505E-01	5.009E-05
Leukemia	1.783E-08	3.104E-09	3.868E+00	8.633E-04
Residual	2.797E-07	3.774E-08	9.425E+00	2.179E-03
Total	2.201E-06	5.476E-05	3.856E+01	8.563E-03

```
************************
*   NUCLIDE  Bi-212    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	1.258E-09	3.480E-09	8.807E+08	1.782E+05
B Surfac	1.258E-09	3.480E-09	1.619E+09	2.866E+05
Breasts	1.258E-09	3.480E-09	1.188E+09	2.085E+05
St Wall	1.987E-07	3.459E-08	9.425E+08	1.911E+05
ULI Wall	7.929E-08	1.719E-08	8.866E+08	1.899E+05
Kidneys	2.030E-07	5.617E-07	9.471E+08	1.934E+05
Lungs	1.258E-09	3.607E-05	1.052E+09	1.992E+05
Ovaries	1.258E-09	3.480E-09	8.703E+08	1.852E+05
R Marrow	1.258E-09	3.480E-09	1.033E+09	2.039E+05
Spleen	1.258E-09	3.480E-09	9.588E+08	1.911E+05
Thymus	1.258E-09	3.480E-09	9.902E+08	1.876E+05
Uterus	1.258E-09	3.480E-09	8.376E+08	1.852E+05
Bld Wall	1.898E-09	5.250E-09	8.796E+08	1.946E+05
Brain	1.258E-09	3.480E-09	1.129E+09	1.887E+05
Esophagu	1.258E-09	5.432E-05	8.959E+08	1.724E+05
SI Wall	1.311E-07	2.395E-08	8.598E+08	1.876E+05
LLI Wall	1.435E-08	5.779E-09	8.749E+08	1.946E+05
Liver	1.258E-09	3.480E-09	9.553E+08	1.911E+05
Muscle	1.258E-09	3.480E-09	1.028E+09	2.167E+05
Pancreas	1.258E-09	3.480E-09	8.493E+08	1.771E+05
Skin	1.258E-09	3.480E-09	4.718E+09	6.233E+06
Testes	1.258E-09	3.480E-09	1.051E+09	2.179E+05
Thyroid	1.258E-09	3.480E-09	1.079E+09	2.027E+05
EFFEC	9.568E-07	1.141E-04	1.044E+09	2.621E+05

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	4.625E-11	1.166E-10	1.031E+00	1.980E-04
Stomach	3.463E-08	5.624E-09	3.810E+00	7.712E-04
Colon	2.927E-08	5.846E-09	9.099E+00	1.980E-03
Liver	1.047E-10	1.498E-10	1.445E+00	2.901E-04
LUNG	5.402E-10	7.326E-06	1.029E+01	1.946E-03
Bone	4.588E-12	8.991E-12	1.538E-01	2.726E-05
Skin	4.995E-12	9.842E-12	4.707E-01	6.221E-04
Breast	1.510E-10	2.853E-10	5.743E+00	1.008E-03
Ovary	1.846E-10	1.450E-10	1.235E+00	2.633E-04
Bladder	2.127E-10	3.663E-10	2.132E+00	4.707E-04
Kidneys	2.790E-09	6.919E-09	4.928E-01	1.007E-04
Thyroid	1.399E-11	3.363E-11	3.437E-01	6.454E-05
Leukemia	1.598E-10	8.325E-11	5.802E+00	1.144E-03
Residual	1.473E-09	1.661E-09	1.363E+01	2.843E-03
Total	6.956E-08	7.363E-06	5.569E+01	1.177E-02

```
************************
*   NUCLIDE  Po-212    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	0.000E+00	0.000E+00	0.000E+00	0.000E+00
B Surfac	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Breasts	0.000E+00	0.000E+00	0.000E+00	0.000E+00
St Wall	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ULI Wall	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Kidneys	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Lungs	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ovaries	0.000E+00	0.000E+00	0.000E+00	0.000E+00
R Marrow	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Spleen	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Thymus	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Uterus	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Bld Wall	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Brain	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Esophagu	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SI Wall	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LLI Wall	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Liver	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Muscle	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pancreas	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Skin	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Testes	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Thyroid	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EFFEC	0.000E+00	0.000E+00	0.000E+00	0.000E+00

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Stomach	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Colon	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Liver	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LUNG	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Bone	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Skin	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Breast	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ovary	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Bladder	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Kidneys	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Thyroid	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Leukemia	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Residual	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00

```
************************
*   NUCLIDE  Tl-208    *
************************
```

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
Adrenals	0.000E+00	0.000E+00	1.736E+10	2.947E+06
B Surfac	0.000E+00	0.000E+00	2.819E+10	4.544E+06
Breasts	0.000E+00	0.000E+00	2.237E+10	3.425E+06
St Wall	0.000E+00	0.000E+00	1.864E+10	3.204E+06
ULI Wall	0.000E+00	0.000E+00	1.771E+10	3.239E+06
Kidneys	0.000E+00	0.000E+00	1.864E+10	3.262E+06
Lungs	0.000E+00	0.000E+00	2.039E+10	3.355E+06
Ovaries	0.000E+00	0.000E+00	1.724E+10	3.169E+06
R Marrow	0.000E+00	0.000E+00	2.027E+10	3.448E+06
Spleen	0.000E+00	0.000E+00	1.887E+10	3.215E+06
Thymus	0.000E+00	0.000E+00	1.969E+10	3.262E+06
Uterus	0.000E+00	0.000E+00	1.713E+10	3.180E+06
Bld Wall	0.000E+00	0.000E+00	1.794E+10	3.507E+06
Brain	0.000E+00	0.000E+00	2.167E+10	3.169E+06
Esophagu	0.000E+00	0.000E+00	1.782E+10	2.936E+06
SI Wall	0.000E+00	0.000E+00	1.724E+10	3.215E+06
LLI Wall	0.000E+00	0.000E+00	1.747E+10	3.285E+06
Liver	0.000E+00	0.000E+00	1.876E+10	3.227E+06
Muscle	0.000E+00	0.000E+00	1.980E+10	3.565E+06
Pancreas	0.000E+00	0.000E+00	1.724E+10	3.087E+06
Skin	0.000E+00	0.000E+00	2.726E+10	1.138E+07
Testes	0.000E+00	0.000E+00	2.004E+10	3.600E+06
Thyroid	0.000E+00	0.000E+00	2.074E+10	3.204E+06
EFFEC	0.000E+00	0.000E+00	1.969E+10	3.460E+06

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
Esophagu	0.000E+00	0.000E+00	2.050E+01	3.378E-03
Stomach	0.000E+00	0.000E+00	7.526E+01	1.293E-02
Colon	0.000E+00	0.000E+00	1.817E+02	3.367E-02
Liver	0.000E+00	0.000E+00	2.843E+01	4.893E-03
LUNG	0.000E+00	0.000E+00	1.992E+02	3.285E-02
Bone	0.000E+00	0.000E+00	2.680E+00	4.310E-04
Skin	0.000E+00	0.000E+00	2.714E+00	1.136E-03
Breast	0.000E+00	0.000E+00	1.081E+02	1.654E-02
Ovary	0.000E+00	0.000E+00	2.458E+01	4.509E-03
Bladder	0.000E+00	0.000E+00	4.334E+01	8.481E-03
Kidneys	0.000E+00	0.000E+00	9.693E+00	1.701E-03
Thyroid	0.000E+00	0.000E+00	6.606E+00	1.021E-03
Leukemia	0.000E+00	0.000E+00	1.138E+02	1.934E-02
Residual	0.000E+00	0.000E+00	2.703E+02	4.765E-02
Total	0.000E+00	0.000E+00	1.087E+03	1.887E-01

C A P 8 8 - P C

Version 3.0

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 Population Assessment
Apr 22, 2014 12:09 pm

Facility: Clean Harbors Deer Trail
Address: 108555 East Highway 36
City: Deer Trail
State: CO Zip: 80105

Source Category: Secure Cell Disposal
Source Type: Area
Emission Year: 2013

Comments: 2013 Emmissions
2013 Emmissions

Dataset Name: CH2013
Dataset Date: 4/22/2014 11:54:00 AM
Wind File: C:\Program Files (x86)\CAP88-PC30\WindLib\23062.WND
Population File: C:\Users\kehoej1\Documents\Documents 020712\John Hackett Documents\CHDT Li

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
N	50	U-238	2.44E-05	4.40E-12	2.35E-14	4.42E-12
N	50	Th-234	2.44E-05	4.40E-12	2.35E-14	4.42E-12
N	50	Pa-234m	2.44E-05	4.39E-12	2.34E-14	4.41E-12
N	50	Pa-234	2.41E-05	4.33E-12	2.31E-14	4.36E-12
N	50	U-234	2.44E-05	4.40E-12	2.35E-14	4.42E-12
N	50	Th-230	2.44E-05	4.40E-12	2.35E-14	4.42E-12
N	50	Ra-226	2.12E-04	3.81E-11	2.04E-13	3.84E-11
N	50	Rn-222	2.14E-04	0.00E+00	0.00E+00	0.00E+00
N	50	Po-218	2.12E-04	3.81E-11	2.04E-13	3.84E-11
N	50	Pb-214	2.12E-04	3.81E-11	2.04E-13	3.84E-11
N	50	Bi-214	2.12E-04	3.81E-11	2.04E-13	3.84E-11
N	50	Po-214	2.12E-04	3.81E-11	2.04E-13	3.83E-11
N	50	Pb-210	2.06E-04	3.70E-11	1.98E-13	3.72E-11
N	50	Bi-210	2.06E-04	3.70E-11	1.98E-13	3.72E-11
N	50	Po-210	2.06E-04	3.70E-11	1.98E-13	3.72E-11
N	50	At-218	4.24E-08	7.63E-15	4.07E-17	7.67E-15
N	50	Th-232	6.23E-06	1.12E-12	5.99E-15	1.13E-12
N	50	Ra-228	9.39E-05	1.69E-11	9.03E-14	1.70E-11
N	50	Ac-228	9.39E-05	1.69E-11	9.03E-14	1.70E-11
N	50	Th-228	9.39E-05	1.69E-11	9.03E-14	1.70E-11
N	50	Ra-224	9.39E-05	1.69E-11	9.03E-14	1.70E-11
N	50	Rn-220	9.50E-05	0.00E+00	0.00E+00	0.00E+00
N	50	Po-216	9.39E-05	1.69E-11	9.03E-14	1.70E-11
N	50	Pb-212	9.39E-05	1.69E-11	9.03E-14	1.70E-11
N	50	Bi-212	9.39E-05	1.69E-11	9.03E-14	1.70E-11
N	50	Po-212	6.02E-05	1.08E-11	5.79E-14	1.09E-11
N	50	Tl-208	3.38E-05	6.08E-12	3.24E-14	6.11E-12
N	100	U-238	1.13E-05	2.03E-12	1.44E-14	2.05E-12
N	100	Th-234	1.13E-05	2.03E-12	1.44E-14	2.05E-12
N	100	Pa-234m	1.13E-05	2.03E-12	1.44E-14	2.04E-12
N	100	Pa-234	1.11E-05	2.00E-12	1.42E-14	2.02E-12
N	100	U-234	1.13E-05	2.03E-12	1.44E-14	2.05E-12
N	100	Th-230	1.13E-05	2.03E-12	1.44E-14	2.05E-12
N	100	Ra-226	9.80E-05	1.76E-11	1.25E-13	1.78E-11
N	100	Rn-222	1.01E-04	0.00E+00	0.00E+00	0.00E+00
N	100	Po-218	9.80E-05	1.76E-11	1.25E-13	1.78E-11
N	100	Pb-214	9.80E-05	1.76E-11	1.25E-13	1.78E-11
N	100	Bi-214	9.80E-05	1.76E-11	1.25E-13	1.78E-11
N	100	Po-214	9.79E-05	1.76E-11	1.25E-13	1.78E-11
N	100	Pb-210	9.51E-05	1.71E-11	1.21E-13	1.72E-11
N	100	Bi-210	9.51E-05	1.71E-11	1.21E-13	1.72E-11
N	100	Po-210	9.51E-05	1.71E-11	1.21E-13	1.72E-11
N	100	At-218	1.96E-08	3.53E-15	2.50E-17	3.55E-15
N	100	Th-232	2.88E-06	5.18E-13	3.67E-15	5.22E-13
N	100	Ra-228	4.34E-05	7.82E-12	5.54E-14	7.87E-12
N	100	Ac-228	4.34E-05	7.82E-12	5.54E-14	7.87E-12
N	100	Th-228	4.34E-05	7.82E-12	5.54E-14	7.87E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
N	100	Ra-224	4.34E-05	7.82E-12	5.54E-14	7.87E-12
N	100	Rn-220	4.49E-05	0.00E+00	0.00E+00	0.00E+00
N	100	Po-216	4.34E-05	7.82E-12	5.54E-14	7.87E-12
N	100	Pb-212	4.34E-05	7.82E-12	5.54E-14	7.87E-12
N	100	Bi-212	4.34E-05	7.82E-12	5.54E-14	7.87E-12
N	100	Po-212	2.78E-05	5.01E-12	3.55E-14	5.05E-12
N	100	Tl-208	1.56E-05	2.81E-12	1.99E-14	2.83E-12
N	150	U-238	5.57E-06	1.00E-12	9.47E-15	1.01E-12
N	150	Th-234	5.57E-06	1.00E-12	9.47E-15	1.01E-12
N	150	Pa-234m	5.56E-06	1.00E-12	9.45E-15	1.01E-12
N	150	Pa-234	5.49E-06	9.88E-13	9.34E-15	9.98E-13
N	150	U-234	5.57E-06	1.00E-12	9.47E-15	1.01E-12
N	150	Th-230	5.57E-06	1.00E-12	9.47E-15	1.01E-12
N	150	Ra-226	4.83E-05	8.70E-12	8.22E-14	8.78E-12
N	150	Rn-222	5.09E-05	0.00E+00	0.00E+00	0.00E+00
N	150	Po-218	4.83E-05	8.70E-12	8.22E-14	8.78E-12
N	150	Pb-214	4.83E-05	8.70E-12	8.22E-14	8.78E-12
N	150	Bi-214	4.83E-05	8.70E-12	8.22E-14	8.78E-12
N	150	Po-214	4.83E-05	8.70E-12	8.22E-14	8.78E-12
N	150	Pb-210	4.69E-05	8.44E-12	7.98E-14	8.52E-12
N	150	Bi-210	4.69E-05	8.44E-12	7.98E-14	8.52E-12
N	150	Po-210	4.69E-05	8.44E-12	7.98E-14	8.52E-12
N	150	At-218	9.66E-09	1.74E-15	1.64E-17	1.76E-15
N	150	Th-232	1.42E-06	2.56E-13	2.42E-15	2.58E-13
N	150	Ra-228	2.14E-05	3.86E-12	3.64E-14	3.89E-12
N	150	Ac-228	2.14E-05	3.86E-12	3.64E-14	3.89E-12
N	150	Th-228	2.14E-05	3.86E-12	3.64E-14	3.89E-12
N	150	Ra-224	2.14E-05	3.86E-12	3.64E-14	3.89E-12
N	150	Rn-220	2.25E-05	0.00E+00	0.00E+00	0.00E+00
N	150	Po-216	2.14E-05	3.86E-12	3.64E-14	3.89E-12
N	150	Pb-212	2.14E-05	3.86E-12	3.64E-14	3.89E-12
N	150	Bi-212	2.14E-05	3.86E-12	3.64E-14	3.89E-12
N	150	Po-212	1.37E-05	2.47E-12	2.34E-14	2.50E-12
N	150	Tl-208	7.70E-06	1.39E-12	1.31E-14	1.40E-12
N	250	U-238	2.17E-06	3.91E-13	5.59E-15	3.97E-13
N	250	Th-234	2.17E-06	3.91E-13	5.59E-15	3.97E-13
N	250	Pa-234m	2.17E-06	3.90E-13	5.58E-15	3.96E-13
N	250	Pa-234	2.14E-06	3.86E-13	5.51E-15	3.91E-13
N	250	U-234	2.17E-06	3.91E-13	5.59E-15	3.97E-13
N	250	Th-230	2.17E-06	3.91E-13	5.59E-15	3.97E-13
N	250	Ra-226	1.89E-05	3.39E-12	4.85E-14	3.44E-12
N	250	Rn-222	2.03E-05	0.00E+00	0.00E+00	0.00E+00
N	250	Po-218	1.89E-05	3.39E-12	4.85E-14	3.44E-12
N	250	Pb-214	1.89E-05	3.39E-12	4.85E-14	3.44E-12
N	250	Bi-214	1.89E-05	3.39E-12	4.85E-14	3.44E-12
N	250	Po-214	1.89E-05	3.39E-12	4.85E-14	3.44E-12
N	250	Pb-210	1.83E-05	3.29E-12	4.71E-14	3.34E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
N	250	Bi-210	1.83E-05	3.29E-12	4.71E-14	3.34E-12
N	250	Po-210	1.83E-05	3.29E-12	4.71E-14	3.34E-12
N	250	At-218	3.77E-09	6.79E-16	9.70E-18	6.88E-16
N	250	Th-232	5.54E-07	9.98E-14	1.43E-15	1.01E-13
N	250	Ra-228	8.36E-06	1.50E-12	2.15E-14	1.53E-12
N	250	Ac-228	8.36E-06	1.50E-12	2.15E-14	1.53E-12
N	250	Th-228	8.36E-06	1.50E-12	2.15E-14	1.53E-12
N	250	Ra-224	8.36E-06	1.50E-12	2.15E-14	1.53E-12
N	250	Rn-220	9.00E-06	0.00E+00	0.00E+00	0.00E+00
N	250	Po-216	8.36E-06	1.50E-12	2.15E-14	1.53E-12
N	250	Pb-212	8.36E-06	1.50E-12	2.15E-14	1.53E-12
N	250	Bi-212	8.36E-06	1.50E-12	2.15E-14	1.53E-12
N	250	Po-212	5.36E-06	9.64E-13	1.38E-14	9.78E-13
N	250	Tl-208	3.00E-06	5.41E-13	7.72E-15	5.48E-13
N	350	U-238	1.15E-06	2.07E-13	3.94E-15	2.11E-13
N	350	Th-234	1.15E-06	2.07E-13	3.94E-15	2.11E-13
N	350	Pa-234m	1.15E-06	2.06E-13	3.93E-15	2.10E-13
N	350	Pa-234	1.13E-06	2.04E-13	3.88E-15	2.08E-13
N	350	U-234	1.15E-06	2.07E-13	3.94E-15	2.11E-13
N	350	Th-230	1.15E-06	2.07E-13	3.94E-15	2.11E-13
N	350	Ra-226	9.97E-06	1.80E-12	3.42E-14	1.83E-12
N	350	Rn-222	1.09E-05	0.00E+00	0.00E+00	0.00E+00
N	350	Po-218	9.97E-06	1.80E-12	3.42E-14	1.83E-12
N	350	Pb-214	9.97E-06	1.80E-12	3.42E-14	1.83E-12
N	350	Bi-214	9.97E-06	1.80E-12	3.42E-14	1.83E-12
N	350	Po-214	9.97E-06	1.79E-12	3.42E-14	1.83E-12
N	350	Pb-210	9.68E-06	1.74E-12	3.32E-14	1.78E-12
N	350	Bi-210	9.68E-06	1.74E-12	3.32E-14	1.78E-12
N	350	Po-210	9.68E-06	1.74E-12	3.32E-14	1.78E-12
N	350	At-218	1.99E-09	3.59E-16	6.84E-18	3.66E-16
N	350	Th-232	2.93E-07	5.28E-14	1.00E-15	5.38E-14
N	350	Ra-228	4.42E-06	7.96E-13	1.52E-14	8.11E-13
N	350	Ac-228	4.42E-06	7.96E-13	1.52E-14	8.11E-13
N	350	Th-228	4.42E-06	7.96E-13	1.52E-14	8.11E-13
N	350	Ra-224	4.42E-06	7.96E-13	1.52E-14	8.11E-13
N	350	Rn-220	4.85E-06	0.00E+00	0.00E+00	0.00E+00
N	350	Po-216	4.42E-06	7.96E-13	1.52E-14	8.11E-13
N	350	Pb-212	4.42E-06	7.96E-13	1.52E-14	8.11E-13
N	350	Bi-212	4.42E-06	7.96E-13	1.52E-14	8.11E-13
N	350	Po-212	2.83E-06	5.10E-13	9.71E-15	5.20E-13
N	350	Tl-208	1.59E-06	2.86E-13	5.45E-15	2.91E-13
N	450	U-238	7.11E-07	1.28E-13	3.03E-15	1.31E-13
N	450	Th-234	7.11E-07	1.28E-13	3.03E-15	1.31E-13
N	450	Pa-234m	7.10E-07	1.28E-13	3.03E-15	1.31E-13
N	450	Pa-234	7.01E-07	1.26E-13	2.99E-15	1.29E-13
N	450	U-234	7.11E-07	1.28E-13	3.03E-15	1.31E-13
N	450	Th-230	7.11E-07	1.28E-13	3.03E-15	1.31E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
N	450	Ra-226	6.17E-06	1.11E-12	2.63E-14	1.14E-12
N	450	Rn-222	6.86E-06	0.00E+00	0.00E+00	0.00E+00
N	450	Po-218	6.17E-06	1.11E-12	2.63E-14	1.14E-12
N	450	Pb-214	6.17E-06	1.11E-12	2.63E-14	1.14E-12
N	450	Bi-214	6.17E-06	1.11E-12	2.63E-14	1.14E-12
N	450	Po-214	6.17E-06	1.11E-12	2.63E-14	1.14E-12
N	450	Pb-210	5.99E-06	1.08E-12	2.55E-14	1.10E-12
N	450	Bi-210	5.99E-06	1.08E-12	2.55E-14	1.10E-12
N	450	Po-210	5.99E-06	1.08E-12	2.55E-14	1.10E-12
N	450	At-218	1.23E-09	2.22E-16	5.26E-18	2.27E-16
N	450	Th-232	1.81E-07	3.26E-14	7.74E-16	3.34E-14
N	450	Ra-228	2.74E-06	4.92E-13	1.17E-14	5.04E-13
N	450	Ac-228	2.74E-06	4.92E-13	1.17E-14	5.04E-13
N	450	Th-228	2.74E-06	4.92E-13	1.17E-14	5.04E-13
N	450	Ra-224	2.74E-06	4.92E-13	1.17E-14	5.04E-13
N	450	Rn-220	3.04E-06	0.00E+00	0.00E+00	0.00E+00
N	450	Po-216	2.74E-06	4.92E-13	1.17E-14	5.04E-13
N	450	Pb-212	2.74E-06	4.92E-13	1.17E-14	5.04E-13
N	450	Bi-212	2.74E-06	4.92E-13	1.17E-14	5.04E-13
N	450	Po-212	1.75E-06	3.16E-13	7.48E-15	3.23E-13
N	450	Tl-208	9.83E-07	1.77E-13	4.19E-15	1.81E-13
N	750	U-238	2.66E-07	4.79E-14	1.78E-15	4.97E-14
N	750	Th-234	2.66E-07	4.79E-14	1.78E-15	4.97E-14
N	750	Pa-234m	2.66E-07	4.78E-14	1.78E-15	4.96E-14
N	750	Pa-234	2.63E-07	4.73E-14	1.76E-15	4.90E-14
N	750	U-234	2.66E-07	4.79E-14	1.78E-15	4.97E-14
N	750	Th-230	2.66E-07	4.79E-14	1.78E-15	4.97E-14
N	750	Ra-226	2.31E-06	4.16E-13	1.55E-14	4.31E-13
N	750	Rn-222	2.64E-06	0.00E+00	0.00E+00	0.00E+00
N	750	Po-218	2.31E-06	4.16E-13	1.55E-14	4.31E-13
N	750	Pb-214	2.31E-06	4.16E-13	1.55E-14	4.31E-13
N	750	Bi-214	2.31E-06	4.16E-13	1.55E-14	4.31E-13
N	750	Po-214	2.31E-06	4.16E-13	1.55E-14	4.31E-13
N	750	Pb-210	2.24E-06	4.04E-13	1.50E-14	4.19E-13
N	750	Bi-210	2.24E-06	4.04E-13	1.50E-14	4.19E-13
N	750	Po-210	2.24E-06	4.04E-13	1.50E-14	4.19E-13
N	750	At-218	4.62E-10	8.32E-17	3.09E-18	8.63E-17
N	750	Th-232	6.79E-08	1.22E-14	4.54E-16	1.27E-14
N	750	Ra-228	1.02E-06	1.84E-13	6.86E-15	1.91E-13
N	750	Ac-228	1.02E-06	1.84E-13	6.86E-15	1.91E-13
N	750	Th-228	1.02E-06	1.84E-13	6.86E-15	1.91E-13
N	750	Ra-224	1.02E-06	1.84E-13	6.86E-15	1.91E-13
N	750	Rn-220	1.17E-06	0.00E+00	0.00E+00	0.00E+00
N	750	Po-216	1.02E-06	1.84E-13	6.86E-15	1.91E-13
N	750	Pb-212	1.02E-06	1.84E-13	6.86E-15	1.91E-13
N	750	Bi-212	1.02E-06	1.84E-13	6.86E-15	1.91E-13
N	750	Po-212	6.57E-07	1.18E-13	4.39E-15	1.23E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
N	750	Tl-208	3.68E-07	6.63E-14	2.46E-15	6.87E-14
N	1500	U-238	7.62E-08	1.37E-14	8.63E-16	1.46E-14
N	1500	Th-234	7.62E-08	1.37E-14	8.63E-16	1.46E-14
N	1500	Pa-234m	7.60E-08	1.37E-14	8.61E-16	1.45E-14
N	1500	Pa-234	7.51E-08	1.35E-14	8.51E-16	1.44E-14
N	1500	U-234	7.62E-08	1.37E-14	8.63E-16	1.46E-14
N	1500	Th-230	7.62E-08	1.37E-14	8.63E-16	1.46E-14
N	1500	Ra-226	6.61E-07	1.19E-13	7.49E-15	1.26E-13
N	1500	Rn-222	7.91E-07	0.00E+00	0.00E+00	0.00E+00
N	1500	Po-218	6.61E-07	1.19E-13	7.49E-15	1.26E-13
N	1500	Pb-214	6.61E-07	1.19E-13	7.49E-15	1.26E-13
N	1500	Bi-214	6.61E-07	1.19E-13	7.49E-15	1.26E-13
N	1500	Po-214	6.61E-07	1.19E-13	7.49E-15	1.26E-13
N	1500	Pb-210	6.41E-07	1.15E-13	7.27E-15	1.23E-13
N	1500	Bi-210	6.41E-07	1.15E-13	7.27E-15	1.23E-13
N	1500	Po-210	6.41E-07	1.15E-13	7.27E-15	1.23E-13
N	1500	At-218	1.32E-10	2.38E-17	1.50E-18	2.53E-17
N	1500	Th-232	1.94E-08	3.50E-15	2.20E-16	3.72E-15
N	1500	Ra-228	2.93E-07	5.27E-14	3.32E-15	5.61E-14
N	1500	Ac-228	2.93E-07	5.27E-14	3.32E-15	5.61E-14
N	1500	Th-228	2.93E-07	5.27E-14	3.32E-15	5.61E-14
N	1500	Ra-224	2.93E-07	5.27E-14	3.32E-15	5.61E-14
N	1500	Rn-220	3.51E-07	0.00E+00	0.00E+00	0.00E+00
N	1500	Po-216	2.93E-07	5.27E-14	3.32E-15	5.61E-14
N	1500	Pb-212	2.93E-07	5.27E-14	3.32E-15	5.61E-14
N	1500	Bi-212	2.93E-07	5.27E-14	3.32E-15	5.61E-14
N	1500	Po-212	1.88E-07	3.38E-14	2.13E-15	3.59E-14
N	1500	Tl-208	1.05E-07	1.90E-14	1.19E-15	2.01E-14
N	2500	U-238	3.18E-08	5.72E-15	5.05E-16	6.23E-15
N	2500	Th-234	3.18E-08	5.72E-15	5.05E-16	6.23E-15
N	2500	Pa-234m	3.17E-08	5.71E-15	5.04E-16	6.21E-15
N	2500	Pa-234	3.13E-08	5.64E-15	4.98E-16	6.14E-15
N	2500	U-234	3.18E-08	5.72E-15	5.05E-16	6.23E-15
N	2500	Th-230	3.18E-08	5.72E-15	5.05E-16	6.23E-15
N	2500	Ra-226	2.76E-07	4.97E-14	4.38E-15	5.40E-14
N	2500	Rn-222	3.42E-07	0.00E+00	0.00E+00	0.00E+00
N	2500	Po-218	2.76E-07	4.97E-14	4.38E-15	5.40E-14
N	2500	Pb-214	2.76E-07	4.97E-14	4.38E-15	5.40E-14
N	2500	Bi-214	2.76E-07	4.97E-14	4.38E-15	5.40E-14
N	2500	Po-214	2.76E-07	4.96E-14	4.38E-15	5.40E-14
N	2500	Pb-210	2.68E-07	4.82E-14	4.25E-15	5.24E-14
N	2500	Bi-210	2.68E-07	4.82E-14	4.25E-15	5.24E-14
N	2500	Po-210	2.68E-07	4.82E-14	4.25E-15	5.24E-14
N	2500	At-218	5.52E-11	9.93E-18	8.76E-19	1.08E-17
N	2500	Th-232	8.11E-09	1.46E-15	1.29E-16	1.59E-15
N	2500	Ra-228	1.22E-07	2.20E-14	1.94E-15	2.40E-14
N	2500	Ac-228	1.22E-07	2.20E-14	1.94E-15	2.40E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
N	2500	Th-228	1.22E-07	2.20E-14	1.94E-15	2.40E-14
N	2500	Ra-224	1.22E-07	2.20E-14	1.94E-15	2.40E-14
N	2500	Rn-220	1.52E-07	0.00E+00	0.00E+00	0.00E+00
N	2500	Po-216	1.22E-07	2.20E-14	1.94E-15	2.40E-14
N	2500	Pb-212	1.22E-07	2.20E-14	1.94E-15	2.40E-14
N	2500	Bi-212	1.22E-07	2.20E-14	1.94E-15	2.40E-14
N	2500	Po-212	7.84E-08	1.41E-14	1.25E-15	1.54E-14
N	2500	Tl-208	4.39E-08	7.91E-15	6.98E-16	8.61E-15
N	3500	U-238	1.85E-08	3.33E-15	3.53E-16	3.68E-15
N	3500	Th-234	1.85E-08	3.33E-15	3.53E-16	3.68E-15
N	3500	Pa-234m	1.84E-08	3.32E-15	3.52E-16	3.67E-15
N	3500	Pa-234	1.82E-08	3.28E-15	3.48E-16	3.63E-15
N	3500	U-234	1.85E-08	3.33E-15	3.53E-16	3.68E-15
N	3500	Th-230	1.85E-08	3.33E-15	3.53E-16	3.68E-15
N	3500	Ra-226	1.60E-07	2.89E-14	3.06E-15	3.19E-14
N	3500	Rn-222	2.06E-07	0.00E+00	0.00E+00	0.00E+00
N	3500	Po-218	1.60E-07	2.89E-14	3.06E-15	3.19E-14
N	3500	Pb-214	1.60E-07	2.89E-14	3.06E-15	3.19E-14
N	3500	Bi-214	1.60E-07	2.89E-14	3.06E-15	3.19E-14
N	3500	Po-214	1.60E-07	2.89E-14	3.06E-15	3.19E-14
N	3500	Pb-210	1.56E-07	2.80E-14	2.97E-15	3.10E-14
N	3500	Bi-210	1.56E-07	2.80E-14	2.97E-15	3.10E-14
N	3500	Po-210	1.56E-07	2.80E-14	2.97E-15	3.10E-14
N	3500	At-218	3.21E-11	5.77E-18	6.12E-19	6.38E-18
N	3500	Th-232	4.71E-09	8.48E-16	8.99E-17	9.38E-16
N	3500	Ra-228	7.11E-08	1.28E-14	1.36E-15	1.42E-14
N	3500	Ac-228	7.11E-08	1.28E-14	1.36E-15	1.42E-14
N	3500	Th-228	7.11E-08	1.28E-14	1.36E-15	1.42E-14
N	3500	Ra-224	7.11E-08	1.28E-14	1.36E-15	1.42E-14
N	3500	Rn-220	9.12E-08	0.00E+00	0.00E+00	0.00E+00
N	3500	Po-216	7.11E-08	1.28E-14	1.36E-15	1.42E-14
N	3500	Pb-212	7.11E-08	1.28E-14	1.36E-15	1.42E-14
N	3500	Bi-212	7.11E-08	1.28E-14	1.36E-15	1.42E-14
N	3500	Po-212	4.56E-08	8.20E-15	8.70E-16	9.07E-15
N	3500	Tl-208	2.55E-08	4.60E-15	4.87E-16	5.09E-15
N	4500	U-238	1.26E-08	2.27E-15	2.69E-16	2.54E-15
N	4500	Th-234	1.26E-08	2.27E-15	2.69E-16	2.54E-15
N	4500	Pa-234m	1.26E-08	2.27E-15	2.68E-16	2.53E-15
N	4500	Pa-234	1.24E-08	2.24E-15	2.65E-16	2.50E-15
N	4500	U-234	1.26E-08	2.27E-15	2.69E-16	2.54E-15
N	4500	Th-230	1.26E-08	2.27E-15	2.69E-16	2.54E-15
N	4500	Ra-226	1.09E-07	1.97E-14	2.33E-15	2.20E-14
N	4500	Rn-222	1.45E-07	0.00E+00	0.00E+00	0.00E+00
N	4500	Po-218	1.09E-07	1.97E-14	2.33E-15	2.20E-14
N	4500	Pb-214	1.09E-07	1.97E-14	2.33E-15	2.20E-14
N	4500	Bi-214	1.09E-07	1.97E-14	2.33E-15	2.20E-14
N	4500	Po-214	1.09E-07	1.97E-14	2.33E-15	2.20E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
N	4500	Pb-210	1.06E-07	1.91E-14	2.26E-15	2.14E-14
N	4500	Bi-210	1.06E-07	1.91E-14	2.26E-15	2.14E-14
N	4500	Po-210	1.06E-07	1.91E-14	2.26E-15	2.14E-14
N	4500	At-218	2.19E-11	3.94E-18	4.66E-19	4.40E-18
N	4500	Th-232	3.22E-09	5.79E-16	6.85E-17	6.47E-16
N	4500	Ra-228	4.85E-08	8.73E-15	1.03E-15	9.77E-15
N	4500	Ac-228	4.85E-08	8.73E-15	1.03E-15	9.77E-15
N	4500	Th-228	4.85E-08	8.73E-15	1.03E-15	9.77E-15
N	4500	Ra-224	4.85E-08	8.73E-15	1.03E-15	9.77E-15
N	4500	Rn-220	6.42E-08	0.00E+00	0.00E+00	0.00E+00
N	4500	Po-216	4.85E-08	8.73E-15	1.03E-15	9.77E-15
N	4500	Pb-212	4.85E-08	8.73E-15	1.03E-15	9.77E-15
N	4500	Bi-212	4.85E-08	8.73E-15	1.03E-15	9.77E-15
N	4500	Po-212	3.11E-08	5.60E-15	6.62E-16	6.26E-15
N	4500	Tl-208	1.74E-08	3.14E-15	3.71E-16	3.51E-15
N	5500	U-238	9.31E-09	1.68E-15	2.16E-16	1.89E-15
N	5500	Th-234	9.31E-09	1.68E-15	2.16E-16	1.89E-15
N	5500	Pa-234m	9.29E-09	1.67E-15	2.16E-16	1.89E-15
N	5500	Pa-234	9.18E-09	1.65E-15	2.13E-16	1.87E-15
N	5500	U-234	9.31E-09	1.68E-15	2.16E-16	1.89E-15
N	5500	Th-230	9.31E-09	1.68E-15	2.16E-16	1.89E-15
N	5500	Ra-226	8.08E-08	1.45E-14	1.88E-15	1.64E-14
N	5500	Rn-222	1.09E-07	0.00E+00	0.00E+00	0.00E+00
N	5500	Po-218	8.08E-08	1.45E-14	1.88E-15	1.64E-14
N	5500	Pb-214	8.08E-08	1.45E-14	1.88E-15	1.64E-14
N	5500	Bi-214	8.08E-08	1.45E-14	1.88E-15	1.64E-14
N	5500	Po-214	8.08E-08	1.45E-14	1.88E-15	1.64E-14
N	5500	Pb-210	7.84E-08	1.41E-14	1.82E-15	1.59E-14
N	5500	Bi-210	7.84E-08	1.41E-14	1.82E-15	1.59E-14
N	5500	Po-210	7.84E-08	1.41E-14	1.82E-15	1.59E-14
N	5500	At-218	1.61E-11	2.91E-18	3.75E-19	3.28E-18
N	5500	Th-232	2.37E-09	4.27E-16	5.52E-17	4.82E-16
N	5500	Ra-228	3.58E-08	6.45E-15	8.33E-16	7.28E-15
N	5500	Ac-228	3.58E-08	6.45E-15	8.33E-16	7.28E-15
N	5500	Th-228	3.58E-08	6.45E-15	8.33E-16	7.28E-15
N	5500	Ra-224	3.58E-08	6.45E-15	8.33E-16	7.28E-15
N	5500	Rn-220	4.85E-08	0.00E+00	0.00E+00	0.00E+00
N	5500	Po-216	3.58E-08	6.45E-15	8.33E-16	7.28E-15
N	5500	Pb-212	3.58E-08	6.45E-15	8.33E-16	7.28E-15
N	5500	Bi-212	3.58E-08	6.45E-15	8.33E-16	7.28E-15
N	5500	Po-212	2.29E-08	4.13E-15	5.34E-16	4.66E-15
N	5500	Tl-208	1.29E-08	2.32E-15	2.99E-16	2.62E-15
N	7000	U-238	6.35E-09	1.14E-15	1.65E-16	1.31E-15
N	7000	Th-234	6.35E-09	1.14E-15	1.65E-16	1.31E-15
N	7000	Pa-234m	6.34E-09	1.14E-15	1.65E-16	1.31E-15
N	7000	Pa-234	6.26E-09	1.13E-15	1.63E-16	1.29E-15
N	7000	U-234	6.35E-09	1.14E-15	1.65E-16	1.31E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
N	7000	Th-230	6.35E-09	1.14E-15	1.65E-16	1.31E-15
N	7000	Ra-226	5.51E-08	9.92E-15	1.43E-15	1.14E-14
N	7000	Rn-222	7.82E-08	0.00E+00	0.00E+00	0.00E+00
N	7000	Po-218	5.51E-08	9.92E-15	1.43E-15	1.14E-14
N	7000	Pb-214	5.51E-08	9.92E-15	1.43E-15	1.14E-14
N	7000	Bi-214	5.51E-08	9.92E-15	1.43E-15	1.14E-14
N	7000	Po-214	5.51E-08	9.92E-15	1.43E-15	1.13E-14
N	7000	Pb-210	5.35E-08	9.63E-15	1.39E-15	1.10E-14
N	7000	Bi-210	5.35E-08	9.63E-15	1.39E-15	1.10E-14
N	7000	Po-210	5.35E-08	9.63E-15	1.39E-15	1.10E-14
N	7000	At-218	1.10E-11	1.98E-18	2.86E-19	2.27E-18
N	7000	Th-232	1.62E-09	2.91E-16	4.21E-17	3.34E-16
N	7000	Ra-228	2.44E-08	4.40E-15	6.35E-16	5.03E-15
N	7000	Ac-228	2.44E-08	4.40E-15	6.35E-16	5.03E-15
N	7000	Th-228	2.44E-08	4.40E-15	6.35E-16	5.03E-15
N	7000	Ra-224	2.44E-08	4.40E-15	6.35E-16	5.03E-15
N	7000	Rn-220	3.47E-08	0.00E+00	0.00E+00	0.00E+00
N	7000	Po-216	2.44E-08	4.40E-15	6.35E-16	5.03E-15
N	7000	Pb-212	2.44E-08	4.40E-15	6.35E-16	5.03E-15
N	7000	Bi-212	2.44E-08	4.40E-15	6.35E-16	5.03E-15
N	7000	Po-212	1.57E-08	2.82E-15	4.07E-16	3.22E-15
N	7000	Tl-208	8.78E-09	1.58E-15	2.28E-16	1.81E-15
NNW	50	U-238	1.59E-05	2.87E-12	1.55E-14	2.88E-12
NNW	50	Th-234	1.59E-05	2.87E-12	1.55E-14	2.88E-12
NNW	50	Pa-234m	1.59E-05	2.86E-12	1.55E-14	2.88E-12
NNW	50	Pa-234	1.57E-05	2.83E-12	1.53E-14	2.84E-12
NNW	50	U-234	1.59E-05	2.87E-12	1.55E-14	2.88E-12
NNW	50	Th-230	1.59E-05	2.87E-12	1.55E-14	2.88E-12
NNW	50	Ra-226	1.38E-04	2.49E-11	1.34E-13	2.50E-11
NNW	50	Rn-222	1.40E-04	0.00E+00	0.00E+00	0.00E+00
NNW	50	Po-218	1.38E-04	2.49E-11	1.34E-13	2.50E-11
NNW	50	Pb-214	1.38E-04	2.49E-11	1.34E-13	2.50E-11
NNW	50	Bi-214	1.38E-04	2.49E-11	1.34E-13	2.50E-11
NNW	50	Po-214	1.38E-04	2.49E-11	1.34E-13	2.50E-11
NNW	50	Pb-210	1.34E-04	2.41E-11	1.30E-13	2.43E-11
NNW	50	Bi-210	1.34E-04	2.41E-11	1.30E-13	2.43E-11
NNW	50	Po-210	1.34E-04	2.41E-11	1.30E-13	2.43E-11
NNW	50	At-218	2.76E-08	4.97E-15	2.69E-17	5.00E-15
NNW	50	Th-232	4.06E-06	7.31E-13	3.95E-15	7.35E-13
NNW	50	Ra-228	6.13E-05	1.10E-11	5.96E-14	1.11E-11
NNW	50	Ac-228	6.13E-05	1.10E-11	5.96E-14	1.11E-11
NNW	50	Th-228	6.13E-05	1.10E-11	5.96E-14	1.11E-11
NNW	50	Ra-224	6.13E-05	1.10E-11	5.96E-14	1.11E-11
NNW	50	Rn-220	6.20E-05	0.00E+00	0.00E+00	0.00E+00
NNW	50	Po-216	6.13E-05	1.10E-11	5.96E-14	1.11E-11
NNW	50	Pb-212	6.13E-05	1.10E-11	5.96E-14	1.11E-11
NNW	50	Bi-212	6.13E-05	1.10E-11	5.96E-14	1.11E-11

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NNW	50	Po-212	3.93E-05	7.07E-12	3.82E-14	7.11E-12
NNW	50	Tl-208	2.20E-05	3.96E-12	2.14E-14	3.98E-12
NNW	100	U-238	4.69E-06	8.45E-13	6.06E-15	8.51E-13
NNW	100	Th-234	4.69E-06	8.45E-13	6.06E-15	8.51E-13
NNW	100	Pa-234m	4.68E-06	8.43E-13	6.05E-15	8.49E-13
NNW	100	Pa-234	4.63E-06	8.33E-13	5.97E-15	8.39E-13
NNW	100	U-234	4.69E-06	8.45E-13	6.06E-15	8.51E-13
NNW	100	Th-230	4.69E-06	8.45E-13	6.06E-15	8.51E-13
NNW	100	Ra-226	4.07E-05	7.33E-12	5.26E-14	7.38E-12
NNW	100	Rn-222	4.23E-05	0.00E+00	0.00E+00	0.00E+00
NNW	100	Po-218	4.07E-05	7.33E-12	5.26E-14	7.38E-12
NNW	100	Pb-214	4.07E-05	7.33E-12	5.26E-14	7.38E-12
NNW	100	Bi-214	4.07E-05	7.33E-12	5.26E-14	7.38E-12
NNW	100	Po-214	4.07E-05	7.33E-12	5.26E-14	7.38E-12
NNW	100	Pb-210	3.95E-05	7.11E-12	5.10E-14	7.16E-12
NNW	100	Bi-210	3.95E-05	7.11E-12	5.10E-14	7.16E-12
NNW	100	Po-210	3.95E-05	7.11E-12	5.10E-14	7.16E-12
NNW	100	At-218	8.14E-09	1.47E-15	1.05E-17	1.48E-15
NNW	100	Th-232	1.20E-06	2.15E-13	1.54E-15	2.17E-13
NNW	100	Ra-228	1.81E-05	3.25E-12	2.33E-14	3.27E-12
NNW	100	Ac-228	1.81E-05	3.25E-12	2.33E-14	3.27E-12
NNW	100	Th-228	1.81E-05	3.25E-12	2.33E-14	3.27E-12
NNW	100	Ra-224	1.81E-05	3.25E-12	2.33E-14	3.27E-12
NNW	100	Rn-220	1.87E-05	0.00E+00	0.00E+00	0.00E+00
NNW	100	Po-216	1.81E-05	3.25E-12	2.33E-14	3.27E-12
NNW	100	Pb-212	1.81E-05	3.25E-12	2.33E-14	3.27E-12
NNW	100	Bi-212	1.81E-05	3.25E-12	2.33E-14	3.27E-12
NNW	100	Po-212	1.16E-05	2.08E-12	1.49E-14	2.10E-12
NNW	100	Tl-208	6.49E-06	1.17E-12	8.37E-15	1.18E-12
NNW	150	U-238	2.31E-06	4.16E-13	3.98E-15	4.20E-13
NNW	150	Th-234	2.31E-06	4.16E-13	3.98E-15	4.20E-13
NNW	150	Pa-234m	2.31E-06	4.16E-13	3.97E-15	4.20E-13
NNW	150	Pa-234	2.28E-06	4.10E-13	3.93E-15	4.14E-13
NNW	150	U-234	2.31E-06	4.16E-13	3.98E-15	4.20E-13
NNW	150	Th-230	2.31E-06	4.16E-13	3.98E-15	4.20E-13
NNW	150	Ra-226	2.01E-05	3.61E-12	3.46E-14	3.65E-12
NNW	150	Rn-222	2.12E-05	0.00E+00	0.00E+00	0.00E+00
NNW	150	Po-218	2.01E-05	3.61E-12	3.46E-14	3.65E-12
NNW	150	Pb-214	2.01E-05	3.61E-12	3.46E-14	3.65E-12
NNW	150	Bi-214	2.01E-05	3.61E-12	3.46E-14	3.65E-12
NNW	150	Po-214	2.01E-05	3.61E-12	3.46E-14	3.65E-12
NNW	150	Pb-210	1.95E-05	3.51E-12	3.35E-14	3.54E-12
NNW	150	Bi-210	1.95E-05	3.51E-12	3.35E-14	3.54E-12
NNW	150	Po-210	1.95E-05	3.51E-12	3.35E-14	3.54E-12
NNW	150	At-218	4.01E-09	7.22E-16	6.91E-18	7.29E-16
NNW	150	Th-232	5.90E-07	1.06E-13	1.02E-15	1.07E-13
NNW	150	Ra-228	8.90E-06	1.60E-12	1.53E-14	1.62E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NNW	150	Ac-228	8.90E-06	1.60E-12	1.53E-14	1.62E-12
NNW	150	Th-228	8.90E-06	1.60E-12	1.53E-14	1.62E-12
NNW	150	Ra-224	8.90E-06	1.60E-12	1.53E-14	1.62E-12
NNW	150	Rn-220	9.42E-06	0.00E+00	0.00E+00	0.00E+00
NNW	150	Po-216	8.90E-06	1.60E-12	1.53E-14	1.62E-12
NNW	150	Pb-212	8.90E-06	1.60E-12	1.53E-14	1.62E-12
NNW	150	Bi-212	8.90E-06	1.60E-12	1.53E-14	1.62E-12
NNW	150	Po-212	5.70E-06	1.03E-12	9.82E-15	1.04E-12
NNW	150	Tl-208	3.20E-06	5.76E-13	5.50E-15	5.81E-13
NNW	250	U-238	9.00E-07	1.62E-13	2.35E-15	1.64E-13
NNW	250	Th-234	9.00E-07	1.62E-13	2.35E-15	1.64E-13
NNW	250	Pa-234m	8.99E-07	1.62E-13	2.34E-15	1.64E-13
NNW	250	Pa-234	8.88E-07	1.60E-13	2.31E-15	1.62E-13
NNW	250	U-234	9.00E-07	1.62E-13	2.35E-15	1.64E-13
NNW	250	Th-230	9.00E-07	1.62E-13	2.35E-15	1.64E-13
NNW	250	Ra-226	7.81E-06	1.41E-12	2.04E-14	1.43E-12
NNW	250	Rn-222	8.49E-06	0.00E+00	0.00E+00	0.00E+00
NNW	250	Po-218	7.81E-06	1.41E-12	2.04E-14	1.43E-12
NNW	250	Pb-214	7.81E-06	1.41E-12	2.04E-14	1.43E-12
NNW	250	Bi-214	7.81E-06	1.41E-12	2.04E-14	1.43E-12
NNW	250	Po-214	7.81E-06	1.41E-12	2.04E-14	1.43E-12
NNW	250	Pb-210	7.58E-06	1.36E-12	1.98E-14	1.38E-12
NNW	250	Bi-210	7.58E-06	1.36E-12	1.98E-14	1.38E-12
NNW	250	Po-210	7.58E-06	1.36E-12	1.98E-14	1.38E-12
NNW	250	At-218	1.56E-09	2.81E-16	4.07E-18	2.85E-16
NNW	250	Th-232	2.30E-07	4.13E-14	5.98E-16	4.19E-14
NNW	250	Ra-228	3.46E-06	6.23E-13	9.02E-15	6.33E-13
NNW	250	Ac-228	3.46E-06	6.23E-13	9.02E-15	6.33E-13
NNW	250	Th-228	3.46E-06	6.23E-13	9.02E-15	6.33E-13
NNW	250	Ra-224	3.46E-06	6.23E-13	9.02E-15	6.33E-13
NNW	250	Rn-220	3.76E-06	0.00E+00	0.00E+00	0.00E+00
NNW	250	Po-216	3.46E-06	6.23E-13	9.02E-15	6.33E-13
NNW	250	Pb-212	3.46E-06	6.23E-13	9.02E-15	6.33E-13
NNW	250	Bi-212	3.46E-06	6.23E-13	9.02E-15	6.33E-13
NNW	250	Po-212	2.22E-06	4.00E-13	5.78E-15	4.05E-13
NNW	250	Tl-208	1.24E-06	2.24E-13	3.24E-15	2.27E-13
NNW	350	U-238	4.75E-07	8.55E-14	1.65E-15	8.72E-14
NNW	350	Th-234	4.75E-07	8.55E-14	1.65E-15	8.72E-14
NNW	350	Pa-234m	4.74E-07	8.54E-14	1.65E-15	8.70E-14
NNW	350	Pa-234	4.68E-07	8.43E-14	1.63E-15	8.59E-14
NNW	350	U-234	4.75E-07	8.55E-14	1.65E-15	8.72E-14
NNW	350	Th-230	4.75E-07	8.55E-14	1.65E-15	8.72E-14
NNW	350	Ra-226	4.12E-06	7.42E-13	1.43E-14	7.57E-13
NNW	350	Rn-222	4.57E-06	0.00E+00	0.00E+00	0.00E+00
NNW	350	Po-218	4.12E-06	7.42E-13	1.43E-14	7.57E-13
NNW	350	Pb-214	4.12E-06	7.42E-13	1.43E-14	7.57E-13
NNW	350	Bi-214	4.12E-06	7.42E-13	1.43E-14	7.57E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NNW	350	Po-214	4.12E-06	7.42E-13	1.43E-14	7.56E-13
NNW	350	Pb-210	4.00E-06	7.20E-13	1.39E-14	7.34E-13
NNW	350	Bi-210	4.00E-06	7.20E-13	1.39E-14	7.34E-13
NNW	350	Po-210	4.00E-06	7.20E-13	1.39E-14	7.34E-13
NNW	350	At-218	8.24E-10	1.48E-16	2.87E-18	1.51E-16
NNW	350	Th-232	1.21E-07	2.18E-14	4.21E-16	2.22E-14
NNW	350	Ra-228	1.83E-06	3.29E-13	6.35E-15	3.35E-13
NNW	350	Ac-228	1.83E-06	3.29E-13	6.35E-15	3.35E-13
NNW	350	Th-228	1.83E-06	3.29E-13	6.35E-15	3.35E-13
NNW	350	Ra-224	1.83E-06	3.29E-13	6.35E-15	3.35E-13
NNW	350	Rn-220	2.03E-06	0.00E+00	0.00E+00	0.00E+00
NNW	350	Po-216	1.83E-06	3.29E-13	6.35E-15	3.35E-13
NNW	350	Pb-212	1.83E-06	3.29E-13	6.35E-15	3.35E-13
NNW	350	Bi-212	1.83E-06	3.29E-13	6.35E-15	3.35E-13
NNW	350	Po-212	1.17E-06	2.11E-13	4.07E-15	2.15E-13
NNW	350	Tl-208	6.57E-07	1.18E-13	2.28E-15	1.20E-13
NNW	450	U-238	2.93E-07	5.28E-14	1.27E-15	5.41E-14
NNW	450	Th-234	2.93E-07	5.28E-14	1.27E-15	5.41E-14
NNW	450	Pa-234m	2.93E-07	5.27E-14	1.27E-15	5.40E-14
NNW	450	Pa-234	2.89E-07	5.21E-14	1.25E-15	5.33E-14
NNW	450	U-234	2.93E-07	5.28E-14	1.27E-15	5.41E-14
NNW	450	Th-230	2.93E-07	5.28E-14	1.27E-15	5.41E-14
NNW	450	Ra-226	2.55E-06	4.58E-13	1.10E-14	4.69E-13
NNW	450	Rn-222	2.87E-06	0.00E+00	0.00E+00	0.00E+00
NNW	450	Po-218	2.55E-06	4.58E-13	1.10E-14	4.69E-13
NNW	450	Pb-214	2.55E-06	4.58E-13	1.10E-14	4.69E-13
NNW	450	Bi-214	2.55E-06	4.58E-13	1.10E-14	4.69E-13
NNW	450	Po-214	2.55E-06	4.58E-13	1.10E-14	4.69E-13
NNW	450	Pb-210	2.47E-06	4.45E-13	1.07E-14	4.56E-13
NNW	450	Bi-210	2.47E-06	4.45E-13	1.07E-14	4.56E-13
NNW	450	Po-210	2.47E-06	4.45E-13	1.07E-14	4.56E-13
NNW	450	At-218	5.09E-10	9.16E-17	2.20E-18	9.38E-17
NNW	450	Th-232	7.48E-08	1.35E-14	3.24E-16	1.38E-14
NNW	450	Ra-228	1.13E-06	2.03E-13	4.89E-15	2.08E-13
NNW	450	Ac-228	1.13E-06	2.03E-13	4.89E-15	2.08E-13
NNW	450	Th-228	1.13E-06	2.03E-13	4.89E-15	2.08E-13
NNW	450	Ra-224	1.13E-06	2.03E-13	4.89E-15	2.08E-13
NNW	450	Rn-220	1.27E-06	0.00E+00	0.00E+00	0.00E+00
NNW	450	Po-216	1.13E-06	2.03E-13	4.89E-15	2.08E-13
NNW	450	Pb-212	1.13E-06	2.03E-13	4.89E-15	2.08E-13
NNW	450	Bi-212	1.13E-06	2.03E-13	4.89E-15	2.08E-13
NNW	450	Po-212	7.24E-07	1.30E-13	3.13E-15	1.33E-13
NNW	450	Tl-208	4.06E-07	7.30E-14	1.76E-15	7.48E-14
NNW	750	U-238	1.09E-07	1.97E-14	7.45E-16	2.05E-14
NNW	750	Th-234	1.09E-07	1.97E-14	7.45E-16	2.05E-14
NNW	750	Pa-234m	1.09E-07	1.97E-14	7.43E-16	2.04E-14
NNW	750	Pa-234	1.08E-07	1.94E-14	7.34E-16	2.02E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NNW	750	U-234	1.09E-07	1.97E-14	7.45E-16	2.05E-14
NNW	750	Th-230	1.09E-07	1.97E-14	7.45E-16	2.05E-14
NNW	750	Ra-226	9.50E-07	1.71E-13	6.46E-15	1.77E-13
NNW	750	Rn-222	1.10E-06	0.00E+00	0.00E+00	0.00E+00
NNW	750	Po-218	9.50E-07	1.71E-13	6.46E-15	1.77E-13
NNW	750	Pb-214	9.50E-07	1.71E-13	6.46E-15	1.77E-13
NNW	750	Bi-214	9.50E-07	1.71E-13	6.46E-15	1.77E-13
NNW	750	Po-214	9.50E-07	1.71E-13	6.46E-15	1.77E-13
NNW	750	Pb-210	9.22E-07	1.66E-13	6.27E-15	1.72E-13
NNW	750	Bi-210	9.22E-07	1.66E-13	6.27E-15	1.72E-13
NNW	750	Po-210	9.22E-07	1.66E-13	6.27E-15	1.72E-13
NNW	750	At-218	1.90E-10	3.42E-17	1.29E-18	3.55E-17
NNW	750	Th-232	2.79E-08	5.02E-15	1.90E-16	5.21E-15
NNW	750	Ra-228	4.21E-07	7.58E-14	2.87E-15	7.87E-14
NNW	750	Ac-228	4.21E-07	7.58E-14	2.87E-15	7.87E-14
NNW	750	Th-228	4.21E-07	7.58E-14	2.87E-15	7.87E-14
NNW	750	Ra-224	4.21E-07	7.58E-14	2.87E-15	7.87E-14
NNW	750	Rn-220	4.90E-07	0.00E+00	0.00E+00	0.00E+00
NNW	750	Po-216	4.21E-07	7.58E-14	2.87E-15	7.87E-14
NNW	750	Pb-212	4.21E-07	7.58E-14	2.87E-15	7.87E-14
NNW	750	Bi-212	4.21E-07	7.58E-14	2.87E-15	7.87E-14
NNW	750	Po-212	2.70E-07	4.86E-14	1.84E-15	5.04E-14
NNW	750	Tl-208	1.51E-07	2.72E-14	1.03E-15	2.83E-14
NNW	1500	U-238	3.11E-08	5.60E-15	3.60E-16	5.96E-15
NNW	1500	Th-234	3.11E-08	5.60E-15	3.60E-16	5.96E-15
NNW	1500	Pa-234m	3.10E-08	5.59E-15	3.59E-16	5.95E-15
NNW	1500	Pa-234	3.07E-08	5.52E-15	3.55E-16	5.88E-15
NNW	1500	U-234	3.11E-08	5.60E-15	3.60E-16	5.96E-15
NNW	1500	Th-230	3.11E-08	5.60E-15	3.60E-16	5.96E-15
NNW	1500	Ra-226	2.70E-07	4.86E-14	3.12E-15	5.17E-14
NNW	1500	Rn-222	3.30E-07	0.00E+00	0.00E+00	0.00E+00
NNW	1500	Po-218	2.70E-07	4.86E-14	3.12E-15	5.17E-14
NNW	1500	Pb-214	2.70E-07	4.86E-14	3.12E-15	5.17E-14
NNW	1500	Bi-214	2.70E-07	4.86E-14	3.12E-15	5.17E-14
NNW	1500	Po-214	2.70E-07	4.86E-14	3.12E-15	5.17E-14
NNW	1500	Pb-210	2.62E-07	4.72E-14	3.03E-15	5.02E-14
NNW	1500	Bi-210	2.62E-07	4.72E-14	3.03E-15	5.02E-14
NNW	1500	Po-210	2.62E-07	4.72E-14	3.03E-15	5.02E-14
NNW	1500	At-218	5.40E-11	9.72E-18	6.24E-19	1.03E-17
NNW	1500	Th-232	7.93E-09	1.43E-15	9.17E-17	1.52E-15
NNW	1500	Ra-228	1.20E-07	2.15E-14	1.38E-15	2.29E-14
NNW	1500	Ac-228	1.20E-07	2.15E-14	1.38E-15	2.29E-14
NNW	1500	Th-228	1.20E-07	2.15E-14	1.38E-15	2.29E-14
NNW	1500	Ra-224	1.20E-07	2.15E-14	1.38E-15	2.29E-14
NNW	1500	Rn-220	1.46E-07	0.00E+00	0.00E+00	0.00E+00
NNW	1500	Po-216	1.20E-07	2.15E-14	1.38E-15	2.29E-14
NNW	1500	Pb-212	1.20E-07	2.15E-14	1.38E-15	2.29E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NNW	1500	Bi-212	1.20E-07	2.15E-14	1.38E-15	2.29E-14
NNW	1500	Po-212	7.67E-08	1.38E-14	8.87E-16	1.47E-14
NNW	1500	Tl-208	4.30E-08	7.74E-15	4.97E-16	8.24E-15
NNW	2500	U-238	1.29E-08	2.33E-15	2.10E-16	2.54E-15
NNW	2500	Th-234	1.29E-08	2.33E-15	2.10E-16	2.54E-15
NNW	2500	Pa-234m	1.29E-08	2.32E-15	2.10E-16	2.53E-15
NNW	2500	Pa-234	1.27E-08	2.29E-15	2.07E-16	2.50E-15
NNW	2500	U-234	1.29E-08	2.33E-15	2.10E-16	2.54E-15
NNW	2500	Th-230	1.29E-08	2.33E-15	2.10E-16	2.54E-15
NNW	2500	Ra-226	1.12E-07	2.02E-14	1.82E-15	2.20E-14
NNW	2500	Rn-222	1.43E-07	0.00E+00	0.00E+00	0.00E+00
NNW	2500	Po-218	1.12E-07	2.02E-14	1.82E-15	2.20E-14
NNW	2500	Pb-214	1.12E-07	2.02E-14	1.82E-15	2.20E-14
NNW	2500	Bi-214	1.12E-07	2.02E-14	1.82E-15	2.20E-14
NNW	2500	Po-214	1.12E-07	2.02E-14	1.82E-15	2.20E-14
NNW	2500	Pb-210	1.09E-07	1.96E-14	1.77E-15	2.14E-14
NNW	2500	Bi-210	1.09E-07	1.96E-14	1.77E-15	2.14E-14
NNW	2500	Po-210	1.09E-07	1.96E-14	1.77E-15	2.14E-14
NNW	2500	At-218	2.24E-11	4.03E-18	3.64E-19	4.40E-18
NNW	2500	Th-232	3.29E-09	5.93E-16	5.36E-17	6.47E-16
NNW	2500	Ra-228	4.97E-08	8.95E-15	8.08E-16	9.75E-15
NNW	2500	Ac-228	4.97E-08	8.95E-15	8.08E-16	9.75E-15
NNW	2500	Th-228	4.97E-08	8.95E-15	8.08E-16	9.75E-15
NNW	2500	Ra-224	4.97E-08	8.95E-15	8.08E-16	9.75E-15
NNW	2500	Rn-220	6.32E-08	0.00E+00	0.00E+00	0.00E+00
NNW	2500	Po-216	4.97E-08	8.95E-15	8.08E-16	9.75E-15
NNW	2500	Pb-212	4.97E-08	8.95E-15	8.08E-16	9.75E-15
NNW	2500	Bi-212	4.97E-08	8.95E-15	8.08E-16	9.75E-15
NNW	2500	Po-212	3.19E-08	5.73E-15	5.18E-16	6.25E-15
NNW	2500	Tl-208	1.79E-08	3.21E-15	2.90E-16	3.50E-15
NNW	3500	U-238	7.48E-09	1.35E-15	1.46E-16	1.49E-15
NNW	3500	Th-234	7.48E-09	1.35E-15	1.46E-16	1.49E-15
NNW	3500	Pa-234m	7.47E-09	1.34E-15	1.46E-16	1.49E-15
NNW	3500	Pa-234	7.38E-09	1.33E-15	1.44E-16	1.47E-15
NNW	3500	U-234	7.48E-09	1.35E-15	1.46E-16	1.49E-15
NNW	3500	Th-230	7.48E-09	1.35E-15	1.46E-16	1.49E-15
NNW	3500	Ra-226	6.49E-08	1.17E-14	1.27E-15	1.30E-14
NNW	3500	Rn-222	8.57E-08	0.00E+00	0.00E+00	0.00E+00
NNW	3500	Po-218	6.49E-08	1.17E-14	1.27E-15	1.30E-14
NNW	3500	Pb-214	6.49E-08	1.17E-14	1.27E-15	1.30E-14
NNW	3500	Bi-214	6.49E-08	1.17E-14	1.27E-15	1.30E-14
NNW	3500	Po-214	6.49E-08	1.17E-14	1.27E-15	1.30E-14
NNW	3500	Pb-210	6.30E-08	1.13E-14	1.23E-15	1.26E-14
NNW	3500	Bi-210	6.30E-08	1.13E-14	1.23E-15	1.26E-14
NNW	3500	Po-210	6.30E-08	1.13E-14	1.23E-15	1.26E-14
NNW	3500	At-218	1.30E-11	2.34E-18	2.54E-19	2.59E-18
NNW	3500	Th-232	1.91E-09	3.43E-16	3.73E-17	3.81E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NNW	3500	Ra-228	2.88E-08	5.18E-15	5.63E-16	5.74E-15
NNW	3500	Ac-228	2.88E-08	5.18E-15	5.63E-16	5.74E-15
NNW	3500	Th-228	2.88E-08	5.18E-15	5.63E-16	5.74E-15
NNW	3500	Ra-224	2.88E-08	5.18E-15	5.63E-16	5.74E-15
NNW	3500	Rn-220	3.80E-08	0.00E+00	0.00E+00	0.00E+00
NNW	3500	Po-216	2.88E-08	5.18E-15	5.63E-16	5.74E-15
NNW	3500	Pb-212	2.88E-08	5.18E-15	5.63E-16	5.74E-15
NNW	3500	Bi-212	2.88E-08	5.18E-15	5.63E-16	5.74E-15
NNW	3500	Po-212	1.84E-08	3.32E-15	3.61E-16	3.68E-15
NNW	3500	Tl-208	1.03E-08	1.86E-15	2.02E-16	2.06E-15
NNW	4500	U-238	5.08E-09	9.15E-16	1.11E-16	1.03E-15
NNW	4500	Th-234	5.08E-09	9.15E-16	1.11E-16	1.03E-15
NNW	4500	Pa-234m	5.07E-09	9.13E-16	1.11E-16	1.02E-15
NNW	4500	Pa-234	5.01E-09	9.02E-16	1.10E-16	1.01E-15
NNW	4500	U-234	5.08E-09	9.15E-16	1.11E-16	1.03E-15
NNW	4500	Th-230	5.08E-09	9.15E-16	1.11E-16	1.03E-15
NNW	4500	Ra-226	4.41E-08	7.94E-15	9.66E-16	8.91E-15
NNW	4500	Rn-222	6.03E-08	0.00E+00	0.00E+00	0.00E+00
NNW	4500	Po-218	4.41E-08	7.94E-15	9.66E-16	8.91E-15
NNW	4500	Pb-214	4.41E-08	7.94E-15	9.66E-16	8.91E-15
NNW	4500	Bi-214	4.41E-08	7.94E-15	9.66E-16	8.91E-15
NNW	4500	Po-214	4.41E-08	7.94E-15	9.66E-16	8.91E-15
NNW	4500	Pb-210	4.28E-08	7.71E-15	9.38E-16	8.64E-15
NNW	4500	Bi-210	4.28E-08	7.71E-15	9.38E-16	8.64E-15
NNW	4500	Po-210	4.28E-08	7.71E-15	9.38E-16	8.64E-15
NNW	4500	At-218	8.82E-12	1.59E-18	1.93E-19	1.78E-18
NNW	4500	Th-232	1.30E-09	2.33E-16	2.84E-17	2.62E-16
NNW	4500	Ra-228	1.96E-08	3.52E-15	4.28E-16	3.95E-15
NNW	4500	Ac-228	1.96E-08	3.52E-15	4.28E-16	3.95E-15
NNW	4500	Th-228	1.96E-08	3.52E-15	4.28E-16	3.95E-15
NNW	4500	Ra-224	1.96E-08	3.52E-15	4.28E-16	3.95E-15
NNW	4500	Rn-220	2.68E-08	0.00E+00	0.00E+00	0.00E+00
NNW	4500	Po-216	1.96E-08	3.52E-15	4.28E-16	3.95E-15
NNW	4500	Pb-212	1.96E-08	3.52E-15	4.28E-16	3.95E-15
NNW	4500	Bi-212	1.96E-08	3.52E-15	4.28E-16	3.95E-15
NNW	4500	Po-212	1.25E-08	2.26E-15	2.74E-16	2.53E-15
NNW	4500	Tl-208	7.03E-09	1.27E-15	1.54E-16	1.42E-15
NNW	5500	U-238	3.74E-09	6.74E-16	8.96E-17	7.63E-16
NNW	5500	Th-234	3.74E-09	6.74E-16	8.96E-17	7.63E-16
NNW	5500	Pa-234m	3.74E-09	6.72E-16	8.94E-17	7.62E-16
NNW	5500	Pa-234	3.69E-09	6.64E-16	8.83E-17	7.52E-16
NNW	5500	U-234	3.74E-09	6.74E-16	8.96E-17	7.63E-16
NNW	5500	Th-230	3.74E-09	6.74E-16	8.96E-17	7.63E-16
NNW	5500	Ra-226	3.25E-08	5.85E-15	7.77E-16	6.62E-15
NNW	5500	Rn-222	4.56E-08	0.00E+00	0.00E+00	0.00E+00
NNW	5500	Po-218	3.25E-08	5.85E-15	7.77E-16	6.62E-15
NNW	5500	Pb-214	3.25E-08	5.85E-15	7.77E-16	6.62E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NNW	5500	Bi-214	3.25E-08	5.85E-15	7.77E-16	6.62E-15
NNW	5500	Po-214	3.25E-08	5.84E-15	7.77E-16	6.62E-15
NNW	5500	Pb-210	3.15E-08	5.67E-15	7.54E-16	6.43E-15
NNW	5500	Bi-210	3.15E-08	5.67E-15	7.54E-16	6.43E-15
NNW	5500	Po-210	3.15E-08	5.67E-15	7.54E-16	6.43E-15
NNW	5500	At-218	6.49E-12	1.17E-18	1.55E-19	1.32E-18
NNW	5500	Th-232	9.54E-10	1.72E-16	2.28E-17	1.95E-16
NNW	5500	Ra-228	1.44E-08	2.59E-15	3.45E-16	2.94E-15
NNW	5500	Ac-228	1.44E-08	2.59E-15	3.45E-16	2.94E-15
NNW	5500	Th-228	1.44E-08	2.59E-15	3.45E-16	2.94E-15
NNW	5500	Ra-224	1.44E-08	2.59E-15	3.45E-16	2.94E-15
NNW	5500	Rn-220	2.02E-08	0.00E+00	0.00E+00	0.00E+00
NNW	5500	Po-216	1.44E-08	2.59E-15	3.45E-16	2.94E-15
NNW	5500	Pb-212	1.44E-08	2.59E-15	3.45E-16	2.94E-15
NNW	5500	Bi-212	1.44E-08	2.59E-15	3.45E-16	2.94E-15
NNW	5500	Po-212	9.23E-09	1.66E-15	2.21E-16	1.88E-15
NNW	5500	Tl-208	5.17E-09	9.31E-16	1.24E-16	1.05E-15
NNW	7000	U-238	2.54E-09	4.57E-16	6.81E-17	5.25E-16
NNW	7000	Th-234	2.54E-09	4.57E-16	6.81E-17	5.25E-16
NNW	7000	Pa-234m	2.53E-09	4.56E-16	6.80E-17	5.24E-16
NNW	7000	Pa-234	2.50E-09	4.50E-16	6.72E-17	5.18E-16
NNW	7000	U-234	2.54E-09	4.57E-16	6.81E-17	5.25E-16
NNW	7000	Th-230	2.54E-09	4.57E-16	6.81E-17	5.25E-16
NNW	7000	Ra-226	2.20E-08	3.97E-15	5.91E-16	4.56E-15
NNW	7000	Rn-222	3.26E-08	0.00E+00	0.00E+00	0.00E+00
NNW	7000	Po-218	2.20E-08	3.97E-15	5.91E-16	4.56E-15
NNW	7000	Pb-214	2.20E-08	3.97E-15	5.91E-16	4.56E-15
NNW	7000	Bi-214	2.20E-08	3.97E-15	5.91E-16	4.56E-15
NNW	7000	Po-214	2.20E-08	3.96E-15	5.91E-16	4.56E-15
NNW	7000	Pb-210	2.14E-08	3.85E-15	5.74E-16	4.42E-15
NNW	7000	Bi-210	2.14E-08	3.85E-15	5.74E-16	4.42E-15
NNW	7000	Po-210	2.14E-08	3.85E-15	5.74E-16	4.42E-15
NNW	7000	At-218	4.40E-12	7.93E-19	1.18E-19	9.11E-19
NNW	7000	Th-232	6.47E-10	1.17E-16	1.74E-17	1.34E-16
NNW	7000	Ra-228	9.77E-09	1.76E-15	2.62E-16	2.02E-15
NNW	7000	Ac-228	9.77E-09	1.76E-15	2.62E-16	2.02E-15
NNW	7000	Th-228	9.77E-09	1.76E-15	2.62E-16	2.02E-15
NNW	7000	Ra-224	9.77E-09	1.76E-15	2.62E-16	2.02E-15
NNW	7000	Rn-220	1.44E-08	0.00E+00	0.00E+00	0.00E+00
NNW	7000	Po-216	9.77E-09	1.76E-15	2.62E-16	2.02E-15
NNW	7000	Pb-212	9.77E-09	1.76E-15	2.62E-16	2.02E-15
NNW	7000	Bi-212	9.77E-09	1.76E-15	2.62E-16	2.02E-15
NNW	7000	Po-212	6.26E-09	1.13E-15	1.68E-16	1.29E-15
NNW	7000	Tl-208	3.51E-09	6.32E-16	9.42E-17	7.26E-16
NW	50	U-238	1.09E-05	1.97E-12	1.12E-14	1.98E-12
NW	50	Th-234	1.09E-05	1.97E-12	1.12E-14	1.98E-12
NW	50	Pa-234m	1.09E-05	1.96E-12	1.12E-14	1.98E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NW	50	Pa-234	1.08E-05	1.94E-12	1.11E-14	1.95E-12
NW	50	U-234	1.09E-05	1.97E-12	1.12E-14	1.98E-12
NW	50	Th-230	1.09E-05	1.97E-12	1.12E-14	1.98E-12
NW	50	Ra-226	9.49E-05	1.71E-11	9.75E-14	1.72E-11
NW	50	Rn-222	9.61E-05	0.00E+00	0.00E+00	0.00E+00
NW	50	Po-218	9.49E-05	1.71E-11	9.75E-14	1.72E-11
NW	50	Pb-214	9.49E-05	1.71E-11	9.75E-14	1.72E-11
NW	50	Bi-214	9.49E-05	1.71E-11	9.75E-14	1.72E-11
NW	50	Po-214	9.49E-05	1.71E-11	9.75E-14	1.72E-11
NW	50	Pb-210	9.21E-05	1.66E-11	9.46E-14	1.67E-11
NW	50	Bi-210	9.21E-05	1.66E-11	9.46E-14	1.67E-11
NW	50	Po-210	9.21E-05	1.66E-11	9.46E-14	1.67E-11
NW	50	At-218	1.90E-08	3.41E-15	1.95E-17	3.43E-15
NW	50	Th-232	2.79E-06	5.02E-13	2.86E-15	5.05E-13
NW	50	Ra-228	4.21E-05	7.57E-12	4.32E-14	7.61E-12
NW	50	Ac-228	4.21E-05	7.57E-12	4.32E-14	7.61E-12
NW	50	Th-228	4.21E-05	7.57E-12	4.32E-14	7.61E-12
NW	50	Ra-224	4.21E-05	7.57E-12	4.32E-14	7.61E-12
NW	50	Rn-220	4.26E-05	0.00E+00	0.00E+00	0.00E+00
NW	50	Po-216	4.21E-05	7.57E-12	4.32E-14	7.61E-12
NW	50	Pb-212	4.21E-05	7.57E-12	4.32E-14	7.61E-12
NW	50	Bi-212	4.21E-05	7.57E-12	4.32E-14	7.61E-12
NW	50	Po-212	2.70E-05	4.85E-12	2.77E-14	4.88E-12
NW	50	Tl-208	1.51E-05	2.72E-12	1.55E-14	2.74E-12
NW	100	U-238	3.95E-06	7.11E-13	5.54E-15	7.17E-13
NW	100	Th-234	3.95E-06	7.11E-13	5.54E-15	7.17E-13
NW	100	Pa-234m	3.94E-06	7.10E-13	5.53E-15	7.16E-13
NW	100	Pa-234	3.90E-06	7.01E-13	5.46E-15	7.07E-13
NW	100	U-234	3.95E-06	7.11E-13	5.54E-15	7.17E-13
NW	100	Th-230	3.95E-06	7.11E-13	5.54E-15	7.17E-13
NW	100	Ra-226	3.43E-05	6.17E-12	4.80E-14	6.22E-12
NW	100	Rn-222	3.56E-05	0.00E+00	0.00E+00	0.00E+00
NW	100	Po-218	3.43E-05	6.17E-12	4.80E-14	6.22E-12
NW	100	Pb-214	3.43E-05	6.17E-12	4.80E-14	6.22E-12
NW	100	Bi-214	3.43E-05	6.17E-12	4.80E-14	6.22E-12
NW	100	Po-214	3.43E-05	6.17E-12	4.80E-14	6.22E-12
NW	100	Pb-210	3.33E-05	5.99E-12	4.66E-14	6.04E-12
NW	100	Bi-210	3.33E-05	5.99E-12	4.66E-14	6.04E-12
NW	100	Po-210	3.33E-05	5.99E-12	4.66E-14	6.04E-12
NW	100	At-218	6.86E-09	1.23E-15	9.61E-18	1.24E-15
NW	100	Th-232	1.01E-06	1.81E-13	1.41E-15	1.83E-13
NW	100	Ra-228	1.52E-05	2.74E-12	2.13E-14	2.76E-12
NW	100	Ac-228	1.52E-05	2.74E-12	2.13E-14	2.76E-12
NW	100	Th-228	1.52E-05	2.74E-12	2.13E-14	2.76E-12
NW	100	Ra-224	1.52E-05	2.74E-12	2.13E-14	2.76E-12
NW	100	Rn-220	1.58E-05	0.00E+00	0.00E+00	0.00E+00
NW	100	Po-216	1.52E-05	2.74E-12	2.13E-14	2.76E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NW	100	Pb-212	1.52E-05	2.74E-12	2.13E-14	2.76E-12
NW	100	Bi-212	1.52E-05	2.74E-12	2.13E-14	2.76E-12
NW	100	Po-212	9.74E-06	1.75E-12	1.37E-14	1.77E-12
NW	100	Tl-208	5.46E-06	9.83E-13	7.65E-15	9.91E-13
NW	150	U-238	1.94E-06	3.50E-13	3.64E-15	3.53E-13
NW	150	Th-234	1.94E-06	3.50E-13	3.64E-15	3.53E-13
NW	150	Pa-234m	1.94E-06	3.49E-13	3.64E-15	3.53E-13
NW	150	Pa-234	1.91E-06	3.45E-13	3.59E-15	3.48E-13
NW	150	U-234	1.94E-06	3.50E-13	3.64E-15	3.53E-13
NW	150	Th-230	1.94E-06	3.50E-13	3.64E-15	3.53E-13
NW	150	Ra-226	1.69E-05	3.03E-12	3.16E-14	3.07E-12
NW	150	Rn-222	1.78E-05	0.00E+00	0.00E+00	0.00E+00
NW	150	Po-218	1.69E-05	3.03E-12	3.16E-14	3.07E-12
NW	150	Pb-214	1.69E-05	3.03E-12	3.16E-14	3.07E-12
NW	150	Bi-214	1.69E-05	3.03E-12	3.16E-14	3.07E-12
NW	150	Po-214	1.69E-05	3.03E-12	3.16E-14	3.06E-12
NW	150	Pb-210	1.64E-05	2.94E-12	3.07E-14	2.97E-12
NW	150	Bi-210	1.64E-05	2.94E-12	3.07E-14	2.97E-12
NW	150	Po-210	1.64E-05	2.94E-12	3.07E-14	2.97E-12
NW	150	At-218	3.37E-09	6.07E-16	6.32E-18	6.13E-16
NW	150	Th-232	4.95E-07	8.91E-14	9.29E-16	9.01E-14
NW	150	Ra-228	7.47E-06	1.34E-12	1.40E-14	1.36E-12
NW	150	Ac-228	7.47E-06	1.34E-12	1.40E-14	1.36E-12
NW	150	Th-228	7.47E-06	1.34E-12	1.40E-14	1.36E-12
NW	150	Ra-224	7.47E-06	1.34E-12	1.40E-14	1.36E-12
NW	150	Rn-220	7.90E-06	0.00E+00	0.00E+00	0.00E+00
NW	150	Po-216	7.47E-06	1.34E-12	1.40E-14	1.36E-12
NW	150	Pb-212	7.47E-06	1.34E-12	1.40E-14	1.36E-12
NW	150	Bi-212	7.47E-06	1.34E-12	1.40E-14	1.36E-12
NW	150	Po-212	4.79E-06	8.62E-13	8.99E-15	8.71E-13
NW	150	Tl-208	2.68E-06	4.83E-13	5.04E-15	4.88E-13
NW	250	U-238	7.55E-07	1.36E-13	2.15E-15	1.38E-13
NW	250	Th-234	7.55E-07	1.36E-13	2.15E-15	1.38E-13
NW	250	Pa-234m	7.53E-07	1.36E-13	2.15E-15	1.38E-13
NW	250	Pa-234	7.44E-07	1.34E-13	2.12E-15	1.36E-13
NW	250	U-234	7.55E-07	1.36E-13	2.15E-15	1.38E-13
NW	250	Th-230	7.55E-07	1.36E-13	2.15E-15	1.38E-13
NW	250	Ra-226	6.55E-06	1.18E-12	1.87E-14	1.20E-12
NW	250	Rn-222	7.10E-06	0.00E+00	0.00E+00	0.00E+00
NW	250	Po-218	6.55E-06	1.18E-12	1.87E-14	1.20E-12
NW	250	Pb-214	6.55E-06	1.18E-12	1.87E-14	1.20E-12
NW	250	Bi-214	6.55E-06	1.18E-12	1.87E-14	1.20E-12
NW	250	Po-214	6.55E-06	1.18E-12	1.87E-14	1.20E-12
NW	250	Pb-210	6.36E-06	1.14E-12	1.81E-14	1.16E-12
NW	250	Bi-210	6.36E-06	1.14E-12	1.81E-14	1.16E-12
NW	250	Po-210	6.36E-06	1.14E-12	1.81E-14	1.16E-12
NW	250	At-218	1.31E-09	2.36E-16	3.73E-18	2.40E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NW	250	Th-232	1.93E-07	3.47E-14	5.48E-16	3.52E-14
NW	250	Ra-228	2.90E-06	5.23E-13	8.27E-15	5.31E-13
NW	250	Ac-228	2.90E-06	5.23E-13	8.27E-15	5.31E-13
NW	250	Th-228	2.90E-06	5.23E-13	8.27E-15	5.31E-13
NW	250	Ra-224	2.90E-06	5.23E-13	8.27E-15	5.31E-13
NW	250	Rn-220	3.15E-06	0.00E+00	0.00E+00	0.00E+00
NW	250	Po-216	2.90E-06	5.23E-13	8.27E-15	5.31E-13
NW	250	Pb-212	2.90E-06	5.23E-13	8.27E-15	5.31E-13
NW	250	Bi-212	2.90E-06	5.23E-13	8.27E-15	5.31E-13
NW	250	Po-212	1.86E-06	3.35E-13	5.30E-15	3.40E-13
NW	250	Tl-208	1.04E-06	1.88E-13	2.97E-15	1.91E-13
NW	350	U-238	3.98E-07	7.17E-14	1.52E-15	7.32E-14
NW	350	Th-234	3.98E-07	7.17E-14	1.52E-15	7.32E-14
NW	350	Pa-234m	3.98E-07	7.16E-14	1.51E-15	7.31E-14
NW	350	Pa-234	3.93E-07	7.07E-14	1.49E-15	7.22E-14
NW	350	U-234	3.98E-07	7.17E-14	1.52E-15	7.32E-14
NW	350	Th-230	3.98E-07	7.17E-14	1.52E-15	7.32E-14
NW	350	Ra-226	3.46E-06	6.22E-13	1.32E-14	6.35E-13
NW	350	Rn-222	3.82E-06	0.00E+00	0.00E+00	0.00E+00
NW	350	Po-218	3.46E-06	6.22E-13	1.32E-14	6.35E-13
NW	350	Pb-214	3.46E-06	6.22E-13	1.32E-14	6.35E-13
NW	350	Bi-214	3.46E-06	6.22E-13	1.32E-14	6.35E-13
NW	350	Po-214	3.46E-06	6.22E-13	1.32E-14	6.35E-13
NW	350	Pb-210	3.35E-06	6.04E-13	1.28E-14	6.17E-13
NW	350	Bi-210	3.35E-06	6.04E-13	1.28E-14	6.17E-13
NW	350	Po-210	3.35E-06	6.04E-13	1.28E-14	6.17E-13
NW	350	At-218	6.91E-10	1.24E-16	2.63E-18	1.27E-16
NW	350	Th-232	1.02E-07	1.83E-14	3.87E-16	1.87E-14
NW	350	Ra-228	1.53E-06	2.76E-13	5.83E-15	2.82E-13
NW	350	Ac-228	1.53E-06	2.76E-13	5.83E-15	2.82E-13
NW	350	Th-228	1.53E-06	2.76E-13	5.83E-15	2.82E-13
NW	350	Ra-224	1.53E-06	2.76E-13	5.83E-15	2.82E-13
NW	350	Rn-220	1.69E-06	0.00E+00	0.00E+00	0.00E+00
NW	350	Po-216	1.53E-06	2.76E-13	5.83E-15	2.82E-13
NW	350	Pb-212	1.53E-06	2.76E-13	5.83E-15	2.82E-13
NW	350	Bi-212	1.53E-06	2.76E-13	5.83E-15	2.82E-13
NW	350	Po-212	9.82E-07	1.77E-13	3.74E-15	1.81E-13
NW	350	Tl-208	5.51E-07	9.91E-14	2.10E-15	1.01E-13
NW	450	U-238	2.46E-07	4.43E-14	1.17E-15	4.55E-14
NW	450	Th-234	2.46E-07	4.43E-14	1.17E-15	4.55E-14
NW	450	Pa-234m	2.46E-07	4.42E-14	1.17E-15	4.54E-14
NW	450	Pa-234	2.43E-07	4.37E-14	1.15E-15	4.48E-14
NW	450	U-234	2.46E-07	4.43E-14	1.17E-15	4.55E-14
NW	450	Th-230	2.46E-07	4.43E-14	1.17E-15	4.55E-14
NW	450	Ra-226	2.14E-06	3.84E-13	1.01E-14	3.94E-13
NW	450	Rn-222	2.39E-06	0.00E+00	0.00E+00	0.00E+00
NW	450	Po-218	2.14E-06	3.84E-13	1.01E-14	3.94E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NW	450	Pb-214	2.14E-06	3.84E-13	1.01E-14	3.94E-13
NW	450	Bi-214	2.14E-06	3.84E-13	1.01E-14	3.94E-13
NW	450	Po-214	2.13E-06	3.84E-13	1.01E-14	3.94E-13
NW	450	Pb-210	2.07E-06	3.73E-13	9.83E-15	3.83E-13
NW	450	Bi-210	2.07E-06	3.73E-13	9.83E-15	3.83E-13
NW	450	Po-210	2.07E-06	3.73E-13	9.83E-15	3.83E-13
NW	450	At-218	4.27E-10	7.68E-17	2.03E-18	7.89E-17
NW	450	Th-232	6.27E-08	1.13E-14	2.98E-16	1.16E-14
NW	450	Ra-228	9.47E-07	1.70E-13	4.49E-15	1.75E-13
NW	450	Ac-228	9.47E-07	1.70E-13	4.49E-15	1.75E-13
NW	450	Th-228	9.47E-07	1.70E-13	4.49E-15	1.75E-13
NW	450	Ra-224	9.47E-07	1.70E-13	4.49E-15	1.75E-13
NW	450	Rn-220	1.06E-06	0.00E+00	0.00E+00	0.00E+00
NW	450	Po-216	9.47E-07	1.70E-13	4.49E-15	1.75E-13
NW	450	Pb-212	9.47E-07	1.70E-13	4.49E-15	1.75E-13
NW	450	Bi-212	9.47E-07	1.70E-13	4.49E-15	1.75E-13
NW	450	Po-212	6.07E-07	1.09E-13	2.88E-15	1.12E-13
NW	450	Tl-208	3.40E-07	6.12E-14	1.61E-15	6.28E-14
NW	750	U-238	9.18E-08	1.65E-14	6.86E-16	1.72E-14
NW	750	Th-234	9.18E-08	1.65E-14	6.86E-16	1.72E-14
NW	750	Pa-234m	9.17E-08	1.65E-14	6.84E-16	1.72E-14
NW	750	Pa-234	9.05E-08	1.63E-14	6.76E-16	1.70E-14
NW	750	U-234	9.18E-08	1.65E-14	6.86E-16	1.72E-14
NW	750	Th-230	9.18E-08	1.65E-14	6.86E-16	1.72E-14
NW	750	Ra-226	7.97E-07	1.43E-13	5.95E-15	1.49E-13
NW	750	Rn-222	9.22E-07	0.00E+00	0.00E+00	0.00E+00
NW	750	Po-218	7.97E-07	1.43E-13	5.95E-15	1.49E-13
NW	750	Pb-214	7.97E-07	1.43E-13	5.95E-15	1.49E-13
NW	750	Bi-214	7.97E-07	1.43E-13	5.95E-15	1.49E-13
NW	750	Po-214	7.97E-07	1.43E-13	5.95E-15	1.49E-13
NW	750	Pb-210	7.73E-07	1.39E-13	5.78E-15	1.45E-13
NW	750	Bi-210	7.73E-07	1.39E-13	5.78E-15	1.45E-13
NW	750	Po-210	7.73E-07	1.39E-13	5.78E-15	1.45E-13
NW	750	At-218	1.59E-10	2.87E-17	1.19E-18	2.99E-17
NW	750	Th-232	2.34E-08	4.22E-15	1.75E-16	4.39E-15
NW	750	Ra-228	3.53E-07	6.36E-14	2.64E-15	6.62E-14
NW	750	Ac-228	3.53E-07	6.36E-14	2.64E-15	6.62E-14
NW	750	Th-228	3.53E-07	6.36E-14	2.64E-15	6.62E-14
NW	750	Ra-224	3.53E-07	6.36E-14	2.64E-15	6.62E-14
NW	750	Rn-220	4.09E-07	0.00E+00	0.00E+00	0.00E+00
NW	750	Po-216	3.53E-07	6.36E-14	2.64E-15	6.62E-14
NW	750	Pb-212	3.53E-07	6.36E-14	2.64E-15	6.62E-14
NW	750	Bi-212	3.53E-07	6.36E-14	2.64E-15	6.62E-14
NW	750	Po-212	2.26E-07	4.08E-14	1.69E-15	4.24E-14
NW	750	Tl-208	1.27E-07	2.28E-14	9.48E-16	2.38E-14
NW	1500	U-238	2.61E-08	4.70E-15	3.32E-16	5.03E-15
NW	1500	Th-234	2.61E-08	4.70E-15	3.32E-16	5.03E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NW	1500	Pa-234m	2.60E-08	4.69E-15	3.32E-16	5.02E-15
NW	1500	Pa-234	2.57E-08	4.63E-15	3.27E-16	4.96E-15
NW	1500	U-234	2.61E-08	4.70E-15	3.32E-16	5.03E-15
NW	1500	Th-230	2.61E-08	4.70E-15	3.32E-16	5.03E-15
NW	1500	Ra-226	2.26E-07	4.07E-14	2.88E-15	4.36E-14
NW	1500	Rn-222	2.75E-07	0.00E+00	0.00E+00	0.00E+00
NW	1500	Po-218	2.26E-07	4.07E-14	2.88E-15	4.36E-14
NW	1500	Pb-214	2.26E-07	4.07E-14	2.88E-15	4.36E-14
NW	1500	Bi-214	2.26E-07	4.07E-14	2.88E-15	4.36E-14
NW	1500	Po-214	2.26E-07	4.07E-14	2.88E-15	4.36E-14
NW	1500	Pb-210	2.20E-07	3.95E-14	2.80E-15	4.23E-14
NW	1500	Bi-210	2.20E-07	3.95E-14	2.80E-15	4.23E-14
NW	1500	Po-210	2.20E-07	3.95E-14	2.80E-15	4.23E-14
NW	1500	At-218	4.53E-11	8.15E-18	5.76E-19	8.72E-18
NW	1500	Th-232	6.65E-09	1.20E-15	8.47E-17	1.28E-15
NW	1500	Ra-228	1.00E-07	1.81E-14	1.28E-15	1.93E-14
NW	1500	Ac-228	1.00E-07	1.81E-14	1.28E-15	1.93E-14
NW	1500	Th-228	1.00E-07	1.81E-14	1.28E-15	1.93E-14
NW	1500	Ra-224	1.00E-07	1.81E-14	1.28E-15	1.93E-14
NW	1500	Rn-220	1.22E-07	0.00E+00	0.00E+00	0.00E+00
NW	1500	Po-216	1.00E-07	1.81E-14	1.28E-15	1.93E-14
NW	1500	Pb-212	1.00E-07	1.81E-14	1.28E-15	1.93E-14
NW	1500	Bi-212	1.00E-07	1.81E-14	1.28E-15	1.93E-14
NW	1500	Po-212	6.43E-08	1.16E-14	8.19E-16	1.24E-14
NW	1500	Tl-208	3.61E-08	6.49E-15	4.59E-16	6.95E-15
NW	2500	U-238	1.08E-08	1.95E-15	1.94E-16	2.14E-15
NW	2500	Th-234	1.08E-08	1.95E-15	1.94E-16	2.14E-15
NW	2500	Pa-234m	1.08E-08	1.94E-15	1.94E-16	2.14E-15
NW	2500	Pa-234	1.07E-08	1.92E-15	1.92E-16	2.11E-15
NW	2500	U-234	1.08E-08	1.95E-15	1.94E-16	2.14E-15
NW	2500	Th-230	1.08E-08	1.95E-15	1.94E-16	2.14E-15
NW	2500	Ra-226	9.39E-08	1.69E-14	1.69E-15	1.86E-14
NW	2500	Rn-222	1.19E-07	0.00E+00	0.00E+00	0.00E+00
NW	2500	Po-218	9.39E-08	1.69E-14	1.69E-15	1.86E-14
NW	2500	Pb-214	9.39E-08	1.69E-14	1.69E-15	1.86E-14
NW	2500	Bi-214	9.39E-08	1.69E-14	1.69E-15	1.86E-14
NW	2500	Po-214	9.39E-08	1.69E-14	1.69E-15	1.86E-14
NW	2500	Pb-210	9.11E-08	1.64E-14	1.64E-15	1.80E-14
NW	2500	Bi-210	9.11E-08	1.64E-14	1.64E-15	1.80E-14
NW	2500	Po-210	9.11E-08	1.64E-14	1.64E-15	1.80E-14
NW	2500	At-218	1.88E-11	3.38E-18	3.37E-19	3.72E-18
NW	2500	Th-232	2.76E-09	4.97E-16	4.96E-17	5.46E-16
NW	2500	Ra-228	4.16E-08	7.49E-15	7.48E-16	8.24E-15
NW	2500	Ac-228	4.16E-08	7.49E-15	7.48E-16	8.24E-15
NW	2500	Th-228	4.16E-08	7.49E-15	7.48E-16	8.24E-15
NW	2500	Ra-224	4.16E-08	7.49E-15	7.48E-16	8.24E-15
NW	2500	Rn-220	5.26E-08	0.00E+00	0.00E+00	0.00E+00

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NW	2500	Po-216	4.16E-08	7.49E-15	7.48E-16	8.24E-15
NW	2500	Pb-212	4.16E-08	7.49E-15	7.48E-16	8.24E-15
NW	2500	Bi-212	4.16E-08	7.49E-15	7.48E-16	8.24E-15
NW	2500	Po-212	2.67E-08	4.80E-15	4.79E-16	5.28E-15
NW	2500	Tl-208	1.50E-08	2.69E-15	2.69E-16	2.96E-15
NW	3500	U-238	6.26E-09	1.13E-15	1.36E-16	1.26E-15
NW	3500	Th-234	6.26E-09	1.13E-15	1.36E-16	1.26E-15
NW	3500	Pa-234m	6.24E-09	1.12E-15	1.36E-16	1.26E-15
NW	3500	Pa-234	6.17E-09	1.11E-15	1.34E-16	1.24E-15
NW	3500	U-234	6.26E-09	1.13E-15	1.36E-16	1.26E-15
NW	3500	Th-230	6.26E-09	1.13E-15	1.36E-16	1.26E-15
NW	3500	Ra-226	5.43E-08	9.77E-15	1.18E-15	1.09E-14
NW	3500	Rn-222	7.11E-08	0.00E+00	0.00E+00	0.00E+00
NW	3500	Po-218	5.43E-08	9.77E-15	1.18E-15	1.09E-14
NW	3500	Pb-214	5.43E-08	9.77E-15	1.18E-15	1.09E-14
NW	3500	Bi-214	5.43E-08	9.77E-15	1.18E-15	1.09E-14
NW	3500	Po-214	5.43E-08	9.77E-15	1.18E-15	1.09E-14
NW	3500	Pb-210	5.27E-08	9.48E-15	1.14E-15	1.06E-14
NW	3500	Bi-210	5.27E-08	9.48E-15	1.14E-15	1.06E-14
NW	3500	Po-210	5.27E-08	9.48E-15	1.14E-15	1.06E-14
NW	3500	At-218	1.09E-11	1.95E-18	2.36E-19	2.19E-18
NW	3500	Th-232	1.59E-09	2.87E-16	3.46E-17	3.22E-16
NW	3500	Ra-228	2.41E-08	4.33E-15	5.23E-16	4.85E-15
NW	3500	Ac-228	2.41E-08	4.33E-15	5.23E-16	4.85E-15
NW	3500	Th-228	2.41E-08	4.33E-15	5.23E-16	4.85E-15
NW	3500	Ra-224	2.41E-08	4.33E-15	5.23E-16	4.85E-15
NW	3500	Rn-220	3.15E-08	0.00E+00	0.00E+00	0.00E+00
NW	3500	Po-216	2.41E-08	4.33E-15	5.23E-16	4.85E-15
NW	3500	Pb-212	2.41E-08	4.33E-15	5.23E-16	4.85E-15
NW	3500	Bi-212	2.41E-08	4.33E-15	5.23E-16	4.85E-15
NW	3500	Po-212	1.54E-08	2.78E-15	3.35E-16	3.11E-15
NW	3500	Tl-208	8.65E-09	1.56E-15	1.88E-16	1.74E-15
NW	4500	U-238	4.25E-09	7.64E-16	1.04E-16	8.68E-16
NW	4500	Th-234	4.25E-09	7.64E-16	1.04E-16	8.68E-16
NW	4500	Pa-234m	4.24E-09	7.63E-16	1.03E-16	8.66E-16
NW	4500	Pa-234	4.18E-09	7.53E-16	1.02E-16	8.55E-16
NW	4500	U-234	4.25E-09	7.64E-16	1.04E-16	8.68E-16
NW	4500	Th-230	4.25E-09	7.64E-16	1.04E-16	8.68E-16
NW	4500	Ra-226	3.68E-08	6.63E-15	8.98E-16	7.53E-15
NW	4500	Rn-222	5.00E-08	0.00E+00	0.00E+00	0.00E+00
NW	4500	Po-218	3.68E-08	6.63E-15	8.98E-16	7.53E-15
NW	4500	Pb-214	3.68E-08	6.63E-15	8.98E-16	7.53E-15
NW	4500	Bi-214	3.68E-08	6.63E-15	8.98E-16	7.53E-15
NW	4500	Po-214	3.68E-08	6.63E-15	8.98E-16	7.53E-15
NW	4500	Pb-210	3.57E-08	6.43E-15	8.72E-16	7.31E-15
NW	4500	Bi-210	3.57E-08	6.43E-15	8.72E-16	7.31E-15
NW	4500	Po-210	3.57E-08	6.43E-15	8.72E-16	7.31E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NW	4500	At-218	7.36E-12	1.33E-18	1.80E-19	1.51E-18
NW	4500	Th-232	1.08E-09	1.95E-16	2.64E-17	2.21E-16
NW	4500	Ra-228	1.63E-08	2.94E-15	3.98E-16	3.34E-15
NW	4500	Ac-228	1.63E-08	2.94E-15	3.98E-16	3.34E-15
NW	4500	Th-228	1.63E-08	2.94E-15	3.98E-16	3.34E-15
NW	4500	Ra-224	1.63E-08	2.94E-15	3.98E-16	3.34E-15
NW	4500	Rn-220	2.22E-08	0.00E+00	0.00E+00	0.00E+00
NW	4500	Po-216	1.63E-08	2.94E-15	3.98E-16	3.34E-15
NW	4500	Pb-212	1.63E-08	2.94E-15	3.98E-16	3.34E-15
NW	4500	Bi-212	1.63E-08	2.94E-15	3.98E-16	3.34E-15
NW	4500	Po-212	1.05E-08	1.88E-15	2.55E-16	2.14E-15
NW	4500	Tl-208	5.87E-09	1.06E-15	1.43E-16	1.20E-15
NW	5500	U-238	3.12E-09	5.62E-16	8.34E-17	6.45E-16
NW	5500	Th-234	3.12E-09	5.62E-16	8.34E-17	6.45E-16
NW	5500	Pa-234m	3.12E-09	5.61E-16	8.32E-17	6.44E-16
NW	5500	Pa-234	3.08E-09	5.54E-16	8.22E-17	6.36E-16
NW	5500	U-234	3.12E-09	5.62E-16	8.34E-17	6.45E-16
NW	5500	Th-230	3.12E-09	5.62E-16	8.34E-17	6.45E-16
NW	5500	Ra-226	2.71E-08	4.88E-15	7.24E-16	5.60E-15
NW	5500	Rn-222	3.77E-08	0.00E+00	0.00E+00	0.00E+00
NW	5500	Po-218	2.71E-08	4.88E-15	7.24E-16	5.60E-15
NW	5500	Pb-214	2.71E-08	4.88E-15	7.24E-16	5.60E-15
NW	5500	Bi-214	2.71E-08	4.88E-15	7.24E-16	5.60E-15
NW	5500	Po-214	2.71E-08	4.87E-15	7.24E-16	5.60E-15
NW	5500	Pb-210	2.63E-08	4.73E-15	7.02E-16	5.43E-15
NW	5500	Bi-210	2.63E-08	4.73E-15	7.02E-16	5.43E-15
NW	5500	Po-210	2.63E-08	4.73E-15	7.02E-16	5.43E-15
NW	5500	At-218	5.42E-12	9.75E-19	1.45E-19	1.12E-18
NW	5500	Th-232	7.96E-10	1.43E-16	2.13E-17	1.65E-16
NW	5500	Ra-228	1.20E-08	2.16E-15	3.21E-16	2.48E-15
NW	5500	Ac-228	1.20E-08	2.16E-15	3.21E-16	2.48E-15
NW	5500	Th-228	1.20E-08	2.16E-15	3.21E-16	2.48E-15
NW	5500	Ra-224	1.20E-08	2.16E-15	3.21E-16	2.48E-15
NW	5500	Rn-220	1.67E-08	0.00E+00	0.00E+00	0.00E+00
NW	5500	Po-216	1.20E-08	2.16E-15	3.21E-16	2.48E-15
NW	5500	Pb-212	1.20E-08	2.16E-15	3.21E-16	2.48E-15
NW	5500	Bi-212	1.20E-08	2.16E-15	3.21E-16	2.48E-15
NW	5500	Po-212	7.70E-09	1.39E-15	2.06E-16	1.59E-15
NW	5500	Tl-208	4.31E-09	7.77E-16	1.15E-16	8.92E-16
NW	7000	U-238	2.12E-09	3.81E-16	6.36E-17	4.45E-16
NW	7000	Th-234	2.12E-09	3.81E-16	6.36E-17	4.45E-16
NW	7000	Pa-234m	2.11E-09	3.80E-16	6.35E-17	4.44E-16
NW	7000	Pa-234	2.09E-09	3.76E-16	6.27E-17	4.38E-16
NW	7000	U-234	2.12E-09	3.81E-16	6.36E-17	4.45E-16
NW	7000	Th-230	2.12E-09	3.81E-16	6.36E-17	4.45E-16
NW	7000	Ra-226	1.84E-08	3.31E-15	5.52E-16	3.86E-15
NW	7000	Rn-222	2.69E-08	0.00E+00	0.00E+00	0.00E+00

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NW	7000	Po-218	1.84E-08	3.31E-15	5.52E-16	3.86E-15
NW	7000	Pb-214	1.84E-08	3.31E-15	5.52E-16	3.86E-15
NW	7000	Bi-214	1.84E-08	3.31E-15	5.52E-16	3.86E-15
NW	7000	Po-214	1.84E-08	3.30E-15	5.52E-16	3.86E-15
NW	7000	Pb-210	1.78E-08	3.21E-15	5.36E-16	3.74E-15
NW	7000	Bi-210	1.78E-08	3.21E-15	5.36E-16	3.74E-15
NW	7000	Po-210	1.78E-08	3.21E-15	5.36E-16	3.74E-15
NW	7000	At-218	3.67E-12	6.61E-19	1.10E-19	7.71E-19
NW	7000	Th-232	5.40E-10	9.71E-17	1.62E-17	1.13E-16
NW	7000	Ra-228	8.14E-09	1.47E-15	2.45E-16	1.71E-15
NW	7000	Ac-228	8.14E-09	1.47E-15	2.45E-16	1.71E-15
NW	7000	Th-228	8.14E-09	1.47E-15	2.45E-16	1.71E-15
NW	7000	Ra-224	8.14E-09	1.47E-15	2.45E-16	1.71E-15
NW	7000	Rn-220	1.19E-08	0.00E+00	0.00E+00	0.00E+00
NW	7000	Po-216	8.14E-09	1.47E-15	2.45E-16	1.71E-15
NW	7000	Pb-212	8.14E-09	1.47E-15	2.45E-16	1.71E-15
NW	7000	Bi-212	8.14E-09	1.47E-15	2.45E-16	1.71E-15
NW	7000	Po-212	5.22E-09	9.39E-16	1.57E-16	1.10E-15
NW	7000	Tl-208	2.92E-09	5.26E-16	8.80E-17	6.14E-16
WNW	50	U-238	8.79E-06	1.58E-12	9.66E-15	1.59E-12
WNW	50	Th-234	8.79E-06	1.58E-12	9.66E-15	1.59E-12
WNW	50	Pa-234m	8.77E-06	1.58E-12	9.64E-15	1.59E-12
WNW	50	Pa-234	8.67E-06	1.56E-12	9.52E-15	1.57E-12
WNW	50	U-234	8.79E-06	1.58E-12	9.66E-15	1.59E-12
WNW	50	Th-230	8.79E-06	1.58E-12	9.66E-15	1.59E-12
WNW	50	Ra-226	7.63E-05	1.37E-11	8.38E-14	1.38E-11
WNW	50	Rn-222	7.73E-05	0.00E+00	0.00E+00	0.00E+00
WNW	50	Po-218	7.63E-05	1.37E-11	8.38E-14	1.38E-11
WNW	50	Pb-214	7.63E-05	1.37E-11	8.38E-14	1.38E-11
WNW	50	Bi-214	7.63E-05	1.37E-11	8.38E-14	1.38E-11
WNW	50	Po-214	7.63E-05	1.37E-11	8.38E-14	1.38E-11
WNW	50	Pb-210	7.40E-05	1.33E-11	8.13E-14	1.34E-11
WNW	50	Bi-210	7.40E-05	1.33E-11	8.13E-14	1.34E-11
WNW	50	Po-210	7.40E-05	1.33E-11	8.13E-14	1.34E-11
WNW	50	At-218	1.53E-08	2.75E-15	1.68E-17	2.76E-15
WNW	50	Th-232	2.24E-06	4.04E-13	2.46E-15	4.06E-13
WNW	50	Ra-228	3.38E-05	6.09E-12	3.71E-14	6.13E-12
WNW	50	Ac-228	3.38E-05	6.09E-12	3.71E-14	6.13E-12
WNW	50	Th-228	3.38E-05	6.09E-12	3.71E-14	6.13E-12
WNW	50	Ra-224	3.38E-05	6.09E-12	3.71E-14	6.13E-12
WNW	50	Rn-220	3.43E-05	0.00E+00	0.00E+00	0.00E+00
WNW	50	Po-216	3.38E-05	6.09E-12	3.71E-14	6.13E-12
WNW	50	Pb-212	3.38E-05	6.09E-12	3.71E-14	6.13E-12
WNW	50	Bi-212	3.38E-05	6.09E-12	3.71E-14	6.13E-12
WNW	50	Po-212	2.17E-05	3.90E-12	2.38E-14	3.93E-12
WNW	50	Tl-208	1.22E-05	2.19E-12	1.33E-14	2.20E-12
WNW	100	U-238	3.10E-06	5.58E-13	4.67E-15	5.63E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
WNW	100	Th-234	3.10E-06	5.58E-13	4.67E-15	5.63E-13
WNW	100	Pa-234m	3.09E-06	5.57E-13	4.66E-15	5.61E-13
WNW	100	Pa-234	3.06E-06	5.50E-13	4.61E-15	5.55E-13
WNW	100	U-234	3.10E-06	5.58E-13	4.67E-15	5.63E-13
WNW	100	Th-230	3.10E-06	5.58E-13	4.67E-15	5.63E-13
WNW	100	Ra-226	2.69E-05	4.84E-12	4.05E-14	4.88E-12
WNW	100	Rn-222	2.79E-05	0.00E+00	0.00E+00	0.00E+00
WNW	100	Po-218	2.69E-05	4.84E-12	4.05E-14	4.88E-12
WNW	100	Pb-214	2.69E-05	4.84E-12	4.05E-14	4.88E-12
WNW	100	Bi-214	2.69E-05	4.84E-12	4.05E-14	4.88E-12
WNW	100	Po-214	2.69E-05	4.84E-12	4.05E-14	4.88E-12
WNW	100	Pb-210	2.61E-05	4.70E-12	3.93E-14	4.74E-12
WNW	100	Bi-210	2.61E-05	4.70E-12	3.93E-14	4.74E-12
WNW	100	Po-210	2.61E-05	4.70E-12	3.93E-14	4.74E-12
WNW	100	At-218	5.38E-09	9.68E-16	8.10E-18	9.76E-16
WNW	100	Th-232	7.90E-07	1.42E-13	1.19E-15	1.43E-13
WNW	100	Ra-228	1.19E-05	2.15E-12	1.80E-14	2.16E-12
WNW	100	Ac-228	1.19E-05	2.15E-12	1.80E-14	2.16E-12
WNW	100	Th-228	1.19E-05	2.15E-12	1.80E-14	2.16E-12
WNW	100	Ra-224	1.19E-05	2.15E-12	1.80E-14	2.16E-12
WNW	100	Rn-220	1.24E-05	0.00E+00	0.00E+00	0.00E+00
WNW	100	Po-216	1.19E-05	2.15E-12	1.80E-14	2.16E-12
WNW	100	Pb-212	1.19E-05	2.15E-12	1.80E-14	2.16E-12
WNW	100	Bi-212	1.19E-05	2.15E-12	1.80E-14	2.16E-12
WNW	100	Po-212	7.64E-06	1.38E-12	1.15E-14	1.39E-12
WNW	100	Tl-208	4.28E-06	7.71E-13	6.46E-15	7.78E-13
WNW	150	U-238	1.52E-06	2.73E-13	3.08E-15	2.77E-13
WNW	150	Th-234	1.52E-06	2.73E-13	3.08E-15	2.77E-13
WNW	150	Pa-234m	1.52E-06	2.73E-13	3.07E-15	2.76E-13
WNW	150	Pa-234	1.50E-06	2.70E-13	3.04E-15	2.73E-13
WNW	150	U-234	1.52E-06	2.73E-13	3.08E-15	2.77E-13
WNW	150	Th-230	1.52E-06	2.73E-13	3.08E-15	2.77E-13
WNW	150	Ra-226	1.32E-05	2.37E-12	2.67E-14	2.40E-12
WNW	150	Rn-222	1.39E-05	0.00E+00	0.00E+00	0.00E+00
WNW	150	Po-218	1.32E-05	2.37E-12	2.67E-14	2.40E-12
WNW	150	Pb-214	1.32E-05	2.37E-12	2.67E-14	2.40E-12
WNW	150	Bi-214	1.32E-05	2.37E-12	2.67E-14	2.40E-12
WNW	150	Po-214	1.32E-05	2.37E-12	2.67E-14	2.40E-12
WNW	150	Pb-210	1.28E-05	2.30E-12	2.59E-14	2.33E-12
WNW	150	Bi-210	1.28E-05	2.30E-12	2.59E-14	2.33E-12
WNW	150	Po-210	1.28E-05	2.30E-12	2.59E-14	2.33E-12
WNW	150	At-218	2.64E-09	4.74E-16	5.34E-18	4.80E-16
WNW	150	Th-232	3.87E-07	6.97E-14	7.85E-16	7.05E-14
WNW	150	Ra-228	5.84E-06	1.05E-12	1.18E-14	1.06E-12
WNW	150	Ac-228	5.84E-06	1.05E-12	1.18E-14	1.06E-12
WNW	150	Th-228	5.84E-06	1.05E-12	1.18E-14	1.06E-12
WNW	150	Ra-224	5.84E-06	1.05E-12	1.18E-14	1.06E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
WNW	150	Rn-220	6.16E-06	0.00E+00	0.00E+00	0.00E+00
WNW	150	Po-216	5.84E-06	1.05E-12	1.18E-14	1.06E-12
WNW	150	Pb-212	5.84E-06	1.05E-12	1.18E-14	1.06E-12
WNW	150	Bi-212	5.84E-06	1.05E-12	1.18E-14	1.06E-12
WNW	150	Po-212	3.75E-06	6.74E-13	7.59E-15	6.82E-13
WNW	150	Tl-208	2.10E-06	3.78E-13	4.26E-15	3.82E-13
WNW	250	U-238	5.91E-07	1.06E-13	1.82E-15	1.08E-13
WNW	250	Th-234	5.91E-07	1.06E-13	1.82E-15	1.08E-13
WNW	250	Pa-234m	5.89E-07	1.06E-13	1.82E-15	1.08E-13
WNW	250	Pa-234	5.82E-07	1.05E-13	1.79E-15	1.07E-13
WNW	250	U-234	5.91E-07	1.06E-13	1.82E-15	1.08E-13
WNW	250	Th-230	5.91E-07	1.06E-13	1.82E-15	1.08E-13
WNW	250	Ra-226	5.13E-06	9.23E-13	1.58E-14	9.38E-13
WNW	250	Rn-222	5.54E-06	0.00E+00	0.00E+00	0.00E+00
WNW	250	Po-218	5.13E-06	9.23E-13	1.58E-14	9.38E-13
WNW	250	Pb-214	5.13E-06	9.23E-13	1.58E-14	9.38E-13
WNW	250	Bi-214	5.13E-06	9.23E-13	1.58E-14	9.38E-13
WNW	250	Po-214	5.12E-06	9.22E-13	1.58E-14	9.38E-13
WNW	250	Pb-210	4.97E-06	8.95E-13	1.53E-14	9.11E-13
WNW	250	Bi-210	4.97E-06	8.95E-13	1.53E-14	9.11E-13
WNW	250	Po-210	4.97E-06	8.95E-13	1.53E-14	9.11E-13
WNW	250	At-218	1.02E-09	1.84E-16	3.16E-18	1.88E-16
WNW	250	Th-232	1.51E-07	2.71E-14	4.64E-16	2.76E-14
WNW	250	Ra-228	2.27E-06	4.09E-13	7.00E-15	4.16E-13
WNW	250	Ac-228	2.27E-06	4.09E-13	7.00E-15	4.16E-13
WNW	250	Th-228	2.27E-06	4.09E-13	7.00E-15	4.16E-13
WNW	250	Ra-224	2.27E-06	4.09E-13	7.00E-15	4.16E-13
WNW	250	Rn-220	2.45E-06	0.00E+00	0.00E+00	0.00E+00
WNW	250	Po-216	2.27E-06	4.09E-13	7.00E-15	4.16E-13
WNW	250	Pb-212	2.27E-06	4.09E-13	7.00E-15	4.16E-13
WNW	250	Bi-212	2.27E-06	4.09E-13	7.00E-15	4.16E-13
WNW	250	Po-212	1.46E-06	2.62E-13	4.49E-15	2.67E-13
WNW	250	Tl-208	8.16E-07	1.47E-13	2.51E-15	1.49E-13
WNW	350	U-238	3.12E-07	5.62E-14	1.28E-15	5.74E-14
WNW	350	Th-234	3.12E-07	5.62E-14	1.28E-15	5.74E-14
WNW	350	Pa-234m	3.11E-07	5.60E-14	1.28E-15	5.73E-14
WNW	350	Pa-234	3.08E-07	5.54E-14	1.27E-15	5.66E-14
WNW	350	U-234	3.12E-07	5.62E-14	1.28E-15	5.74E-14
WNW	350	Th-230	3.12E-07	5.62E-14	1.28E-15	5.74E-14
WNW	350	Ra-226	2.71E-06	4.87E-13	1.11E-14	4.98E-13
WNW	350	Rn-222	2.98E-06	0.00E+00	0.00E+00	0.00E+00
WNW	350	Po-218	2.71E-06	4.87E-13	1.11E-14	4.98E-13
WNW	350	Pb-214	2.71E-06	4.87E-13	1.11E-14	4.98E-13
WNW	350	Bi-214	2.71E-06	4.87E-13	1.11E-14	4.98E-13
WNW	350	Po-214	2.71E-06	4.87E-13	1.11E-14	4.98E-13
WNW	350	Pb-210	2.63E-06	4.73E-13	1.08E-14	4.84E-13
WNW	350	Bi-210	2.63E-06	4.73E-13	1.08E-14	4.84E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
WNW	350	Po-210	2.63E-06	4.73E-13	1.08E-14	4.84E-13
WNW	350	At-218	5.41E-10	9.74E-17	2.23E-18	9.97E-17
WNW	350	Th-232	7.95E-08	1.43E-14	3.28E-16	1.46E-14
WNW	350	Ra-228	1.20E-06	2.16E-13	4.94E-15	2.21E-13
WNW	350	Ac-228	1.20E-06	2.16E-13	4.94E-15	2.21E-13
WNW	350	Th-228	1.20E-06	2.16E-13	4.94E-15	2.21E-13
WNW	350	Ra-224	1.20E-06	2.16E-13	4.94E-15	2.21E-13
WNW	350	Rn-220	1.32E-06	0.00E+00	0.00E+00	0.00E+00
WNW	350	Po-216	1.20E-06	2.16E-13	4.94E-15	2.21E-13
WNW	350	Pb-212	1.20E-06	2.16E-13	4.94E-15	2.21E-13
WNW	350	Bi-212	1.20E-06	2.16E-13	4.94E-15	2.21E-13
WNW	350	Po-212	7.69E-07	1.38E-13	3.17E-15	1.42E-13
WNW	350	Tl-208	4.31E-07	7.76E-14	1.78E-15	7.94E-14
WNW	450	U-238	1.93E-07	3.47E-14	9.90E-16	3.57E-14
WNW	450	Th-234	1.93E-07	3.47E-14	9.90E-16	3.57E-14
WNW	450	Pa-234m	1.93E-07	3.47E-14	9.88E-16	3.56E-14
WNW	450	Pa-234	1.90E-07	3.42E-14	9.76E-16	3.52E-14
WNW	450	U-234	1.93E-07	3.47E-14	9.90E-16	3.57E-14
WNW	450	Th-230	1.93E-07	3.47E-14	9.90E-16	3.57E-14
WNW	450	Ra-226	1.67E-06	3.01E-13	8.59E-15	3.10E-13
WNW	450	Rn-222	1.87E-06	0.00E+00	0.00E+00	0.00E+00
WNW	450	Po-218	1.67E-06	3.01E-13	8.59E-15	3.10E-13
WNW	450	Pb-214	1.67E-06	3.01E-13	8.59E-15	3.10E-13
WNW	450	Bi-214	1.67E-06	3.01E-13	8.59E-15	3.10E-13
WNW	450	Po-214	1.67E-06	3.01E-13	8.59E-15	3.10E-13
WNW	450	Pb-210	1.62E-06	2.92E-13	8.34E-15	3.01E-13
WNW	450	Bi-210	1.62E-06	2.92E-13	8.34E-15	3.01E-13
WNW	450	Po-210	1.62E-06	2.92E-13	8.34E-15	3.01E-13
WNW	450	At-218	3.35E-10	6.02E-17	1.72E-18	6.20E-17
WNW	450	Th-232	4.92E-08	8.85E-15	2.52E-16	9.11E-15
WNW	450	Ra-228	7.42E-07	1.34E-13	3.81E-15	1.37E-13
WNW	450	Ac-228	7.42E-07	1.34E-13	3.81E-15	1.37E-13
WNW	450	Th-228	7.42E-07	1.34E-13	3.81E-15	1.37E-13
WNW	450	Ra-224	7.42E-07	1.34E-13	3.81E-15	1.37E-13
WNW	450	Rn-220	8.28E-07	0.00E+00	0.00E+00	0.00E+00
WNW	450	Po-216	7.42E-07	1.34E-13	3.81E-15	1.37E-13
WNW	450	Pb-212	7.42E-07	1.34E-13	3.81E-15	1.37E-13
WNW	450	Bi-212	7.42E-07	1.34E-13	3.81E-15	1.37E-13
WNW	450	Po-212	4.76E-07	8.56E-14	2.44E-15	8.81E-14
WNW	450	Tl-208	2.67E-07	4.80E-14	1.37E-15	4.94E-14
WNW	750	U-238	7.22E-08	1.30E-14	5.83E-16	1.36E-14
WNW	750	Th-234	7.22E-08	1.30E-14	5.83E-16	1.36E-14
WNW	750	Pa-234m	7.21E-08	1.30E-14	5.82E-16	1.36E-14
WNW	750	Pa-234	7.12E-08	1.28E-14	5.75E-16	1.34E-14
WNW	750	U-234	7.22E-08	1.30E-14	5.83E-16	1.36E-14
WNW	750	Th-230	7.22E-08	1.30E-14	5.83E-16	1.36E-14
WNW	750	Ra-226	6.27E-07	1.13E-13	5.06E-15	1.18E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
WNW	750	Rn-222	7.20E-07	0.00E+00	0.00E+00	0.00E+00
WNW	750	Po-218	6.27E-07	1.13E-13	5.06E-15	1.18E-13
WNW	750	Pb-214	6.27E-07	1.13E-13	5.06E-15	1.18E-13
WNW	750	Bi-214	6.27E-07	1.13E-13	5.06E-15	1.18E-13
WNW	750	Po-214	6.27E-07	1.13E-13	5.06E-15	1.18E-13
WNW	750	Pb-210	6.08E-07	1.09E-13	4.91E-15	1.14E-13
WNW	750	Bi-210	6.08E-07	1.09E-13	4.91E-15	1.14E-13
WNW	750	Po-210	6.08E-07	1.09E-13	4.91E-15	1.14E-13
WNW	750	At-218	1.25E-10	2.25E-17	1.01E-18	2.36E-17
WNW	750	Th-232	1.84E-08	3.31E-15	1.49E-16	3.46E-15
WNW	750	Ra-228	2.78E-07	5.00E-14	2.24E-15	5.22E-14
WNW	750	Ac-228	2.78E-07	5.00E-14	2.24E-15	5.22E-14
WNW	750	Th-228	2.78E-07	5.00E-14	2.24E-15	5.22E-14
WNW	750	Ra-224	2.78E-07	5.00E-14	2.24E-15	5.22E-14
WNW	750	Rn-220	3.19E-07	0.00E+00	0.00E+00	0.00E+00
WNW	750	Po-216	2.78E-07	5.00E-14	2.24E-15	5.22E-14
WNW	750	Pb-212	2.78E-07	5.00E-14	2.24E-15	5.22E-14
WNW	750	Bi-212	2.78E-07	5.00E-14	2.24E-15	5.22E-14
WNW	750	Po-212	1.78E-07	3.20E-14	1.44E-15	3.35E-14
WNW	750	Tl-208	9.98E-08	1.80E-14	8.06E-16	1.88E-14
WNW	1500	U-238	2.06E-08	3.70E-15	2.83E-16	3.98E-15
WNW	1500	Th-234	2.06E-08	3.70E-15	2.83E-16	3.98E-15
WNW	1500	Pa-234m	2.05E-08	3.69E-15	2.83E-16	3.98E-15
WNW	1500	Pa-234	2.03E-08	3.65E-15	2.79E-16	3.93E-15
WNW	1500	U-234	2.06E-08	3.70E-15	2.83E-16	3.98E-15
WNW	1500	Th-230	2.06E-08	3.70E-15	2.83E-16	3.98E-15
WNW	1500	Ra-226	1.78E-07	3.21E-14	2.46E-15	3.46E-14
WNW	1500	Rn-222	2.15E-07	0.00E+00	0.00E+00	0.00E+00
WNW	1500	Po-218	1.78E-07	3.21E-14	2.46E-15	3.46E-14
WNW	1500	Pb-214	1.78E-07	3.21E-14	2.46E-15	3.46E-14
WNW	1500	Bi-214	1.78E-07	3.21E-14	2.46E-15	3.46E-14
WNW	1500	Po-214	1.78E-07	3.21E-14	2.46E-15	3.46E-14
WNW	1500	Pb-210	1.73E-07	3.12E-14	2.38E-15	3.35E-14
WNW	1500	Bi-210	1.73E-07	3.12E-14	2.38E-15	3.35E-14
WNW	1500	Po-210	1.73E-07	3.12E-14	2.38E-15	3.35E-14
WNW	1500	At-218	3.57E-11	6.42E-18	4.91E-19	6.91E-18
WNW	1500	Th-232	5.24E-09	9.44E-16	7.22E-17	1.02E-15
WNW	1500	Ra-228	7.91E-08	1.42E-14	1.09E-15	1.53E-14
WNW	1500	Ac-228	7.91E-08	1.42E-14	1.09E-15	1.53E-14
WNW	1500	Th-228	7.91E-08	1.42E-14	1.09E-15	1.53E-14
WNW	1500	Ra-224	7.91E-08	1.42E-14	1.09E-15	1.53E-14
WNW	1500	Rn-220	9.52E-08	0.00E+00	0.00E+00	0.00E+00
WNW	1500	Po-216	7.91E-08	1.42E-14	1.09E-15	1.53E-14
WNW	1500	Pb-212	7.91E-08	1.42E-14	1.09E-15	1.53E-14
WNW	1500	Bi-212	7.91E-08	1.42E-14	1.09E-15	1.53E-14
WNW	1500	Po-212	5.07E-08	9.12E-15	6.98E-16	9.82E-15
WNW	1500	Tl-208	2.84E-08	5.11E-15	3.91E-16	5.51E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
WNW	2500	U-238	8.53E-09	1.54E-15	1.66E-16	1.70E-15
WNW	2500	Th-234	8.53E-09	1.54E-15	1.66E-16	1.70E-15
WNW	2500	Pa-234m	8.51E-09	1.53E-15	1.66E-16	1.70E-15
WNW	2500	Pa-234	8.41E-09	1.51E-15	1.64E-16	1.68E-15
WNW	2500	U-234	8.53E-09	1.54E-15	1.66E-16	1.70E-15
WNW	2500	Th-230	8.53E-09	1.54E-15	1.66E-16	1.70E-15
WNW	2500	Ra-226	7.40E-08	1.33E-14	1.44E-15	1.48E-14
WNW	2500	Rn-222	9.24E-08	0.00E+00	0.00E+00	0.00E+00
WNW	2500	Po-218	7.40E-08	1.33E-14	1.44E-15	1.48E-14
WNW	2500	Pb-214	7.40E-08	1.33E-14	1.44E-15	1.48E-14
WNW	2500	Bi-214	7.40E-08	1.33E-14	1.44E-15	1.48E-14
WNW	2500	Po-214	7.40E-08	1.33E-14	1.44E-15	1.48E-14
WNW	2500	Pb-210	7.18E-08	1.29E-14	1.40E-15	1.43E-14
WNW	2500	Bi-210	7.18E-08	1.29E-14	1.40E-15	1.43E-14
WNW	2500	Po-210	7.18E-08	1.29E-14	1.40E-15	1.43E-14
WNW	2500	At-218	1.48E-11	2.66E-18	2.88E-19	2.95E-18
WNW	2500	Th-232	2.17E-09	3.91E-16	4.24E-17	4.34E-16
WNW	2500	Ra-228	3.28E-08	5.91E-15	6.39E-16	6.55E-15
WNW	2500	Ac-228	3.28E-08	5.91E-15	6.39E-16	6.55E-15
WNW	2500	Th-228	3.28E-08	5.91E-15	6.39E-16	6.55E-15
WNW	2500	Ra-224	3.28E-08	5.91E-15	6.39E-16	6.55E-15
WNW	2500	Rn-220	4.10E-08	0.00E+00	0.00E+00	0.00E+00
WNW	2500	Po-216	3.28E-08	5.91E-15	6.39E-16	6.55E-15
WNW	2500	Pb-212	3.28E-08	5.91E-15	6.39E-16	6.55E-15
WNW	2500	Bi-212	3.28E-08	5.91E-15	6.39E-16	6.55E-15
WNW	2500	Po-212	2.10E-08	3.79E-15	4.10E-16	4.19E-15
WNW	2500	Tl-208	1.18E-08	2.12E-15	2.30E-16	2.35E-15
WNW	3500	U-238	4.93E-09	8.87E-16	1.16E-16	1.00E-15
WNW	3500	Th-234	4.93E-09	8.87E-16	1.16E-16	1.00E-15
WNW	3500	Pa-234m	4.92E-09	8.86E-16	1.16E-16	1.00E-15
WNW	3500	Pa-234	4.86E-09	8.75E-16	1.15E-16	9.89E-16
WNW	3500	U-234	4.93E-09	8.87E-16	1.16E-16	1.00E-15
WNW	3500	Th-230	4.93E-09	8.87E-16	1.16E-16	1.00E-15
WNW	3500	Ra-226	4.28E-08	7.70E-15	1.01E-15	8.71E-15
WNW	3500	Rn-222	5.53E-08	0.00E+00	0.00E+00	0.00E+00
WNW	3500	Po-218	4.28E-08	7.70E-15	1.01E-15	8.71E-15
WNW	3500	Pb-214	4.28E-08	7.70E-15	1.01E-15	8.71E-15
WNW	3500	Bi-214	4.28E-08	7.70E-15	1.01E-15	8.71E-15
WNW	3500	Po-214	4.28E-08	7.70E-15	1.01E-15	8.71E-15
WNW	3500	Pb-210	4.15E-08	7.47E-15	9.80E-16	8.45E-15
WNW	3500	Bi-210	4.15E-08	7.47E-15	9.80E-16	8.45E-15
WNW	3500	Po-210	4.15E-08	7.47E-15	9.80E-16	8.45E-15
WNW	3500	At-218	8.55E-12	1.54E-18	2.02E-19	1.74E-18
WNW	3500	Th-232	1.26E-09	2.26E-16	2.97E-17	2.56E-16
WNW	3500	Ra-228	1.90E-08	3.41E-15	4.48E-16	3.86E-15
WNW	3500	Ac-228	1.90E-08	3.41E-15	4.48E-16	3.86E-15
WNW	3500	Th-228	1.90E-08	3.41E-15	4.48E-16	3.86E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
WNW	3500	Ra-224	1.90E-08	3.41E-15	4.48E-16	3.86E-15
WNW	3500	Rn-220	2.45E-08	0.00E+00	0.00E+00	0.00E+00
WNW	3500	Po-216	1.90E-08	3.41E-15	4.48E-16	3.86E-15
WNW	3500	Pb-212	1.90E-08	3.41E-15	4.48E-16	3.86E-15
WNW	3500	Bi-212	1.90E-08	3.41E-15	4.48E-16	3.86E-15
WNW	3500	Po-212	1.22E-08	2.19E-15	2.87E-16	2.47E-15
WNW	3500	Tl-208	6.81E-09	1.23E-15	1.61E-16	1.39E-15
WNW	4500	U-238	3.34E-09	6.02E-16	8.88E-17	6.91E-16
WNW	4500	Th-234	3.34E-09	6.02E-16	8.88E-17	6.91E-16
WNW	4500	Pa-234m	3.34E-09	6.01E-16	8.87E-17	6.90E-16
WNW	4500	Pa-234	3.30E-09	5.94E-16	8.76E-17	6.81E-16
WNW	4500	U-234	3.34E-09	6.02E-16	8.88E-17	6.91E-16
WNW	4500	Th-230	3.34E-09	6.02E-16	8.88E-17	6.91E-16
WNW	4500	Ra-226	2.90E-08	5.22E-15	7.71E-16	6.00E-15
WNW	4500	Rn-222	3.88E-08	0.00E+00	0.00E+00	0.00E+00
WNW	4500	Po-218	2.90E-08	5.22E-15	7.71E-16	6.00E-15
WNW	4500	Pb-214	2.90E-08	5.22E-15	7.71E-16	6.00E-15
WNW	4500	Bi-214	2.90E-08	5.22E-15	7.71E-16	6.00E-15
WNW	4500	Po-214	2.90E-08	5.22E-15	7.71E-16	5.99E-15
WNW	4500	Pb-210	2.82E-08	5.07E-15	7.48E-16	5.82E-15
WNW	4500	Bi-210	2.82E-08	5.07E-15	7.48E-16	5.82E-15
WNW	4500	Po-210	2.82E-08	5.07E-15	7.48E-16	5.82E-15
WNW	4500	At-218	5.80E-12	1.04E-18	1.54E-19	1.20E-18
WNW	4500	Th-232	8.53E-10	1.54E-16	2.27E-17	1.76E-16
WNW	4500	Ra-228	1.29E-08	2.32E-15	3.42E-16	2.66E-15
WNW	4500	Ac-228	1.29E-08	2.32E-15	3.42E-16	2.66E-15
WNW	4500	Th-228	1.29E-08	2.32E-15	3.42E-16	2.66E-15
WNW	4500	Ra-224	1.29E-08	2.32E-15	3.42E-16	2.66E-15
WNW	4500	Rn-220	1.72E-08	0.00E+00	0.00E+00	0.00E+00
WNW	4500	Po-216	1.29E-08	2.32E-15	3.42E-16	2.66E-15
WNW	4500	Pb-212	1.29E-08	2.32E-15	3.42E-16	2.66E-15
WNW	4500	Bi-212	1.29E-08	2.32E-15	3.42E-16	2.66E-15
WNW	4500	Po-212	8.25E-09	1.48E-15	2.19E-16	1.70E-15
WNW	4500	Tl-208	4.62E-09	8.32E-16	1.23E-16	9.55E-16
WNW	5500	U-238	2.46E-09	4.43E-16	7.17E-17	5.14E-16
WNW	5500	Th-234	2.46E-09	4.43E-16	7.17E-17	5.14E-16
WNW	5500	Pa-234m	2.45E-09	4.42E-16	7.15E-17	5.13E-16
WNW	5500	Pa-234	2.42E-09	4.36E-16	7.07E-17	5.07E-16
WNW	5500	U-234	2.46E-09	4.43E-16	7.17E-17	5.14E-16
WNW	5500	Th-230	2.46E-09	4.43E-16	7.17E-17	5.14E-16
WNW	5500	Ra-226	2.13E-08	3.84E-15	6.22E-16	4.46E-15
WNW	5500	Rn-222	2.92E-08	0.00E+00	0.00E+00	0.00E+00
WNW	5500	Po-218	2.13E-08	3.84E-15	6.22E-16	4.46E-15
WNW	5500	Pb-214	2.13E-08	3.84E-15	6.22E-16	4.46E-15
WNW	5500	Bi-214	2.13E-08	3.84E-15	6.22E-16	4.46E-15
WNW	5500	Po-214	2.13E-08	3.84E-15	6.22E-16	4.46E-15
WNW	5500	Pb-210	2.07E-08	3.73E-15	6.04E-16	4.33E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
WNW	5500	Bi-210	2.07E-08	3.73E-15	6.04E-16	4.33E-15
WNW	5500	Po-210	2.07E-08	3.73E-15	6.04E-16	4.33E-15
WNW	5500	At-218	4.27E-12	7.68E-19	1.24E-19	8.92E-19
WNW	5500	Th-232	6.27E-10	1.13E-16	1.83E-17	1.31E-16
WNW	5500	Ra-228	9.46E-09	1.70E-15	2.76E-16	1.98E-15
WNW	5500	Ac-228	9.46E-09	1.70E-15	2.76E-16	1.98E-15
WNW	5500	Th-228	9.46E-09	1.70E-15	2.76E-16	1.98E-15
WNW	5500	Ra-224	9.46E-09	1.70E-15	2.76E-16	1.98E-15
WNW	5500	Rn-220	1.30E-08	0.00E+00	0.00E+00	0.00E+00
WNW	5500	Po-216	9.46E-09	1.70E-15	2.76E-16	1.98E-15
WNW	5500	Pb-212	9.46E-09	1.70E-15	2.76E-16	1.98E-15
WNW	5500	Bi-212	9.46E-09	1.70E-15	2.76E-16	1.98E-15
WNW	5500	Po-212	6.06E-09	1.09E-15	1.77E-16	1.27E-15
WNW	5500	Tl-208	3.40E-09	6.12E-16	9.91E-17	7.11E-16
WNW	7000	U-238	1.67E-09	3.00E-16	5.49E-17	3.55E-16
WNW	7000	Th-234	1.67E-09	3.00E-16	5.49E-17	3.55E-16
WNW	7000	Pa-234m	1.66E-09	3.00E-16	5.48E-17	3.54E-16
WNW	7000	Pa-234	1.64E-09	2.96E-16	5.41E-17	3.50E-16
WNW	7000	U-234	1.67E-09	3.00E-16	5.49E-17	3.55E-16
WNW	7000	Th-230	1.67E-09	3.00E-16	5.49E-17	3.55E-16
WNW	7000	Ra-226	1.45E-08	2.61E-15	4.76E-16	3.08E-15
WNW	7000	Rn-222	2.08E-08	0.00E+00	0.00E+00	0.00E+00
WNW	7000	Po-218	1.45E-08	2.61E-15	4.76E-16	3.08E-15
WNW	7000	Pb-214	1.45E-08	2.61E-15	4.76E-16	3.08E-15
WNW	7000	Bi-214	1.45E-08	2.61E-15	4.76E-16	3.08E-15
WNW	7000	Po-214	1.45E-08	2.61E-15	4.76E-16	3.08E-15
WNW	7000	Pb-210	1.40E-08	2.53E-15	4.62E-16	2.99E-15
WNW	7000	Bi-210	1.40E-08	2.53E-15	4.62E-16	2.99E-15
WNW	7000	Po-210	1.40E-08	2.53E-15	4.62E-16	2.99E-15
WNW	7000	At-218	2.89E-12	5.21E-19	9.52E-20	6.16E-19
WNW	7000	Th-232	4.25E-10	7.66E-17	1.40E-17	9.06E-17
WNW	7000	Ra-228	6.42E-09	1.16E-15	2.11E-16	1.37E-15
WNW	7000	Ac-228	6.42E-09	1.16E-15	2.11E-16	1.37E-15
WNW	7000	Th-228	6.42E-09	1.16E-15	2.11E-16	1.37E-15
WNW	7000	Ra-224	6.42E-09	1.16E-15	2.11E-16	1.37E-15
WNW	7000	Rn-220	9.24E-09	0.00E+00	0.00E+00	0.00E+00
WNW	7000	Po-216	6.42E-09	1.16E-15	2.11E-16	1.37E-15
WNW	7000	Pb-212	6.42E-09	1.16E-15	2.11E-16	1.37E-15
WNW	7000	Bi-212	6.42E-09	1.16E-15	2.11E-16	1.37E-15
WNW	7000	Po-212	4.11E-09	7.40E-16	1.35E-16	8.76E-16
WNW	7000	Tl-208	2.31E-09	4.15E-16	7.59E-17	4.91E-16
W	50	U-238	6.47E-06	1.16E-12	7.91E-15	1.17E-12
W	50	Th-234	6.47E-06	1.16E-12	7.91E-15	1.17E-12
W	50	Pa-234m	6.46E-06	1.16E-12	7.89E-15	1.17E-12
W	50	Pa-234	6.38E-06	1.15E-12	7.80E-15	1.16E-12
W	50	U-234	6.47E-06	1.16E-12	7.91E-15	1.17E-12
W	50	Th-230	6.47E-06	1.16E-12	7.91E-15	1.17E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
W	50	Ra-226	5.61E-05	1.01E-11	6.86E-14	1.02E-11
W	50	Rn-222	5.68E-05	0.00E+00	0.00E+00	0.00E+00
W	50	Po-218	5.61E-05	1.01E-11	6.86E-14	1.02E-11
W	50	Pb-214	5.61E-05	1.01E-11	6.86E-14	1.02E-11
W	50	Bi-214	5.61E-05	1.01E-11	6.86E-14	1.02E-11
W	50	Po-214	5.61E-05	1.01E-11	6.86E-14	1.02E-11
W	50	Pb-210	5.45E-05	9.81E-12	6.66E-14	9.87E-12
W	50	Bi-210	5.45E-05	9.81E-12	6.66E-14	9.87E-12
W	50	Po-210	5.45E-05	9.81E-12	6.66E-14	9.87E-12
W	50	At-218	1.12E-08	2.02E-15	1.37E-17	2.03E-15
W	50	Th-232	1.65E-06	2.97E-13	2.02E-15	2.99E-13
W	50	Ra-228	2.49E-05	4.48E-12	3.04E-14	4.51E-12
W	50	Ac-228	2.49E-05	4.48E-12	3.04E-14	4.51E-12
W	50	Th-228	2.49E-05	4.48E-12	3.04E-14	4.51E-12
W	50	Ra-224	2.49E-05	4.48E-12	3.04E-14	4.51E-12
W	50	Rn-220	2.52E-05	0.00E+00	0.00E+00	0.00E+00
W	50	Po-216	2.49E-05	4.48E-12	3.04E-14	4.51E-12
W	50	Pb-212	2.49E-05	4.48E-12	3.04E-14	4.51E-12
W	50	Bi-212	2.49E-05	4.48E-12	3.04E-14	4.51E-12
W	50	Po-212	1.59E-05	2.87E-12	1.95E-14	2.89E-12
W	50	Tl-208	8.94E-06	1.61E-12	1.09E-14	1.62E-12
W	100	U-238	2.18E-06	3.93E-13	4.01E-15	3.97E-13
W	100	Th-234	2.18E-06	3.93E-13	4.01E-15	3.97E-13
W	100	Pa-234m	2.18E-06	3.92E-13	4.01E-15	3.96E-13
W	100	Pa-234	2.15E-06	3.87E-13	3.96E-15	3.91E-13
W	100	U-234	2.18E-06	3.93E-13	4.01E-15	3.97E-13
W	100	Th-230	2.18E-06	3.93E-13	4.01E-15	3.97E-13
W	100	Ra-226	1.89E-05	3.41E-12	3.48E-14	3.44E-12
W	100	Rn-222	1.96E-05	0.00E+00	0.00E+00	0.00E+00
W	100	Po-218	1.89E-05	3.41E-12	3.48E-14	3.44E-12
W	100	Pb-214	1.89E-05	3.41E-12	3.48E-14	3.44E-12
W	100	Bi-214	1.89E-05	3.41E-12	3.48E-14	3.44E-12
W	100	Po-214	1.89E-05	3.41E-12	3.48E-14	3.44E-12
W	100	Pb-210	1.84E-05	3.31E-12	3.38E-14	3.34E-12
W	100	Bi-210	1.84E-05	3.31E-12	3.38E-14	3.34E-12
W	100	Po-210	1.84E-05	3.31E-12	3.38E-14	3.34E-12
W	100	At-218	3.78E-09	6.81E-16	6.96E-18	6.88E-16
W	100	Th-232	5.56E-07	1.00E-13	1.02E-15	1.01E-13
W	100	Ra-228	8.39E-06	1.51E-12	1.54E-14	1.53E-12
W	100	Ac-228	8.39E-06	1.51E-12	1.54E-14	1.53E-12
W	100	Th-228	8.39E-06	1.51E-12	1.54E-14	1.53E-12
W	100	Ra-224	8.39E-06	1.51E-12	1.54E-14	1.53E-12
W	100	Rn-220	8.67E-06	0.00E+00	0.00E+00	0.00E+00
W	100	Po-216	8.39E-06	1.51E-12	1.54E-14	1.53E-12
W	100	Pb-212	8.39E-06	1.51E-12	1.54E-14	1.53E-12
W	100	Bi-212	8.39E-06	1.51E-12	1.54E-14	1.53E-12
W	100	Po-212	5.38E-06	9.68E-13	9.90E-15	9.78E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
W	100	Tl-208	3.01E-06	5.43E-13	5.55E-15	5.48E-13
W	150	U-238	1.06E-06	1.91E-13	2.65E-15	1.93E-13
W	150	Th-234	1.06E-06	1.91E-13	2.65E-15	1.93E-13
W	150	Pa-234m	1.06E-06	1.90E-13	2.65E-15	1.93E-13
W	150	Pa-234	1.04E-06	1.88E-13	2.61E-15	1.91E-13
W	150	U-234	1.06E-06	1.91E-13	2.65E-15	1.93E-13
W	150	Th-230	1.06E-06	1.91E-13	2.65E-15	1.93E-13
W	150	Ra-226	9.20E-06	1.66E-12	2.30E-14	1.68E-12
W	150	Rn-222	9.66E-06	0.00E+00	0.00E+00	0.00E+00
W	150	Po-218	9.20E-06	1.66E-12	2.30E-14	1.68E-12
W	150	Pb-214	9.20E-06	1.66E-12	2.30E-14	1.68E-12
W	150	Bi-214	9.20E-06	1.66E-12	2.30E-14	1.68E-12
W	150	Po-214	9.19E-06	1.65E-12	2.30E-14	1.68E-12
W	150	Pb-210	8.92E-06	1.61E-12	2.23E-14	1.63E-12
W	150	Bi-210	8.92E-06	1.61E-12	2.23E-14	1.63E-12
W	150	Po-210	8.92E-06	1.61E-12	2.23E-14	1.63E-12
W	150	At-218	1.84E-09	3.31E-16	4.60E-18	3.36E-16
W	150	Th-232	2.70E-07	4.86E-14	6.76E-16	4.93E-14
W	150	Ra-228	4.08E-06	7.34E-13	1.02E-14	7.44E-13
W	150	Ac-228	4.08E-06	7.34E-13	1.02E-14	7.44E-13
W	150	Th-228	4.08E-06	7.34E-13	1.02E-14	7.44E-13
W	150	Ra-224	4.08E-06	7.34E-13	1.02E-14	7.44E-13
W	150	Rn-220	4.28E-06	0.00E+00	0.00E+00	0.00E+00
W	150	Po-216	4.08E-06	7.34E-13	1.02E-14	7.44E-13
W	150	Pb-212	4.08E-06	7.34E-13	1.02E-14	7.44E-13
W	150	Bi-212	4.08E-06	7.34E-13	1.02E-14	7.44E-13
W	150	Po-212	2.61E-06	4.70E-13	6.54E-15	4.77E-13
W	150	Tl-208	1.46E-06	2.64E-13	3.67E-15	2.67E-13
W	250	U-238	4.11E-07	7.40E-14	1.57E-15	7.55E-14
W	250	Th-234	4.11E-07	7.40E-14	1.57E-15	7.55E-14
W	250	Pa-234m	4.10E-07	7.38E-14	1.57E-15	7.54E-14
W	250	Pa-234	4.05E-07	7.29E-14	1.55E-15	7.44E-14
W	250	U-234	4.11E-07	7.40E-14	1.57E-15	7.55E-14
W	250	Th-230	4.11E-07	7.40E-14	1.57E-15	7.55E-14
W	250	Ra-226	3.57E-06	6.42E-13	1.36E-14	6.55E-13
W	250	Rn-222	3.83E-06	0.00E+00	0.00E+00	0.00E+00
W	250	Po-218	3.57E-06	6.42E-13	1.36E-14	6.55E-13
W	250	Pb-214	3.57E-06	6.42E-13	1.36E-14	6.55E-13
W	250	Bi-214	3.57E-06	6.42E-13	1.36E-14	6.55E-13
W	250	Po-214	3.56E-06	6.42E-13	1.36E-14	6.55E-13
W	250	Pb-210	3.46E-06	6.23E-13	1.32E-14	6.36E-13
W	250	Bi-210	3.46E-06	6.23E-13	1.32E-14	6.36E-13
W	250	Po-210	3.46E-06	6.23E-13	1.32E-14	6.36E-13
W	250	At-218	7.13E-10	1.28E-16	2.73E-18	1.31E-16
W	250	Th-232	1.05E-07	1.89E-14	4.01E-16	1.93E-14
W	250	Ra-228	1.58E-06	2.84E-13	6.05E-15	2.91E-13
W	250	Ac-228	1.58E-06	2.84E-13	6.05E-15	2.91E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
W	250	Th-228	1.58E-06	2.84E-13	6.05E-15	2.91E-13
W	250	Ra-224	1.58E-06	2.84E-13	6.05E-15	2.91E-13
W	250	Rn-220	1.70E-06	0.00E+00	0.00E+00	0.00E+00
W	250	Po-216	1.58E-06	2.84E-13	6.05E-15	2.91E-13
W	250	Pb-212	1.58E-06	2.84E-13	6.05E-15	2.91E-13
W	250	Bi-212	1.58E-06	2.84E-13	6.05E-15	2.91E-13
W	250	Po-212	1.01E-06	1.82E-13	3.88E-15	1.86E-13
W	250	Tl-208	5.68E-07	1.02E-13	2.17E-15	1.04E-13
W	350	U-238	2.17E-07	3.91E-14	1.11E-15	4.02E-14
W	350	Th-234	2.17E-07	3.91E-14	1.11E-15	4.02E-14
W	350	Pa-234m	2.17E-07	3.90E-14	1.11E-15	4.01E-14
W	350	Pa-234	2.14E-07	3.85E-14	1.10E-15	3.96E-14
W	350	U-234	2.17E-07	3.91E-14	1.11E-15	4.02E-14
W	350	Th-230	2.17E-07	3.91E-14	1.11E-15	4.02E-14
W	350	Ra-226	1.88E-06	3.39E-13	9.66E-15	3.49E-13
W	350	Rn-222	2.06E-06	0.00E+00	0.00E+00	0.00E+00
W	350	Po-218	1.88E-06	3.39E-13	9.66E-15	3.49E-13
W	350	Pb-214	1.88E-06	3.39E-13	9.66E-15	3.49E-13
W	350	Bi-214	1.88E-06	3.39E-13	9.66E-15	3.49E-13
W	350	Po-214	1.88E-06	3.39E-13	9.66E-15	3.49E-13
W	350	Pb-210	1.83E-06	3.29E-13	9.37E-15	3.39E-13
W	350	Bi-210	1.83E-06	3.29E-13	9.37E-15	3.39E-13
W	350	Po-210	1.83E-06	3.29E-13	9.37E-15	3.39E-13
W	350	At-218	3.77E-10	6.78E-17	1.93E-18	6.98E-17
W	350	Th-232	5.54E-08	9.97E-15	2.84E-16	1.03E-14
W	350	Ra-228	8.36E-07	1.50E-13	4.28E-15	1.55E-13
W	350	Ac-228	8.36E-07	1.50E-13	4.28E-15	1.55E-13
W	350	Th-228	8.36E-07	1.50E-13	4.28E-15	1.55E-13
W	350	Ra-224	8.36E-07	1.50E-13	4.28E-15	1.55E-13
W	350	Rn-220	9.12E-07	0.00E+00	0.00E+00	0.00E+00
W	350	Po-216	8.36E-07	1.50E-13	4.28E-15	1.55E-13
W	350	Pb-212	8.36E-07	1.50E-13	4.28E-15	1.55E-13
W	350	Bi-212	8.36E-07	1.50E-13	4.28E-15	1.55E-13
W	350	Po-212	5.35E-07	9.64E-14	2.74E-15	9.91E-14
W	350	Tl-208	3.00E-07	5.40E-14	1.54E-15	5.56E-14
W	450	U-238	1.35E-07	2.42E-14	8.60E-16	2.51E-14
W	450	Th-234	1.35E-07	2.42E-14	8.60E-16	2.51E-14
W	450	Pa-234m	1.34E-07	2.42E-14	8.58E-16	2.50E-14
W	450	Pa-234	1.33E-07	2.39E-14	8.47E-16	2.47E-14
W	450	U-234	1.35E-07	2.42E-14	8.60E-16	2.51E-14
W	450	Th-230	1.35E-07	2.42E-14	8.60E-16	2.51E-14
W	450	Ra-226	1.17E-06	2.10E-13	7.46E-15	2.18E-13
W	450	Rn-222	1.29E-06	0.00E+00	0.00E+00	0.00E+00
W	450	Po-218	1.17E-06	2.10E-13	7.46E-15	2.18E-13
W	450	Pb-214	1.17E-06	2.10E-13	7.46E-15	2.18E-13
W	450	Bi-214	1.17E-06	2.10E-13	7.46E-15	2.18E-13
W	450	Po-214	1.17E-06	2.10E-13	7.46E-15	2.18E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
W	450	Pb-210	1.13E-06	2.04E-13	7.24E-15	2.11E-13
W	450	Bi-210	1.13E-06	2.04E-13	7.24E-15	2.11E-13
W	450	Po-210	1.13E-06	2.04E-13	7.24E-15	2.11E-13
W	450	At-218	2.33E-10	4.20E-17	1.49E-18	4.35E-17
W	450	Th-232	3.43E-08	6.17E-15	2.19E-16	6.39E-15
W	450	Ra-228	5.17E-07	9.31E-14	3.31E-15	9.64E-14
W	450	Ac-228	5.17E-07	9.31E-14	3.31E-15	9.64E-14
W	450	Th-228	5.17E-07	9.31E-14	3.31E-15	9.64E-14
W	450	Ra-224	5.17E-07	9.31E-14	3.31E-15	9.64E-14
W	450	Rn-220	5.72E-07	0.00E+00	0.00E+00	0.00E+00
W	450	Po-216	5.17E-07	9.31E-14	3.31E-15	9.64E-14
W	450	Pb-212	5.17E-07	9.31E-14	3.31E-15	9.64E-14
W	450	Bi-212	5.17E-07	9.31E-14	3.31E-15	9.64E-14
W	450	Po-212	3.32E-07	5.97E-14	2.12E-15	6.18E-14
W	450	Tl-208	1.86E-07	3.35E-14	1.19E-15	3.47E-14
W	750	U-238	5.05E-08	9.10E-15	5.08E-16	9.61E-15
W	750	Th-234	5.05E-08	9.10E-15	5.08E-16	9.61E-15
W	750	Pa-234m	5.04E-08	9.08E-15	5.07E-16	9.59E-15
W	750	Pa-234	4.98E-08	8.97E-15	5.01E-16	9.47E-15
W	750	U-234	5.05E-08	9.10E-15	5.08E-16	9.61E-15
W	750	Th-230	5.05E-08	9.10E-15	5.08E-16	9.61E-15
W	750	Ra-226	4.39E-07	7.90E-14	4.41E-15	8.34E-14
W	750	Rn-222	4.98E-07	0.00E+00	0.00E+00	0.00E+00
W	750	Po-218	4.39E-07	7.90E-14	4.41E-15	8.34E-14
W	750	Pb-214	4.39E-07	7.90E-14	4.41E-15	8.34E-14
W	750	Bi-214	4.39E-07	7.90E-14	4.41E-15	8.34E-14
W	750	Po-214	4.39E-07	7.89E-14	4.41E-15	8.34E-14
W	750	Pb-210	4.26E-07	7.66E-14	4.28E-15	8.09E-14
W	750	Bi-210	4.26E-07	7.66E-14	4.28E-15	8.09E-14
W	750	Po-210	4.26E-07	7.66E-14	4.28E-15	8.09E-14
W	750	At-218	8.77E-11	1.58E-17	8.82E-19	1.67E-17
W	750	Th-232	1.29E-08	2.32E-15	1.30E-16	2.45E-15
W	750	Ra-228	1.94E-07	3.50E-14	1.96E-15	3.70E-14
W	750	Ac-228	1.94E-07	3.50E-14	1.96E-15	3.70E-14
W	750	Th-228	1.94E-07	3.50E-14	1.96E-15	3.70E-14
W	750	Ra-224	1.94E-07	3.50E-14	1.96E-15	3.70E-14
W	750	Rn-220	2.21E-07	0.00E+00	0.00E+00	0.00E+00
W	750	Po-216	1.94E-07	3.50E-14	1.96E-15	3.70E-14
W	750	Pb-212	1.94E-07	3.50E-14	1.96E-15	3.70E-14
W	750	Bi-212	1.94E-07	3.50E-14	1.96E-15	3.70E-14
W	750	Po-212	1.25E-07	2.24E-14	1.25E-15	2.37E-14
W	750	Tl-208	6.99E-08	1.26E-14	7.03E-16	1.33E-14
W	1500	U-238	1.44E-08	2.59E-15	2.49E-16	2.84E-15
W	1500	Th-234	1.44E-08	2.59E-15	2.49E-16	2.84E-15
W	1500	Pa-234m	1.44E-08	2.59E-15	2.48E-16	2.83E-15
W	1500	Pa-234	1.42E-08	2.55E-15	2.45E-16	2.80E-15
W	1500	U-234	1.44E-08	2.59E-15	2.49E-16	2.84E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
W	1500	Th-230	1.44E-08	2.59E-15	2.49E-16	2.84E-15
W	1500	Ra-226	1.25E-07	2.25E-14	2.16E-15	2.46E-14
W	1500	Rn-222	1.48E-07	0.00E+00	0.00E+00	0.00E+00
W	1500	Po-218	1.25E-07	2.25E-14	2.16E-15	2.46E-14
W	1500	Pb-214	1.25E-07	2.25E-14	2.16E-15	2.46E-14
W	1500	Bi-214	1.25E-07	2.25E-14	2.16E-15	2.46E-14
W	1500	Po-214	1.25E-07	2.25E-14	2.16E-15	2.46E-14
W	1500	Pb-210	1.21E-07	2.18E-14	2.09E-15	2.39E-14
W	1500	Bi-210	1.21E-07	2.18E-14	2.09E-15	2.39E-14
W	1500	Po-210	1.21E-07	2.18E-14	2.09E-15	2.39E-14
W	1500	At-218	2.50E-11	4.50E-18	4.31E-19	4.93E-18
W	1500	Th-232	3.67E-09	6.61E-16	6.34E-17	7.24E-16
W	1500	Ra-228	5.54E-08	9.97E-15	9.56E-16	1.09E-14
W	1500	Ac-228	5.54E-08	9.97E-15	9.56E-16	1.09E-14
W	1500	Th-228	5.54E-08	9.97E-15	9.56E-16	1.09E-14
W	1500	Ra-224	5.54E-08	9.97E-15	9.56E-16	1.09E-14
W	1500	Rn-220	6.55E-08	0.00E+00	0.00E+00	0.00E+00
W	1500	Po-216	5.54E-08	9.97E-15	9.56E-16	1.09E-14
W	1500	Pb-212	5.54E-08	9.97E-15	9.56E-16	1.09E-14
W	1500	Bi-212	5.54E-08	9.97E-15	9.56E-16	1.09E-14
W	1500	Po-212	3.55E-08	6.39E-15	6.13E-16	7.00E-15
W	1500	Tl-208	1.99E-08	3.58E-15	3.44E-16	3.92E-15
W	2500	U-238	5.95E-09	1.07E-15	1.47E-16	1.22E-15
W	2500	Th-234	5.95E-09	1.07E-15	1.47E-16	1.22E-15
W	2500	Pa-234m	5.94E-09	1.07E-15	1.46E-16	1.22E-15
W	2500	Pa-234	5.87E-09	1.06E-15	1.45E-16	1.20E-15
W	2500	U-234	5.95E-09	1.07E-15	1.47E-16	1.22E-15
W	2500	Th-230	5.95E-09	1.07E-15	1.47E-16	1.22E-15
W	2500	Ra-226	5.16E-08	9.29E-15	1.27E-15	1.06E-14
W	2500	Rn-222	6.31E-08	0.00E+00	0.00E+00	0.00E+00
W	2500	Po-218	5.16E-08	9.29E-15	1.27E-15	1.06E-14
W	2500	Pb-214	5.16E-08	9.29E-15	1.27E-15	1.06E-14
W	2500	Bi-214	5.16E-08	9.29E-15	1.27E-15	1.06E-14
W	2500	Po-214	5.16E-08	9.29E-15	1.27E-15	1.06E-14
W	2500	Pb-210	5.01E-08	9.02E-15	1.23E-15	1.03E-14
W	2500	Bi-210	5.01E-08	9.02E-15	1.23E-15	1.03E-14
W	2500	Po-210	5.01E-08	9.02E-15	1.23E-15	1.03E-14
W	2500	At-218	1.03E-11	1.86E-18	2.54E-19	2.11E-18
W	2500	Th-232	1.52E-09	2.73E-16	3.74E-17	3.10E-16
W	2500	Ra-228	2.29E-08	4.12E-15	5.64E-16	4.68E-15
W	2500	Ac-228	2.29E-08	4.12E-15	5.64E-16	4.68E-15
W	2500	Th-228	2.29E-08	4.12E-15	5.64E-16	4.68E-15
W	2500	Ra-224	2.29E-08	4.12E-15	5.64E-16	4.68E-15
W	2500	Rn-220	2.80E-08	0.00E+00	0.00E+00	0.00E+00
W	2500	Po-216	2.29E-08	4.12E-15	5.64E-16	4.68E-15
W	2500	Pb-212	2.29E-08	4.12E-15	5.64E-16	4.68E-15
W	2500	Bi-212	2.29E-08	4.12E-15	5.64E-16	4.68E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
W	2500	Po-212	1.47E-08	2.64E-15	3.61E-16	3.00E-15
W	2500	Tl-208	8.22E-09	1.48E-15	2.03E-16	1.68E-15
W	3500	U-238	3.42E-09	6.16E-16	1.03E-16	7.19E-16
W	3500	Th-234	3.42E-09	6.16E-16	1.03E-16	7.19E-16
W	3500	Pa-234m	3.42E-09	6.15E-16	1.03E-16	7.18E-16
W	3500	Pa-234	3.37E-09	6.07E-16	1.02E-16	7.09E-16
W	3500	U-234	3.42E-09	6.16E-16	1.03E-16	7.19E-16
W	3500	Th-230	3.42E-09	6.16E-16	1.03E-16	7.19E-16
W	3500	Ra-226	2.97E-08	5.35E-15	8.95E-16	6.24E-15
W	3500	Rn-222	3.75E-08	0.00E+00	0.00E+00	0.00E+00
W	3500	Po-218	2.97E-08	5.35E-15	8.95E-16	6.24E-15
W	3500	Pb-214	2.97E-08	5.35E-15	8.95E-16	6.24E-15
W	3500	Bi-214	2.97E-08	5.35E-15	8.95E-16	6.24E-15
W	3500	Po-214	2.97E-08	5.34E-15	8.95E-16	6.24E-15
W	3500	Pb-210	2.88E-08	5.19E-15	8.68E-16	6.06E-15
W	3500	Bi-210	2.88E-08	5.19E-15	8.68E-16	6.06E-15
W	3500	Po-210	2.88E-08	5.19E-15	8.68E-16	6.06E-15
W	3500	At-218	5.94E-12	1.07E-18	1.79E-19	1.25E-18
W	3500	Th-232	8.73E-10	1.57E-16	2.63E-17	1.83E-16
W	3500	Ra-228	1.32E-08	2.37E-15	3.97E-16	2.77E-15
W	3500	Ac-228	1.32E-08	2.37E-15	3.97E-16	2.77E-15
W	3500	Th-228	1.32E-08	2.37E-15	3.97E-16	2.77E-15
W	3500	Ra-224	1.32E-08	2.37E-15	3.97E-16	2.77E-15
W	3500	Rn-220	1.66E-08	0.00E+00	0.00E+00	0.00E+00
W	3500	Po-216	1.32E-08	2.37E-15	3.97E-16	2.77E-15
W	3500	Pb-212	1.32E-08	2.37E-15	3.97E-16	2.77E-15
W	3500	Bi-212	1.32E-08	2.37E-15	3.97E-16	2.77E-15
W	3500	Po-212	8.44E-09	1.52E-15	2.54E-16	1.77E-15
W	3500	Tl-208	4.73E-09	8.51E-16	1.43E-16	9.94E-16
W	4500	U-238	2.31E-09	4.16E-16	7.91E-17	4.95E-16
W	4500	Th-234	2.31E-09	4.16E-16	7.91E-17	4.95E-16
W	4500	Pa-234m	2.31E-09	4.15E-16	7.89E-17	4.94E-16
W	4500	Pa-234	2.28E-09	4.10E-16	7.80E-17	4.88E-16
W	4500	U-234	2.31E-09	4.16E-16	7.91E-17	4.95E-16
W	4500	Th-230	2.31E-09	4.16E-16	7.91E-17	4.95E-16
W	4500	Ra-226	2.01E-08	3.61E-15	6.86E-16	4.30E-15
W	4500	Rn-222	2.61E-08	0.00E+00	0.00E+00	0.00E+00
W	4500	Po-218	2.01E-08	3.61E-15	6.86E-16	4.30E-15
W	4500	Pb-214	2.01E-08	3.61E-15	6.86E-16	4.30E-15
W	4500	Bi-214	2.01E-08	3.61E-15	6.86E-16	4.30E-15
W	4500	Po-214	2.00E-08	3.61E-15	6.86E-16	4.29E-15
W	4500	Pb-210	1.95E-08	3.50E-15	6.66E-16	4.17E-15
W	4500	Bi-210	1.95E-08	3.50E-15	6.66E-16	4.17E-15
W	4500	Po-210	1.95E-08	3.50E-15	6.66E-16	4.17E-15
W	4500	At-218	4.01E-12	7.22E-19	1.37E-19	8.59E-19
W	4500	Th-232	5.89E-10	1.06E-16	2.02E-17	1.26E-16
W	4500	Ra-228	8.89E-09	1.60E-15	3.04E-16	1.90E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
W	4500	Ac-228	8.89E-09	1.60E-15	3.04E-16	1.90E-15
W	4500	Th-228	8.89E-09	1.60E-15	3.04E-16	1.90E-15
W	4500	Ra-224	8.89E-09	1.60E-15	3.04E-16	1.90E-15
W	4500	Rn-220	1.16E-08	0.00E+00	0.00E+00	0.00E+00
W	4500	Po-216	8.89E-09	1.60E-15	3.04E-16	1.90E-15
W	4500	Pb-212	8.89E-09	1.60E-15	3.04E-16	1.90E-15
W	4500	Bi-212	8.89E-09	1.60E-15	3.04E-16	1.90E-15
W	4500	Po-212	5.70E-09	1.03E-15	1.95E-16	1.22E-15
W	4500	Tl-208	3.19E-09	5.75E-16	1.09E-16	6.84E-16
W	5500	U-238	1.69E-09	3.05E-16	6.40E-17	3.69E-16
W	5500	Th-234	1.69E-09	3.05E-16	6.40E-17	3.69E-16
W	5500	Pa-234m	1.69E-09	3.04E-16	6.39E-17	3.68E-16
W	5500	Pa-234	1.67E-09	3.00E-16	6.31E-17	3.63E-16
W	5500	U-234	1.69E-09	3.05E-16	6.40E-17	3.69E-16
W	5500	Th-230	1.69E-09	3.05E-16	6.40E-17	3.69E-16
W	5500	Ra-226	1.47E-08	2.64E-15	5.56E-16	3.20E-15
W	5500	Rn-222	1.96E-08	0.00E+00	0.00E+00	0.00E+00
W	5500	Po-218	1.47E-08	2.64E-15	5.56E-16	3.20E-15
W	5500	Pb-214	1.47E-08	2.64E-15	5.56E-16	3.20E-15
W	5500	Bi-214	1.47E-08	2.64E-15	5.56E-16	3.20E-15
W	5500	Po-214	1.47E-08	2.64E-15	5.56E-16	3.20E-15
W	5500	Pb-210	1.42E-08	2.56E-15	5.39E-16	3.10E-15
W	5500	Bi-210	1.42E-08	2.56E-15	5.39E-16	3.10E-15
W	5500	Po-210	1.42E-08	2.56E-15	5.39E-16	3.10E-15
W	5500	At-218	2.94E-12	5.28E-19	1.11E-19	6.39E-19
W	5500	Th-232	4.31E-10	7.77E-17	1.63E-17	9.40E-17
W	5500	Ra-228	6.51E-09	1.17E-15	2.46E-16	1.42E-15
W	5500	Ac-228	6.51E-09	1.17E-15	2.46E-16	1.42E-15
W	5500	Th-228	6.51E-09	1.17E-15	2.46E-16	1.42E-15
W	5500	Ra-224	6.51E-09	1.17E-15	2.46E-16	1.42E-15
W	5500	Rn-220	8.68E-09	0.00E+00	0.00E+00	0.00E+00
W	5500	Po-216	6.51E-09	1.17E-15	2.46E-16	1.42E-15
W	5500	Pb-212	6.51E-09	1.17E-15	2.46E-16	1.42E-15
W	5500	Bi-212	6.51E-09	1.17E-15	2.46E-16	1.42E-15
W	5500	Po-212	4.17E-09	7.51E-16	1.58E-16	9.09E-16
W	5500	Tl-208	2.34E-09	4.21E-16	8.85E-17	5.09E-16
W	7000	U-238	1.15E-09	2.06E-16	4.93E-17	2.56E-16
W	7000	Th-234	1.15E-09	2.06E-16	4.93E-17	2.56E-16
W	7000	Pa-234m	1.14E-09	2.06E-16	4.92E-17	2.55E-16
W	7000	Pa-234	1.13E-09	2.03E-16	4.86E-17	2.52E-16
W	7000	U-234	1.15E-09	2.06E-16	4.93E-17	2.56E-16
W	7000	Th-230	1.15E-09	2.06E-16	4.93E-17	2.56E-16
W	7000	Ra-226	9.94E-09	1.79E-15	4.28E-16	2.22E-15
W	7000	Rn-222	1.39E-08	0.00E+00	0.00E+00	0.00E+00
W	7000	Po-218	9.94E-09	1.79E-15	4.28E-16	2.22E-15
W	7000	Pb-214	9.94E-09	1.79E-15	4.28E-16	2.22E-15
W	7000	Bi-214	9.94E-09	1.79E-15	4.28E-16	2.22E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
W	7000	Po-214	9.94E-09	1.79E-15	4.28E-16	2.22E-15
W	7000	Pb-210	9.65E-09	1.74E-15	4.15E-16	2.15E-15
W	7000	Bi-210	9.65E-09	1.74E-15	4.15E-16	2.15E-15
W	7000	Po-210	9.65E-09	1.74E-15	4.15E-16	2.15E-15
W	7000	At-218	1.99E-12	3.58E-19	8.56E-20	4.43E-19
W	7000	Th-232	2.92E-10	5.26E-17	1.26E-17	6.52E-17
W	7000	Ra-228	4.41E-09	7.93E-16	1.90E-16	9.83E-16
W	7000	Ac-228	4.41E-09	7.93E-16	1.90E-16	9.83E-16
W	7000	Th-228	4.41E-09	7.93E-16	1.90E-16	9.83E-16
W	7000	Ra-224	4.41E-09	7.93E-16	1.90E-16	9.83E-16
W	7000	Rn-220	6.15E-09	0.00E+00	0.00E+00	0.00E+00
W	7000	Po-216	4.41E-09	7.93E-16	1.90E-16	9.83E-16
W	7000	Pb-212	4.41E-09	7.93E-16	1.90E-16	9.83E-16
W	7000	Bi-212	4.41E-09	7.93E-16	1.90E-16	9.83E-16
W	7000	Po-212	2.82E-09	5.08E-16	1.22E-16	6.30E-16
W	7000	Tl-208	1.58E-09	2.85E-16	6.82E-17	3.53E-16
WSW	50	U-238	4.38E-06	7.89E-13	5.84E-15	7.95E-13
WSW	50	Th-234	4.38E-06	7.89E-13	5.84E-15	7.95E-13
WSW	50	Pa-234m	4.37E-06	7.87E-13	5.83E-15	7.93E-13
WSW	50	Pa-234	4.32E-06	7.77E-13	5.76E-15	7.83E-13
WSW	50	U-234	4.38E-06	7.89E-13	5.84E-15	7.95E-13
WSW	50	Th-230	4.38E-06	7.89E-13	5.84E-15	7.95E-13
WSW	50	Ra-226	3.80E-05	6.84E-12	5.07E-14	6.89E-12
WSW	50	Rn-222	3.85E-05	0.00E+00	0.00E+00	0.00E+00
WSW	50	Po-218	3.80E-05	6.84E-12	5.07E-14	6.89E-12
WSW	50	Pb-214	3.80E-05	6.84E-12	5.07E-14	6.89E-12
WSW	50	Bi-214	3.80E-05	6.84E-12	5.07E-14	6.89E-12
WSW	50	Po-214	3.80E-05	6.84E-12	5.07E-14	6.89E-12
WSW	50	Pb-210	3.69E-05	6.64E-12	4.92E-14	6.69E-12
WSW	50	Bi-210	3.69E-05	6.64E-12	4.92E-14	6.69E-12
WSW	50	Po-210	3.69E-05	6.64E-12	4.92E-14	6.69E-12
WSW	50	At-218	7.60E-09	1.37E-15	1.01E-17	1.38E-15
WSW	50	Th-232	1.12E-06	2.01E-13	1.49E-15	2.03E-13
WSW	50	Ra-228	1.69E-05	3.03E-12	2.25E-14	3.06E-12
WSW	50	Ac-228	1.69E-05	3.03E-12	2.25E-14	3.06E-12
WSW	50	Th-228	1.69E-05	3.03E-12	2.25E-14	3.06E-12
WSW	50	Ra-224	1.69E-05	3.03E-12	2.25E-14	3.06E-12
WSW	50	Rn-220	1.71E-05	0.00E+00	0.00E+00	0.00E+00
WSW	50	Po-216	1.69E-05	3.03E-12	2.25E-14	3.06E-12
WSW	50	Pb-212	1.69E-05	3.03E-12	2.25E-14	3.06E-12
WSW	50	Bi-212	1.69E-05	3.03E-12	2.25E-14	3.06E-12
WSW	50	Po-212	1.08E-05	1.94E-12	1.44E-14	1.96E-12
WSW	50	Tl-208	6.06E-06	1.09E-12	8.08E-15	1.10E-12
WSW	100	U-238	1.27E-06	2.29E-13	2.58E-15	2.32E-13
WSW	100	Th-234	1.27E-06	2.29E-13	2.58E-15	2.32E-13
WSW	100	Pa-234m	1.27E-06	2.29E-13	2.58E-15	2.31E-13
WSW	100	Pa-234	1.25E-06	2.26E-13	2.55E-15	2.28E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
WSW	100	U-234	1.27E-06	2.29E-13	2.58E-15	2.32E-13
WSW	100	Th-230	1.27E-06	2.29E-13	2.58E-15	2.32E-13
WSW	100	Ra-226	1.10E-05	1.99E-12	2.24E-14	2.01E-12
WSW	100	Rn-222	1.14E-05	0.00E+00	0.00E+00	0.00E+00
WSW	100	Po-218	1.10E-05	1.99E-12	2.24E-14	2.01E-12
WSW	100	Pb-214	1.10E-05	1.99E-12	2.24E-14	2.01E-12
WSW	100	Bi-214	1.10E-05	1.99E-12	2.24E-14	2.01E-12
WSW	100	Po-214	1.10E-05	1.99E-12	2.24E-14	2.01E-12
WSW	100	Pb-210	1.07E-05	1.93E-12	2.18E-14	1.95E-12
WSW	100	Bi-210	1.07E-05	1.93E-12	2.18E-14	1.95E-12
WSW	100	Po-210	1.07E-05	1.93E-12	2.18E-14	1.95E-12
WSW	100	At-218	2.21E-09	3.98E-16	4.48E-18	4.02E-16
WSW	100	Th-232	3.25E-07	5.84E-14	6.59E-16	5.91E-14
WSW	100	Ra-228	4.90E-06	8.81E-13	9.94E-15	8.91E-13
WSW	100	Ac-228	4.90E-06	8.81E-13	9.94E-15	8.91E-13
WSW	100	Th-228	4.90E-06	8.81E-13	9.94E-15	8.91E-13
WSW	100	Ra-224	4.90E-06	8.81E-13	9.94E-15	8.91E-13
WSW	100	Rn-220	5.06E-06	0.00E+00	0.00E+00	0.00E+00
WSW	100	Po-216	4.90E-06	8.81E-13	9.94E-15	8.91E-13
WSW	100	Pb-212	4.90E-06	8.81E-13	9.94E-15	8.91E-13
WSW	100	Bi-212	4.90E-06	8.81E-13	9.94E-15	8.91E-13
WSW	100	Po-212	3.14E-06	5.65E-13	6.37E-15	5.71E-13
WSW	100	Tl-208	1.76E-06	3.17E-13	3.57E-15	3.20E-13
WSW	150	U-238	6.15E-07	1.11E-13	1.71E-15	1.12E-13
WSW	150	Th-234	6.15E-07	1.11E-13	1.71E-15	1.12E-13
WSW	150	Pa-234m	6.14E-07	1.11E-13	1.70E-15	1.12E-13
WSW	150	Pa-234	6.07E-07	1.09E-13	1.68E-15	1.11E-13
WSW	150	U-234	6.15E-07	1.11E-13	1.71E-15	1.12E-13
WSW	150	Th-230	6.15E-07	1.11E-13	1.71E-15	1.12E-13
WSW	150	Ra-226	5.34E-06	9.61E-13	1.48E-14	9.76E-13
WSW	150	Rn-222	5.61E-06	0.00E+00	0.00E+00	0.00E+00
WSW	150	Po-218	5.34E-06	9.61E-13	1.48E-14	9.76E-13
WSW	150	Pb-214	5.34E-06	9.61E-13	1.48E-14	9.76E-13
WSW	150	Bi-214	5.34E-06	9.61E-13	1.48E-14	9.76E-13
WSW	150	Po-214	5.34E-06	9.61E-13	1.48E-14	9.76E-13
WSW	150	Pb-210	5.18E-06	9.33E-13	1.44E-14	9.47E-13
WSW	150	Bi-210	5.18E-06	9.33E-13	1.44E-14	9.47E-13
WSW	150	Po-210	5.18E-06	9.33E-13	1.44E-14	9.47E-13
WSW	150	At-218	1.07E-09	1.92E-16	2.96E-18	1.95E-16
WSW	150	Th-232	1.57E-07	2.83E-14	4.36E-16	2.87E-14
WSW	150	Ra-228	2.37E-06	4.26E-13	6.57E-15	4.33E-13
WSW	150	Ac-228	2.37E-06	4.26E-13	6.57E-15	4.33E-13
WSW	150	Th-228	2.37E-06	4.26E-13	6.57E-15	4.33E-13
WSW	150	Ra-224	2.37E-06	4.26E-13	6.57E-15	4.33E-13
WSW	150	Rn-220	2.49E-06	0.00E+00	0.00E+00	0.00E+00
WSW	150	Po-216	2.37E-06	4.26E-13	6.57E-15	4.33E-13
WSW	150	Pb-212	2.37E-06	4.26E-13	6.57E-15	4.33E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
WSW	150	Bi-212	2.37E-06	4.26E-13	6.57E-15	4.33E-13
WSW	150	Po-212	1.52E-06	2.73E-13	4.21E-15	2.77E-13
WSW	150	Tl-208	8.51E-07	1.53E-13	2.36E-15	1.55E-13
WSW	250	U-238	2.38E-07	4.29E-14	1.01E-15	4.39E-14
WSW	250	Th-234	2.38E-07	4.29E-14	1.01E-15	4.39E-14
WSW	250	Pa-234m	2.38E-07	4.28E-14	1.01E-15	4.38E-14
WSW	250	Pa-234	2.35E-07	4.23E-14	9.99E-16	4.33E-14
WSW	250	U-234	2.38E-07	4.29E-14	1.01E-15	4.39E-14
WSW	250	Th-230	2.38E-07	4.29E-14	1.01E-15	4.39E-14
WSW	250	Ra-226	2.07E-06	3.72E-13	8.80E-15	3.81E-13
WSW	250	Rn-222	2.22E-06	0.00E+00	0.00E+00	0.00E+00
WSW	250	Po-218	2.07E-06	3.72E-13	8.80E-15	3.81E-13
WSW	250	Pb-214	2.07E-06	3.72E-13	8.80E-15	3.81E-13
WSW	250	Bi-214	2.07E-06	3.72E-13	8.80E-15	3.81E-13
WSW	250	Po-214	2.07E-06	3.72E-13	8.80E-15	3.81E-13
WSW	250	Pb-210	2.01E-06	3.61E-13	8.54E-15	3.70E-13
WSW	250	Bi-210	2.01E-06	3.61E-13	8.54E-15	3.70E-13
WSW	250	Po-210	2.01E-06	3.61E-13	8.54E-15	3.70E-13
WSW	250	At-218	4.13E-10	7.44E-17	1.76E-18	7.62E-17
WSW	250	Th-232	6.07E-08	1.09E-14	2.59E-16	1.12E-14
WSW	250	Ra-228	9.16E-07	1.65E-13	3.90E-15	1.69E-13
WSW	250	Ac-228	9.16E-07	1.65E-13	3.90E-15	1.69E-13
WSW	250	Th-228	9.16E-07	1.65E-13	3.90E-15	1.69E-13
WSW	250	Ra-224	9.16E-07	1.65E-13	3.90E-15	1.69E-13
WSW	250	Rn-220	9.84E-07	0.00E+00	0.00E+00	0.00E+00
WSW	250	Po-216	9.16E-07	1.65E-13	3.90E-15	1.69E-13
WSW	250	Pb-212	9.16E-07	1.65E-13	3.90E-15	1.69E-13
WSW	250	Bi-212	9.16E-07	1.65E-13	3.90E-15	1.69E-13
WSW	250	Po-212	5.87E-07	1.06E-13	2.50E-15	1.08E-13
WSW	250	Tl-208	3.29E-07	5.93E-14	1.40E-15	6.07E-14
WSW	350	U-238	1.26E-07	2.27E-14	7.18E-16	2.34E-14
WSW	350	Th-234	1.26E-07	2.27E-14	7.18E-16	2.34E-14
WSW	350	Pa-234m	1.26E-07	2.26E-14	7.17E-16	2.34E-14
WSW	350	Pa-234	1.24E-07	2.24E-14	7.08E-16	2.31E-14
WSW	350	U-234	1.26E-07	2.27E-14	7.18E-16	2.34E-14
WSW	350	Th-230	1.26E-07	2.27E-14	7.18E-16	2.34E-14
WSW	350	Ra-226	1.09E-06	1.97E-13	6.23E-15	2.03E-13
WSW	350	Rn-222	1.19E-06	0.00E+00	0.00E+00	0.00E+00
WSW	350	Po-218	1.09E-06	1.97E-13	6.23E-15	2.03E-13
WSW	350	Pb-214	1.09E-06	1.97E-13	6.23E-15	2.03E-13
WSW	350	Bi-214	1.09E-06	1.97E-13	6.23E-15	2.03E-13
WSW	350	Po-214	1.09E-06	1.97E-13	6.23E-15	2.03E-13
WSW	350	Pb-210	1.06E-06	1.91E-13	6.05E-15	1.97E-13
WSW	350	Bi-210	1.06E-06	1.91E-13	6.05E-15	1.97E-13
WSW	350	Po-210	1.06E-06	1.91E-13	6.05E-15	1.97E-13
WSW	350	At-218	2.19E-10	3.93E-17	1.25E-18	4.06E-17
WSW	350	Th-232	3.21E-08	5.78E-15	1.83E-16	5.97E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
WSW	350	Ra-228	4.85E-07	8.73E-14	2.76E-15	9.00E-14
WSW	350	Ac-228	4.85E-07	8.73E-14	2.76E-15	9.00E-14
WSW	350	Th-228	4.85E-07	8.73E-14	2.76E-15	9.00E-14
WSW	350	Ra-224	4.85E-07	8.73E-14	2.76E-15	9.00E-14
WSW	350	Rn-220	5.29E-07	0.00E+00	0.00E+00	0.00E+00
WSW	350	Po-216	4.85E-07	8.73E-14	2.76E-15	9.00E-14
WSW	350	Pb-212	4.85E-07	8.73E-14	2.76E-15	9.00E-14
WSW	350	Bi-212	4.85E-07	8.73E-14	2.76E-15	9.00E-14
WSW	350	Po-212	3.11E-07	5.59E-14	1.77E-15	5.77E-14
WSW	350	Tl-208	1.74E-07	3.13E-14	9.93E-16	3.23E-14
WSW	450	U-238	7.81E-08	1.41E-14	5.55E-16	1.46E-14
WSW	450	Th-234	7.81E-08	1.41E-14	5.55E-16	1.46E-14
WSW	450	Pa-234m	7.79E-08	1.40E-14	5.54E-16	1.46E-14
WSW	450	Pa-234	7.70E-08	1.39E-14	5.47E-16	1.44E-14
WSW	450	U-234	7.81E-08	1.41E-14	5.55E-16	1.46E-14
WSW	450	Th-230	7.81E-08	1.41E-14	5.55E-16	1.46E-14
WSW	450	Ra-226	6.78E-07	1.22E-13	4.82E-15	1.27E-13
WSW	450	Rn-222	7.49E-07	0.00E+00	0.00E+00	0.00E+00
WSW	450	Po-218	6.78E-07	1.22E-13	4.82E-15	1.27E-13
WSW	450	Pb-214	6.78E-07	1.22E-13	4.82E-15	1.27E-13
WSW	450	Bi-214	6.78E-07	1.22E-13	4.82E-15	1.27E-13
WSW	450	Po-214	6.78E-07	1.22E-13	4.82E-15	1.27E-13
WSW	450	Pb-210	6.58E-07	1.18E-13	4.67E-15	1.23E-13
WSW	450	Bi-210	6.58E-07	1.18E-13	4.67E-15	1.23E-13
WSW	450	Po-210	6.58E-07	1.18E-13	4.67E-15	1.23E-13
WSW	450	At-218	1.35E-10	2.44E-17	9.63E-19	2.53E-17
WSW	450	Th-232	1.99E-08	3.58E-15	1.42E-16	3.73E-15
WSW	450	Ra-228	3.00E-07	5.41E-14	2.13E-15	5.62E-14
WSW	450	Ac-228	3.00E-07	5.41E-14	2.13E-15	5.62E-14
WSW	450	Th-228	3.00E-07	5.41E-14	2.13E-15	5.62E-14
WSW	450	Ra-224	3.00E-07	5.41E-14	2.13E-15	5.62E-14
WSW	450	Rn-220	3.32E-07	0.00E+00	0.00E+00	0.00E+00
WSW	450	Po-216	3.00E-07	5.41E-14	2.13E-15	5.62E-14
WSW	450	Pb-212	3.00E-07	5.41E-14	2.13E-15	5.62E-14
WSW	450	Bi-212	3.00E-07	5.41E-14	2.13E-15	5.62E-14
WSW	450	Po-212	1.93E-07	3.47E-14	1.37E-15	3.60E-14
WSW	450	Tl-208	1.08E-07	1.94E-14	7.67E-16	2.02E-14
WSW	750	U-238	2.94E-08	5.29E-15	3.29E-16	5.62E-15
WSW	750	Th-234	2.94E-08	5.29E-15	3.29E-16	5.62E-15
WSW	750	Pa-234m	2.94E-08	5.28E-15	3.28E-16	5.61E-15
WSW	750	Pa-234	2.90E-08	5.22E-15	3.24E-16	5.54E-15
WSW	750	U-234	2.94E-08	5.29E-15	3.29E-16	5.62E-15
WSW	750	Th-230	2.94E-08	5.29E-15	3.29E-16	5.62E-15
WSW	750	Ra-226	2.55E-07	4.59E-14	2.85E-15	4.88E-14
WSW	750	Rn-222	2.89E-07	0.00E+00	0.00E+00	0.00E+00
WSW	750	Po-218	2.55E-07	4.59E-14	2.85E-15	4.88E-14
WSW	750	Pb-214	2.55E-07	4.59E-14	2.85E-15	4.88E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
WSW	750	Bi-214	2.55E-07	4.59E-14	2.85E-15	4.88E-14
WSW	750	Po-214	2.55E-07	4.59E-14	2.85E-15	4.88E-14
WSW	750	Pb-210	2.48E-07	4.46E-14	2.77E-15	4.73E-14
WSW	750	Bi-210	2.48E-07	4.46E-14	2.77E-15	4.73E-14
WSW	750	Po-210	2.48E-07	4.46E-14	2.77E-15	4.73E-14
WSW	750	At-218	5.10E-11	9.18E-18	5.70E-19	9.75E-18
WSW	750	Th-232	7.50E-09	1.35E-15	8.38E-17	1.43E-15
WSW	750	Ra-228	1.13E-07	2.04E-14	1.26E-15	2.16E-14
WSW	750	Ac-228	1.13E-07	2.04E-14	1.26E-15	2.16E-14
WSW	750	Th-228	1.13E-07	2.04E-14	1.26E-15	2.16E-14
WSW	750	Ra-224	1.13E-07	2.04E-14	1.26E-15	2.16E-14
WSW	750	Rn-220	1.28E-07	0.00E+00	0.00E+00	0.00E+00
WSW	750	Po-216	1.13E-07	2.04E-14	1.26E-15	2.16E-14
WSW	750	Pb-212	1.13E-07	2.04E-14	1.26E-15	2.16E-14
WSW	750	Bi-212	1.13E-07	2.04E-14	1.26E-15	2.16E-14
WSW	750	Po-212	7.25E-08	1.31E-14	8.10E-16	1.39E-14
WSW	750	Tl-208	4.07E-08	7.32E-15	4.54E-16	7.77E-15
WSW	1500	U-238	8.37E-09	1.51E-15	1.61E-16	1.67E-15
WSW	1500	Th-234	8.37E-09	1.51E-15	1.61E-16	1.67E-15
WSW	1500	Pa-234m	8.36E-09	1.50E-15	1.61E-16	1.66E-15
WSW	1500	Pa-234	8.25E-09	1.49E-15	1.59E-16	1.64E-15
WSW	1500	U-234	8.37E-09	1.51E-15	1.61E-16	1.67E-15
WSW	1500	Th-230	8.37E-09	1.51E-15	1.61E-16	1.67E-15
WSW	1500	Ra-226	7.27E-08	1.31E-14	1.40E-15	1.45E-14
WSW	1500	Rn-222	8.58E-08	0.00E+00	0.00E+00	0.00E+00
WSW	1500	Po-218	7.27E-08	1.31E-14	1.40E-15	1.45E-14
WSW	1500	Pb-214	7.27E-08	1.31E-14	1.40E-15	1.45E-14
WSW	1500	Bi-214	7.27E-08	1.31E-14	1.40E-15	1.45E-14
WSW	1500	Po-214	7.26E-08	1.31E-14	1.40E-15	1.45E-14
WSW	1500	Pb-210	7.05E-08	1.27E-14	1.36E-15	1.40E-14
WSW	1500	Bi-210	7.05E-08	1.27E-14	1.36E-15	1.40E-14
WSW	1500	Po-210	7.05E-08	1.27E-14	1.36E-15	1.40E-14
WSW	1500	At-218	1.45E-11	2.61E-18	2.79E-19	2.89E-18
WSW	1500	Th-232	2.13E-09	3.84E-16	4.10E-17	4.25E-16
WSW	1500	Ra-228	3.22E-08	5.80E-15	6.19E-16	6.42E-15
WSW	1500	Ac-228	3.22E-08	5.80E-15	6.19E-16	6.42E-15
WSW	1500	Th-228	3.22E-08	5.80E-15	6.19E-16	6.42E-15
WSW	1500	Ra-224	3.22E-08	5.80E-15	6.19E-16	6.42E-15
WSW	1500	Rn-220	3.80E-08	0.00E+00	0.00E+00	0.00E+00
WSW	1500	Po-216	3.22E-08	5.80E-15	6.19E-16	6.42E-15
WSW	1500	Pb-212	3.22E-08	5.80E-15	6.19E-16	6.42E-15
WSW	1500	Bi-212	3.22E-08	5.80E-15	6.19E-16	6.42E-15
WSW	1500	Po-212	2.06E-08	3.72E-15	3.97E-16	4.11E-15
WSW	1500	Tl-208	1.16E-08	2.08E-15	2.22E-16	2.31E-15
WSW	2500	U-238	3.45E-09	6.21E-16	9.51E-17	7.16E-16
WSW	2500	Th-234	3.45E-09	6.21E-16	9.51E-17	7.16E-16
WSW	2500	Pa-234m	3.44E-09	6.20E-16	9.49E-17	7.15E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
WSW	2500	Pa-234	3.40E-09	6.12E-16	9.37E-17	7.06E-16
WSW	2500	U-234	3.45E-09	6.21E-16	9.51E-17	7.16E-16
WSW	2500	Th-230	3.45E-09	6.21E-16	9.51E-17	7.16E-16
WSW	2500	Ra-226	2.99E-08	5.39E-15	8.25E-16	6.22E-15
WSW	2500	Rn-222	3.66E-08	0.00E+00	0.00E+00	0.00E+00
WSW	2500	Po-218	2.99E-08	5.39E-15	8.25E-16	6.22E-15
WSW	2500	Pb-214	2.99E-08	5.39E-15	8.25E-16	6.22E-15
WSW	2500	Bi-214	2.99E-08	5.39E-15	8.25E-16	6.22E-15
WSW	2500	Po-214	2.99E-08	5.39E-15	8.25E-16	6.21E-15
WSW	2500	Pb-210	2.91E-08	5.23E-15	8.01E-16	6.03E-15
WSW	2500	Bi-210	2.91E-08	5.23E-15	8.01E-16	6.03E-15
WSW	2500	Po-210	2.91E-08	5.23E-15	8.01E-16	6.03E-15
WSW	2500	At-218	5.99E-12	1.08E-18	1.65E-19	1.24E-18
WSW	2500	Th-232	8.80E-10	1.58E-16	2.42E-17	1.83E-16
WSW	2500	Ra-228	1.33E-08	2.39E-15	3.66E-16	2.76E-15
WSW	2500	Ac-228	1.33E-08	2.39E-15	3.66E-16	2.76E-15
WSW	2500	Th-228	1.33E-08	2.39E-15	3.66E-16	2.76E-15
WSW	2500	Ra-224	1.33E-08	2.39E-15	3.66E-16	2.76E-15
WSW	2500	Rn-220	1.62E-08	0.00E+00	0.00E+00	0.00E+00
WSW	2500	Po-216	1.33E-08	2.39E-15	3.66E-16	2.76E-15
WSW	2500	Pb-212	1.33E-08	2.39E-15	3.66E-16	2.76E-15
WSW	2500	Bi-212	1.33E-08	2.39E-15	3.66E-16	2.76E-15
WSW	2500	Po-212	8.51E-09	1.53E-15	2.34E-16	1.77E-15
WSW	2500	Tl-208	4.77E-09	8.59E-16	1.31E-16	9.90E-16
WSW	3500	U-238	1.98E-09	3.56E-16	6.70E-17	4.23E-16
WSW	3500	Th-234	1.98E-09	3.56E-16	6.70E-17	4.23E-16
WSW	3500	Pa-234m	1.97E-09	3.55E-16	6.68E-17	4.22E-16
WSW	3500	Pa-234	1.95E-09	3.51E-16	6.60E-17	4.17E-16
WSW	3500	U-234	1.98E-09	3.56E-16	6.70E-17	4.23E-16
WSW	3500	Th-230	1.98E-09	3.56E-16	6.70E-17	4.23E-16
WSW	3500	Ra-226	1.72E-08	3.09E-15	5.81E-16	3.67E-15
WSW	3500	Rn-222	2.16E-08	0.00E+00	0.00E+00	0.00E+00
WSW	3500	Po-218	1.72E-08	3.09E-15	5.81E-16	3.67E-15
WSW	3500	Pb-214	1.72E-08	3.09E-15	5.81E-16	3.67E-15
WSW	3500	Bi-214	1.72E-08	3.09E-15	5.81E-16	3.67E-15
WSW	3500	Po-214	1.72E-08	3.09E-15	5.81E-16	3.67E-15
WSW	3500	Pb-210	1.67E-08	3.00E-15	5.64E-16	3.56E-15
WSW	3500	Bi-210	1.67E-08	3.00E-15	5.64E-16	3.56E-15
WSW	3500	Po-210	1.67E-08	3.00E-15	5.64E-16	3.56E-15
WSW	3500	At-218	3.43E-12	6.18E-19	1.16E-19	7.34E-19
WSW	3500	Th-232	5.04E-10	9.08E-17	1.71E-17	1.08E-16
WSW	3500	Ra-228	7.61E-09	1.37E-15	2.58E-16	1.63E-15
WSW	3500	Ac-228	7.61E-09	1.37E-15	2.58E-16	1.63E-15
WSW	3500	Th-228	7.61E-09	1.37E-15	2.58E-16	1.63E-15
WSW	3500	Ra-224	7.61E-09	1.37E-15	2.58E-16	1.63E-15
WSW	3500	Rn-220	9.60E-09	0.00E+00	0.00E+00	0.00E+00
WSW	3500	Po-216	7.61E-09	1.37E-15	2.58E-16	1.63E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
WSW	3500	Pb-212	7.61E-09	1.37E-15	2.58E-16	1.63E-15
WSW	3500	Bi-212	7.61E-09	1.37E-15	2.58E-16	1.63E-15
WSW	3500	Po-212	4.88E-09	8.78E-16	1.65E-16	1.04E-15
WSW	3500	Tl-208	2.73E-09	4.92E-16	9.26E-17	5.85E-16
WSW	4500	U-238	1.33E-09	2.40E-16	5.14E-17	2.91E-16
WSW	4500	Th-234	1.33E-09	2.40E-16	5.14E-17	2.91E-16
WSW	4500	Pa-234m	1.33E-09	2.39E-16	5.13E-17	2.90E-16
WSW	4500	Pa-234	1.31E-09	2.36E-16	5.07E-17	2.87E-16
WSW	4500	U-234	1.33E-09	2.40E-16	5.14E-17	2.91E-16
WSW	4500	Th-230	1.33E-09	2.40E-16	5.14E-17	2.91E-16
WSW	4500	Ra-226	1.15E-08	2.08E-15	4.46E-16	2.53E-15
WSW	4500	Rn-222	1.50E-08	0.00E+00	0.00E+00	0.00E+00
WSW	4500	Po-218	1.15E-08	2.08E-15	4.46E-16	2.53E-15
WSW	4500	Pb-214	1.15E-08	2.08E-15	4.46E-16	2.53E-15
WSW	4500	Bi-214	1.15E-08	2.08E-15	4.46E-16	2.53E-15
WSW	4500	Po-214	1.15E-08	2.08E-15	4.46E-16	2.52E-15
WSW	4500	Pb-210	1.12E-08	2.02E-15	4.33E-16	2.45E-15
WSW	4500	Bi-210	1.12E-08	2.02E-15	4.33E-16	2.45E-15
WSW	4500	Po-210	1.12E-08	2.02E-15	4.33E-16	2.45E-15
WSW	4500	At-218	2.31E-12	4.16E-19	8.92E-20	5.05E-19
WSW	4500	Th-232	3.39E-10	6.11E-17	1.31E-17	7.42E-17
WSW	4500	Ra-228	5.12E-09	9.22E-16	1.98E-16	1.12E-15
WSW	4500	Ac-228	5.12E-09	9.22E-16	1.98E-16	1.12E-15
WSW	4500	Th-228	5.12E-09	9.22E-16	1.98E-16	1.12E-15
WSW	4500	Ra-224	5.12E-09	9.22E-16	1.98E-16	1.12E-15
WSW	4500	Rn-220	6.66E-09	0.00E+00	0.00E+00	0.00E+00
WSW	4500	Po-216	5.12E-09	9.22E-16	1.98E-16	1.12E-15
WSW	4500	Pb-212	5.12E-09	9.22E-16	1.98E-16	1.12E-15
WSW	4500	Bi-212	5.12E-09	9.22E-16	1.98E-16	1.12E-15
WSW	4500	Po-212	3.28E-09	5.91E-16	1.27E-16	7.17E-16
WSW	4500	Tl-208	1.84E-09	3.31E-16	7.11E-17	4.02E-16
WSW	5500	U-238	9.72E-10	1.75E-16	4.17E-17	2.17E-16
WSW	5500	Th-234	9.72E-10	1.75E-16	4.17E-17	2.17E-16
WSW	5500	Pa-234m	9.70E-10	1.75E-16	4.16E-17	2.16E-16
WSW	5500	Pa-234	9.58E-10	1.72E-16	4.11E-17	2.14E-16
WSW	5500	U-234	9.72E-10	1.75E-16	4.17E-17	2.17E-16
WSW	5500	Th-230	9.72E-10	1.75E-16	4.17E-17	2.17E-16
WSW	5500	Ra-226	8.43E-09	1.52E-15	3.62E-16	1.88E-15
WSW	5500	Rn-222	1.12E-08	0.00E+00	0.00E+00	0.00E+00
WSW	5500	Po-218	8.43E-09	1.52E-15	3.62E-16	1.88E-15
WSW	5500	Pb-214	8.43E-09	1.52E-15	3.62E-16	1.88E-15
WSW	5500	Bi-214	8.43E-09	1.52E-15	3.62E-16	1.88E-15
WSW	5500	Po-214	8.43E-09	1.52E-15	3.62E-16	1.88E-15
WSW	5500	Pb-210	8.18E-09	1.47E-15	3.51E-16	1.82E-15
WSW	5500	Bi-210	8.18E-09	1.47E-15	3.51E-16	1.82E-15
WSW	5500	Po-210	8.18E-09	1.47E-15	3.51E-16	1.82E-15
WSW	5500	At-218	1.69E-12	3.03E-19	7.23E-20	3.76E-19

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
WSW	5500	Th-232	2.48E-10	4.46E-17	1.06E-17	5.52E-17
WSW	5500	Ra-228	3.74E-09	6.73E-16	1.60E-16	8.33E-16
WSW	5500	Ac-228	3.74E-09	6.73E-16	1.60E-16	8.33E-16
WSW	5500	Th-228	3.74E-09	6.73E-16	1.60E-16	8.33E-16
WSW	5500	Ra-224	3.74E-09	6.73E-16	1.60E-16	8.33E-16
WSW	5500	Rn-220	4.98E-09	0.00E+00	0.00E+00	0.00E+00
WSW	5500	Po-216	3.74E-09	6.73E-16	1.60E-16	8.33E-16
WSW	5500	Pb-212	3.74E-09	6.73E-16	1.60E-16	8.33E-16
WSW	5500	Bi-212	3.74E-09	6.73E-16	1.60E-16	8.33E-16
WSW	5500	Po-212	2.40E-09	4.31E-16	1.03E-16	5.34E-16
WSW	5500	Tl-208	1.34E-09	2.42E-16	5.76E-17	2.99E-16
WSW	7000	U-238	6.56E-10	1.18E-16	3.22E-17	1.50E-16
WSW	7000	Th-234	6.56E-10	1.18E-16	3.22E-17	1.50E-16
WSW	7000	Pa-234m	6.55E-10	1.18E-16	3.21E-17	1.50E-16
WSW	7000	Pa-234	6.47E-10	1.16E-16	3.17E-17	1.48E-16
WSW	7000	U-234	6.56E-10	1.18E-16	3.22E-17	1.50E-16
WSW	7000	Th-230	6.56E-10	1.18E-16	3.22E-17	1.50E-16
WSW	7000	Ra-226	5.70E-09	1.03E-15	2.79E-16	1.30E-15
WSW	7000	Rn-222	7.93E-09	0.00E+00	0.00E+00	0.00E+00
WSW	7000	Po-218	5.70E-09	1.03E-15	2.79E-16	1.30E-15
WSW	7000	Pb-214	5.70E-09	1.03E-15	2.79E-16	1.30E-15
WSW	7000	Bi-214	5.70E-09	1.03E-15	2.79E-16	1.30E-15
WSW	7000	Po-214	5.69E-09	1.02E-15	2.79E-16	1.30E-15
WSW	7000	Pb-210	5.53E-09	9.95E-16	2.71E-16	1.27E-15
WSW	7000	Bi-210	5.53E-09	9.95E-16	2.71E-16	1.27E-15
WSW	7000	Po-210	5.53E-09	9.95E-16	2.71E-16	1.27E-15
WSW	7000	At-218	1.14E-12	2.05E-19	5.58E-20	2.61E-19
WSW	7000	Th-232	1.67E-10	3.01E-17	8.21E-18	3.83E-17
WSW	7000	Ra-228	2.52E-09	4.54E-16	1.24E-16	5.78E-16
WSW	7000	Ac-228	2.52E-09	4.54E-16	1.24E-16	5.78E-16
WSW	7000	Th-228	2.52E-09	4.54E-16	1.24E-16	5.78E-16
WSW	7000	Ra-224	2.52E-09	4.54E-16	1.24E-16	5.78E-16
WSW	7000	Rn-220	3.51E-09	0.00E+00	0.00E+00	0.00E+00
WSW	7000	Po-216	2.52E-09	4.54E-16	1.24E-16	5.78E-16
WSW	7000	Pb-212	2.52E-09	4.54E-16	1.24E-16	5.78E-16
WSW	7000	Bi-212	2.52E-09	4.54E-16	1.24E-16	5.78E-16
WSW	7000	Po-212	1.62E-09	2.91E-16	7.93E-17	3.71E-16
WSW	7000	Tl-208	9.07E-10	1.63E-16	4.45E-17	2.08E-16
SW	50	U-238	3.75E-06	6.76E-13	5.29E-15	6.81E-13
SW	50	Th-234	3.75E-06	6.76E-13	5.29E-15	6.81E-13
SW	50	Pa-234m	3.75E-06	6.74E-13	5.28E-15	6.80E-13
SW	50	Pa-234	3.70E-06	6.66E-13	5.21E-15	6.71E-13
SW	50	U-234	3.75E-06	6.76E-13	5.29E-15	6.81E-13
SW	50	Th-230	3.75E-06	6.76E-13	5.29E-15	6.81E-13
SW	50	Ra-226	3.26E-05	5.86E-12	4.59E-14	5.91E-12
SW	50	Rn-222	3.30E-05	0.00E+00	0.00E+00	0.00E+00
SW	50	Po-218	3.26E-05	5.86E-12	4.59E-14	5.91E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SW	50	Pb-214	3.26E-05	5.86E-12	4.59E-14	5.91E-12
SW	50	Bi-214	3.26E-05	5.86E-12	4.59E-14	5.91E-12
SW	50	Po-214	3.26E-05	5.86E-12	4.59E-14	5.91E-12
SW	50	Pb-210	3.16E-05	5.69E-12	4.45E-14	5.73E-12
SW	50	Bi-210	3.16E-05	5.69E-12	4.45E-14	5.73E-12
SW	50	Po-210	3.16E-05	5.69E-12	4.45E-14	5.73E-12
SW	50	At-218	6.51E-09	1.17E-15	9.17E-18	1.18E-15
SW	50	Th-232	9.57E-07	1.72E-13	1.35E-15	1.74E-13
SW	50	Ra-228	1.44E-05	2.60E-12	2.03E-14	2.62E-12
SW	50	Ac-228	1.44E-05	2.60E-12	2.03E-14	2.62E-12
SW	50	Th-228	1.44E-05	2.60E-12	2.03E-14	2.62E-12
SW	50	Ra-224	1.44E-05	2.60E-12	2.03E-14	2.62E-12
SW	50	Rn-220	1.46E-05	0.00E+00	0.00E+00	0.00E+00
SW	50	Po-216	1.44E-05	2.60E-12	2.03E-14	2.62E-12
SW	50	Pb-212	1.44E-05	2.60E-12	2.03E-14	2.62E-12
SW	50	Bi-212	1.44E-05	2.60E-12	2.03E-14	2.62E-12
SW	50	Po-212	9.25E-06	1.67E-12	1.30E-14	1.68E-12
SW	50	Tl-208	5.19E-06	9.34E-13	7.31E-15	9.41E-13
SW	100	U-238	1.17E-06	2.11E-13	2.62E-15	2.14E-13
SW	100	Th-234	1.17E-06	2.11E-13	2.62E-15	2.14E-13
SW	100	Pa-234m	1.17E-06	2.11E-13	2.62E-15	2.13E-13
SW	100	Pa-234	1.16E-06	2.08E-13	2.59E-15	2.11E-13
SW	100	U-234	1.17E-06	2.11E-13	2.62E-15	2.14E-13
SW	100	Th-230	1.17E-06	2.11E-13	2.62E-15	2.14E-13
SW	100	Ra-226	1.02E-05	1.83E-12	2.28E-14	1.85E-12
SW	100	Rn-222	1.05E-05	0.00E+00	0.00E+00	0.00E+00
SW	100	Po-218	1.02E-05	1.83E-12	2.28E-14	1.85E-12
SW	100	Pb-214	1.02E-05	1.83E-12	2.28E-14	1.85E-12
SW	100	Bi-214	1.02E-05	1.83E-12	2.28E-14	1.85E-12
SW	100	Po-214	1.02E-05	1.83E-12	2.28E-14	1.85E-12
SW	100	Pb-210	9.88E-06	1.78E-12	2.21E-14	1.80E-12
SW	100	Bi-210	9.88E-06	1.78E-12	2.21E-14	1.80E-12
SW	100	Po-210	9.88E-06	1.78E-12	2.21E-14	1.80E-12
SW	100	At-218	2.03E-09	3.66E-16	4.55E-18	3.71E-16
SW	100	Th-232	2.99E-07	5.38E-14	6.69E-16	5.45E-14
SW	100	Ra-228	4.51E-06	8.12E-13	1.01E-14	8.22E-13
SW	100	Ac-228	4.51E-06	8.12E-13	1.01E-14	8.22E-13
SW	100	Th-228	4.51E-06	8.12E-13	1.01E-14	8.22E-13
SW	100	Ra-224	4.51E-06	8.12E-13	1.01E-14	8.22E-13
SW	100	Rn-220	4.65E-06	0.00E+00	0.00E+00	0.00E+00
SW	100	Po-216	4.51E-06	8.12E-13	1.01E-14	8.22E-13
SW	100	Pb-212	4.51E-06	8.12E-13	1.01E-14	8.22E-13
SW	100	Bi-212	4.51E-06	8.12E-13	1.01E-14	8.22E-13
SW	100	Po-212	2.89E-06	5.20E-13	6.47E-15	5.27E-13
SW	100	Tl-208	1.62E-06	2.92E-13	3.63E-15	2.95E-13
SW	150	U-238	5.64E-07	1.02E-13	1.74E-15	1.03E-13
SW	150	Th-234	5.64E-07	1.02E-13	1.74E-15	1.03E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SW	150	Pa-234m	5.63E-07	1.01E-13	1.73E-15	1.03E-13
SW	150	Pa-234	5.56E-07	1.00E-13	1.71E-15	1.02E-13
SW	150	U-234	5.64E-07	1.02E-13	1.74E-15	1.03E-13
SW	150	Th-230	5.64E-07	1.02E-13	1.74E-15	1.03E-13
SW	150	Ra-226	4.90E-06	8.81E-13	1.51E-14	8.96E-13
SW	150	Rn-222	5.11E-06	0.00E+00	0.00E+00	0.00E+00
SW	150	Po-218	4.90E-06	8.81E-13	1.51E-14	8.96E-13
SW	150	Pb-214	4.90E-06	8.81E-13	1.51E-14	8.96E-13
SW	150	Bi-214	4.90E-06	8.81E-13	1.51E-14	8.96E-13
SW	150	Po-214	4.89E-06	8.81E-13	1.51E-14	8.96E-13
SW	150	Pb-210	4.75E-06	8.55E-13	1.46E-14	8.70E-13
SW	150	Bi-210	4.75E-06	8.55E-13	1.46E-14	8.70E-13
SW	150	Po-210	4.75E-06	8.55E-13	1.46E-14	8.70E-13
SW	150	At-218	9.79E-10	1.76E-16	3.01E-18	1.79E-16
SW	150	Th-232	1.44E-07	2.59E-14	4.43E-16	2.63E-14
SW	150	Ra-228	2.17E-06	3.91E-13	6.68E-15	3.97E-13
SW	150	Ac-228	2.17E-06	3.91E-13	6.68E-15	3.97E-13
SW	150	Th-228	2.17E-06	3.91E-13	6.68E-15	3.97E-13
SW	150	Ra-224	2.17E-06	3.91E-13	6.68E-15	3.97E-13
SW	150	Rn-220	2.27E-06	0.00E+00	0.00E+00	0.00E+00
SW	150	Po-216	2.17E-06	3.91E-13	6.68E-15	3.97E-13
SW	150	Pb-212	2.17E-06	3.91E-13	6.68E-15	3.97E-13
SW	150	Bi-212	2.17E-06	3.91E-13	6.68E-15	3.97E-13
SW	150	Po-212	1.39E-06	2.50E-13	4.28E-15	2.55E-13
SW	150	Tl-208	7.80E-07	1.40E-13	2.40E-15	1.43E-13
SW	250	U-238	2.18E-07	3.93E-14	1.03E-15	4.03E-14
SW	250	Th-234	2.18E-07	3.93E-14	1.03E-15	4.03E-14
SW	250	Pa-234m	2.18E-07	3.92E-14	1.03E-15	4.02E-14
SW	250	Pa-234	2.15E-07	3.87E-14	1.02E-15	3.97E-14
SW	250	U-234	2.18E-07	3.93E-14	1.03E-15	4.03E-14
SW	250	Th-230	2.18E-07	3.93E-14	1.03E-15	4.03E-14
SW	250	Ra-226	1.89E-06	3.41E-13	8.96E-15	3.50E-13
SW	250	Rn-222	2.01E-06	0.00E+00	0.00E+00	0.00E+00
SW	250	Po-218	1.89E-06	3.41E-13	8.96E-15	3.50E-13
SW	250	Pb-214	1.89E-06	3.41E-13	8.96E-15	3.50E-13
SW	250	Bi-214	1.89E-06	3.41E-13	8.96E-15	3.50E-13
SW	250	Po-214	1.89E-06	3.41E-13	8.96E-15	3.50E-13
SW	250	Pb-210	1.84E-06	3.31E-13	8.70E-15	3.39E-13
SW	250	Bi-210	1.84E-06	3.31E-13	8.70E-15	3.39E-13
SW	250	Po-210	1.84E-06	3.31E-13	8.70E-15	3.39E-13
SW	250	At-218	3.78E-10	6.81E-17	1.79E-18	6.99E-17
SW	250	Th-232	5.56E-08	1.00E-14	2.63E-16	1.03E-14
SW	250	Ra-228	8.39E-07	1.51E-13	3.97E-15	1.55E-13
SW	250	Ac-228	8.39E-07	1.51E-13	3.97E-15	1.55E-13
SW	250	Th-228	8.39E-07	1.51E-13	3.97E-15	1.55E-13
SW	250	Ra-224	8.39E-07	1.51E-13	3.97E-15	1.55E-13
SW	250	Rn-220	8.92E-07	0.00E+00	0.00E+00	0.00E+00

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SW	250	Po-216	8.39E-07	1.51E-13	3.97E-15	1.55E-13
SW	250	Pb-212	8.39E-07	1.51E-13	3.97E-15	1.55E-13
SW	250	Bi-212	8.39E-07	1.51E-13	3.97E-15	1.55E-13
SW	250	Po-212	5.38E-07	9.68E-14	2.55E-15	9.94E-14
SW	250	Tl-208	3.02E-07	5.43E-14	1.43E-15	5.57E-14
SW	350	U-238	1.16E-07	2.08E-14	7.33E-16	2.15E-14
SW	350	Th-234	1.16E-07	2.08E-14	7.33E-16	2.15E-14
SW	350	Pa-234m	1.15E-07	2.08E-14	7.31E-16	2.15E-14
SW	350	Pa-234	1.14E-07	2.05E-14	7.22E-16	2.12E-14
SW	350	U-234	1.16E-07	2.08E-14	7.33E-16	2.15E-14
SW	350	Th-230	1.16E-07	2.08E-14	7.33E-16	2.15E-14
SW	350	Ra-226	1.00E-06	1.80E-13	6.36E-15	1.87E-13
SW	350	Rn-222	1.08E-06	0.00E+00	0.00E+00	0.00E+00
SW	350	Po-218	1.00E-06	1.80E-13	6.36E-15	1.87E-13
SW	350	Pb-214	1.00E-06	1.80E-13	6.36E-15	1.87E-13
SW	350	Bi-214	1.00E-06	1.80E-13	6.36E-15	1.87E-13
SW	350	Po-214	1.00E-06	1.80E-13	6.36E-15	1.87E-13
SW	350	Pb-210	9.73E-07	1.75E-13	6.17E-15	1.81E-13
SW	350	Bi-210	9.73E-07	1.75E-13	6.17E-15	1.81E-13
SW	350	Po-210	9.73E-07	1.75E-13	6.17E-15	1.81E-13
SW	350	At-218	2.00E-10	3.61E-17	1.27E-18	3.73E-17
SW	350	Th-232	2.95E-08	5.30E-15	1.87E-16	5.49E-15
SW	350	Ra-228	4.44E-07	8.00E-14	2.82E-15	8.28E-14
SW	350	Ac-228	4.44E-07	8.00E-14	2.82E-15	8.28E-14
SW	350	Th-228	4.44E-07	8.00E-14	2.82E-15	8.28E-14
SW	350	Ra-224	4.44E-07	8.00E-14	2.82E-15	8.28E-14
SW	350	Rn-220	4.79E-07	0.00E+00	0.00E+00	0.00E+00
SW	350	Po-216	4.44E-07	8.00E-14	2.82E-15	8.28E-14
SW	350	Pb-212	4.44E-07	8.00E-14	2.82E-15	8.28E-14
SW	350	Bi-212	4.44E-07	8.00E-14	2.82E-15	8.28E-14
SW	350	Po-212	2.85E-07	5.13E-14	1.81E-15	5.31E-14
SW	350	Tl-208	1.60E-07	2.87E-14	1.01E-15	2.98E-14
SW	450	U-238	7.17E-08	1.29E-14	5.67E-16	1.35E-14
SW	450	Th-234	7.17E-08	1.29E-14	5.67E-16	1.35E-14
SW	450	Pa-234m	7.16E-08	1.29E-14	5.66E-16	1.34E-14
SW	450	Pa-234	7.07E-08	1.27E-14	5.59E-16	1.33E-14
SW	450	U-234	7.17E-08	1.29E-14	5.67E-16	1.35E-14
SW	450	Th-230	7.17E-08	1.29E-14	5.67E-16	1.35E-14
SW	450	Ra-226	6.22E-07	1.12E-13	4.92E-15	1.17E-13
SW	450	Rn-222	6.78E-07	0.00E+00	0.00E+00	0.00E+00
SW	450	Po-218	6.22E-07	1.12E-13	4.92E-15	1.17E-13
SW	450	Pb-214	6.22E-07	1.12E-13	4.92E-15	1.17E-13
SW	450	Bi-214	6.22E-07	1.12E-13	4.92E-15	1.17E-13
SW	450	Po-214	6.22E-07	1.12E-13	4.92E-15	1.17E-13
SW	450	Pb-210	6.04E-07	1.09E-13	4.77E-15	1.13E-13
SW	450	Bi-210	6.04E-07	1.09E-13	4.77E-15	1.13E-13
SW	450	Po-210	6.04E-07	1.09E-13	4.77E-15	1.13E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SW	450	At-218	1.24E-10	2.24E-17	9.84E-19	2.34E-17
SW	450	Th-232	1.83E-08	3.29E-15	1.45E-16	3.44E-15
SW	450	Ra-228	2.76E-07	4.96E-14	2.18E-15	5.18E-14
SW	450	Ac-228	2.76E-07	4.96E-14	2.18E-15	5.18E-14
SW	450	Th-228	2.76E-07	4.96E-14	2.18E-15	5.18E-14
SW	450	Ra-224	2.76E-07	4.96E-14	2.18E-15	5.18E-14
SW	450	Rn-220	3.00E-07	0.00E+00	0.00E+00	0.00E+00
SW	450	Po-216	2.76E-07	4.96E-14	2.18E-15	5.18E-14
SW	450	Pb-212	2.76E-07	4.96E-14	2.18E-15	5.18E-14
SW	450	Bi-212	2.76E-07	4.96E-14	2.18E-15	5.18E-14
SW	450	Po-212	1.77E-07	3.18E-14	1.40E-15	3.32E-14
SW	450	Tl-208	9.91E-08	1.78E-14	7.84E-16	1.86E-14
SW	750	U-238	2.71E-08	4.88E-15	3.36E-16	5.22E-15
SW	750	Th-234	2.71E-08	4.88E-15	3.36E-16	5.22E-15
SW	750	Pa-234m	2.70E-08	4.87E-15	3.36E-16	5.20E-15
SW	750	Pa-234	2.67E-08	4.81E-15	3.32E-16	5.14E-15
SW	750	U-234	2.71E-08	4.88E-15	3.36E-16	5.22E-15
SW	750	Th-230	2.71E-08	4.88E-15	3.36E-16	5.22E-15
SW	750	Ra-226	2.35E-07	4.23E-14	2.92E-15	4.53E-14
SW	750	Rn-222	2.62E-07	0.00E+00	0.00E+00	0.00E+00
SW	750	Po-218	2.35E-07	4.23E-14	2.92E-15	4.53E-14
SW	750	Pb-214	2.35E-07	4.23E-14	2.92E-15	4.53E-14
SW	750	Bi-214	2.35E-07	4.23E-14	2.92E-15	4.53E-14
SW	750	Po-214	2.35E-07	4.23E-14	2.92E-15	4.52E-14
SW	750	Pb-210	2.28E-07	4.11E-14	2.83E-15	4.39E-14
SW	750	Bi-210	2.28E-07	4.11E-14	2.83E-15	4.39E-14
SW	750	Po-210	2.28E-07	4.11E-14	2.83E-15	4.39E-14
SW	750	At-218	4.70E-11	8.46E-18	5.84E-19	9.05E-18
SW	750	Th-232	6.91E-09	1.24E-15	8.58E-17	1.33E-15
SW	750	Ra-228	1.04E-07	1.88E-14	1.29E-15	2.01E-14
SW	750	Ac-228	1.04E-07	1.88E-14	1.29E-15	2.01E-14
SW	750	Th-228	1.04E-07	1.88E-14	1.29E-15	2.01E-14
SW	750	Ra-224	1.04E-07	1.88E-14	1.29E-15	2.01E-14
SW	750	Rn-220	1.16E-07	0.00E+00	0.00E+00	0.00E+00
SW	750	Po-216	1.04E-07	1.88E-14	1.29E-15	2.01E-14
SW	750	Pb-212	1.04E-07	1.88E-14	1.29E-15	2.01E-14
SW	750	Bi-212	1.04E-07	1.88E-14	1.29E-15	2.01E-14
SW	750	Po-212	6.68E-08	1.20E-14	8.30E-16	1.29E-14
SW	750	Tl-208	3.75E-08	6.74E-15	4.65E-16	7.21E-15
SW	1500	U-238	7.74E-09	1.39E-15	1.65E-16	1.56E-15
SW	1500	Th-234	7.74E-09	1.39E-15	1.65E-16	1.56E-15
SW	1500	Pa-234m	7.72E-09	1.39E-15	1.65E-16	1.55E-15
SW	1500	Pa-234	7.63E-09	1.37E-15	1.63E-16	1.54E-15
SW	1500	U-234	7.74E-09	1.39E-15	1.65E-16	1.56E-15
SW	1500	Th-230	7.74E-09	1.39E-15	1.65E-16	1.56E-15
SW	1500	Ra-226	6.71E-08	1.21E-14	1.44E-15	1.35E-14
SW	1500	Rn-222	7.74E-08	0.00E+00	0.00E+00	0.00E+00

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SW	1500	Po-218	6.71E-08	1.21E-14	1.44E-15	1.35E-14
SW	1500	Pb-214	6.71E-08	1.21E-14	1.44E-15	1.35E-14
SW	1500	Bi-214	6.71E-08	1.21E-14	1.44E-15	1.35E-14
SW	1500	Po-214	6.71E-08	1.21E-14	1.44E-15	1.35E-14
SW	1500	Pb-210	6.51E-08	1.17E-14	1.39E-15	1.31E-14
SW	1500	Bi-210	6.51E-08	1.17E-14	1.39E-15	1.31E-14
SW	1500	Po-210	6.51E-08	1.17E-14	1.39E-15	1.31E-14
SW	1500	At-218	1.34E-11	2.42E-18	2.87E-19	2.70E-18
SW	1500	Th-232	1.97E-09	3.55E-16	4.22E-17	3.97E-16
SW	1500	Ra-228	2.98E-08	5.36E-15	6.36E-16	5.99E-15
SW	1500	Ac-228	2.98E-08	5.36E-15	6.36E-16	5.99E-15
SW	1500	Th-228	2.98E-08	5.36E-15	6.36E-16	5.99E-15
SW	1500	Ra-224	2.98E-08	5.36E-15	6.36E-16	5.99E-15
SW	1500	Rn-220	3.43E-08	0.00E+00	0.00E+00	0.00E+00
SW	1500	Po-216	2.98E-08	5.36E-15	6.36E-16	5.99E-15
SW	1500	Pb-212	2.98E-08	5.36E-15	6.36E-16	5.99E-15
SW	1500	Bi-212	2.98E-08	5.36E-15	6.36E-16	5.99E-15
SW	1500	Po-212	1.91E-08	3.43E-15	4.08E-16	3.84E-15
SW	1500	Tl-208	1.07E-08	1.92E-15	2.29E-16	2.15E-15
SW	2500	U-238	3.19E-09	5.74E-16	9.80E-17	6.72E-16
SW	2500	Th-234	3.19E-09	5.74E-16	9.80E-17	6.72E-16
SW	2500	Pa-234m	3.18E-09	5.73E-16	9.78E-17	6.71E-16
SW	2500	Pa-234	3.14E-09	5.66E-16	9.66E-17	6.62E-16
SW	2500	U-234	3.19E-09	5.74E-16	9.80E-17	6.72E-16
SW	2500	Th-230	3.19E-09	5.74E-16	9.80E-17	6.72E-16
SW	2500	Ra-226	2.77E-08	4.98E-15	8.50E-16	5.83E-15
SW	2500	Rn-222	3.28E-08	0.00E+00	0.00E+00	0.00E+00
SW	2500	Po-218	2.77E-08	4.98E-15	8.50E-16	5.83E-15
SW	2500	Pb-214	2.77E-08	4.98E-15	8.50E-16	5.83E-15
SW	2500	Bi-214	2.77E-08	4.98E-15	8.50E-16	5.83E-15
SW	2500	Po-214	2.77E-08	4.98E-15	8.50E-16	5.83E-15
SW	2500	Pb-210	2.69E-08	4.83E-15	8.25E-16	5.66E-15
SW	2500	Bi-210	2.69E-08	4.83E-15	8.25E-16	5.66E-15
SW	2500	Po-210	2.69E-08	4.83E-15	8.25E-16	5.66E-15
SW	2500	At-218	5.53E-12	9.96E-19	1.70E-19	1.17E-18
SW	2500	Th-232	8.13E-10	1.46E-16	2.50E-17	1.71E-16
SW	2500	Ra-228	1.23E-08	2.21E-15	3.77E-16	2.58E-15
SW	2500	Ac-228	1.23E-08	2.21E-15	3.77E-16	2.58E-15
SW	2500	Th-228	1.23E-08	2.21E-15	3.77E-16	2.58E-15
SW	2500	Ra-224	1.23E-08	2.21E-15	3.77E-16	2.58E-15
SW	2500	Rn-220	1.46E-08	0.00E+00	0.00E+00	0.00E+00
SW	2500	Po-216	1.23E-08	2.21E-15	3.77E-16	2.58E-15
SW	2500	Pb-212	1.23E-08	2.21E-15	3.77E-16	2.58E-15
SW	2500	Bi-212	1.23E-08	2.21E-15	3.77E-16	2.58E-15
SW	2500	Po-212	7.86E-09	1.42E-15	2.42E-16	1.66E-15
SW	2500	Tl-208	4.41E-09	7.93E-16	1.35E-16	9.29E-16
SW	3500	U-238	1.83E-09	3.29E-16	6.92E-17	3.98E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SW	3500	Th-234	1.83E-09	3.29E-16	6.92E-17	3.98E-16
SW	3500	Pa-234m	1.82E-09	3.28E-16	6.90E-17	3.97E-16
SW	3500	Pa-234	1.80E-09	3.24E-16	6.82E-17	3.92E-16
SW	3500	U-234	1.83E-09	3.29E-16	6.92E-17	3.98E-16
SW	3500	Th-230	1.83E-09	3.29E-16	6.92E-17	3.98E-16
SW	3500	Ra-226	1.58E-08	2.85E-15	6.00E-16	3.45E-15
SW	3500	Rn-222	1.93E-08	0.00E+00	0.00E+00	0.00E+00
SW	3500	Po-218	1.58E-08	2.85E-15	6.00E-16	3.45E-15
SW	3500	Pb-214	1.58E-08	2.85E-15	6.00E-16	3.45E-15
SW	3500	Bi-214	1.58E-08	2.85E-15	6.00E-16	3.45E-15
SW	3500	Po-214	1.58E-08	2.85E-15	6.00E-16	3.45E-15
SW	3500	Pb-210	1.54E-08	2.77E-15	5.83E-16	3.35E-15
SW	3500	Bi-210	1.54E-08	2.77E-15	5.83E-16	3.35E-15
SW	3500	Po-210	1.54E-08	2.77E-15	5.83E-16	3.35E-15
SW	3500	At-218	3.17E-12	5.70E-19	1.20E-19	6.90E-19
SW	3500	Th-232	4.65E-10	8.38E-17	1.76E-17	1.01E-16
SW	3500	Ra-228	7.02E-09	1.26E-15	2.66E-16	1.53E-15
SW	3500	Ac-228	7.02E-09	1.26E-15	2.66E-16	1.53E-15
SW	3500	Th-228	7.02E-09	1.26E-15	2.66E-16	1.53E-15
SW	3500	Ra-224	7.02E-09	1.26E-15	2.66E-16	1.53E-15
SW	3500	Rn-220	8.57E-09	0.00E+00	0.00E+00	0.00E+00
SW	3500	Po-216	7.02E-09	1.26E-15	2.66E-16	1.53E-15
SW	3500	Pb-212	7.02E-09	1.26E-15	2.66E-16	1.53E-15
SW	3500	Bi-212	7.02E-09	1.26E-15	2.66E-16	1.53E-15
SW	3500	Po-212	4.50E-09	8.10E-16	1.71E-16	9.81E-16
SW	3500	Tl-208	2.52E-09	4.54E-16	9.56E-17	5.50E-16
SW	4500	U-238	1.23E-09	2.21E-16	5.33E-17	2.74E-16
SW	4500	Th-234	1.23E-09	2.21E-16	5.33E-17	2.74E-16
SW	4500	Pa-234m	1.22E-09	2.20E-16	5.31E-17	2.74E-16
SW	4500	Pa-234	1.21E-09	2.18E-16	5.25E-17	2.70E-16
SW	4500	U-234	1.23E-09	2.21E-16	5.33E-17	2.74E-16
SW	4500	Th-230	1.23E-09	2.21E-16	5.33E-17	2.74E-16
SW	4500	Ra-226	1.06E-08	1.92E-15	4.62E-16	2.38E-15
SW	4500	Rn-222	1.33E-08	0.00E+00	0.00E+00	0.00E+00
SW	4500	Po-218	1.06E-08	1.92E-15	4.62E-16	2.38E-15
SW	4500	Pb-214	1.06E-08	1.92E-15	4.62E-16	2.38E-15
SW	4500	Bi-214	1.06E-08	1.92E-15	4.62E-16	2.38E-15
SW	4500	Po-214	1.06E-08	1.92E-15	4.62E-16	2.38E-15
SW	4500	Pb-210	1.03E-08	1.86E-15	4.48E-16	2.31E-15
SW	4500	Bi-210	1.03E-08	1.86E-15	4.48E-16	2.31E-15
SW	4500	Po-210	1.03E-08	1.86E-15	4.48E-16	2.31E-15
SW	4500	At-218	2.13E-12	3.83E-19	9.24E-20	4.76E-19
SW	4500	Th-232	3.13E-10	5.63E-17	1.36E-17	6.99E-17
SW	4500	Ra-228	4.72E-09	8.50E-16	2.05E-16	1.05E-15
SW	4500	Ac-228	4.72E-09	8.50E-16	2.05E-16	1.05E-15
SW	4500	Th-228	4.72E-09	8.50E-16	2.05E-16	1.05E-15
SW	4500	Ra-224	4.72E-09	8.50E-16	2.05E-16	1.05E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SW	4500	Rn-220	5.92E-09	0.00E+00	0.00E+00	0.00E+00
SW	4500	Po-216	4.72E-09	8.50E-16	2.05E-16	1.05E-15
SW	4500	Pb-212	4.72E-09	8.50E-16	2.05E-16	1.05E-15
SW	4500	Bi-212	4.72E-09	8.50E-16	2.05E-16	1.05E-15
SW	4500	Po-212	3.03E-09	5.45E-16	1.31E-16	6.76E-16
SW	4500	Tl-208	1.70E-09	3.05E-16	7.36E-17	3.79E-16
SW	5500	U-238	8.95E-10	1.61E-16	4.32E-17	2.04E-16
SW	5500	Th-234	8.95E-10	1.61E-16	4.32E-17	2.04E-16
SW	5500	Pa-234m	8.93E-10	1.61E-16	4.31E-17	2.04E-16
SW	5500	Pa-234	8.83E-10	1.59E-16	4.26E-17	2.01E-16
SW	5500	U-234	8.95E-10	1.61E-16	4.32E-17	2.04E-16
SW	5500	Th-230	8.95E-10	1.61E-16	4.32E-17	2.04E-16
SW	5500	Ra-226	7.77E-09	1.40E-15	3.75E-16	1.77E-15
SW	5500	Rn-222	9.94E-09	0.00E+00	0.00E+00	0.00E+00
SW	5500	Po-218	7.77E-09	1.40E-15	3.75E-16	1.77E-15
SW	5500	Pb-214	7.77E-09	1.40E-15	3.75E-16	1.77E-15
SW	5500	Bi-214	7.77E-09	1.40E-15	3.75E-16	1.77E-15
SW	5500	Po-214	7.77E-09	1.40E-15	3.75E-16	1.77E-15
SW	5500	Pb-210	7.54E-09	1.36E-15	3.64E-16	1.72E-15
SW	5500	Bi-210	7.54E-09	1.36E-15	3.64E-16	1.72E-15
SW	5500	Po-210	7.54E-09	1.36E-15	3.64E-16	1.72E-15
SW	5500	At-218	1.55E-12	2.80E-19	7.50E-20	3.55E-19
SW	5500	Th-232	2.28E-10	4.11E-17	1.10E-17	5.21E-17
SW	5500	Ra-228	3.44E-09	6.20E-16	1.66E-16	7.86E-16
SW	5500	Ac-228	3.44E-09	6.20E-16	1.66E-16	7.86E-16
SW	5500	Th-228	3.44E-09	6.20E-16	1.66E-16	7.86E-16
SW	5500	Ra-224	3.44E-09	6.20E-16	1.66E-16	7.86E-16
SW	5500	Rn-220	4.41E-09	0.00E+00	0.00E+00	0.00E+00
SW	5500	Po-216	3.44E-09	6.20E-16	1.66E-16	7.86E-16
SW	5500	Pb-212	3.44E-09	6.20E-16	1.66E-16	7.86E-16
SW	5500	Bi-212	3.44E-09	6.20E-16	1.66E-16	7.86E-16
SW	5500	Po-212	2.21E-09	3.97E-16	1.07E-16	5.04E-16
SW	5500	Tl-208	1.24E-09	2.23E-16	5.97E-17	2.82E-16
SW	7000	U-238	6.06E-10	1.09E-16	3.35E-17	1.42E-16
SW	7000	Th-234	6.06E-10	1.09E-16	3.35E-17	1.42E-16
SW	7000	Pa-234m	6.04E-10	1.09E-16	3.34E-17	1.42E-16
SW	7000	Pa-234	5.97E-10	1.07E-16	3.30E-17	1.40E-16
SW	7000	U-234	6.06E-10	1.09E-16	3.35E-17	1.42E-16
SW	7000	Th-230	6.06E-10	1.09E-16	3.35E-17	1.42E-16
SW	7000	Ra-226	5.26E-09	9.46E-16	2.91E-16	1.24E-15
SW	7000	Rn-222	6.99E-09	0.00E+00	0.00E+00	0.00E+00
SW	7000	Po-218	5.26E-09	9.46E-16	2.91E-16	1.24E-15
SW	7000	Pb-214	5.26E-09	9.46E-16	2.91E-16	1.24E-15
SW	7000	Bi-214	5.26E-09	9.46E-16	2.91E-16	1.24E-15
SW	7000	Po-214	5.25E-09	9.46E-16	2.90E-16	1.24E-15
SW	7000	Pb-210	5.10E-09	9.18E-16	2.82E-16	1.20E-15
SW	7000	Bi-210	5.10E-09	9.18E-16	2.82E-16	1.20E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SW	7000	Po-210	5.10E-09	9.18E-16	2.82E-16	1.20E-15
SW	7000	At-218	1.05E-12	1.89E-19	5.81E-20	2.47E-19
SW	7000	Th-232	1.54E-10	2.78E-17	8.54E-18	3.63E-17
SW	7000	Ra-228	2.33E-09	4.19E-16	1.29E-16	5.48E-16
SW	7000	Ac-228	2.33E-09	4.19E-16	1.29E-16	5.48E-16
SW	7000	Th-228	2.33E-09	4.19E-16	1.29E-16	5.48E-16
SW	7000	Ra-224	2.33E-09	4.19E-16	1.29E-16	5.48E-16
SW	7000	Rn-220	3.10E-09	0.00E+00	0.00E+00	0.00E+00
SW	7000	Po-216	2.33E-09	4.19E-16	1.29E-16	5.48E-16
SW	7000	Pb-212	2.33E-09	4.19E-16	1.29E-16	5.48E-16
SW	7000	Bi-212	2.33E-09	4.19E-16	1.29E-16	5.48E-16
SW	7000	Po-212	1.49E-09	2.69E-16	8.25E-17	3.51E-16
SW	7000	Tl-208	8.37E-10	1.51E-16	4.63E-17	1.97E-16
SSW	50	U-238	4.89E-06	8.80E-13	6.69E-15	8.86E-13
SSW	50	Th-234	4.89E-06	8.80E-13	6.69E-15	8.86E-13
SSW	50	Pa-234m	4.88E-06	8.78E-13	6.67E-15	8.84E-13
SSW	50	Pa-234	4.82E-06	8.67E-13	6.59E-15	8.74E-13
SSW	50	U-234	4.89E-06	8.80E-13	6.69E-15	8.86E-13
SSW	50	Th-230	4.89E-06	8.80E-13	6.69E-15	8.86E-13
SSW	50	Ra-226	4.24E-05	7.63E-12	5.80E-14	7.69E-12
SSW	50	Rn-222	4.29E-05	0.00E+00	0.00E+00	0.00E+00
SSW	50	Po-218	4.24E-05	7.63E-12	5.80E-14	7.69E-12
SSW	50	Pb-214	4.24E-05	7.63E-12	5.80E-14	7.69E-12
SSW	50	Bi-214	4.24E-05	7.63E-12	5.80E-14	7.69E-12
SSW	50	Po-214	4.24E-05	7.63E-12	5.80E-14	7.69E-12
SSW	50	Pb-210	4.11E-05	7.41E-12	5.63E-14	7.46E-12
SSW	50	Bi-210	4.11E-05	7.41E-12	5.63E-14	7.46E-12
SSW	50	Po-210	4.11E-05	7.41E-12	5.63E-14	7.46E-12
SSW	50	At-218	8.48E-09	1.53E-15	1.16E-17	1.54E-15
SSW	50	Th-232	1.25E-06	2.24E-13	1.71E-15	2.26E-13
SSW	50	Ra-228	1.88E-05	3.38E-12	2.57E-14	3.41E-12
SSW	50	Ac-228	1.88E-05	3.38E-12	2.57E-14	3.41E-12
SSW	50	Th-228	1.88E-05	3.38E-12	2.57E-14	3.41E-12
SSW	50	Ra-224	1.88E-05	3.38E-12	2.57E-14	3.41E-12
SSW	50	Rn-220	1.90E-05	0.00E+00	0.00E+00	0.00E+00
SSW	50	Po-216	1.88E-05	3.38E-12	2.57E-14	3.41E-12
SSW	50	Pb-212	1.88E-05	3.38E-12	2.57E-14	3.41E-12
SSW	50	Bi-212	1.88E-05	3.38E-12	2.57E-14	3.41E-12
SSW	50	Po-212	1.20E-05	2.17E-12	1.65E-14	2.18E-12
SSW	50	Tl-208	6.75E-06	1.22E-12	9.24E-15	1.22E-12
SSW	100	U-238	1.16E-06	2.08E-13	2.51E-15	2.11E-13
SSW	100	Th-234	1.16E-06	2.08E-13	2.51E-15	2.11E-13
SSW	100	Pa-234m	1.16E-06	2.08E-13	2.50E-15	2.10E-13
SSW	100	Pa-234	1.14E-06	2.05E-13	2.47E-15	2.08E-13
SSW	100	U-234	1.16E-06	2.08E-13	2.51E-15	2.11E-13
SSW	100	Th-230	1.16E-06	2.08E-13	2.51E-15	2.11E-13
SSW	100	Ra-226	1.00E-05	1.81E-12	2.18E-14	1.83E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SSW	100	Rn-222	1.04E-05	0.00E+00	0.00E+00	0.00E+00
SSW	100	Po-218	1.00E-05	1.81E-12	2.18E-14	1.83E-12
SSW	100	Pb-214	1.00E-05	1.81E-12	2.18E-14	1.83E-12
SSW	100	Bi-214	1.00E-05	1.81E-12	2.18E-14	1.83E-12
SSW	100	Po-214	1.00E-05	1.81E-12	2.18E-14	1.83E-12
SSW	100	Pb-210	9.75E-06	1.75E-12	2.11E-14	1.78E-12
SSW	100	Bi-210	9.75E-06	1.75E-12	2.11E-14	1.78E-12
SSW	100	Po-210	9.75E-06	1.75E-12	2.11E-14	1.78E-12
SSW	100	At-218	2.01E-09	3.61E-16	4.35E-18	3.66E-16
SSW	100	Th-232	2.95E-07	5.31E-14	6.39E-16	5.38E-14
SSW	100	Ra-228	4.45E-06	8.02E-13	9.65E-15	8.11E-13
SSW	100	Ac-228	4.45E-06	8.02E-13	9.65E-15	8.11E-13
SSW	100	Th-228	4.45E-06	8.02E-13	9.65E-15	8.11E-13
SSW	100	Ra-224	4.45E-06	8.02E-13	9.65E-15	8.11E-13
SSW	100	Rn-220	4.59E-06	0.00E+00	0.00E+00	0.00E+00
SSW	100	Po-216	4.45E-06	8.02E-13	9.65E-15	8.11E-13
SSW	100	Pb-212	4.45E-06	8.02E-13	9.65E-15	8.11E-13
SSW	100	Bi-212	4.45E-06	8.02E-13	9.65E-15	8.11E-13
SSW	100	Po-212	2.85E-06	5.14E-13	6.18E-15	5.20E-13
SSW	100	Tl-208	1.60E-06	2.88E-13	3.47E-15	2.91E-13
SSW	150	U-238	5.58E-07	1.00E-13	1.66E-15	1.02E-13
SSW	150	Th-234	5.58E-07	1.00E-13	1.66E-15	1.02E-13
SSW	150	Pa-234m	5.57E-07	1.00E-13	1.66E-15	1.02E-13
SSW	150	Pa-234	5.50E-07	9.90E-14	1.64E-15	1.01E-13
SSW	150	U-234	5.58E-07	1.00E-13	1.66E-15	1.02E-13
SSW	150	Th-230	5.58E-07	1.00E-13	1.66E-15	1.02E-13
SSW	150	Ra-226	4.84E-06	8.71E-13	1.44E-14	8.86E-13
SSW	150	Rn-222	5.06E-06	0.00E+00	0.00E+00	0.00E+00
SSW	150	Po-218	4.84E-06	8.71E-13	1.44E-14	8.86E-13
SSW	150	Pb-214	4.84E-06	8.71E-13	1.44E-14	8.86E-13
SSW	150	Bi-214	4.84E-06	8.71E-13	1.44E-14	8.86E-13
SSW	150	Po-214	4.84E-06	8.71E-13	1.44E-14	8.86E-13
SSW	150	Pb-210	4.70E-06	8.46E-13	1.40E-14	8.60E-13
SSW	150	Bi-210	4.70E-06	8.46E-13	1.40E-14	8.60E-13
SSW	150	Po-210	4.70E-06	8.46E-13	1.40E-14	8.60E-13
SSW	150	At-218	9.68E-10	1.74E-16	2.88E-18	1.77E-16
SSW	150	Th-232	1.42E-07	2.56E-14	4.23E-16	2.60E-14
SSW	150	Ra-228	2.15E-06	3.86E-13	6.39E-15	3.93E-13
SSW	150	Ac-228	2.15E-06	3.86E-13	6.39E-15	3.93E-13
SSW	150	Th-228	2.15E-06	3.86E-13	6.39E-15	3.93E-13
SSW	150	Ra-224	2.15E-06	3.86E-13	6.39E-15	3.93E-13
SSW	150	Rn-220	2.24E-06	0.00E+00	0.00E+00	0.00E+00
SSW	150	Po-216	2.15E-06	3.86E-13	6.39E-15	3.93E-13
SSW	150	Pb-212	2.15E-06	3.86E-13	6.39E-15	3.93E-13
SSW	150	Bi-212	2.15E-06	3.86E-13	6.39E-15	3.93E-13
SSW	150	Po-212	1.38E-06	2.48E-13	4.09E-15	2.52E-13
SSW	150	Tl-208	7.71E-07	1.39E-13	2.29E-15	1.41E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SSW	250	U-238	2.16E-07	3.89E-14	9.87E-16	3.99E-14
SSW	250	Th-234	2.16E-07	3.89E-14	9.87E-16	3.99E-14
SSW	250	Pa-234m	2.16E-07	3.88E-14	9.85E-16	3.98E-14
SSW	250	Pa-234	2.13E-07	3.83E-14	9.73E-16	3.93E-14
SSW	250	U-234	2.16E-07	3.89E-14	9.87E-16	3.99E-14
SSW	250	Th-230	2.16E-07	3.89E-14	9.87E-16	3.99E-14
SSW	250	Ra-226	1.88E-06	3.38E-13	8.56E-15	3.46E-13
SSW	250	Rn-222	2.00E-06	0.00E+00	0.00E+00	0.00E+00
SSW	250	Po-218	1.88E-06	3.38E-13	8.56E-15	3.46E-13
SSW	250	Pb-214	1.88E-06	3.38E-13	8.56E-15	3.46E-13
SSW	250	Bi-214	1.88E-06	3.38E-13	8.56E-15	3.46E-13
SSW	250	Po-214	1.87E-06	3.37E-13	8.56E-15	3.46E-13
SSW	250	Pb-210	1.82E-06	3.28E-13	8.31E-15	3.36E-13
SSW	250	Bi-210	1.82E-06	3.28E-13	8.31E-15	3.36E-13
SSW	250	Po-210	1.82E-06	3.28E-13	8.31E-15	3.36E-13
SSW	250	At-218	3.75E-10	6.75E-17	1.71E-18	6.92E-17
SSW	250	Th-232	5.51E-08	9.92E-15	2.52E-16	1.02E-14
SSW	250	Ra-228	8.31E-07	1.50E-13	3.80E-15	1.53E-13
SSW	250	Ac-228	8.31E-07	1.50E-13	3.80E-15	1.53E-13
SSW	250	Th-228	8.31E-07	1.50E-13	3.80E-15	1.53E-13
SSW	250	Ra-224	8.31E-07	1.50E-13	3.80E-15	1.53E-13
SSW	250	Rn-220	8.85E-07	0.00E+00	0.00E+00	0.00E+00
SSW	250	Po-216	8.31E-07	1.50E-13	3.80E-15	1.53E-13
SSW	250	Pb-212	8.31E-07	1.50E-13	3.80E-15	1.53E-13
SSW	250	Bi-212	8.31E-07	1.50E-13	3.80E-15	1.53E-13
SSW	250	Po-212	5.33E-07	9.59E-14	2.43E-15	9.83E-14
SSW	250	Tl-208	2.99E-07	5.38E-14	1.36E-15	5.51E-14
SSW	350	U-238	1.15E-07	2.06E-14	7.00E-16	2.13E-14
SSW	350	Th-234	1.15E-07	2.06E-14	7.00E-16	2.13E-14
SSW	350	Pa-234m	1.14E-07	2.06E-14	6.98E-16	2.13E-14
SSW	350	Pa-234	1.13E-07	2.03E-14	6.90E-16	2.10E-14
SSW	350	U-234	1.15E-07	2.06E-14	7.00E-16	2.13E-14
SSW	350	Th-230	1.15E-07	2.06E-14	7.00E-16	2.13E-14
SSW	350	Ra-226	9.94E-07	1.79E-13	6.07E-15	1.85E-13
SSW	350	Rn-222	1.07E-06	0.00E+00	0.00E+00	0.00E+00
SSW	350	Po-218	9.94E-07	1.79E-13	6.07E-15	1.85E-13
SSW	350	Pb-214	9.94E-07	1.79E-13	6.07E-15	1.85E-13
SSW	350	Bi-214	9.94E-07	1.79E-13	6.07E-15	1.85E-13
SSW	350	Po-214	9.94E-07	1.79E-13	6.07E-15	1.85E-13
SSW	350	Pb-210	9.64E-07	1.74E-13	5.89E-15	1.79E-13
SSW	350	Bi-210	9.64E-07	1.74E-13	5.89E-15	1.79E-13
SSW	350	Po-210	9.64E-07	1.74E-13	5.89E-15	1.79E-13
SSW	350	At-218	1.99E-10	3.58E-17	1.21E-18	3.70E-17
SSW	350	Th-232	2.92E-08	5.26E-15	1.78E-16	5.43E-15
SSW	350	Ra-228	4.41E-07	7.93E-14	2.69E-15	8.20E-14
SSW	350	Ac-228	4.41E-07	7.93E-14	2.69E-15	8.20E-14
SSW	350	Th-228	4.41E-07	7.93E-14	2.69E-15	8.20E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SSW	350	Ra-224	4.41E-07	7.93E-14	2.69E-15	8.20E-14
SSW	350	Rn-220	4.76E-07	0.00E+00	0.00E+00	0.00E+00
SSW	350	Po-216	4.41E-07	7.93E-14	2.69E-15	8.20E-14
SSW	350	Pb-212	4.41E-07	7.93E-14	2.69E-15	8.20E-14
SSW	350	Bi-212	4.41E-07	7.93E-14	2.69E-15	8.20E-14
SSW	350	Po-212	2.82E-07	5.08E-14	1.72E-15	5.25E-14
SSW	350	Tl-208	1.58E-07	2.85E-14	9.67E-16	2.95E-14
SSW	450	U-238	7.11E-08	1.28E-14	5.41E-16	1.33E-14
SSW	450	Th-234	7.11E-08	1.28E-14	5.41E-16	1.33E-14
SSW	450	Pa-234m	7.10E-08	1.28E-14	5.40E-16	1.33E-14
SSW	450	Pa-234	7.01E-08	1.26E-14	5.34E-16	1.32E-14
SSW	450	U-234	7.11E-08	1.28E-14	5.41E-16	1.33E-14
SSW	450	Th-230	7.11E-08	1.28E-14	5.41E-16	1.33E-14
SSW	450	Ra-226	6.17E-07	1.11E-13	4.70E-15	1.16E-13
SSW	450	Rn-222	6.74E-07	0.00E+00	0.00E+00	0.00E+00
SSW	450	Po-218	6.17E-07	1.11E-13	4.70E-15	1.16E-13
SSW	450	Pb-214	6.17E-07	1.11E-13	4.70E-15	1.16E-13
SSW	450	Bi-214	6.17E-07	1.11E-13	4.70E-15	1.16E-13
SSW	450	Po-214	6.17E-07	1.11E-13	4.70E-15	1.16E-13
SSW	450	Pb-210	5.99E-07	1.08E-13	4.56E-15	1.12E-13
SSW	450	Bi-210	5.99E-07	1.08E-13	4.56E-15	1.12E-13
SSW	450	Po-210	5.99E-07	1.08E-13	4.56E-15	1.12E-13
SSW	450	At-218	1.23E-10	2.22E-17	9.39E-19	2.31E-17
SSW	450	Th-232	1.81E-08	3.26E-15	1.38E-16	3.40E-15
SSW	450	Ra-228	2.74E-07	4.92E-14	2.08E-15	5.13E-14
SSW	450	Ac-228	2.74E-07	4.92E-14	2.08E-15	5.13E-14
SSW	450	Th-228	2.74E-07	4.92E-14	2.08E-15	5.13E-14
SSW	450	Ra-224	2.74E-07	4.92E-14	2.08E-15	5.13E-14
SSW	450	Rn-220	2.99E-07	0.00E+00	0.00E+00	0.00E+00
SSW	450	Po-216	2.74E-07	4.92E-14	2.08E-15	5.13E-14
SSW	450	Pb-212	2.74E-07	4.92E-14	2.08E-15	5.13E-14
SSW	450	Bi-212	2.74E-07	4.92E-14	2.08E-15	5.13E-14
SSW	450	Po-212	1.75E-07	3.16E-14	1.33E-15	3.29E-14
SSW	450	Tl-208	9.83E-08	1.77E-14	7.48E-16	1.84E-14
SSW	750	U-238	2.69E-08	4.84E-15	3.21E-16	5.16E-15
SSW	750	Th-234	2.69E-08	4.84E-15	3.21E-16	5.16E-15
SSW	750	Pa-234m	2.68E-08	4.83E-15	3.20E-16	5.15E-15
SSW	750	Pa-234	2.65E-08	4.77E-15	3.16E-16	5.09E-15
SSW	750	U-234	2.69E-08	4.84E-15	3.21E-16	5.16E-15
SSW	750	Th-230	2.69E-08	4.84E-15	3.21E-16	5.16E-15
SSW	750	Ra-226	2.33E-07	4.20E-14	2.79E-15	4.48E-14
SSW	750	Rn-222	2.61E-07	0.00E+00	0.00E+00	0.00E+00
SSW	750	Po-218	2.33E-07	4.20E-14	2.79E-15	4.48E-14
SSW	750	Pb-214	2.33E-07	4.20E-14	2.79E-15	4.48E-14
SSW	750	Bi-214	2.33E-07	4.20E-14	2.79E-15	4.48E-14
SSW	750	Po-214	2.33E-07	4.20E-14	2.78E-15	4.48E-14
SSW	750	Pb-210	2.27E-07	4.08E-14	2.70E-15	4.35E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SSW	750	Bi-210	2.27E-07	4.08E-14	2.70E-15	4.35E-14
SSW	750	Po-210	2.27E-07	4.08E-14	2.70E-15	4.35E-14
SSW	750	At-218	4.67E-11	8.40E-18	5.57E-19	8.96E-18
SSW	750	Th-232	6.86E-09	1.23E-15	8.18E-17	1.32E-15
SSW	750	Ra-228	1.03E-07	1.86E-14	1.23E-15	1.99E-14
SSW	750	Ac-228	1.03E-07	1.86E-14	1.23E-15	1.99E-14
SSW	750	Th-228	1.03E-07	1.86E-14	1.23E-15	1.99E-14
SSW	750	Ra-224	1.03E-07	1.86E-14	1.23E-15	1.99E-14
SSW	750	Rn-220	1.16E-07	0.00E+00	0.00E+00	0.00E+00
SSW	750	Po-216	1.03E-07	1.86E-14	1.23E-15	1.99E-14
SSW	750	Pb-212	1.03E-07	1.86E-14	1.23E-15	1.99E-14
SSW	750	Bi-212	1.03E-07	1.86E-14	1.23E-15	1.99E-14
SSW	750	Po-212	6.63E-08	1.19E-14	7.91E-16	1.27E-14
SSW	750	Tl-208	3.72E-08	6.69E-15	4.44E-16	7.14E-15
SSW	1500	U-238	7.69E-09	1.38E-15	1.58E-16	1.54E-15
SSW	1500	Th-234	7.69E-09	1.38E-15	1.58E-16	1.54E-15
SSW	1500	Pa-234m	7.67E-09	1.38E-15	1.57E-16	1.54E-15
SSW	1500	Pa-234	7.58E-09	1.36E-15	1.55E-16	1.52E-15
SSW	1500	U-234	7.69E-09	1.38E-15	1.58E-16	1.54E-15
SSW	1500	Th-230	7.69E-09	1.38E-15	1.58E-16	1.54E-15
SSW	1500	Ra-226	6.67E-08	1.20E-14	1.37E-15	1.34E-14
SSW	1500	Rn-222	7.72E-08	0.00E+00	0.00E+00	0.00E+00
SSW	1500	Po-218	6.67E-08	1.20E-14	1.37E-15	1.34E-14
SSW	1500	Pb-214	6.67E-08	1.20E-14	1.37E-15	1.34E-14
SSW	1500	Bi-214	6.67E-08	1.20E-14	1.37E-15	1.34E-14
SSW	1500	Po-214	6.67E-08	1.20E-14	1.37E-15	1.34E-14
SSW	1500	Pb-210	6.47E-08	1.17E-14	1.33E-15	1.30E-14
SSW	1500	Bi-210	6.47E-08	1.17E-14	1.33E-15	1.30E-14
SSW	1500	Po-210	6.47E-08	1.17E-14	1.33E-15	1.30E-14
SSW	1500	At-218	1.33E-11	2.40E-18	2.74E-19	2.67E-18
SSW	1500	Th-232	1.96E-09	3.53E-16	4.02E-17	3.93E-16
SSW	1500	Ra-228	2.96E-08	5.32E-15	6.07E-16	5.93E-15
SSW	1500	Ac-228	2.96E-08	5.32E-15	6.07E-16	5.93E-15
SSW	1500	Th-228	2.96E-08	5.32E-15	6.07E-16	5.93E-15
SSW	1500	Ra-224	2.96E-08	5.32E-15	6.07E-16	5.93E-15
SSW	1500	Rn-220	3.42E-08	0.00E+00	0.00E+00	0.00E+00
SSW	1500	Po-216	2.96E-08	5.32E-15	6.07E-16	5.93E-15
SSW	1500	Pb-212	2.96E-08	5.32E-15	6.07E-16	5.93E-15
SSW	1500	Bi-212	2.96E-08	5.32E-15	6.07E-16	5.93E-15
SSW	1500	Po-212	1.90E-08	3.41E-15	3.89E-16	3.80E-15
SSW	1500	Tl-208	1.06E-08	1.91E-15	2.18E-16	2.13E-15
SSW	2500	U-238	3.17E-09	5.71E-16	9.33E-17	6.64E-16
SSW	2500	Th-234	3.17E-09	5.71E-16	9.33E-17	6.64E-16
SSW	2500	Pa-234m	3.17E-09	5.70E-16	9.31E-17	6.63E-16
SSW	2500	Pa-234	3.13E-09	5.63E-16	9.20E-17	6.55E-16
SSW	2500	U-234	3.17E-09	5.71E-16	9.33E-17	6.64E-16
SSW	2500	Th-230	3.17E-09	5.71E-16	9.33E-17	6.64E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SSW	2500	Ra-226	2.75E-08	4.96E-15	8.10E-16	5.77E-15
SSW	2500	Rn-222	3.28E-08	0.00E+00	0.00E+00	0.00E+00
SSW	2500	Po-218	2.75E-08	4.96E-15	8.10E-16	5.77E-15
SSW	2500	Pb-214	2.75E-08	4.96E-15	8.10E-16	5.77E-15
SSW	2500	Bi-214	2.75E-08	4.96E-15	8.10E-16	5.77E-15
SSW	2500	Po-214	2.75E-08	4.95E-15	8.10E-16	5.76E-15
SSW	2500	Pb-210	2.67E-08	4.81E-15	7.86E-16	5.60E-15
SSW	2500	Bi-210	2.67E-08	4.81E-15	7.86E-16	5.60E-15
SSW	2500	Po-210	2.67E-08	4.81E-15	7.86E-16	5.60E-15
SSW	2500	At-218	5.50E-12	9.91E-19	1.62E-19	1.15E-18
SSW	2500	Th-232	8.09E-10	1.46E-16	2.38E-17	1.69E-16
SSW	2500	Ra-228	1.22E-08	2.20E-15	3.59E-16	2.56E-15
SSW	2500	Ac-228	1.22E-08	2.20E-15	3.59E-16	2.56E-15
SSW	2500	Th-228	1.22E-08	2.20E-15	3.59E-16	2.56E-15
SSW	2500	Ra-224	1.22E-08	2.20E-15	3.59E-16	2.56E-15
SSW	2500	Rn-220	1.45E-08	0.00E+00	0.00E+00	0.00E+00
SSW	2500	Po-216	1.22E-08	2.20E-15	3.59E-16	2.56E-15
SSW	2500	Pb-212	1.22E-08	2.20E-15	3.59E-16	2.56E-15
SSW	2500	Bi-212	1.22E-08	2.20E-15	3.59E-16	2.56E-15
SSW	2500	Po-212	7.82E-09	1.41E-15	2.30E-16	1.64E-15
SSW	2500	Tl-208	4.39E-09	7.89E-16	1.29E-16	9.18E-16
SSW	3500	U-238	1.82E-09	3.27E-16	6.59E-17	3.93E-16
SSW	3500	Th-234	1.82E-09	3.27E-16	6.59E-17	3.93E-16
SSW	3500	Pa-234m	1.81E-09	3.27E-16	6.57E-17	3.92E-16
SSW	3500	Pa-234	1.79E-09	3.23E-16	6.49E-17	3.88E-16
SSW	3500	U-234	1.82E-09	3.27E-16	6.59E-17	3.93E-16
SSW	3500	Th-230	1.82E-09	3.27E-16	6.59E-17	3.93E-16
SSW	3500	Ra-226	1.58E-08	2.84E-15	5.72E-16	3.41E-15
SSW	3500	Rn-222	1.93E-08	0.00E+00	0.00E+00	0.00E+00
SSW	3500	Po-218	1.58E-08	2.84E-15	5.72E-16	3.41E-15
SSW	3500	Pb-214	1.58E-08	2.84E-15	5.72E-16	3.41E-15
SSW	3500	Bi-214	1.58E-08	2.84E-15	5.72E-16	3.41E-15
SSW	3500	Po-214	1.58E-08	2.84E-15	5.71E-16	3.41E-15
SSW	3500	Pb-210	1.53E-08	2.76E-15	5.55E-16	3.31E-15
SSW	3500	Bi-210	1.53E-08	2.76E-15	5.55E-16	3.31E-15
SSW	3500	Po-210	1.53E-08	2.76E-15	5.55E-16	3.31E-15
SSW	3500	At-218	3.15E-12	5.68E-19	1.14E-19	6.82E-19
SSW	3500	Th-232	4.64E-10	8.34E-17	1.68E-17	1.00E-16
SSW	3500	Ra-228	6.99E-09	1.26E-15	2.53E-16	1.51E-15
SSW	3500	Ac-228	6.99E-09	1.26E-15	2.53E-16	1.51E-15
SSW	3500	Th-228	6.99E-09	1.26E-15	2.53E-16	1.51E-15
SSW	3500	Ra-224	6.99E-09	1.26E-15	2.53E-16	1.51E-15
SSW	3500	Rn-220	8.57E-09	0.00E+00	0.00E+00	0.00E+00
SSW	3500	Po-216	6.99E-09	1.26E-15	2.53E-16	1.51E-15
SSW	3500	Pb-212	6.99E-09	1.26E-15	2.53E-16	1.51E-15
SSW	3500	Bi-212	6.99E-09	1.26E-15	2.53E-16	1.51E-15
SSW	3500	Po-212	4.48E-09	8.07E-16	1.62E-16	9.69E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SSW	3500	Tl-208	2.51E-09	4.52E-16	9.10E-17	5.43E-16
SSW	4500	U-238	1.22E-09	2.20E-16	5.07E-17	2.71E-16
SSW	4500	Th-234	1.22E-09	2.20E-16	5.07E-17	2.71E-16
SSW	4500	Pa-234m	1.22E-09	2.20E-16	5.06E-17	2.70E-16
SSW	4500	Pa-234	1.21E-09	2.17E-16	5.00E-17	2.67E-16
SSW	4500	U-234	1.22E-09	2.20E-16	5.07E-17	2.71E-16
SSW	4500	Th-230	1.22E-09	2.20E-16	5.07E-17	2.71E-16
SSW	4500	Ra-226	1.06E-08	1.91E-15	4.40E-16	2.35E-15
SSW	4500	Rn-222	1.34E-08	0.00E+00	0.00E+00	0.00E+00
SSW	4500	Po-218	1.06E-08	1.91E-15	4.40E-16	2.35E-15
SSW	4500	Pb-214	1.06E-08	1.91E-15	4.40E-16	2.35E-15
SSW	4500	Bi-214	1.06E-08	1.91E-15	4.40E-16	2.35E-15
SSW	4500	Po-214	1.06E-08	1.91E-15	4.40E-16	2.35E-15
SSW	4500	Pb-210	1.03E-08	1.85E-15	4.27E-16	2.28E-15
SSW	4500	Bi-210	1.03E-08	1.85E-15	4.27E-16	2.28E-15
SSW	4500	Po-210	1.03E-08	1.85E-15	4.27E-16	2.28E-15
SSW	4500	At-218	2.12E-12	3.82E-19	8.79E-20	4.70E-19
SSW	4500	Th-232	3.12E-10	5.61E-17	1.29E-17	6.91E-17
SSW	4500	Ra-228	4.70E-09	8.47E-16	1.95E-16	1.04E-15
SSW	4500	Ac-228	4.70E-09	8.47E-16	1.95E-16	1.04E-15
SSW	4500	Th-228	4.70E-09	8.47E-16	1.95E-16	1.04E-15
SSW	4500	Ra-224	4.70E-09	8.47E-16	1.95E-16	1.04E-15
SSW	4500	Rn-220	5.93E-09	0.00E+00	0.00E+00	0.00E+00
SSW	4500	Po-216	4.70E-09	8.47E-16	1.95E-16	1.04E-15
SSW	4500	Pb-212	4.70E-09	8.47E-16	1.95E-16	1.04E-15
SSW	4500	Bi-212	4.70E-09	8.47E-16	1.95E-16	1.04E-15
SSW	4500	Po-212	3.02E-09	5.43E-16	1.25E-16	6.68E-16
SSW	4500	Tl-208	1.69E-09	3.04E-16	7.00E-17	3.74E-16
SSW	5500	U-238	8.93E-10	1.61E-16	4.11E-17	2.02E-16
SSW	5500	Th-234	8.93E-10	1.61E-16	4.11E-17	2.02E-16
SSW	5500	Pa-234m	8.91E-10	1.60E-16	4.10E-17	2.01E-16
SSW	5500	Pa-234	8.80E-10	1.58E-16	4.05E-17	1.99E-16
SSW	5500	U-234	8.93E-10	1.61E-16	4.11E-17	2.02E-16
SSW	5500	Th-230	8.93E-10	1.61E-16	4.11E-17	2.02E-16
SSW	5500	Ra-226	7.75E-09	1.39E-15	3.57E-16	1.75E-15
SSW	5500	Rn-222	9.96E-09	0.00E+00	0.00E+00	0.00E+00
SSW	5500	Po-218	7.75E-09	1.39E-15	3.57E-16	1.75E-15
SSW	5500	Pb-214	7.75E-09	1.39E-15	3.57E-16	1.75E-15
SSW	5500	Bi-214	7.75E-09	1.39E-15	3.57E-16	1.75E-15
SSW	5500	Po-214	7.74E-09	1.39E-15	3.57E-16	1.75E-15
SSW	5500	Pb-210	7.52E-09	1.35E-15	3.46E-16	1.70E-15
SSW	5500	Bi-210	7.52E-09	1.35E-15	3.46E-16	1.70E-15
SSW	5500	Po-210	7.52E-09	1.35E-15	3.46E-16	1.70E-15
SSW	5500	At-218	1.55E-12	2.79E-19	7.13E-20	3.50E-19
SSW	5500	Th-232	2.28E-10	4.10E-17	1.05E-17	5.15E-17
SSW	5500	Ra-228	3.43E-09	6.18E-16	1.58E-16	7.76E-16
SSW	5500	Ac-228	3.43E-09	6.18E-16	1.58E-16	7.76E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SSW	5500	Th-228	3.43E-09	6.18E-16	1.58E-16	7.76E-16
SSW	5500	Ra-224	3.43E-09	6.18E-16	1.58E-16	7.76E-16
SSW	5500	Rn-220	4.42E-09	0.00E+00	0.00E+00	0.00E+00
SSW	5500	Po-216	3.43E-09	6.18E-16	1.58E-16	7.76E-16
SSW	5500	Pb-212	3.43E-09	6.18E-16	1.58E-16	7.76E-16
SSW	5500	Bi-212	3.43E-09	6.18E-16	1.58E-16	7.76E-16
SSW	5500	Po-212	2.20E-09	3.96E-16	1.01E-16	4.97E-16
SSW	5500	Tl-208	1.23E-09	2.22E-16	5.68E-17	2.79E-16
SSW	7000	U-238	6.04E-10	1.09E-16	3.18E-17	1.41E-16
SSW	7000	Th-234	6.04E-10	1.09E-16	3.18E-17	1.41E-16
SSW	7000	Pa-234m	6.03E-10	1.08E-16	3.18E-17	1.40E-16
SSW	7000	Pa-234	5.95E-10	1.07E-16	3.14E-17	1.39E-16
SSW	7000	U-234	6.04E-10	1.09E-16	3.18E-17	1.41E-16
SSW	7000	Th-230	6.04E-10	1.09E-16	3.18E-17	1.41E-16
SSW	7000	Ra-226	5.24E-09	9.43E-16	2.76E-16	1.22E-15
SSW	7000	Rn-222	7.01E-09	0.00E+00	0.00E+00	0.00E+00
SSW	7000	Po-218	5.24E-09	9.43E-16	2.76E-16	1.22E-15
SSW	7000	Pb-214	5.24E-09	9.43E-16	2.76E-16	1.22E-15
SSW	7000	Bi-214	5.24E-09	9.43E-16	2.76E-16	1.22E-15
SSW	7000	Po-214	5.24E-09	9.43E-16	2.76E-16	1.22E-15
SSW	7000	Pb-210	5.09E-09	9.15E-16	2.68E-16	1.18E-15
SSW	7000	Bi-210	5.09E-09	9.15E-16	2.68E-16	1.18E-15
SSW	7000	Po-210	5.09E-09	9.15E-16	2.68E-16	1.18E-15
SSW	7000	At-218	1.05E-12	1.89E-19	5.52E-20	2.44E-19
SSW	7000	Th-232	1.54E-10	2.77E-17	8.11E-18	3.58E-17
SSW	7000	Ra-228	2.32E-09	4.18E-16	1.22E-16	5.41E-16
SSW	7000	Ac-228	2.32E-09	4.18E-16	1.22E-16	5.41E-16
SSW	7000	Th-228	2.32E-09	4.18E-16	1.22E-16	5.41E-16
SSW	7000	Ra-224	2.32E-09	4.18E-16	1.22E-16	5.41E-16
SSW	7000	Rn-220	3.11E-09	0.00E+00	0.00E+00	0.00E+00
SSW	7000	Po-216	2.32E-09	4.18E-16	1.22E-16	5.41E-16
SSW	7000	Pb-212	2.32E-09	4.18E-16	1.22E-16	5.41E-16
SSW	7000	Bi-212	2.32E-09	4.18E-16	1.22E-16	5.41E-16
SSW	7000	Po-212	1.49E-09	2.68E-16	7.84E-17	3.46E-16
SSW	7000	Tl-208	8.35E-10	1.50E-16	4.40E-17	1.94E-16
S	50	U-238	7.88E-06	1.42E-12	1.04E-14	1.43E-12
S	50	Th-234	7.88E-06	1.42E-12	1.04E-14	1.43E-12
S	50	Pa-234m	7.86E-06	1.41E-12	1.04E-14	1.42E-12
S	50	Pa-234	7.76E-06	1.40E-12	1.02E-14	1.41E-12
S	50	U-234	7.88E-06	1.42E-12	1.04E-14	1.43E-12
S	50	Th-230	7.88E-06	1.42E-12	1.04E-14	1.43E-12
S	50	Ra-226	6.83E-05	1.23E-11	9.01E-14	1.24E-11
S	50	Rn-222	6.91E-05	0.00E+00	0.00E+00	0.00E+00
S	50	Po-218	6.83E-05	1.23E-11	9.01E-14	1.24E-11
S	50	Pb-214	6.83E-05	1.23E-11	9.01E-14	1.24E-11
S	50	Bi-214	6.83E-05	1.23E-11	9.01E-14	1.24E-11
S	50	Po-214	6.83E-05	1.23E-11	9.00E-14	1.24E-11

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
S	50	Pb-210	6.63E-05	1.19E-11	8.74E-14	1.20E-11
S	50	Bi-210	6.63E-05	1.19E-11	8.74E-14	1.20E-11
S	50	Po-210	6.63E-05	1.19E-11	8.74E-14	1.20E-11
S	50	At-218	1.37E-08	2.46E-15	1.80E-17	2.48E-15
S	50	Th-232	2.01E-06	3.61E-13	2.65E-15	3.64E-13
S	50	Ra-228	3.03E-05	5.45E-12	3.99E-14	5.49E-12
S	50	Ac-228	3.03E-05	5.45E-12	3.99E-14	5.49E-12
S	50	Th-228	3.03E-05	5.45E-12	3.99E-14	5.49E-12
S	50	Ra-224	3.03E-05	5.45E-12	3.99E-14	5.49E-12
S	50	Rn-220	3.06E-05	0.00E+00	0.00E+00	0.00E+00
S	50	Po-216	3.03E-05	5.45E-12	3.99E-14	5.49E-12
S	50	Pb-212	3.03E-05	5.45E-12	3.99E-14	5.49E-12
S	50	Bi-212	3.03E-05	5.45E-12	3.99E-14	5.49E-12
S	50	Po-212	1.94E-05	3.49E-12	2.56E-14	3.52E-12
S	50	Tl-208	1.09E-05	1.96E-12	1.43E-14	1.97E-12
S	100	U-238	3.24E-06	5.83E-13	6.47E-15	5.89E-13
S	100	Th-234	3.24E-06	5.83E-13	6.47E-15	5.89E-13
S	100	Pa-234m	3.23E-06	5.82E-13	6.45E-15	5.88E-13
S	100	Pa-234	3.19E-06	5.75E-13	6.38E-15	5.81E-13
S	100	U-234	3.24E-06	5.83E-13	6.47E-15	5.89E-13
S	100	Th-230	3.24E-06	5.83E-13	6.47E-15	5.89E-13
S	100	Ra-226	2.81E-05	5.06E-12	5.61E-14	5.12E-12
S	100	Rn-222	2.90E-05	0.00E+00	0.00E+00	0.00E+00
S	100	Po-218	2.81E-05	5.06E-12	5.61E-14	5.12E-12
S	100	Pb-214	2.81E-05	5.06E-12	5.61E-14	5.12E-12
S	100	Bi-214	2.81E-05	5.06E-12	5.61E-14	5.12E-12
S	100	Po-214	2.81E-05	5.06E-12	5.61E-14	5.11E-12
S	100	Pb-210	2.73E-05	4.91E-12	5.45E-14	4.96E-12
S	100	Bi-210	2.73E-05	4.91E-12	5.45E-14	4.96E-12
S	100	Po-210	2.73E-05	4.91E-12	5.45E-14	4.96E-12
S	100	At-218	5.62E-09	1.01E-15	1.12E-17	1.02E-15
S	100	Th-232	8.26E-07	1.49E-13	1.65E-15	1.50E-13
S	100	Ra-228	1.25E-05	2.24E-12	2.49E-14	2.27E-12
S	100	Ac-228	1.25E-05	2.24E-12	2.49E-14	2.27E-12
S	100	Th-228	1.25E-05	2.24E-12	2.49E-14	2.27E-12
S	100	Ra-224	1.25E-05	2.24E-12	2.49E-14	2.27E-12
S	100	Rn-220	1.28E-05	0.00E+00	0.00E+00	0.00E+00
S	100	Po-216	1.25E-05	2.24E-12	2.49E-14	2.27E-12
S	100	Pb-212	1.25E-05	2.24E-12	2.49E-14	2.27E-12
S	100	Bi-212	1.25E-05	2.24E-12	2.49E-14	2.27E-12
S	100	Po-212	7.99E-06	1.44E-12	1.59E-14	1.45E-12
S	100	Tl-208	4.48E-06	8.06E-13	8.94E-15	8.15E-13
S	150	U-238	1.57E-06	2.82E-13	4.28E-15	2.86E-13
S	150	Th-234	1.57E-06	2.82E-13	4.28E-15	2.86E-13
S	150	Pa-234m	1.56E-06	2.82E-13	4.27E-15	2.86E-13
S	150	Pa-234	1.55E-06	2.78E-13	4.22E-15	2.82E-13
S	150	U-234	1.57E-06	2.82E-13	4.28E-15	2.86E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
S	150	Th-230	1.57E-06	2.82E-13	4.28E-15	2.86E-13
S	150	Ra-226	1.36E-05	2.45E-12	3.71E-14	2.49E-12
S	150	Rn-222	1.42E-05	0.00E+00	0.00E+00	0.00E+00
S	150	Po-218	1.36E-05	2.45E-12	3.71E-14	2.49E-12
S	150	Pb-214	1.36E-05	2.45E-12	3.71E-14	2.49E-12
S	150	Bi-214	1.36E-05	2.45E-12	3.71E-14	2.49E-12
S	150	Po-214	1.36E-05	2.45E-12	3.71E-14	2.49E-12
S	150	Pb-210	1.32E-05	2.38E-12	3.60E-14	2.41E-12
S	150	Bi-210	1.32E-05	2.38E-12	3.60E-14	2.41E-12
S	150	Po-210	1.32E-05	2.38E-12	3.60E-14	2.41E-12
S	150	At-218	2.72E-09	4.90E-16	7.42E-18	4.97E-16
S	150	Th-232	4.00E-07	7.19E-14	1.09E-15	7.30E-14
S	150	Ra-228	6.03E-06	1.09E-12	1.65E-14	1.10E-12
S	150	Ac-228	6.03E-06	1.09E-12	1.65E-14	1.10E-12
S	150	Th-228	6.03E-06	1.09E-12	1.65E-14	1.10E-12
S	150	Ra-224	6.03E-06	1.09E-12	1.65E-14	1.10E-12
S	150	Rn-220	6.30E-06	0.00E+00	0.00E+00	0.00E+00
S	150	Po-216	6.03E-06	1.09E-12	1.65E-14	1.10E-12
S	150	Pb-212	6.03E-06	1.09E-12	1.65E-14	1.10E-12
S	150	Bi-212	6.03E-06	1.09E-12	1.65E-14	1.10E-12
S	150	Po-212	3.86E-06	6.96E-13	1.05E-14	7.06E-13
S	150	Tl-208	2.17E-06	3.90E-13	5.91E-15	3.96E-13
S	250	U-238	6.09E-07	1.10E-13	2.54E-15	1.12E-13
S	250	Th-234	6.09E-07	1.10E-13	2.54E-15	1.12E-13
S	250	Pa-234m	6.08E-07	1.09E-13	2.54E-15	1.12E-13
S	250	Pa-234	6.00E-07	1.08E-13	2.51E-15	1.11E-13
S	250	U-234	6.09E-07	1.10E-13	2.54E-15	1.12E-13
S	250	Th-230	6.09E-07	1.10E-13	2.54E-15	1.12E-13
S	250	Ra-226	5.28E-06	9.51E-13	2.21E-14	9.73E-13
S	250	Rn-222	5.63E-06	0.00E+00	0.00E+00	0.00E+00
S	250	Po-218	5.28E-06	9.51E-13	2.21E-14	9.73E-13
S	250	Pb-214	5.28E-06	9.51E-13	2.21E-14	9.73E-13
S	250	Bi-214	5.28E-06	9.51E-13	2.21E-14	9.73E-13
S	250	Po-214	5.28E-06	9.51E-13	2.21E-14	9.73E-13
S	250	Pb-210	5.13E-06	9.23E-13	2.14E-14	9.44E-13
S	250	Bi-210	5.13E-06	9.23E-13	2.14E-14	9.44E-13
S	250	Po-210	5.13E-06	9.23E-13	2.14E-14	9.44E-13
S	250	At-218	1.06E-09	1.90E-16	4.41E-18	1.95E-16
S	250	Th-232	1.55E-07	2.80E-14	6.48E-16	2.86E-14
S	250	Ra-228	2.34E-06	4.22E-13	9.78E-15	4.31E-13
S	250	Ac-228	2.34E-06	4.22E-13	9.78E-15	4.31E-13
S	250	Th-228	2.34E-06	4.22E-13	9.78E-15	4.31E-13
S	250	Ra-224	2.34E-06	4.22E-13	9.78E-15	4.31E-13
S	250	Rn-220	2.50E-06	0.00E+00	0.00E+00	0.00E+00
S	250	Po-216	2.34E-06	4.22E-13	9.78E-15	4.31E-13
S	250	Pb-212	2.34E-06	4.22E-13	9.78E-15	4.31E-13
S	250	Bi-212	2.34E-06	4.22E-13	9.78E-15	4.31E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
S	250	Po-212	1.50E-06	2.70E-13	6.27E-15	2.77E-13
S	250	Tl-208	8.42E-07	1.52E-13	3.51E-15	1.55E-13
S	350	U-238	3.23E-07	5.82E-14	1.80E-15	6.00E-14
S	350	Th-234	3.23E-07	5.82E-14	1.80E-15	6.00E-14
S	350	Pa-234m	3.23E-07	5.81E-14	1.80E-15	5.99E-14
S	350	Pa-234	3.19E-07	5.73E-14	1.78E-15	5.91E-14
S	350	U-234	3.23E-07	5.82E-14	1.80E-15	6.00E-14
S	350	Th-230	3.23E-07	5.82E-14	1.80E-15	6.00E-14
S	350	Ra-226	2.80E-06	5.05E-13	1.56E-14	5.20E-13
S	350	Rn-222	3.03E-06	0.00E+00	0.00E+00	0.00E+00
S	350	Po-218	2.80E-06	5.05E-13	1.56E-14	5.20E-13
S	350	Pb-214	2.80E-06	5.05E-13	1.56E-14	5.20E-13
S	350	Bi-214	2.80E-06	5.05E-13	1.56E-14	5.20E-13
S	350	Po-214	2.80E-06	5.05E-13	1.56E-14	5.20E-13
S	350	Pb-210	2.72E-06	4.90E-13	1.52E-14	5.05E-13
S	350	Bi-210	2.72E-06	4.90E-13	1.52E-14	5.05E-13
S	350	Po-210	2.72E-06	4.90E-13	1.52E-14	5.05E-13
S	350	At-218	5.61E-10	1.01E-16	3.13E-18	1.04E-16
S	350	Th-232	8.24E-08	1.48E-14	4.59E-16	1.53E-14
S	350	Ra-228	1.24E-06	2.24E-13	6.93E-15	2.31E-13
S	350	Ac-228	1.24E-06	2.24E-13	6.93E-15	2.31E-13
S	350	Th-228	1.24E-06	2.24E-13	6.93E-15	2.31E-13
S	350	Ra-224	1.24E-06	2.24E-13	6.93E-15	2.31E-13
S	350	Rn-220	1.34E-06	0.00E+00	0.00E+00	0.00E+00
S	350	Po-216	1.24E-06	2.24E-13	6.93E-15	2.31E-13
S	350	Pb-212	1.24E-06	2.24E-13	6.93E-15	2.31E-13
S	350	Bi-212	1.24E-06	2.24E-13	6.93E-15	2.31E-13
S	350	Po-212	7.97E-07	1.43E-13	4.44E-15	1.48E-13
S	350	Tl-208	4.47E-07	8.04E-14	2.49E-15	8.29E-14
S	450	U-238	2.01E-07	3.62E-14	1.39E-15	3.75E-14
S	450	Th-234	2.01E-07	3.62E-14	1.39E-15	3.75E-14
S	450	Pa-234m	2.00E-07	3.61E-14	1.39E-15	3.75E-14
S	450	Pa-234	1.98E-07	3.56E-14	1.37E-15	3.70E-14
S	450	U-234	2.01E-07	3.62E-14	1.39E-15	3.75E-14
S	450	Th-230	2.01E-07	3.62E-14	1.39E-15	3.75E-14
S	450	Ra-226	1.74E-06	3.14E-13	1.21E-14	3.26E-13
S	450	Rn-222	1.90E-06	0.00E+00	0.00E+00	0.00E+00
S	450	Po-218	1.74E-06	3.14E-13	1.21E-14	3.26E-13
S	450	Pb-214	1.74E-06	3.14E-13	1.21E-14	3.26E-13
S	450	Bi-214	1.74E-06	3.14E-13	1.21E-14	3.26E-13
S	450	Po-214	1.74E-06	3.14E-13	1.21E-14	3.26E-13
S	450	Pb-210	1.69E-06	3.04E-13	1.17E-14	3.16E-13
S	450	Bi-210	1.69E-06	3.04E-13	1.17E-14	3.16E-13
S	450	Po-210	1.69E-06	3.04E-13	1.17E-14	3.16E-13
S	450	At-218	3.48E-10	6.27E-17	2.42E-18	6.51E-17
S	450	Th-232	5.12E-08	9.22E-15	3.55E-16	9.57E-15
S	450	Ra-228	7.73E-07	1.39E-13	5.36E-15	1.44E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
S	450	Ac-228	7.73E-07	1.39E-13	5.36E-15	1.44E-13
S	450	Th-228	7.73E-07	1.39E-13	5.36E-15	1.44E-13
S	450	Ra-224	7.73E-07	1.39E-13	5.36E-15	1.44E-13
S	450	Rn-220	8.44E-07	0.00E+00	0.00E+00	0.00E+00
S	450	Po-216	7.73E-07	1.39E-13	5.36E-15	1.44E-13
S	450	Pb-212	7.73E-07	1.39E-13	5.36E-15	1.44E-13
S	450	Bi-212	7.73E-07	1.39E-13	5.36E-15	1.44E-13
S	450	Po-212	4.95E-07	8.91E-14	3.43E-15	9.26E-14
S	450	Tl-208	2.78E-07	5.00E-14	1.93E-15	5.19E-14
S	750	U-238	7.61E-08	1.37E-14	8.26E-16	1.45E-14
S	750	Th-234	7.61E-08	1.37E-14	8.26E-16	1.45E-14
S	750	Pa-234m	7.60E-08	1.37E-14	8.24E-16	1.45E-14
S	750	Pa-234	7.50E-08	1.35E-14	8.14E-16	1.43E-14
S	750	U-234	7.61E-08	1.37E-14	8.26E-16	1.45E-14
S	750	Th-230	7.61E-08	1.37E-14	8.26E-16	1.45E-14
S	750	Ra-226	6.60E-07	1.19E-13	7.16E-15	1.26E-13
S	750	Rn-222	7.38E-07	0.00E+00	0.00E+00	0.00E+00
S	750	Po-218	6.60E-07	1.19E-13	7.16E-15	1.26E-13
S	750	Pb-214	6.60E-07	1.19E-13	7.16E-15	1.26E-13
S	750	Bi-214	6.60E-07	1.19E-13	7.16E-15	1.26E-13
S	750	Po-214	6.60E-07	1.19E-13	7.16E-15	1.26E-13
S	750	Pb-210	6.41E-07	1.15E-13	6.95E-15	1.22E-13
S	750	Bi-210	6.41E-07	1.15E-13	6.95E-15	1.22E-13
S	750	Po-210	6.41E-07	1.15E-13	6.95E-15	1.22E-13
S	750	At-218	1.32E-10	2.38E-17	1.43E-18	2.52E-17
S	750	Th-232	1.94E-08	3.49E-15	2.11E-16	3.70E-15
S	750	Ra-228	2.93E-07	5.27E-14	3.18E-15	5.59E-14
S	750	Ac-228	2.93E-07	5.27E-14	3.18E-15	5.59E-14
S	750	Th-228	2.93E-07	5.27E-14	3.18E-15	5.59E-14
S	750	Ra-224	2.93E-07	5.27E-14	3.18E-15	5.59E-14
S	750	Rn-220	3.27E-07	0.00E+00	0.00E+00	0.00E+00
S	750	Po-216	2.93E-07	5.27E-14	3.18E-15	5.59E-14
S	750	Pb-212	2.93E-07	5.27E-14	3.18E-15	5.59E-14
S	750	Bi-212	2.93E-07	5.27E-14	3.18E-15	5.59E-14
S	750	Po-212	1.88E-07	3.38E-14	2.04E-15	3.58E-14
S	750	Tl-208	1.05E-07	1.89E-14	1.14E-15	2.01E-14
S	1500	U-238	2.18E-08	3.93E-15	4.05E-16	4.34E-15
S	1500	Th-234	2.18E-08	3.93E-15	4.05E-16	4.34E-15
S	1500	Pa-234m	2.18E-08	3.92E-15	4.04E-16	4.33E-15
S	1500	Pa-234	2.15E-08	3.88E-15	3.99E-16	4.28E-15
S	1500	U-234	2.18E-08	3.93E-15	4.05E-16	4.34E-15
S	1500	Th-230	2.18E-08	3.93E-15	4.05E-16	4.34E-15
S	1500	Ra-226	1.90E-07	3.41E-14	3.52E-15	3.76E-14
S	1500	Rn-222	2.19E-07	0.00E+00	0.00E+00	0.00E+00
S	1500	Po-218	1.90E-07	3.41E-14	3.52E-15	3.76E-14
S	1500	Pb-214	1.90E-07	3.41E-14	3.52E-15	3.76E-14
S	1500	Bi-214	1.90E-07	3.41E-14	3.52E-15	3.76E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
S	1500	Po-214	1.90E-07	3.41E-14	3.51E-15	3.76E-14
S	1500	Pb-210	1.84E-07	3.31E-14	3.41E-15	3.65E-14
S	1500	Bi-210	1.84E-07	3.31E-14	3.41E-15	3.65E-14
S	1500	Po-210	1.84E-07	3.31E-14	3.41E-15	3.65E-14
S	1500	At-218	3.79E-11	6.82E-18	7.03E-19	7.52E-18
S	1500	Th-232	5.57E-09	1.00E-15	1.03E-16	1.11E-15
S	1500	Ra-228	8.40E-08	1.51E-14	1.56E-15	1.67E-14
S	1500	Ac-228	8.40E-08	1.51E-14	1.56E-15	1.67E-14
S	1500	Th-228	8.40E-08	1.51E-14	1.56E-15	1.67E-14
S	1500	Ra-224	8.40E-08	1.51E-14	1.56E-15	1.67E-14
S	1500	Rn-220	9.73E-08	0.00E+00	0.00E+00	0.00E+00
S	1500	Po-216	8.40E-08	1.51E-14	1.56E-15	1.67E-14
S	1500	Pb-212	8.40E-08	1.51E-14	1.56E-15	1.67E-14
S	1500	Bi-212	8.40E-08	1.51E-14	1.56E-15	1.67E-14
S	1500	Po-212	5.39E-08	9.69E-15	9.99E-16	1.07E-14
S	1500	Tl-208	3.02E-08	5.44E-15	5.60E-16	6.00E-15
S	2500	U-238	9.05E-09	1.63E-15	2.40E-16	1.87E-15
S	2500	Th-234	9.05E-09	1.63E-15	2.40E-16	1.87E-15
S	2500	Pa-234m	9.04E-09	1.63E-15	2.39E-16	1.87E-15
S	2500	Pa-234	8.93E-09	1.61E-15	2.36E-16	1.84E-15
S	2500	U-234	9.05E-09	1.63E-15	2.40E-16	1.87E-15
S	2500	Th-230	9.05E-09	1.63E-15	2.40E-16	1.87E-15
S	2500	Ra-226	7.86E-08	1.41E-14	2.08E-15	1.62E-14
S	2500	Rn-222	9.36E-08	0.00E+00	0.00E+00	0.00E+00
S	2500	Po-218	7.86E-08	1.41E-14	2.08E-15	1.62E-14
S	2500	Pb-214	7.86E-08	1.41E-14	2.08E-15	1.62E-14
S	2500	Bi-214	7.86E-08	1.41E-14	2.08E-15	1.62E-14
S	2500	Po-214	7.85E-08	1.41E-14	2.08E-15	1.62E-14
S	2500	Pb-210	7.62E-08	1.37E-14	2.02E-15	1.57E-14
S	2500	Bi-210	7.62E-08	1.37E-14	2.02E-15	1.57E-14
S	2500	Po-210	7.62E-08	1.37E-14	2.02E-15	1.57E-14
S	2500	At-218	1.57E-11	2.83E-18	4.16E-19	3.24E-18
S	2500	Th-232	2.31E-09	4.16E-16	6.11E-17	4.77E-16
S	2500	Ra-228	3.48E-08	6.27E-15	9.21E-16	7.19E-15
S	2500	Ac-228	3.48E-08	6.27E-15	9.21E-16	7.19E-15
S	2500	Th-228	3.48E-08	6.27E-15	9.21E-16	7.19E-15
S	2500	Ra-224	3.48E-08	6.27E-15	9.21E-16	7.19E-15
S	2500	Rn-220	4.15E-08	0.00E+00	0.00E+00	0.00E+00
S	2500	Po-216	3.48E-08	6.27E-15	9.21E-16	7.19E-15
S	2500	Pb-212	3.48E-08	6.27E-15	9.21E-16	7.19E-15
S	2500	Bi-212	3.48E-08	6.27E-15	9.21E-16	7.19E-15
S	2500	Po-212	2.23E-08	4.02E-15	5.91E-16	4.61E-15
S	2500	Tl-208	1.25E-08	2.25E-15	3.31E-16	2.58E-15
S	3500	U-238	5.21E-09	9.37E-16	1.69E-16	1.11E-15
S	3500	Th-234	5.21E-09	9.37E-16	1.69E-16	1.11E-15
S	3500	Pa-234m	5.20E-09	9.35E-16	1.69E-16	1.10E-15
S	3500	Pa-234	5.13E-09	9.24E-16	1.67E-16	1.09E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
S	3500	U-234	5.21E-09	9.37E-16	1.69E-16	1.11E-15
S	3500	Th-230	5.21E-09	9.37E-16	1.69E-16	1.11E-15
S	3500	Ra-226	4.52E-08	8.13E-15	1.47E-15	9.60E-15
S	3500	Rn-222	5.54E-08	0.00E+00	0.00E+00	0.00E+00
S	3500	Po-218	4.52E-08	8.13E-15	1.47E-15	9.60E-15
S	3500	Pb-214	4.52E-08	8.13E-15	1.47E-15	9.60E-15
S	3500	Bi-214	4.52E-08	8.13E-15	1.47E-15	9.60E-15
S	3500	Po-214	4.52E-08	8.13E-15	1.47E-15	9.60E-15
S	3500	Pb-210	4.38E-08	7.89E-15	1.42E-15	9.31E-15
S	3500	Bi-210	4.38E-08	7.89E-15	1.42E-15	9.31E-15
S	3500	Po-210	4.38E-08	7.89E-15	1.42E-15	9.31E-15
S	3500	At-218	9.03E-12	1.63E-18	2.93E-19	1.92E-18
S	3500	Th-232	1.33E-09	2.39E-16	4.31E-17	2.82E-16
S	3500	Ra-228	2.00E-08	3.60E-15	6.50E-16	4.25E-15
S	3500	Ac-228	2.00E-08	3.60E-15	6.50E-16	4.25E-15
S	3500	Th-228	2.00E-08	3.60E-15	6.50E-16	4.25E-15
S	3500	Ra-224	2.00E-08	3.60E-15	6.50E-16	4.25E-15
S	3500	Rn-220	2.46E-08	0.00E+00	0.00E+00	0.00E+00
S	3500	Po-216	2.00E-08	3.60E-15	6.50E-16	4.25E-15
S	3500	Pb-212	2.00E-08	3.60E-15	6.50E-16	4.25E-15
S	3500	Bi-212	2.00E-08	3.60E-15	6.50E-16	4.25E-15
S	3500	Po-212	1.28E-08	2.31E-15	4.16E-16	2.73E-15
S	3500	Tl-208	7.20E-09	1.30E-15	2.33E-16	1.53E-15
S	4500	U-238	3.51E-09	6.32E-16	1.30E-16	7.62E-16
S	4500	Th-234	3.51E-09	6.32E-16	1.30E-16	7.62E-16
S	4500	Pa-234m	3.51E-09	6.31E-16	1.30E-16	7.61E-16
S	4500	Pa-234	3.46E-09	6.23E-16	1.28E-16	7.51E-16
S	4500	U-234	3.51E-09	6.32E-16	1.30E-16	7.62E-16
S	4500	Th-230	3.51E-09	6.32E-16	1.30E-16	7.62E-16
S	4500	Ra-226	3.05E-08	5.49E-15	1.13E-15	6.62E-15
S	4500	Rn-222	3.84E-08	0.00E+00	0.00E+00	0.00E+00
S	4500	Po-218	3.05E-08	5.49E-15	1.13E-15	6.62E-15
S	4500	Pb-214	3.05E-08	5.49E-15	1.13E-15	6.62E-15
S	4500	Bi-214	3.05E-08	5.49E-15	1.13E-15	6.62E-15
S	4500	Po-214	3.05E-08	5.49E-15	1.13E-15	6.61E-15
S	4500	Pb-210	2.96E-08	5.33E-15	1.09E-15	6.42E-15
S	4500	Bi-210	2.96E-08	5.33E-15	1.09E-15	6.42E-15
S	4500	Po-210	2.96E-08	5.33E-15	1.09E-15	6.42E-15
S	4500	At-218	6.10E-12	1.10E-18	2.25E-19	1.32E-18
S	4500	Th-232	8.96E-10	1.61E-16	3.31E-17	1.94E-16
S	4500	Ra-228	1.35E-08	2.43E-15	4.99E-16	2.93E-15
S	4500	Ac-228	1.35E-08	2.43E-15	4.99E-16	2.93E-15
S	4500	Th-228	1.35E-08	2.43E-15	4.99E-16	2.93E-15
S	4500	Ra-224	1.35E-08	2.43E-15	4.99E-16	2.93E-15
S	4500	Rn-220	1.70E-08	0.00E+00	0.00E+00	0.00E+00
S	4500	Po-216	1.35E-08	2.43E-15	4.99E-16	2.93E-15
S	4500	Pb-212	1.35E-08	2.43E-15	4.99E-16	2.93E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
S	4500	Bi-212	1.35E-08	2.43E-15	4.99E-16	2.93E-15
S	4500	Po-212	8.66E-09	1.56E-15	3.20E-16	1.88E-15
S	4500	Tl-208	4.86E-09	8.74E-16	1.79E-16	1.05E-15
S	5500	U-238	2.57E-09	4.63E-16	1.05E-16	5.68E-16
S	5500	Th-234	2.57E-09	4.63E-16	1.05E-16	5.68E-16
S	5500	Pa-234m	2.57E-09	4.62E-16	1.05E-16	5.67E-16
S	5500	Pa-234	2.53E-09	4.56E-16	1.04E-16	5.60E-16
S	5500	U-234	2.57E-09	4.63E-16	1.05E-16	5.68E-16
S	5500	Th-230	2.57E-09	4.63E-16	1.05E-16	5.68E-16
S	5500	Ra-226	2.23E-08	4.02E-15	9.14E-16	4.93E-15
S	5500	Rn-222	2.87E-08	0.00E+00	0.00E+00	0.00E+00
S	5500	Po-218	2.23E-08	4.02E-15	9.14E-16	4.93E-15
S	5500	Pb-214	2.23E-08	4.02E-15	9.14E-16	4.93E-15
S	5500	Bi-214	2.23E-08	4.02E-15	9.14E-16	4.93E-15
S	5500	Po-214	2.23E-08	4.01E-15	9.14E-16	4.93E-15
S	5500	Pb-210	2.16E-08	3.90E-15	8.87E-16	4.78E-15
S	5500	Bi-210	2.16E-08	3.90E-15	8.87E-16	4.78E-15
S	5500	Po-210	2.16E-08	3.90E-15	8.87E-16	4.78E-15
S	5500	At-218	4.46E-12	8.03E-19	1.83E-19	9.85E-19
S	5500	Th-232	6.56E-10	1.18E-16	2.68E-17	1.45E-16
S	5500	Ra-228	9.89E-09	1.78E-15	4.05E-16	2.19E-15
S	5500	Ac-228	9.89E-09	1.78E-15	4.05E-16	2.19E-15
S	5500	Th-228	9.89E-09	1.78E-15	4.05E-16	2.19E-15
S	5500	Ra-224	9.89E-09	1.78E-15	4.05E-16	2.19E-15
S	5500	Rn-220	1.27E-08	0.00E+00	0.00E+00	0.00E+00
S	5500	Po-216	9.89E-09	1.78E-15	4.05E-16	2.19E-15
S	5500	Pb-212	9.89E-09	1.78E-15	4.05E-16	2.19E-15
S	5500	Bi-212	9.89E-09	1.78E-15	4.05E-16	2.19E-15
S	5500	Po-212	6.34E-09	1.14E-15	2.60E-16	1.40E-15
S	5500	Tl-208	3.55E-09	6.40E-16	1.46E-16	7.85E-16
S	7000	U-238	1.74E-09	3.14E-16	8.14E-17	3.95E-16
S	7000	Th-234	1.74E-09	3.14E-16	8.14E-17	3.95E-16
S	7000	Pa-234m	1.74E-09	3.13E-16	8.12E-17	3.95E-16
S	7000	Pa-234	1.72E-09	3.09E-16	8.03E-17	3.90E-16
S	7000	U-234	1.74E-09	3.14E-16	8.14E-17	3.95E-16
S	7000	Th-230	1.74E-09	3.14E-16	8.14E-17	3.95E-16
S	7000	Ra-226	1.51E-08	2.72E-15	7.06E-16	3.43E-15
S	7000	Rn-222	2.02E-08	0.00E+00	0.00E+00	0.00E+00
S	7000	Po-218	1.51E-08	2.72E-15	7.06E-16	3.43E-15
S	7000	Pb-214	1.51E-08	2.72E-15	7.06E-16	3.43E-15
S	7000	Bi-214	1.51E-08	2.72E-15	7.06E-16	3.43E-15
S	7000	Po-214	1.51E-08	2.72E-15	7.06E-16	3.43E-15
S	7000	Pb-210	1.47E-08	2.64E-15	6.86E-16	3.33E-15
S	7000	Bi-210	1.47E-08	2.64E-15	6.86E-16	3.33E-15
S	7000	Po-210	1.47E-08	2.64E-15	6.86E-16	3.33E-15
S	7000	At-218	3.03E-12	5.45E-19	1.41E-19	6.86E-19
S	7000	Th-232	4.45E-10	8.00E-17	2.08E-17	1.01E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
S	7000	Ra-228	6.71E-09	1.21E-15	3.13E-16	1.52E-15
S	7000	Ac-228	6.71E-09	1.21E-15	3.13E-16	1.52E-15
S	7000	Th-228	6.71E-09	1.21E-15	3.13E-16	1.52E-15
S	7000	Ra-224	6.71E-09	1.21E-15	3.13E-16	1.52E-15
S	7000	Rn-220	8.97E-09	0.00E+00	0.00E+00	0.00E+00
S	7000	Po-216	6.71E-09	1.21E-15	3.13E-16	1.52E-15
S	7000	Pb-212	6.71E-09	1.21E-15	3.13E-16	1.52E-15
S	7000	Bi-212	6.71E-09	1.21E-15	3.13E-16	1.52E-15
S	7000	Po-212	4.30E-09	7.74E-16	2.01E-16	9.75E-16
S	7000	Tl-208	2.41E-09	4.34E-16	1.13E-16	5.46E-16
SSE	50	U-238	5.80E-06	1.04E-12	7.52E-15	1.05E-12
SSE	50	Th-234	5.80E-06	1.04E-12	7.52E-15	1.05E-12
SSE	50	Pa-234m	5.79E-06	1.04E-12	7.51E-15	1.05E-12
SSE	50	Pa-234	5.72E-06	1.03E-12	7.41E-15	1.04E-12
SSE	50	U-234	5.80E-06	1.04E-12	7.52E-15	1.05E-12
SSE	50	Th-230	5.80E-06	1.04E-12	7.52E-15	1.05E-12
SSE	50	Ra-226	5.04E-05	9.06E-12	6.53E-14	9.13E-12
SSE	50	Rn-222	5.10E-05	0.00E+00	0.00E+00	0.00E+00
SSE	50	Po-218	5.04E-05	9.06E-12	6.53E-14	9.13E-12
SSE	50	Pb-214	5.04E-05	9.06E-12	6.53E-14	9.13E-12
SSE	50	Bi-214	5.04E-05	9.06E-12	6.53E-14	9.13E-12
SSE	50	Po-214	5.03E-05	9.06E-12	6.53E-14	9.13E-12
SSE	50	Pb-210	4.89E-05	8.80E-12	6.33E-14	8.86E-12
SSE	50	Bi-210	4.89E-05	8.80E-12	6.33E-14	8.86E-12
SSE	50	Po-210	4.89E-05	8.80E-12	6.33E-14	8.86E-12
SSE	50	At-218	1.01E-08	1.81E-15	1.30E-17	1.83E-15
SSE	50	Th-232	1.48E-06	2.66E-13	1.92E-15	2.68E-13
SSE	50	Ra-228	2.23E-05	4.02E-12	2.89E-14	4.05E-12
SSE	50	Ac-228	2.23E-05	4.02E-12	2.89E-14	4.05E-12
SSE	50	Th-228	2.23E-05	4.02E-12	2.89E-14	4.05E-12
SSE	50	Ra-224	2.23E-05	4.02E-12	2.89E-14	4.05E-12
SSE	50	Rn-220	2.26E-05	0.00E+00	0.00E+00	0.00E+00
SSE	50	Po-216	2.23E-05	4.02E-12	2.89E-14	4.05E-12
SSE	50	Pb-212	2.23E-05	4.02E-12	2.89E-14	4.05E-12
SSE	50	Bi-212	2.23E-05	4.02E-12	2.89E-14	4.05E-12
SSE	50	Po-212	1.43E-05	2.58E-12	1.85E-14	2.59E-12
SSE	50	Tl-208	8.02E-06	1.44E-12	1.04E-14	1.45E-12
SSE	100	U-238	1.59E-06	2.87E-13	3.15E-15	2.90E-13
SSE	100	Th-234	1.59E-06	2.87E-13	3.15E-15	2.90E-13
SSE	100	Pa-234m	1.59E-06	2.86E-13	3.14E-15	2.90E-13
SSE	100	Pa-234	1.57E-06	2.83E-13	3.11E-15	2.86E-13
SSE	100	U-234	1.59E-06	2.87E-13	3.15E-15	2.90E-13
SSE	100	Th-230	1.59E-06	2.87E-13	3.15E-15	2.90E-13
SSE	100	Ra-226	1.38E-05	2.49E-12	2.73E-14	2.52E-12
SSE	100	Rn-222	1.43E-05	0.00E+00	0.00E+00	0.00E+00
SSE	100	Po-218	1.38E-05	2.49E-12	2.73E-14	2.52E-12
SSE	100	Pb-214	1.38E-05	2.49E-12	2.73E-14	2.52E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SSE	100	Bi-214	1.38E-05	2.49E-12	2.73E-14	2.52E-12
SSE	100	Po-214	1.38E-05	2.49E-12	2.73E-14	2.52E-12
SSE	100	Pb-210	1.34E-05	2.42E-12	2.65E-14	2.44E-12
SSE	100	Bi-210	1.34E-05	2.42E-12	2.65E-14	2.44E-12
SSE	100	Po-210	1.34E-05	2.42E-12	2.65E-14	2.44E-12
SSE	100	At-218	2.77E-09	4.98E-16	5.47E-18	5.03E-16
SSE	100	Th-232	4.06E-07	7.32E-14	8.03E-16	7.40E-14
SSE	100	Ra-228	6.13E-06	1.10E-12	1.21E-14	1.12E-12
SSE	100	Ac-228	6.13E-06	1.10E-12	1.21E-14	1.12E-12
SSE	100	Th-228	6.13E-06	1.10E-12	1.21E-14	1.12E-12
SSE	100	Ra-224	6.13E-06	1.10E-12	1.21E-14	1.12E-12
SSE	100	Rn-220	6.33E-06	0.00E+00	0.00E+00	0.00E+00
SSE	100	Po-216	6.13E-06	1.10E-12	1.21E-14	1.12E-12
SSE	100	Pb-212	6.13E-06	1.10E-12	1.21E-14	1.12E-12
SSE	100	Bi-212	6.13E-06	1.10E-12	1.21E-14	1.12E-12
SSE	100	Po-212	3.93E-06	7.07E-13	7.77E-15	7.15E-13
SSE	100	Tl-208	2.20E-06	3.97E-13	4.35E-15	4.01E-13
SSE	150	U-238	7.72E-07	1.39E-13	2.08E-15	1.41E-13
SSE	150	Th-234	7.72E-07	1.39E-13	2.08E-15	1.41E-13
SSE	150	Pa-234m	7.70E-07	1.39E-13	2.08E-15	1.41E-13
SSE	150	Pa-234	7.61E-07	1.37E-13	2.05E-15	1.39E-13
SSE	150	U-234	7.72E-07	1.39E-13	2.08E-15	1.41E-13
SSE	150	Th-230	7.72E-07	1.39E-13	2.08E-15	1.41E-13
SSE	150	Ra-226	6.70E-06	1.21E-12	1.81E-14	1.22E-12
SSE	150	Rn-222	7.02E-06	0.00E+00	0.00E+00	0.00E+00
SSE	150	Po-218	6.70E-06	1.21E-12	1.81E-14	1.22E-12
SSE	150	Pb-214	6.70E-06	1.21E-12	1.81E-14	1.22E-12
SSE	150	Bi-214	6.70E-06	1.21E-12	1.81E-14	1.22E-12
SSE	150	Po-214	6.70E-06	1.21E-12	1.81E-14	1.22E-12
SSE	150	Pb-210	6.50E-06	1.17E-12	1.75E-14	1.19E-12
SSE	150	Bi-210	6.50E-06	1.17E-12	1.75E-14	1.19E-12
SSE	150	Po-210	6.50E-06	1.17E-12	1.75E-14	1.19E-12
SSE	150	At-218	1.34E-09	2.41E-16	3.61E-18	2.45E-16
SSE	150	Th-232	1.97E-07	3.54E-14	5.31E-16	3.60E-14
SSE	150	Ra-228	2.97E-06	5.34E-13	8.01E-15	5.42E-13
SSE	150	Ac-228	2.97E-06	5.34E-13	8.01E-15	5.42E-13
SSE	150	Th-228	2.97E-06	5.34E-13	8.01E-15	5.42E-13
SSE	150	Ra-224	2.97E-06	5.34E-13	8.01E-15	5.42E-13
SSE	150	Rn-220	3.11E-06	0.00E+00	0.00E+00	0.00E+00
SSE	150	Po-216	2.97E-06	5.34E-13	8.01E-15	5.42E-13
SSE	150	Pb-212	2.97E-06	5.34E-13	8.01E-15	5.42E-13
SSE	150	Bi-212	2.97E-06	5.34E-13	8.01E-15	5.42E-13
SSE	150	Po-212	1.90E-06	3.42E-13	5.14E-15	3.48E-13
SSE	150	Tl-208	1.07E-06	1.92E-13	2.88E-15	1.95E-13
SSE	250	U-238	2.99E-07	5.39E-14	1.24E-15	5.51E-14
SSE	250	Th-234	2.99E-07	5.39E-14	1.24E-15	5.51E-14
SSE	250	Pa-234m	2.99E-07	5.37E-14	1.23E-15	5.50E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SSE	250	Pa-234	2.95E-07	5.31E-14	1.22E-15	5.43E-14
SSE	250	U-234	2.99E-07	5.39E-14	1.24E-15	5.51E-14
SSE	250	Th-230	2.99E-07	5.39E-14	1.24E-15	5.51E-14
SSE	250	Ra-226	2.60E-06	4.67E-13	1.07E-14	4.78E-13
SSE	250	Rn-222	2.78E-06	0.00E+00	0.00E+00	0.00E+00
SSE	250	Po-218	2.60E-06	4.67E-13	1.07E-14	4.78E-13
SSE	250	Pb-214	2.60E-06	4.67E-13	1.07E-14	4.78E-13
SSE	250	Bi-214	2.60E-06	4.67E-13	1.07E-14	4.78E-13
SSE	250	Po-214	2.60E-06	4.67E-13	1.07E-14	4.78E-13
SSE	250	Pb-210	2.52E-06	4.53E-13	1.04E-14	4.64E-13
SSE	250	Bi-210	2.52E-06	4.53E-13	1.04E-14	4.64E-13
SSE	250	Po-210	2.52E-06	4.53E-13	1.04E-14	4.64E-13
SSE	250	At-218	5.19E-10	9.34E-17	2.14E-18	9.56E-17
SSE	250	Th-232	7.63E-08	1.37E-14	3.15E-16	1.40E-14
SSE	250	Ra-228	1.15E-06	2.07E-13	4.76E-15	2.12E-13
SSE	250	Ac-228	1.15E-06	2.07E-13	4.76E-15	2.12E-13
SSE	250	Th-228	1.15E-06	2.07E-13	4.76E-15	2.12E-13
SSE	250	Ra-224	1.15E-06	2.07E-13	4.76E-15	2.12E-13
SSE	250	Rn-220	1.23E-06	0.00E+00	0.00E+00	0.00E+00
SSE	250	Po-216	1.15E-06	2.07E-13	4.76E-15	2.12E-13
SSE	250	Pb-212	1.15E-06	2.07E-13	4.76E-15	2.12E-13
SSE	250	Bi-212	1.15E-06	2.07E-13	4.76E-15	2.12E-13
SSE	250	Po-212	7.38E-07	1.33E-13	3.05E-15	1.36E-13
SSE	250	Tl-208	4.14E-07	7.44E-14	1.71E-15	7.61E-14
SSE	350	U-238	1.58E-07	2.85E-14	8.76E-16	2.94E-14
SSE	350	Th-234	1.58E-07	2.85E-14	8.76E-16	2.94E-14
SSE	350	Pa-234m	1.58E-07	2.85E-14	8.74E-16	2.93E-14
SSE	350	Pa-234	1.56E-07	2.81E-14	8.63E-16	2.90E-14
SSE	350	U-234	1.58E-07	2.85E-14	8.76E-16	2.94E-14
SSE	350	Th-230	1.58E-07	2.85E-14	8.76E-16	2.94E-14
SSE	350	Ra-226	1.37E-06	2.47E-13	7.60E-15	2.55E-13
SSE	350	Rn-222	1.49E-06	0.00E+00	0.00E+00	0.00E+00
SSE	350	Po-218	1.37E-06	2.47E-13	7.60E-15	2.55E-13
SSE	350	Pb-214	1.37E-06	2.47E-13	7.60E-15	2.55E-13
SSE	350	Bi-214	1.37E-06	2.47E-13	7.60E-15	2.55E-13
SSE	350	Po-214	1.37E-06	2.47E-13	7.60E-15	2.55E-13
SSE	350	Pb-210	1.33E-06	2.40E-13	7.38E-15	2.48E-13
SSE	350	Bi-210	1.33E-06	2.40E-13	7.38E-15	2.48E-13
SSE	350	Po-210	1.33E-06	2.40E-13	7.38E-15	2.48E-13
SSE	350	At-218	2.75E-10	4.95E-17	1.52E-18	5.10E-17
SSE	350	Th-232	4.04E-08	7.27E-15	2.23E-16	7.50E-15
SSE	350	Ra-228	6.09E-07	1.10E-13	3.37E-15	1.13E-13
SSE	350	Ac-228	6.09E-07	1.10E-13	3.37E-15	1.13E-13
SSE	350	Th-228	6.09E-07	1.10E-13	3.37E-15	1.13E-13
SSE	350	Ra-224	6.09E-07	1.10E-13	3.37E-15	1.13E-13
SSE	350	Rn-220	6.62E-07	0.00E+00	0.00E+00	0.00E+00
SSE	350	Po-216	6.09E-07	1.10E-13	3.37E-15	1.13E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SSE	350	Pb-212	6.09E-07	1.10E-13	3.37E-15	1.13E-13
SSE	350	Bi-212	6.09E-07	1.10E-13	3.37E-15	1.13E-13
SSE	350	Po-212	3.91E-07	7.03E-14	2.16E-15	7.25E-14
SSE	350	Tl-208	2.19E-07	3.94E-14	1.21E-15	4.06E-14
SSE	450	U-238	9.83E-08	1.77E-14	6.77E-16	1.84E-14
SSE	450	Th-234	9.83E-08	1.77E-14	6.77E-16	1.84E-14
SSE	450	Pa-234m	9.81E-08	1.77E-14	6.76E-16	1.83E-14
SSE	450	Pa-234	9.69E-08	1.74E-14	6.67E-16	1.81E-14
SSE	450	U-234	9.83E-08	1.77E-14	6.77E-16	1.84E-14
SSE	450	Th-230	9.83E-08	1.77E-14	6.77E-16	1.84E-14
SSE	450	Ra-226	8.53E-07	1.54E-13	5.87E-15	1.59E-13
SSE	450	Rn-222	9.37E-07	0.00E+00	0.00E+00	0.00E+00
SSE	450	Po-218	8.53E-07	1.54E-13	5.87E-15	1.59E-13
SSE	450	Pb-214	8.53E-07	1.54E-13	5.87E-15	1.59E-13
SSE	450	Bi-214	8.53E-07	1.54E-13	5.87E-15	1.59E-13
SSE	450	Po-214	8.53E-07	1.53E-13	5.87E-15	1.59E-13
SSE	450	Pb-210	8.28E-07	1.49E-13	5.70E-15	1.55E-13
SSE	450	Bi-210	8.28E-07	1.49E-13	5.70E-15	1.55E-13
SSE	450	Po-210	8.28E-07	1.49E-13	5.70E-15	1.55E-13
SSE	450	At-218	1.70E-10	3.07E-17	1.17E-18	3.19E-17
SSE	450	Th-232	2.51E-08	4.51E-15	1.73E-16	4.68E-15
SSE	450	Ra-228	3.78E-07	6.80E-14	2.60E-15	7.07E-14
SSE	450	Ac-228	3.78E-07	6.80E-14	2.60E-15	7.07E-14
SSE	450	Th-228	3.78E-07	6.80E-14	2.60E-15	7.07E-14
SSE	450	Ra-224	3.78E-07	6.80E-14	2.60E-15	7.07E-14
SSE	450	Rn-220	4.15E-07	0.00E+00	0.00E+00	0.00E+00
SSE	450	Po-216	3.78E-07	6.80E-14	2.60E-15	7.07E-14
SSE	450	Pb-212	3.78E-07	6.80E-14	2.60E-15	7.07E-14
SSE	450	Bi-212	3.78E-07	6.80E-14	2.60E-15	7.07E-14
SSE	450	Po-212	2.42E-07	4.36E-14	1.67E-15	4.53E-14
SSE	450	Tl-208	1.36E-07	2.44E-14	9.36E-16	2.54E-14
SSE	750	U-238	3.71E-08	6.68E-15	4.01E-16	7.08E-15
SSE	750	Th-234	3.71E-08	6.68E-15	4.01E-16	7.08E-15
SSE	750	Pa-234m	3.70E-08	6.66E-15	4.00E-16	7.06E-15
SSE	750	Pa-234	3.66E-08	6.58E-15	3.95E-16	6.98E-15
SSE	750	U-234	3.71E-08	6.68E-15	4.01E-16	7.08E-15
SSE	750	Th-230	3.71E-08	6.68E-15	4.01E-16	7.08E-15
SSE	750	Ra-226	3.22E-07	5.79E-14	3.48E-15	6.14E-14
SSE	750	Rn-222	3.62E-07	0.00E+00	0.00E+00	0.00E+00
SSE	750	Po-218	3.22E-07	5.79E-14	3.48E-15	6.14E-14
SSE	750	Pb-214	3.22E-07	5.79E-14	3.48E-15	6.14E-14
SSE	750	Bi-214	3.22E-07	5.79E-14	3.48E-15	6.14E-14
SSE	750	Po-214	3.22E-07	5.79E-14	3.48E-15	6.14E-14
SSE	750	Pb-210	3.12E-07	5.62E-14	3.37E-15	5.96E-14
SSE	750	Bi-210	3.12E-07	5.62E-14	3.37E-15	5.96E-14
SSE	750	Po-210	3.12E-07	5.62E-14	3.37E-15	5.96E-14
SSE	750	At-218	6.43E-11	1.16E-17	6.95E-19	1.23E-17

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SSE	750	Th-232	9.46E-09	1.70E-15	1.02E-16	1.80E-15
SSE	750	Ra-228	1.43E-07	2.57E-14	1.54E-15	2.72E-14
SSE	750	Ac-228	1.43E-07	2.57E-14	1.54E-15	2.72E-14
SSE	750	Th-228	1.43E-07	2.57E-14	1.54E-15	2.72E-14
SSE	750	Ra-224	1.43E-07	2.57E-14	1.54E-15	2.72E-14
SSE	750	Rn-220	1.61E-07	0.00E+00	0.00E+00	0.00E+00
SSE	750	Po-216	1.43E-07	2.57E-14	1.54E-15	2.72E-14
SSE	750	Pb-212	1.43E-07	2.57E-14	1.54E-15	2.72E-14
SSE	750	Bi-212	1.43E-07	2.57E-14	1.54E-15	2.72E-14
SSE	750	Po-212	9.14E-08	1.65E-14	9.88E-16	1.74E-14
SSE	750	Tl-208	5.13E-08	9.23E-15	5.54E-16	9.78E-15
SSE	1500	U-238	1.06E-08	1.91E-15	1.96E-16	2.10E-15
SSE	1500	Th-234	1.06E-08	1.91E-15	1.96E-16	2.10E-15
SSE	1500	Pa-234m	1.06E-08	1.90E-15	1.96E-16	2.10E-15
SSE	1500	Pa-234	1.04E-08	1.88E-15	1.94E-16	2.07E-15
SSE	1500	U-234	1.06E-08	1.91E-15	1.96E-16	2.10E-15
SSE	1500	Th-230	1.06E-08	1.91E-15	1.96E-16	2.10E-15
SSE	1500	Ra-226	9.19E-08	1.65E-14	1.70E-15	1.82E-14
SSE	1500	Rn-222	1.07E-07	0.00E+00	0.00E+00	0.00E+00
SSE	1500	Po-218	9.19E-08	1.65E-14	1.70E-15	1.82E-14
SSE	1500	Pb-214	9.19E-08	1.65E-14	1.70E-15	1.82E-14
SSE	1500	Bi-214	9.19E-08	1.65E-14	1.70E-15	1.82E-14
SSE	1500	Po-214	9.19E-08	1.65E-14	1.70E-15	1.82E-14
SSE	1500	Pb-210	8.92E-08	1.61E-14	1.65E-15	1.77E-14
SSE	1500	Bi-210	8.92E-08	1.61E-14	1.65E-15	1.77E-14
SSE	1500	Po-210	8.92E-08	1.61E-14	1.65E-15	1.77E-14
SSE	1500	At-218	1.84E-11	3.31E-18	3.41E-19	3.65E-18
SSE	1500	Th-232	2.70E-09	4.86E-16	5.01E-17	5.36E-16
SSE	1500	Ra-228	4.07E-08	7.33E-15	7.56E-16	8.09E-15
SSE	1500	Ac-228	4.07E-08	7.33E-15	7.56E-16	8.09E-15
SSE	1500	Th-228	4.07E-08	7.33E-15	7.56E-16	8.09E-15
SSE	1500	Ra-224	4.07E-08	7.33E-15	7.56E-16	8.09E-15
SSE	1500	Rn-220	4.77E-08	0.00E+00	0.00E+00	0.00E+00
SSE	1500	Po-216	4.07E-08	7.33E-15	7.56E-16	8.09E-15
SSE	1500	Pb-212	4.07E-08	7.33E-15	7.56E-16	8.09E-15
SSE	1500	Bi-212	4.07E-08	7.33E-15	7.56E-16	8.09E-15
SSE	1500	Po-212	2.61E-08	4.70E-15	4.84E-16	5.18E-15
SSE	1500	Tl-208	1.46E-08	2.64E-15	2.71E-16	2.91E-15
SSE	2500	U-238	4.38E-09	7.88E-16	1.16E-16	9.04E-16
SSE	2500	Th-234	4.38E-09	7.88E-16	1.16E-16	9.04E-16
SSE	2500	Pa-234m	4.37E-09	7.87E-16	1.16E-16	9.02E-16
SSE	2500	Pa-234	4.32E-09	7.77E-16	1.14E-16	8.91E-16
SSE	2500	U-234	4.38E-09	7.88E-16	1.16E-16	9.04E-16
SSE	2500	Th-230	4.38E-09	7.88E-16	1.16E-16	9.04E-16
SSE	2500	Ra-226	3.80E-08	6.84E-15	1.01E-15	7.85E-15
SSE	2500	Rn-222	4.59E-08	0.00E+00	0.00E+00	0.00E+00
SSE	2500	Po-218	3.80E-08	6.84E-15	1.01E-15	7.85E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SSE	2500	Pb-214	3.80E-08	6.84E-15	1.01E-15	7.85E-15
SSE	2500	Bi-214	3.80E-08	6.84E-15	1.01E-15	7.85E-15
SSE	2500	Po-214	3.80E-08	6.84E-15	1.01E-15	7.84E-15
SSE	2500	Pb-210	3.69E-08	6.64E-15	9.77E-16	7.61E-15
SSE	2500	Bi-210	3.69E-08	6.64E-15	9.77E-16	7.61E-15
SSE	2500	Po-210	3.69E-08	6.64E-15	9.77E-16	7.61E-15
SSE	2500	At-218	7.60E-12	1.37E-18	2.01E-19	1.57E-18
SSE	2500	Th-232	1.12E-09	2.01E-16	2.96E-17	2.31E-16
SSE	2500	Ra-228	1.68E-08	3.03E-15	4.46E-16	3.48E-15
SSE	2500	Ac-228	1.68E-08	3.03E-15	4.46E-16	3.48E-15
SSE	2500	Th-228	1.68E-08	3.03E-15	4.46E-16	3.48E-15
SSE	2500	Ra-224	1.68E-08	3.03E-15	4.46E-16	3.48E-15
SSE	2500	Rn-220	2.03E-08	0.00E+00	0.00E+00	0.00E+00
SSE	2500	Po-216	1.68E-08	3.03E-15	4.46E-16	3.48E-15
SSE	2500	Pb-212	1.68E-08	3.03E-15	4.46E-16	3.48E-15
SSE	2500	Bi-212	1.68E-08	3.03E-15	4.46E-16	3.48E-15
SSE	2500	Po-212	1.08E-08	1.94E-15	2.86E-16	2.23E-15
SSE	2500	Tl-208	6.05E-09	1.09E-15	1.60E-16	1.25E-15
SSE	3500	U-238	2.52E-09	4.53E-16	8.17E-17	5.34E-16
SSE	3500	Th-234	2.52E-09	4.53E-16	8.17E-17	5.34E-16
SSE	3500	Pa-234m	2.51E-09	4.52E-16	8.15E-17	5.33E-16
SSE	3500	Pa-234	2.48E-09	4.46E-16	8.06E-17	5.27E-16
SSE	3500	U-234	2.52E-09	4.53E-16	8.17E-17	5.34E-16
SSE	3500	Th-230	2.52E-09	4.53E-16	8.17E-17	5.34E-16
SSE	3500	Ra-226	2.18E-08	3.93E-15	7.09E-16	4.64E-15
SSE	3500	Rn-222	2.72E-08	0.00E+00	0.00E+00	0.00E+00
SSE	3500	Po-218	2.18E-08	3.93E-15	7.09E-16	4.64E-15
SSE	3500	Pb-214	2.18E-08	3.93E-15	7.09E-16	4.64E-15
SSE	3500	Bi-214	2.18E-08	3.93E-15	7.09E-16	4.64E-15
SSE	3500	Po-214	2.18E-08	3.93E-15	7.09E-16	4.64E-15
SSE	3500	Pb-210	2.12E-08	3.81E-15	6.88E-16	4.50E-15
SSE	3500	Bi-210	2.12E-08	3.81E-15	6.88E-16	4.50E-15
SSE	3500	Po-210	2.12E-08	3.81E-15	6.88E-16	4.50E-15
SSE	3500	At-218	4.36E-12	7.85E-19	1.42E-19	9.27E-19
SSE	3500	Th-232	6.41E-10	1.15E-16	2.08E-17	1.36E-16
SSE	3500	Ra-228	9.67E-09	1.74E-15	3.14E-16	2.06E-15
SSE	3500	Ac-228	9.67E-09	1.74E-15	3.14E-16	2.06E-15
SSE	3500	Th-228	9.67E-09	1.74E-15	3.14E-16	2.06E-15
SSE	3500	Ra-224	9.67E-09	1.74E-15	3.14E-16	2.06E-15
SSE	3500	Rn-220	1.20E-08	0.00E+00	0.00E+00	0.00E+00
SSE	3500	Po-216	9.67E-09	1.74E-15	3.14E-16	2.06E-15
SSE	3500	Pb-212	9.67E-09	1.74E-15	3.14E-16	2.06E-15
SSE	3500	Bi-212	9.67E-09	1.74E-15	3.14E-16	2.06E-15
SSE	3500	Po-212	6.20E-09	1.12E-15	2.01E-16	1.32E-15
SSE	3500	Tl-208	3.48E-09	6.26E-16	1.13E-16	7.39E-16
SSE	4500	U-238	1.70E-09	3.05E-16	6.28E-17	3.68E-16
SSE	4500	Th-234	1.70E-09	3.05E-16	6.28E-17	3.68E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SSE	4500	Pa-234m	1.69E-09	3.05E-16	6.26E-17	3.67E-16
SSE	4500	Pa-234	1.67E-09	3.01E-16	6.19E-17	3.63E-16
SSE	4500	U-234	1.70E-09	3.05E-16	6.28E-17	3.68E-16
SSE	4500	Th-230	1.70E-09	3.05E-16	6.28E-17	3.68E-16
SSE	4500	Ra-226	1.47E-08	2.65E-15	5.45E-16	3.19E-15
SSE	4500	Rn-222	1.89E-08	0.00E+00	0.00E+00	0.00E+00
SSE	4500	Po-218	1.47E-08	2.65E-15	5.45E-16	3.19E-15
SSE	4500	Pb-214	1.47E-08	2.65E-15	5.45E-16	3.19E-15
SSE	4500	Bi-214	1.47E-08	2.65E-15	5.45E-16	3.19E-15
SSE	4500	Po-214	1.47E-08	2.65E-15	5.45E-16	3.19E-15
SSE	4500	Pb-210	1.43E-08	2.57E-15	5.28E-16	3.10E-15
SSE	4500	Bi-210	1.43E-08	2.57E-15	5.28E-16	3.10E-15
SSE	4500	Po-210	1.43E-08	2.57E-15	5.28E-16	3.10E-15
SSE	4500	At-218	2.94E-12	5.30E-19	1.09E-19	6.39E-19
SSE	4500	Th-232	4.32E-10	7.78E-17	1.60E-17	9.39E-17
SSE	4500	Ra-228	6.52E-09	1.17E-15	2.41E-16	1.42E-15
SSE	4500	Ac-228	6.52E-09	1.17E-15	2.41E-16	1.42E-15
SSE	4500	Th-228	6.52E-09	1.17E-15	2.41E-16	1.42E-15
SSE	4500	Ra-224	6.52E-09	1.17E-15	2.41E-16	1.42E-15
SSE	4500	Rn-220	8.36E-09	0.00E+00	0.00E+00	0.00E+00
SSE	4500	Po-216	6.52E-09	1.17E-15	2.41E-16	1.42E-15
SSE	4500	Pb-212	6.52E-09	1.17E-15	2.41E-16	1.42E-15
SSE	4500	Bi-212	6.52E-09	1.17E-15	2.41E-16	1.42E-15
SSE	4500	Po-212	4.18E-09	7.53E-16	1.55E-16	9.07E-16
SSE	4500	Tl-208	2.34E-09	4.22E-16	8.67E-17	5.09E-16
SSE	5500	U-238	1.24E-09	2.23E-16	5.09E-17	2.74E-16
SSE	5500	Th-234	1.24E-09	2.23E-16	5.09E-17	2.74E-16
SSE	5500	Pa-234m	1.24E-09	2.23E-16	5.08E-17	2.74E-16
SSE	5500	Pa-234	1.22E-09	2.20E-16	5.01E-17	2.70E-16
SSE	5500	U-234	1.24E-09	2.23E-16	5.09E-17	2.74E-16
SSE	5500	Th-230	1.24E-09	2.23E-16	5.09E-17	2.74E-16
SSE	5500	Ra-226	1.08E-08	1.94E-15	4.41E-16	2.38E-15
SSE	5500	Rn-222	1.41E-08	0.00E+00	0.00E+00	0.00E+00
SSE	5500	Po-218	1.08E-08	1.94E-15	4.41E-16	2.38E-15
SSE	5500	Pb-214	1.08E-08	1.94E-15	4.41E-16	2.38E-15
SSE	5500	Bi-214	1.08E-08	1.94E-15	4.41E-16	2.38E-15
SSE	5500	Po-214	1.08E-08	1.94E-15	4.41E-16	2.38E-15
SSE	5500	Pb-210	1.04E-08	1.88E-15	4.28E-16	2.31E-15
SSE	5500	Bi-210	1.04E-08	1.88E-15	4.28E-16	2.31E-15
SSE	5500	Po-210	1.04E-08	1.88E-15	4.28E-16	2.31E-15
SSE	5500	At-218	2.15E-12	3.87E-19	8.82E-20	4.76E-19
SSE	5500	Th-232	3.16E-10	5.69E-17	1.30E-17	6.99E-17
SSE	5500	Ra-228	4.77E-09	8.59E-16	1.96E-16	1.05E-15
SSE	5500	Ac-228	4.77E-09	8.59E-16	1.96E-16	1.05E-15
SSE	5500	Th-228	4.77E-09	8.59E-16	1.96E-16	1.05E-15
SSE	5500	Ra-224	4.77E-09	8.59E-16	1.96E-16	1.05E-15
SSE	5500	Rn-220	6.25E-09	0.00E+00	0.00E+00	0.00E+00

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SSE	5500	Po-216	4.77E-09	8.59E-16	1.96E-16	1.05E-15
SSE	5500	Pb-212	4.77E-09	8.59E-16	1.96E-16	1.05E-15
SSE	5500	Bi-212	4.77E-09	8.59E-16	1.96E-16	1.05E-15
SSE	5500	Po-212	3.06E-09	5.50E-16	1.25E-16	6.76E-16
SSE	5500	Tl-208	1.71E-09	3.09E-16	7.03E-17	3.79E-16
SSE	7000	U-238	8.40E-10	1.51E-16	3.93E-17	1.90E-16
SSE	7000	Th-234	8.40E-10	1.51E-16	3.93E-17	1.90E-16
SSE	7000	Pa-234m	8.38E-10	1.51E-16	3.92E-17	1.90E-16
SSE	7000	Pa-234	8.28E-10	1.49E-16	3.87E-17	1.88E-16
SSE	7000	U-234	8.40E-10	1.51E-16	3.93E-17	1.90E-16
SSE	7000	Th-230	8.40E-10	1.51E-16	3.93E-17	1.90E-16
SSE	7000	Ra-226	7.29E-09	1.31E-15	3.41E-16	1.65E-15
SSE	7000	Rn-222	9.95E-09	0.00E+00	0.00E+00	0.00E+00
SSE	7000	Po-218	7.29E-09	1.31E-15	3.41E-16	1.65E-15
SSE	7000	Pb-214	7.29E-09	1.31E-15	3.41E-16	1.65E-15
SSE	7000	Bi-214	7.29E-09	1.31E-15	3.41E-16	1.65E-15
SSE	7000	Po-214	7.29E-09	1.31E-15	3.41E-16	1.65E-15
SSE	7000	Pb-210	7.07E-09	1.27E-15	3.31E-16	1.60E-15
SSE	7000	Bi-210	7.07E-09	1.27E-15	3.31E-16	1.60E-15
SSE	7000	Po-210	7.07E-09	1.27E-15	3.31E-16	1.60E-15
SSE	7000	At-218	1.46E-12	2.62E-19	6.81E-20	3.30E-19
SSE	7000	Th-232	2.14E-10	3.86E-17	1.00E-17	4.86E-17
SSE	7000	Ra-228	3.23E-09	5.82E-16	1.51E-16	7.33E-16
SSE	7000	Ac-228	3.23E-09	5.82E-16	1.51E-16	7.33E-16
SSE	7000	Th-228	3.23E-09	5.82E-16	1.51E-16	7.33E-16
SSE	7000	Ra-224	3.23E-09	5.82E-16	1.51E-16	7.33E-16
SSE	7000	Rn-220	4.41E-09	0.00E+00	0.00E+00	0.00E+00
SSE	7000	Po-216	3.23E-09	5.82E-16	1.51E-16	7.33E-16
SSE	7000	Pb-212	3.23E-09	5.82E-16	1.51E-16	7.33E-16
SSE	7000	Bi-212	3.23E-09	5.82E-16	1.51E-16	7.33E-16
SSE	7000	Po-212	2.07E-09	3.73E-16	9.68E-17	4.70E-16
SSE	7000	Tl-208	1.16E-09	2.09E-16	5.43E-17	2.63E-16
SE	50	U-238	4.39E-06	7.89E-13	5.44E-15	7.95E-13
SE	50	Th-234	4.39E-06	7.89E-13	5.44E-15	7.95E-13
SE	50	Pa-234m	4.38E-06	7.88E-13	5.43E-15	7.93E-13
SE	50	Pa-234	4.32E-06	7.78E-13	5.37E-15	7.84E-13
SE	50	U-234	4.39E-06	7.89E-13	5.44E-15	7.95E-13
SE	50	Th-230	4.39E-06	7.89E-13	5.44E-15	7.95E-13
SE	50	Ra-226	3.81E-05	6.85E-12	4.72E-14	6.90E-12
SE	50	Rn-222	3.85E-05	0.00E+00	0.00E+00	0.00E+00
SE	50	Po-218	3.81E-05	6.85E-12	4.72E-14	6.90E-12
SE	50	Pb-214	3.81E-05	6.85E-12	4.72E-14	6.90E-12
SE	50	Bi-214	3.81E-05	6.85E-12	4.72E-14	6.90E-12
SE	50	Po-214	3.81E-05	6.85E-12	4.72E-14	6.90E-12
SE	50	Pb-210	3.69E-05	6.65E-12	4.58E-14	6.69E-12
SE	50	Bi-210	3.69E-05	6.65E-12	4.58E-14	6.69E-12
SE	50	Po-210	3.69E-05	6.65E-12	4.58E-14	6.69E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SE	50	At-218	7.61E-09	1.37E-15	9.44E-18	1.38E-15
SE	50	Th-232	1.12E-06	2.01E-13	1.39E-15	2.03E-13
SE	50	Ra-228	1.69E-05	3.04E-12	2.09E-14	3.06E-12
SE	50	Ac-228	1.69E-05	3.04E-12	2.09E-14	3.06E-12
SE	50	Th-228	1.69E-05	3.04E-12	2.09E-14	3.06E-12
SE	50	Ra-224	1.69E-05	3.04E-12	2.09E-14	3.06E-12
SE	50	Rn-220	1.71E-05	0.00E+00	0.00E+00	0.00E+00
SE	50	Po-216	1.69E-05	3.04E-12	2.09E-14	3.06E-12
SE	50	Pb-212	1.69E-05	3.04E-12	2.09E-14	3.06E-12
SE	50	Bi-212	1.69E-05	3.04E-12	2.09E-14	3.06E-12
SE	50	Po-212	1.08E-05	1.95E-12	1.34E-14	1.96E-12
SE	50	Tl-208	6.06E-06	1.09E-12	7.52E-15	1.10E-12
SE	100	U-238	1.50E-06	2.70E-13	2.65E-15	2.73E-13
SE	100	Th-234	1.50E-06	2.70E-13	2.65E-15	2.73E-13
SE	100	Pa-234m	1.50E-06	2.70E-13	2.64E-15	2.72E-13
SE	100	Pa-234	1.48E-06	2.67E-13	2.61E-15	2.69E-13
SE	100	U-234	1.50E-06	2.70E-13	2.65E-15	2.73E-13
SE	100	Th-230	1.50E-06	2.70E-13	2.65E-15	2.73E-13
SE	100	Ra-226	1.30E-05	2.35E-12	2.30E-14	2.37E-12
SE	100	Rn-222	1.35E-05	0.00E+00	0.00E+00	0.00E+00
SE	100	Po-218	1.30E-05	2.35E-12	2.30E-14	2.37E-12
SE	100	Pb-214	1.30E-05	2.35E-12	2.30E-14	2.37E-12
SE	100	Bi-214	1.30E-05	2.35E-12	2.30E-14	2.37E-12
SE	100	Po-214	1.30E-05	2.35E-12	2.30E-14	2.37E-12
SE	100	Pb-210	1.26E-05	2.28E-12	2.23E-14	2.30E-12
SE	100	Bi-210	1.26E-05	2.28E-12	2.23E-14	2.30E-12
SE	100	Po-210	1.26E-05	2.28E-12	2.23E-14	2.30E-12
SE	100	At-218	2.61E-09	4.69E-16	4.60E-18	4.74E-16
SE	100	Th-232	3.83E-07	6.89E-14	6.76E-16	6.96E-14
SE	100	Ra-228	5.78E-06	1.04E-12	1.02E-14	1.05E-12
SE	100	Ac-228	5.78E-06	1.04E-12	1.02E-14	1.05E-12
SE	100	Th-228	5.78E-06	1.04E-12	1.02E-14	1.05E-12
SE	100	Ra-224	5.78E-06	1.04E-12	1.02E-14	1.05E-12
SE	100	Rn-220	5.99E-06	0.00E+00	0.00E+00	0.00E+00
SE	100	Po-216	5.78E-06	1.04E-12	1.02E-14	1.05E-12
SE	100	Pb-212	5.78E-06	1.04E-12	1.02E-14	1.05E-12
SE	100	Bi-212	5.78E-06	1.04E-12	1.02E-14	1.05E-12
SE	100	Po-212	3.70E-06	6.67E-13	6.53E-15	6.73E-13
SE	100	Tl-208	2.08E-06	3.74E-13	3.66E-15	3.77E-13
SE	150	U-238	7.30E-07	1.31E-13	1.75E-15	1.33E-13
SE	150	Th-234	7.30E-07	1.31E-13	1.75E-15	1.33E-13
SE	150	Pa-234m	7.29E-07	1.31E-13	1.74E-15	1.33E-13
SE	150	Pa-234	7.20E-07	1.30E-13	1.72E-15	1.31E-13
SE	150	U-234	7.30E-07	1.31E-13	1.75E-15	1.33E-13
SE	150	Th-230	7.30E-07	1.31E-13	1.75E-15	1.33E-13
SE	150	Ra-226	6.34E-06	1.14E-12	1.52E-14	1.16E-12
SE	150	Rn-222	6.69E-06	0.00E+00	0.00E+00	0.00E+00

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SE	150	Po-218	6.34E-06	1.14E-12	1.52E-14	1.16E-12
SE	150	Pb-214	6.34E-06	1.14E-12	1.52E-14	1.16E-12
SE	150	Bi-214	6.34E-06	1.14E-12	1.52E-14	1.16E-12
SE	150	Po-214	6.33E-06	1.14E-12	1.52E-14	1.16E-12
SE	150	Pb-210	6.15E-06	1.11E-12	1.47E-14	1.12E-12
SE	150	Bi-210	6.15E-06	1.11E-12	1.47E-14	1.12E-12
SE	150	Po-210	6.15E-06	1.11E-12	1.47E-14	1.12E-12
SE	150	At-218	1.27E-09	2.28E-16	3.03E-18	2.31E-16
SE	150	Th-232	1.86E-07	3.35E-14	4.46E-16	3.40E-14
SE	150	Ra-228	2.81E-06	5.05E-13	6.73E-15	5.12E-13
SE	150	Ac-228	2.81E-06	5.05E-13	6.73E-15	5.12E-13
SE	150	Th-228	2.81E-06	5.05E-13	6.73E-15	5.12E-13
SE	150	Ra-224	2.81E-06	5.05E-13	6.73E-15	5.12E-13
SE	150	Rn-220	2.97E-06	0.00E+00	0.00E+00	0.00E+00
SE	150	Po-216	2.81E-06	5.05E-13	6.73E-15	5.12E-13
SE	150	Pb-212	2.81E-06	5.05E-13	6.73E-15	5.12E-13
SE	150	Bi-212	2.81E-06	5.05E-13	6.73E-15	5.12E-13
SE	150	Po-212	1.80E-06	3.24E-13	4.31E-15	3.28E-13
SE	150	Tl-208	1.01E-06	1.82E-13	2.42E-15	1.84E-13
SE	250	U-238	2.83E-07	5.09E-14	1.04E-15	5.19E-14
SE	250	Th-234	2.83E-07	5.09E-14	1.04E-15	5.19E-14
SE	250	Pa-234m	2.82E-07	5.08E-14	1.03E-15	5.18E-14
SE	250	Pa-234	2.79E-07	5.02E-14	1.02E-15	5.12E-14
SE	250	U-234	2.83E-07	5.09E-14	1.04E-15	5.19E-14
SE	250	Th-230	2.83E-07	5.09E-14	1.04E-15	5.19E-14
SE	250	Ra-226	2.45E-06	4.42E-13	8.98E-15	4.51E-13
SE	250	Rn-222	2.66E-06	0.00E+00	0.00E+00	0.00E+00
SE	250	Po-218	2.45E-06	4.42E-13	8.98E-15	4.51E-13
SE	250	Pb-214	2.45E-06	4.42E-13	8.98E-15	4.51E-13
SE	250	Bi-214	2.45E-06	4.42E-13	8.98E-15	4.51E-13
SE	250	Po-214	2.45E-06	4.42E-13	8.98E-15	4.51E-13
SE	250	Pb-210	2.38E-06	4.29E-13	8.72E-15	4.37E-13
SE	250	Bi-210	2.38E-06	4.29E-13	8.72E-15	4.37E-13
SE	250	Po-210	2.38E-06	4.29E-13	8.72E-15	4.37E-13
SE	250	At-218	4.91E-10	8.83E-17	1.80E-18	9.01E-17
SE	250	Th-232	7.21E-08	1.30E-14	2.64E-16	1.32E-14
SE	250	Ra-228	1.09E-06	1.96E-13	3.98E-15	2.00E-13
SE	250	Ac-228	1.09E-06	1.96E-13	3.98E-15	2.00E-13
SE	250	Th-228	1.09E-06	1.96E-13	3.98E-15	2.00E-13
SE	250	Ra-224	1.09E-06	1.96E-13	3.98E-15	2.00E-13
SE	250	Rn-220	1.18E-06	0.00E+00	0.00E+00	0.00E+00
SE	250	Po-216	1.09E-06	1.96E-13	3.98E-15	2.00E-13
SE	250	Pb-212	1.09E-06	1.96E-13	3.98E-15	2.00E-13
SE	250	Bi-212	1.09E-06	1.96E-13	3.98E-15	2.00E-13
SE	250	Po-212	6.97E-07	1.26E-13	2.55E-15	1.28E-13
SE	250	Tl-208	3.91E-07	7.04E-14	1.43E-15	7.18E-14
SE	350	U-238	1.49E-07	2.69E-14	7.32E-16	2.76E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SE	350	Th-234	1.49E-07	2.69E-14	7.32E-16	2.76E-14
SE	350	Pa-234m	1.49E-07	2.68E-14	7.30E-16	2.76E-14
SE	350	Pa-234	1.47E-07	2.65E-14	7.21E-16	2.72E-14
SE	350	U-234	1.49E-07	2.69E-14	7.32E-16	2.76E-14
SE	350	Th-230	1.49E-07	2.69E-14	7.32E-16	2.76E-14
SE	350	Ra-226	1.30E-06	2.33E-13	6.35E-15	2.40E-13
SE	350	Rn-222	1.43E-06	0.00E+00	0.00E+00	0.00E+00
SE	350	Po-218	1.30E-06	2.33E-13	6.35E-15	2.40E-13
SE	350	Pb-214	1.30E-06	2.33E-13	6.35E-15	2.40E-13
SE	350	Bi-214	1.30E-06	2.33E-13	6.35E-15	2.40E-13
SE	350	Po-214	1.30E-06	2.33E-13	6.35E-15	2.40E-13
SE	350	Pb-210	1.26E-06	2.26E-13	6.16E-15	2.33E-13
SE	350	Bi-210	1.26E-06	2.26E-13	6.16E-15	2.33E-13
SE	350	Po-210	1.26E-06	2.26E-13	6.16E-15	2.33E-13
SE	350	At-218	2.59E-10	4.66E-17	1.27E-18	4.79E-17
SE	350	Th-232	3.81E-08	6.86E-15	1.87E-16	7.04E-15
SE	350	Ra-228	5.75E-07	1.03E-13	2.81E-15	1.06E-13
SE	350	Ac-228	5.75E-07	1.03E-13	2.81E-15	1.06E-13
SE	350	Th-228	5.75E-07	1.03E-13	2.81E-15	1.06E-13
SE	350	Ra-224	5.75E-07	1.03E-13	2.81E-15	1.06E-13
SE	350	Rn-220	6.34E-07	0.00E+00	0.00E+00	0.00E+00
SE	350	Po-216	5.75E-07	1.03E-13	2.81E-15	1.06E-13
SE	350	Pb-212	5.75E-07	1.03E-13	2.81E-15	1.06E-13
SE	350	Bi-212	5.75E-07	1.03E-13	2.81E-15	1.06E-13
SE	350	Po-212	3.68E-07	6.63E-14	1.80E-15	6.81E-14
SE	350	Tl-208	2.06E-07	3.72E-14	1.01E-15	3.82E-14
SE	450	U-238	9.24E-08	1.66E-14	5.65E-16	1.72E-14
SE	450	Th-234	9.24E-08	1.66E-14	5.65E-16	1.72E-14
SE	450	Pa-234m	9.23E-08	1.66E-14	5.64E-16	1.72E-14
SE	450	Pa-234	9.11E-08	1.64E-14	5.57E-16	1.70E-14
SE	450	U-234	9.24E-08	1.66E-14	5.65E-16	1.72E-14
SE	450	Th-230	9.24E-08	1.66E-14	5.65E-16	1.72E-14
SE	450	Ra-226	8.02E-07	1.44E-13	4.90E-15	1.49E-13
SE	450	Rn-222	8.97E-07	0.00E+00	0.00E+00	0.00E+00
SE	450	Po-218	8.02E-07	1.44E-13	4.90E-15	1.49E-13
SE	450	Pb-214	8.02E-07	1.44E-13	4.90E-15	1.49E-13
SE	450	Bi-214	8.02E-07	1.44E-13	4.90E-15	1.49E-13
SE	450	Po-214	8.02E-07	1.44E-13	4.90E-15	1.49E-13
SE	450	Pb-210	7.78E-07	1.40E-13	4.76E-15	1.45E-13
SE	450	Bi-210	7.78E-07	1.40E-13	4.76E-15	1.45E-13
SE	450	Po-210	7.78E-07	1.40E-13	4.76E-15	1.45E-13
SE	450	At-218	1.60E-10	2.89E-17	9.80E-19	2.98E-17
SE	450	Th-232	2.36E-08	4.24E-15	1.44E-16	4.39E-15
SE	450	Ra-228	3.56E-07	6.40E-14	2.17E-15	6.62E-14
SE	450	Ac-228	3.56E-07	6.40E-14	2.17E-15	6.62E-14
SE	450	Th-228	3.56E-07	6.40E-14	2.17E-15	6.62E-14
SE	450	Ra-224	3.56E-07	6.40E-14	2.17E-15	6.62E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SE	450	Rn-220	3.98E-07	0.00E+00	0.00E+00	0.00E+00
SE	450	Po-216	3.56E-07	6.40E-14	2.17E-15	6.62E-14
SE	450	Pb-212	3.56E-07	6.40E-14	2.17E-15	6.62E-14
SE	450	Bi-212	3.56E-07	6.40E-14	2.17E-15	6.62E-14
SE	450	Po-212	2.28E-07	4.10E-14	1.39E-15	4.24E-14
SE	450	Tl-208	1.28E-07	2.30E-14	7.80E-16	2.38E-14
SE	750	U-238	3.47E-08	6.24E-15	3.33E-16	6.58E-15
SE	750	Th-234	3.47E-08	6.24E-15	3.33E-16	6.58E-15
SE	750	Pa-234m	3.46E-08	6.23E-15	3.33E-16	6.56E-15
SE	750	Pa-234	3.42E-08	6.15E-15	3.29E-16	6.48E-15
SE	750	U-234	3.47E-08	6.24E-15	3.33E-16	6.58E-15
SE	750	Th-230	3.47E-08	6.24E-15	3.33E-16	6.58E-15
SE	750	Ra-226	3.01E-07	5.42E-14	2.89E-15	5.71E-14
SE	750	Rn-222	3.47E-07	0.00E+00	0.00E+00	0.00E+00
SE	750	Po-218	3.01E-07	5.42E-14	2.89E-15	5.71E-14
SE	750	Pb-214	3.01E-07	5.42E-14	2.89E-15	5.71E-14
SE	750	Bi-214	3.01E-07	5.42E-14	2.89E-15	5.71E-14
SE	750	Po-214	3.01E-07	5.42E-14	2.89E-15	5.71E-14
SE	750	Pb-210	2.92E-07	5.26E-14	2.81E-15	5.54E-14
SE	750	Bi-210	2.92E-07	5.26E-14	2.81E-15	5.54E-14
SE	750	Po-210	2.92E-07	5.26E-14	2.81E-15	5.54E-14
SE	750	At-218	6.02E-11	1.08E-17	5.78E-19	1.14E-17
SE	750	Th-232	8.84E-09	1.59E-15	8.50E-17	1.68E-15
SE	750	Ra-228	1.33E-07	2.40E-14	1.28E-15	2.53E-14
SE	750	Ac-228	1.33E-07	2.40E-14	1.28E-15	2.53E-14
SE	750	Th-228	1.33E-07	2.40E-14	1.28E-15	2.53E-14
SE	750	Ra-224	1.33E-07	2.40E-14	1.28E-15	2.53E-14
SE	750	Rn-220	1.54E-07	0.00E+00	0.00E+00	0.00E+00
SE	750	Po-216	1.33E-07	2.40E-14	1.28E-15	2.53E-14
SE	750	Pb-212	1.33E-07	2.40E-14	1.28E-15	2.53E-14
SE	750	Bi-212	1.33E-07	2.40E-14	1.28E-15	2.53E-14
SE	750	Po-212	8.55E-08	1.54E-14	8.22E-16	1.62E-14
SE	750	Tl-208	4.79E-08	8.63E-15	4.61E-16	9.09E-15
SE	1500	U-238	9.86E-09	1.77E-15	1.63E-16	1.94E-15
SE	1500	Th-234	9.86E-09	1.77E-15	1.63E-16	1.94E-15
SE	1500	Pa-234m	9.84E-09	1.77E-15	1.62E-16	1.93E-15
SE	1500	Pa-234	9.72E-09	1.75E-15	1.60E-16	1.91E-15
SE	1500	U-234	9.86E-09	1.77E-15	1.63E-16	1.94E-15
SE	1500	Th-230	9.86E-09	1.77E-15	1.63E-16	1.94E-15
SE	1500	Ra-226	8.55E-08	1.54E-14	1.41E-15	1.68E-14
SE	1500	Rn-222	1.03E-07	0.00E+00	0.00E+00	0.00E+00
SE	1500	Po-218	8.55E-08	1.54E-14	1.41E-15	1.68E-14
SE	1500	Pb-214	8.55E-08	1.54E-14	1.41E-15	1.68E-14
SE	1500	Bi-214	8.55E-08	1.54E-14	1.41E-15	1.68E-14
SE	1500	Po-214	8.55E-08	1.54E-14	1.41E-15	1.68E-14
SE	1500	Pb-210	8.30E-08	1.49E-14	1.37E-15	1.63E-14
SE	1500	Bi-210	8.30E-08	1.49E-14	1.37E-15	1.63E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SE	1500	Po-210	8.30E-08	1.49E-14	1.37E-15	1.63E-14
SE	1500	At-218	1.71E-11	3.08E-18	2.82E-19	3.36E-18
SE	1500	Th-232	2.51E-09	4.52E-16	4.15E-17	4.94E-16
SE	1500	Ra-228	3.79E-08	6.83E-15	6.25E-16	7.45E-15
SE	1500	Ac-228	3.79E-08	6.83E-15	6.25E-16	7.45E-15
SE	1500	Th-228	3.79E-08	6.83E-15	6.25E-16	7.45E-15
SE	1500	Ra-224	3.79E-08	6.83E-15	6.25E-16	7.45E-15
SE	1500	Rn-220	4.57E-08	0.00E+00	0.00E+00	0.00E+00
SE	1500	Po-216	3.79E-08	6.83E-15	6.25E-16	7.45E-15
SE	1500	Pb-212	3.79E-08	6.83E-15	6.25E-16	7.45E-15
SE	1500	Bi-212	3.79E-08	6.83E-15	6.25E-16	7.45E-15
SE	1500	Po-212	2.43E-08	4.37E-15	4.01E-16	4.77E-15
SE	1500	Tl-208	1.36E-08	2.45E-15	2.25E-16	2.68E-15
SE	2500	U-238	4.07E-09	7.32E-16	9.57E-17	8.28E-16
SE	2500	Th-234	4.07E-09	7.32E-16	9.57E-17	8.28E-16
SE	2500	Pa-234m	4.06E-09	7.31E-16	9.55E-17	8.26E-16
SE	2500	Pa-234	4.01E-09	7.22E-16	9.44E-17	8.16E-16
SE	2500	U-234	4.07E-09	7.32E-16	9.57E-17	8.28E-16
SE	2500	Th-230	4.07E-09	7.32E-16	9.57E-17	8.28E-16
SE	2500	Ra-226	3.53E-08	6.35E-15	8.31E-16	7.18E-15
SE	2500	Rn-222	4.42E-08	0.00E+00	0.00E+00	0.00E+00
SE	2500	Po-218	3.53E-08	6.35E-15	8.31E-16	7.18E-15
SE	2500	Pb-214	3.53E-08	6.35E-15	8.31E-16	7.18E-15
SE	2500	Bi-214	3.53E-08	6.35E-15	8.31E-16	7.18E-15
SE	2500	Po-214	3.53E-08	6.35E-15	8.30E-16	7.18E-15
SE	2500	Pb-210	3.43E-08	6.17E-15	8.06E-16	6.97E-15
SE	2500	Bi-210	3.43E-08	6.17E-15	8.06E-16	6.97E-15
SE	2500	Po-210	3.43E-08	6.17E-15	8.06E-16	6.97E-15
SE	2500	At-218	7.06E-12	1.27E-18	1.66E-19	1.44E-18
SE	2500	Th-232	1.04E-09	1.87E-16	2.44E-17	2.11E-16
SE	2500	Ra-228	1.56E-08	2.82E-15	3.68E-16	3.19E-15
SE	2500	Ac-228	1.56E-08	2.82E-15	3.68E-16	3.19E-15
SE	2500	Th-228	1.56E-08	2.82E-15	3.68E-16	3.19E-15
SE	2500	Ra-224	1.56E-08	2.82E-15	3.68E-16	3.19E-15
SE	2500	Rn-220	1.96E-08	0.00E+00	0.00E+00	0.00E+00
SE	2500	Po-216	1.56E-08	2.82E-15	3.68E-16	3.19E-15
SE	2500	Pb-212	1.56E-08	2.82E-15	3.68E-16	3.19E-15
SE	2500	Bi-212	1.56E-08	2.82E-15	3.68E-16	3.19E-15
SE	2500	Po-212	1.00E-08	1.81E-15	2.36E-16	2.04E-15
SE	2500	Tl-208	5.62E-09	1.01E-15	1.32E-16	1.14E-15
SE	3500	U-238	2.34E-09	4.20E-16	6.72E-17	4.88E-16
SE	3500	Th-234	2.34E-09	4.20E-16	6.72E-17	4.88E-16
SE	3500	Pa-234m	2.33E-09	4.20E-16	6.71E-17	4.87E-16
SE	3500	Pa-234	2.30E-09	4.14E-16	6.63E-17	4.81E-16
SE	3500	U-234	2.34E-09	4.20E-16	6.72E-17	4.88E-16
SE	3500	Th-230	2.34E-09	4.20E-16	6.72E-17	4.88E-16
SE	3500	Ra-226	2.03E-08	3.65E-15	5.83E-16	4.23E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SE	3500	Rn-222	2.63E-08	0.00E+00	0.00E+00	0.00E+00
SE	3500	Po-218	2.03E-08	3.65E-15	5.83E-16	4.23E-15
SE	3500	Pb-214	2.03E-08	3.65E-15	5.83E-16	4.23E-15
SE	3500	Bi-214	2.03E-08	3.65E-15	5.83E-16	4.23E-15
SE	3500	Po-214	2.03E-08	3.65E-15	5.83E-16	4.23E-15
SE	3500	Pb-210	1.97E-08	3.54E-15	5.66E-16	4.11E-15
SE	3500	Bi-210	1.97E-08	3.54E-15	5.66E-16	4.11E-15
SE	3500	Po-210	1.97E-08	3.54E-15	5.66E-16	4.11E-15
SE	3500	At-218	4.05E-12	7.29E-19	1.17E-19	8.46E-19
SE	3500	Th-232	5.96E-10	1.07E-16	1.71E-17	1.24E-16
SE	3500	Ra-228	8.98E-09	1.62E-15	2.59E-16	1.88E-15
SE	3500	Ac-228	8.98E-09	1.62E-15	2.59E-16	1.88E-15
SE	3500	Th-228	8.98E-09	1.62E-15	2.59E-16	1.88E-15
SE	3500	Ra-224	8.98E-09	1.62E-15	2.59E-16	1.88E-15
SE	3500	Rn-220	1.17E-08	0.00E+00	0.00E+00	0.00E+00
SE	3500	Po-216	8.98E-09	1.62E-15	2.59E-16	1.88E-15
SE	3500	Pb-212	8.98E-09	1.62E-15	2.59E-16	1.88E-15
SE	3500	Bi-212	8.98E-09	1.62E-15	2.59E-16	1.88E-15
SE	3500	Po-212	5.76E-09	1.04E-15	1.66E-16	1.20E-15
SE	3500	Tl-208	3.23E-09	5.81E-16	9.29E-17	6.74E-16
SE	4500	U-238	1.57E-09	2.83E-16	5.15E-17	3.35E-16
SE	4500	Th-234	1.57E-09	2.83E-16	5.15E-17	3.35E-16
SE	4500	Pa-234m	1.57E-09	2.83E-16	5.14E-17	3.34E-16
SE	4500	Pa-234	1.55E-09	2.79E-16	5.08E-17	3.30E-16
SE	4500	U-234	1.57E-09	2.83E-16	5.15E-17	3.35E-16
SE	4500	Th-230	1.57E-09	2.83E-16	5.15E-17	3.35E-16
SE	4500	Ra-226	1.37E-08	2.46E-15	4.47E-16	2.91E-15
SE	4500	Rn-222	1.83E-08	0.00E+00	0.00E+00	0.00E+00
SE	4500	Po-218	1.37E-08	2.46E-15	4.47E-16	2.91E-15
SE	4500	Pb-214	1.37E-08	2.46E-15	4.47E-16	2.91E-15
SE	4500	Bi-214	1.37E-08	2.46E-15	4.47E-16	2.91E-15
SE	4500	Po-214	1.37E-08	2.46E-15	4.47E-16	2.91E-15
SE	4500	Pb-210	1.33E-08	2.39E-15	4.34E-16	2.82E-15
SE	4500	Bi-210	1.33E-08	2.39E-15	4.34E-16	2.82E-15
SE	4500	Po-210	1.33E-08	2.39E-15	4.34E-16	2.82E-15
SE	4500	At-218	2.73E-12	4.92E-19	8.93E-20	5.81E-19
SE	4500	Th-232	4.01E-10	7.22E-17	1.31E-17	8.54E-17
SE	4500	Ra-228	6.06E-09	1.09E-15	1.98E-16	1.29E-15
SE	4500	Ac-228	6.06E-09	1.09E-15	1.98E-16	1.29E-15
SE	4500	Th-228	6.06E-09	1.09E-15	1.98E-16	1.29E-15
SE	4500	Ra-224	6.06E-09	1.09E-15	1.98E-16	1.29E-15
SE	4500	Rn-220	8.13E-09	0.00E+00	0.00E+00	0.00E+00
SE	4500	Po-216	6.06E-09	1.09E-15	1.98E-16	1.29E-15
SE	4500	Pb-212	6.06E-09	1.09E-15	1.98E-16	1.29E-15
SE	4500	Bi-212	6.06E-09	1.09E-15	1.98E-16	1.29E-15
SE	4500	Po-212	3.88E-09	6.99E-16	1.27E-16	8.25E-16
SE	4500	Tl-208	2.18E-09	3.92E-16	7.12E-17	4.63E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SE	5500	U-238	1.15E-09	2.07E-16	4.17E-17	2.49E-16
SE	5500	Th-234	1.15E-09	2.07E-16	4.17E-17	2.49E-16
SE	5500	Pa-234m	1.15E-09	2.07E-16	4.16E-17	2.48E-16
SE	5500	Pa-234	1.13E-09	2.04E-16	4.11E-17	2.45E-16
SE	5500	U-234	1.15E-09	2.07E-16	4.17E-17	2.49E-16
SE	5500	Th-230	1.15E-09	2.07E-16	4.17E-17	2.49E-16
SE	5500	Ra-226	9.99E-09	1.80E-15	3.61E-16	2.16E-15
SE	5500	Rn-222	1.38E-08	0.00E+00	0.00E+00	0.00E+00
SE	5500	Po-218	9.99E-09	1.80E-15	3.61E-16	2.16E-15
SE	5500	Pb-214	9.99E-09	1.80E-15	3.61E-16	2.16E-15
SE	5500	Bi-214	9.99E-09	1.80E-15	3.61E-16	2.16E-15
SE	5500	Po-214	9.99E-09	1.80E-15	3.61E-16	2.16E-15
SE	5500	Pb-210	9.69E-09	1.74E-15	3.51E-16	2.10E-15
SE	5500	Bi-210	9.69E-09	1.74E-15	3.51E-16	2.10E-15
SE	5500	Po-210	9.69E-09	1.74E-15	3.51E-16	2.10E-15
SE	5500	At-218	2.00E-12	3.59E-19	7.23E-20	4.32E-19
SE	5500	Th-232	2.93E-10	5.28E-17	1.06E-17	6.34E-17
SE	5500	Ra-228	4.43E-09	7.97E-16	1.60E-16	9.57E-16
SE	5500	Ac-228	4.43E-09	7.97E-16	1.60E-16	9.57E-16
SE	5500	Th-228	4.43E-09	7.97E-16	1.60E-16	9.57E-16
SE	5500	Ra-224	4.43E-09	7.97E-16	1.60E-16	9.57E-16
SE	5500	Rn-220	6.10E-09	0.00E+00	0.00E+00	0.00E+00
SE	5500	Po-216	4.43E-09	7.97E-16	1.60E-16	9.57E-16
SE	5500	Pb-212	4.43E-09	7.97E-16	1.60E-16	9.57E-16
SE	5500	Bi-212	4.43E-09	7.97E-16	1.60E-16	9.57E-16
SE	5500	Po-212	2.84E-09	5.11E-16	1.03E-16	6.13E-16
SE	5500	Tl-208	1.59E-09	2.86E-16	5.76E-17	3.44E-16
SE	7000	U-238	7.77E-10	1.40E-16	3.20E-17	1.72E-16
SE	7000	Th-234	7.77E-10	1.40E-16	3.20E-17	1.72E-16
SE	7000	Pa-234m	7.75E-10	1.40E-16	3.20E-17	1.72E-16
SE	7000	Pa-234	7.66E-10	1.38E-16	3.16E-17	1.69E-16
SE	7000	U-234	7.77E-10	1.40E-16	3.20E-17	1.72E-16
SE	7000	Th-230	7.77E-10	1.40E-16	3.20E-17	1.72E-16
SE	7000	Ra-226	6.74E-09	1.21E-15	2.78E-16	1.49E-15
SE	7000	Rn-222	9.75E-09	0.00E+00	0.00E+00	0.00E+00
SE	7000	Po-218	6.74E-09	1.21E-15	2.78E-16	1.49E-15
SE	7000	Pb-214	6.74E-09	1.21E-15	2.78E-16	1.49E-15
SE	7000	Bi-214	6.74E-09	1.21E-15	2.78E-16	1.49E-15
SE	7000	Po-214	6.74E-09	1.21E-15	2.78E-16	1.49E-15
SE	7000	Pb-210	6.54E-09	1.18E-15	2.70E-16	1.45E-15
SE	7000	Bi-210	6.54E-09	1.18E-15	2.70E-16	1.45E-15
SE	7000	Po-210	6.54E-09	1.18E-15	2.70E-16	1.45E-15
SE	7000	At-218	1.35E-12	2.43E-19	5.56E-20	2.98E-19
SE	7000	Th-232	1.98E-10	3.57E-17	8.17E-18	4.38E-17
SE	7000	Ra-228	2.99E-09	5.38E-16	1.23E-16	6.61E-16
SE	7000	Ac-228	2.99E-09	5.38E-16	1.23E-16	6.61E-16
SE	7000	Th-228	2.99E-09	5.38E-16	1.23E-16	6.61E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
SE	7000	Ra-224	2.99E-09	5.38E-16	1.23E-16	6.61E-16
SE	7000	Rn-220	4.32E-09	0.00E+00	0.00E+00	0.00E+00
SE	7000	Po-216	2.99E-09	5.38E-16	1.23E-16	6.61E-16
SE	7000	Pb-212	2.99E-09	5.38E-16	1.23E-16	6.61E-16
SE	7000	Bi-212	2.99E-09	5.38E-16	1.23E-16	6.61E-16
SE	7000	Po-212	1.91E-09	3.45E-16	7.90E-17	4.24E-16
SE	7000	Tl-208	1.07E-09	1.93E-16	4.43E-17	2.38E-16
ESE	50	U-238	3.77E-06	6.78E-13	4.72E-15	6.83E-13
ESE	50	Th-234	3.77E-06	6.78E-13	4.72E-15	6.83E-13
ESE	50	Pa-234m	3.76E-06	6.77E-13	4.71E-15	6.81E-13
ESE	50	Pa-234	3.71E-06	6.68E-13	4.65E-15	6.73E-13
ESE	50	U-234	3.77E-06	6.78E-13	4.72E-15	6.83E-13
ESE	50	Th-230	3.77E-06	6.78E-13	4.72E-15	6.83E-13
ESE	50	Ra-226	3.27E-05	5.88E-12	4.09E-14	5.92E-12
ESE	50	Rn-222	3.31E-05	0.00E+00	0.00E+00	0.00E+00
ESE	50	Po-218	3.27E-05	5.88E-12	4.09E-14	5.92E-12
ESE	50	Pb-214	3.27E-05	5.88E-12	4.09E-14	5.92E-12
ESE	50	Bi-214	3.27E-05	5.88E-12	4.09E-14	5.92E-12
ESE	50	Po-214	3.27E-05	5.88E-12	4.09E-14	5.92E-12
ESE	50	Pb-210	3.17E-05	5.71E-12	3.97E-14	5.75E-12
ESE	50	Bi-210	3.17E-05	5.71E-12	3.97E-14	5.75E-12
ESE	50	Po-210	3.17E-05	5.71E-12	3.97E-14	5.75E-12
ESE	50	At-218	6.53E-09	1.18E-15	8.19E-18	1.18E-15
ESE	50	Th-232	9.60E-07	1.73E-13	1.20E-15	1.74E-13
ESE	50	Ra-228	1.45E-05	2.61E-12	1.81E-14	2.63E-12
ESE	50	Ac-228	1.45E-05	2.61E-12	1.81E-14	2.63E-12
ESE	50	Th-228	1.45E-05	2.61E-12	1.81E-14	2.63E-12
ESE	50	Ra-224	1.45E-05	2.61E-12	1.81E-14	2.63E-12
ESE	50	Rn-220	1.47E-05	0.00E+00	0.00E+00	0.00E+00
ESE	50	Po-216	1.45E-05	2.61E-12	1.81E-14	2.63E-12
ESE	50	Pb-212	1.45E-05	2.61E-12	1.81E-14	2.63E-12
ESE	50	Bi-212	1.45E-05	2.61E-12	1.81E-14	2.63E-12
ESE	50	Po-212	9.28E-06	1.67E-12	1.16E-14	1.68E-12
ESE	50	Tl-208	5.21E-06	9.37E-13	6.52E-15	9.43E-13
ESE	100	U-238	1.18E-06	2.13E-13	2.22E-15	2.15E-13
ESE	100	Th-234	1.18E-06	2.13E-13	2.22E-15	2.15E-13
ESE	100	Pa-234m	1.18E-06	2.13E-13	2.21E-15	2.15E-13
ESE	100	Pa-234	1.17E-06	2.10E-13	2.19E-15	2.12E-13
ESE	100	U-234	1.18E-06	2.13E-13	2.22E-15	2.15E-13
ESE	100	Th-230	1.18E-06	2.13E-13	2.22E-15	2.15E-13
ESE	100	Ra-226	1.03E-05	1.85E-12	1.92E-14	1.87E-12
ESE	100	Rn-222	1.06E-05	0.00E+00	0.00E+00	0.00E+00
ESE	100	Po-218	1.03E-05	1.85E-12	1.92E-14	1.87E-12
ESE	100	Pb-214	1.03E-05	1.85E-12	1.92E-14	1.87E-12
ESE	100	Bi-214	1.03E-05	1.85E-12	1.92E-14	1.87E-12
ESE	100	Po-214	1.03E-05	1.85E-12	1.92E-14	1.87E-12
ESE	100	Pb-210	9.96E-06	1.79E-12	1.87E-14	1.81E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
ESE	100	Bi-210	9.96E-06	1.79E-12	1.87E-14	1.81E-12
ESE	100	Po-210	9.96E-06	1.79E-12	1.87E-14	1.81E-12
ESE	100	At-218	2.05E-09	3.69E-16	3.85E-18	3.73E-16
ESE	100	Th-232	3.02E-07	5.43E-14	5.65E-16	5.49E-14
ESE	100	Ra-228	4.55E-06	8.19E-13	8.53E-15	8.28E-13
ESE	100	Ac-228	4.55E-06	8.19E-13	8.53E-15	8.28E-13
ESE	100	Th-228	4.55E-06	8.19E-13	8.53E-15	8.28E-13
ESE	100	Ra-224	4.55E-06	8.19E-13	8.53E-15	8.28E-13
ESE	100	Rn-220	4.70E-06	0.00E+00	0.00E+00	0.00E+00
ESE	100	Po-216	4.55E-06	8.19E-13	8.53E-15	8.28E-13
ESE	100	Pb-212	4.55E-06	8.19E-13	8.53E-15	8.28E-13
ESE	100	Bi-212	4.55E-06	8.19E-13	8.53E-15	8.28E-13
ESE	100	Po-212	2.92E-06	5.25E-13	5.47E-15	5.30E-13
ESE	100	Tl-208	1.64E-06	2.94E-13	3.06E-15	2.97E-13
ESE	150	U-238	5.74E-07	1.03E-13	1.47E-15	1.05E-13
ESE	150	Th-234	5.74E-07	1.03E-13	1.47E-15	1.05E-13
ESE	150	Pa-234m	5.73E-07	1.03E-13	1.46E-15	1.05E-13
ESE	150	Pa-234	5.66E-07	1.02E-13	1.44E-15	1.03E-13
ESE	150	U-234	5.74E-07	1.03E-13	1.47E-15	1.05E-13
ESE	150	Th-230	5.74E-07	1.03E-13	1.47E-15	1.05E-13
ESE	150	Ra-226	4.98E-06	8.97E-13	1.27E-14	9.10E-13
ESE	150	Rn-222	5.23E-06	0.00E+00	0.00E+00	0.00E+00
ESE	150	Po-218	4.98E-06	8.97E-13	1.27E-14	9.10E-13
ESE	150	Pb-214	4.98E-06	8.97E-13	1.27E-14	9.10E-13
ESE	150	Bi-214	4.98E-06	8.97E-13	1.27E-14	9.10E-13
ESE	150	Po-214	4.98E-06	8.97E-13	1.27E-14	9.09E-13
ESE	150	Pb-210	4.83E-06	8.70E-13	1.23E-14	8.83E-13
ESE	150	Bi-210	4.83E-06	8.70E-13	1.23E-14	8.83E-13
ESE	150	Po-210	4.83E-06	8.70E-13	1.23E-14	8.83E-13
ESE	150	At-218	9.96E-10	1.79E-16	2.54E-18	1.82E-16
ESE	150	Th-232	1.46E-07	2.64E-14	3.74E-16	2.67E-14
ESE	150	Ra-228	2.21E-06	3.98E-13	5.64E-15	4.03E-13
ESE	150	Ac-228	2.21E-06	3.98E-13	5.64E-15	4.03E-13
ESE	150	Th-228	2.21E-06	3.98E-13	5.64E-15	4.03E-13
ESE	150	Ra-224	2.21E-06	3.98E-13	5.64E-15	4.03E-13
ESE	150	Rn-220	2.32E-06	0.00E+00	0.00E+00	0.00E+00
ESE	150	Po-216	2.21E-06	3.98E-13	5.64E-15	4.03E-13
ESE	150	Pb-212	2.21E-06	3.98E-13	5.64E-15	4.03E-13
ESE	150	Bi-212	2.21E-06	3.98E-13	5.64E-15	4.03E-13
ESE	150	Po-212	1.42E-06	2.55E-13	3.61E-15	2.58E-13
ESE	150	Tl-208	7.94E-07	1.43E-13	2.03E-15	1.45E-13
ESE	250	U-238	2.23E-07	4.01E-14	8.69E-16	4.09E-14
ESE	250	Th-234	2.23E-07	4.01E-14	8.69E-16	4.09E-14
ESE	250	Pa-234m	2.22E-07	4.00E-14	8.67E-16	4.08E-14
ESE	250	Pa-234	2.19E-07	3.95E-14	8.57E-16	4.03E-14
ESE	250	U-234	2.23E-07	4.01E-14	8.69E-16	4.09E-14
ESE	250	Th-230	2.23E-07	4.01E-14	8.69E-16	4.09E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
ESE	250	Ra-226	1.93E-06	3.48E-13	7.54E-15	3.55E-13
ESE	250	Rn-222	2.07E-06	0.00E+00	0.00E+00	0.00E+00
ESE	250	Po-218	1.93E-06	3.48E-13	7.54E-15	3.55E-13
ESE	250	Pb-214	1.93E-06	3.48E-13	7.54E-15	3.55E-13
ESE	250	Bi-214	1.93E-06	3.48E-13	7.54E-15	3.55E-13
ESE	250	Po-214	1.93E-06	3.47E-13	7.54E-15	3.55E-13
ESE	250	Pb-210	1.87E-06	3.37E-13	7.32E-15	3.45E-13
ESE	250	Bi-210	1.87E-06	3.37E-13	7.32E-15	3.45E-13
ESE	250	Po-210	1.87E-06	3.37E-13	7.32E-15	3.45E-13
ESE	250	At-218	3.86E-10	6.95E-17	1.51E-18	7.10E-17
ESE	250	Th-232	5.67E-08	1.02E-14	2.22E-16	1.04E-14
ESE	250	Ra-228	8.56E-07	1.54E-13	3.34E-15	1.57E-13
ESE	250	Ac-228	8.56E-07	1.54E-13	3.34E-15	1.57E-13
ESE	250	Th-228	8.56E-07	1.54E-13	3.34E-15	1.57E-13
ESE	250	Ra-224	8.56E-07	1.54E-13	3.34E-15	1.57E-13
ESE	250	Rn-220	9.17E-07	0.00E+00	0.00E+00	0.00E+00
ESE	250	Po-216	8.56E-07	1.54E-13	3.34E-15	1.57E-13
ESE	250	Pb-212	8.56E-07	1.54E-13	3.34E-15	1.57E-13
ESE	250	Bi-212	8.56E-07	1.54E-13	3.34E-15	1.57E-13
ESE	250	Po-212	5.49E-07	9.87E-14	2.14E-15	1.01E-13
ESE	250	Tl-208	3.08E-07	5.54E-14	1.20E-15	5.66E-14
ESE	350	U-238	1.18E-07	2.12E-14	6.16E-16	2.18E-14
ESE	350	Th-234	1.18E-07	2.12E-14	6.16E-16	2.18E-14
ESE	350	Pa-234m	1.17E-07	2.11E-14	6.14E-16	2.18E-14
ESE	350	Pa-234	1.16E-07	2.09E-14	6.07E-16	2.15E-14
ESE	350	U-234	1.18E-07	2.12E-14	6.16E-16	2.18E-14
ESE	350	Th-230	1.18E-07	2.12E-14	6.16E-16	2.18E-14
ESE	350	Ra-226	1.02E-06	1.84E-13	5.34E-15	1.89E-13
ESE	350	Rn-222	1.11E-06	0.00E+00	0.00E+00	0.00E+00
ESE	350	Po-218	1.02E-06	1.84E-13	5.34E-15	1.89E-13
ESE	350	Pb-214	1.02E-06	1.84E-13	5.34E-15	1.89E-13
ESE	350	Bi-214	1.02E-06	1.84E-13	5.34E-15	1.89E-13
ESE	350	Po-214	1.02E-06	1.84E-13	5.34E-15	1.89E-13
ESE	350	Pb-210	9.91E-07	1.78E-13	5.18E-15	1.84E-13
ESE	350	Bi-210	9.91E-07	1.78E-13	5.18E-15	1.84E-13
ESE	350	Po-210	9.91E-07	1.78E-13	5.18E-15	1.84E-13
ESE	350	At-218	2.04E-10	3.67E-17	1.07E-18	3.78E-17
ESE	350	Th-232	3.00E-08	5.40E-15	1.57E-16	5.56E-15
ESE	350	Ra-228	4.53E-07	8.15E-14	2.37E-15	8.38E-14
ESE	350	Ac-228	4.53E-07	8.15E-14	2.37E-15	8.38E-14
ESE	350	Th-228	4.53E-07	8.15E-14	2.37E-15	8.38E-14
ESE	350	Ra-224	4.53E-07	8.15E-14	2.37E-15	8.38E-14
ESE	350	Rn-220	4.93E-07	0.00E+00	0.00E+00	0.00E+00
ESE	350	Po-216	4.53E-07	8.15E-14	2.37E-15	8.38E-14
ESE	350	Pb-212	4.53E-07	8.15E-14	2.37E-15	8.38E-14
ESE	350	Bi-212	4.53E-07	8.15E-14	2.37E-15	8.38E-14
ESE	350	Po-212	2.90E-07	5.22E-14	1.52E-15	5.37E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
ESE	350	Tl-208	1.63E-07	2.93E-14	8.51E-16	3.01E-14
ESE	450	U-238	7.29E-08	1.31E-14	4.76E-16	1.36E-14
ESE	450	Th-234	7.29E-08	1.31E-14	4.76E-16	1.36E-14
ESE	450	Pa-234m	7.27E-08	1.31E-14	4.75E-16	1.36E-14
ESE	450	Pa-234	7.19E-08	1.29E-14	4.69E-16	1.34E-14
ESE	450	U-234	7.29E-08	1.31E-14	4.76E-16	1.36E-14
ESE	450	Th-230	7.29E-08	1.31E-14	4.76E-16	1.36E-14
ESE	450	Ra-226	6.33E-07	1.14E-13	4.13E-15	1.18E-13
ESE	450	Rn-222	6.97E-07	0.00E+00	0.00E+00	0.00E+00
ESE	450	Po-218	6.33E-07	1.14E-13	4.13E-15	1.18E-13
ESE	450	Pb-214	6.33E-07	1.14E-13	4.13E-15	1.18E-13
ESE	450	Bi-214	6.33E-07	1.14E-13	4.13E-15	1.18E-13
ESE	450	Po-214	6.32E-07	1.14E-13	4.13E-15	1.18E-13
ESE	450	Pb-210	6.14E-07	1.10E-13	4.00E-15	1.14E-13
ESE	450	Bi-210	6.14E-07	1.10E-13	4.00E-15	1.14E-13
ESE	450	Po-210	6.14E-07	1.10E-13	4.00E-15	1.14E-13
ESE	450	At-218	1.26E-10	2.28E-17	8.25E-19	2.36E-17
ESE	450	Th-232	1.86E-08	3.35E-15	1.21E-16	3.47E-15
ESE	450	Ra-228	2.80E-07	5.05E-14	1.83E-15	5.23E-14
ESE	450	Ac-228	2.80E-07	5.05E-14	1.83E-15	5.23E-14
ESE	450	Th-228	2.80E-07	5.05E-14	1.83E-15	5.23E-14
ESE	450	Ra-224	2.80E-07	5.05E-14	1.83E-15	5.23E-14
ESE	450	Rn-220	3.09E-07	0.00E+00	0.00E+00	0.00E+00
ESE	450	Po-216	2.80E-07	5.05E-14	1.83E-15	5.23E-14
ESE	450	Pb-212	2.80E-07	5.05E-14	1.83E-15	5.23E-14
ESE	450	Bi-212	2.80E-07	5.05E-14	1.83E-15	5.23E-14
ESE	450	Po-212	1.80E-07	3.23E-14	1.17E-15	3.35E-14
ESE	450	Tl-208	1.01E-07	1.81E-14	6.57E-16	1.88E-14
ESE	750	U-238	2.74E-08	4.94E-15	2.81E-16	5.22E-15
ESE	750	Th-234	2.74E-08	4.94E-15	2.81E-16	5.22E-15
ESE	750	Pa-234m	2.74E-08	4.93E-15	2.81E-16	5.21E-15
ESE	750	Pa-234	2.70E-08	4.87E-15	2.77E-16	5.14E-15
ESE	750	U-234	2.74E-08	4.94E-15	2.81E-16	5.22E-15
ESE	750	Th-230	2.74E-08	4.94E-15	2.81E-16	5.22E-15
ESE	750	Ra-226	2.38E-07	4.28E-14	2.44E-15	4.53E-14
ESE	750	Rn-222	2.69E-07	0.00E+00	0.00E+00	0.00E+00
ESE	750	Po-218	2.38E-07	4.28E-14	2.44E-15	4.53E-14
ESE	750	Pb-214	2.38E-07	4.28E-14	2.44E-15	4.53E-14
ESE	750	Bi-214	2.38E-07	4.28E-14	2.44E-15	4.53E-14
ESE	750	Po-214	2.38E-07	4.28E-14	2.44E-15	4.53E-14
ESE	750	Pb-210	2.31E-07	4.16E-14	2.37E-15	4.39E-14
ESE	750	Bi-210	2.31E-07	4.16E-14	2.37E-15	4.39E-14
ESE	750	Po-210	2.31E-07	4.16E-14	2.37E-15	4.39E-14
ESE	750	At-218	4.76E-11	8.56E-18	4.88E-19	9.05E-18
ESE	750	Th-232	6.99E-09	1.26E-15	7.18E-17	1.33E-15
ESE	750	Ra-228	1.05E-07	1.90E-14	1.08E-15	2.01E-14
ESE	750	Ac-228	1.05E-07	1.90E-14	1.08E-15	2.01E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
ESE	750	Th-228	1.05E-07	1.90E-14	1.08E-15	2.01E-14
ESE	750	Ra-224	1.05E-07	1.90E-14	1.08E-15	2.01E-14
ESE	750	Rn-220	1.19E-07	0.00E+00	0.00E+00	0.00E+00
ESE	750	Po-216	1.05E-07	1.90E-14	1.08E-15	2.01E-14
ESE	750	Pb-212	1.05E-07	1.90E-14	1.08E-15	2.01E-14
ESE	750	Bi-212	1.05E-07	1.90E-14	1.08E-15	2.01E-14
ESE	750	Po-212	6.76E-08	1.22E-14	6.94E-16	1.29E-14
ESE	750	Tl-208	3.79E-08	6.82E-15	3.89E-16	7.21E-15
ESE	1500	U-238	7.82E-09	1.41E-15	1.38E-16	1.54E-15
ESE	1500	Th-234	7.82E-09	1.41E-15	1.38E-16	1.54E-15
ESE	1500	Pa-234m	7.80E-09	1.40E-15	1.38E-16	1.54E-15
ESE	1500	Pa-234	7.71E-09	1.39E-15	1.36E-16	1.52E-15
ESE	1500	U-234	7.82E-09	1.41E-15	1.38E-16	1.54E-15
ESE	1500	Th-230	7.82E-09	1.41E-15	1.38E-16	1.54E-15
ESE	1500	Ra-226	6.78E-08	1.22E-14	1.20E-15	1.34E-14
ESE	1500	Rn-222	7.99E-08	0.00E+00	0.00E+00	0.00E+00
ESE	1500	Po-218	6.78E-08	1.22E-14	1.20E-15	1.34E-14
ESE	1500	Pb-214	6.78E-08	1.22E-14	1.20E-15	1.34E-14
ESE	1500	Bi-214	6.78E-08	1.22E-14	1.20E-15	1.34E-14
ESE	1500	Po-214	6.78E-08	1.22E-14	1.20E-15	1.34E-14
ESE	1500	Pb-210	6.58E-08	1.18E-14	1.16E-15	1.30E-14
ESE	1500	Bi-210	6.58E-08	1.18E-14	1.16E-15	1.30E-14
ESE	1500	Po-210	6.58E-08	1.18E-14	1.16E-15	1.30E-14
ESE	1500	At-218	1.36E-11	2.44E-18	2.39E-19	2.68E-18
ESE	1500	Th-232	1.99E-09	3.59E-16	3.51E-17	3.94E-16
ESE	1500	Ra-228	3.01E-08	5.41E-15	5.30E-16	5.94E-15
ESE	1500	Ac-228	3.01E-08	5.41E-15	5.30E-16	5.94E-15
ESE	1500	Th-228	3.01E-08	5.41E-15	5.30E-16	5.94E-15
ESE	1500	Ra-224	3.01E-08	5.41E-15	5.30E-16	5.94E-15
ESE	1500	Rn-220	3.54E-08	0.00E+00	0.00E+00	0.00E+00
ESE	1500	Po-216	3.01E-08	5.41E-15	5.30E-16	5.94E-15
ESE	1500	Pb-212	3.01E-08	5.41E-15	5.30E-16	5.94E-15
ESE	1500	Bi-212	3.01E-08	5.41E-15	5.30E-16	5.94E-15
ESE	1500	Po-212	1.93E-08	3.47E-15	3.40E-16	3.81E-15
ESE	1500	Tl-208	1.08E-08	1.94E-15	1.90E-16	2.14E-15
ESE	2500	U-238	3.23E-09	5.82E-16	8.13E-17	6.63E-16
ESE	2500	Th-234	3.23E-09	5.82E-16	8.13E-17	6.63E-16
ESE	2500	Pa-234m	3.23E-09	5.81E-16	8.12E-17	6.62E-16
ESE	2500	Pa-234	3.19E-09	5.74E-16	8.02E-17	6.54E-16
ESE	2500	U-234	3.23E-09	5.82E-16	8.13E-17	6.63E-16
ESE	2500	Th-230	3.23E-09	5.82E-16	8.13E-17	6.63E-16
ESE	2500	Ra-226	2.81E-08	5.05E-15	7.06E-16	5.76E-15
ESE	2500	Rn-222	3.41E-08	0.00E+00	0.00E+00	0.00E+00
ESE	2500	Po-218	2.81E-08	5.05E-15	7.06E-16	5.76E-15
ESE	2500	Pb-214	2.81E-08	5.05E-15	7.06E-16	5.76E-15
ESE	2500	Bi-214	2.81E-08	5.05E-15	7.06E-16	5.76E-15
ESE	2500	Po-214	2.81E-08	5.05E-15	7.06E-16	5.76E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
ESE	2500	Pb-210	2.72E-08	4.90E-15	6.85E-16	5.59E-15
ESE	2500	Bi-210	2.72E-08	4.90E-15	6.85E-16	5.59E-15
ESE	2500	Po-210	2.72E-08	4.90E-15	6.85E-16	5.59E-15
ESE	2500	At-218	5.61E-12	1.01E-18	1.41E-19	1.15E-18
ESE	2500	Th-232	8.24E-10	1.48E-16	2.07E-17	1.69E-16
ESE	2500	Ra-228	1.24E-08	2.24E-15	3.13E-16	2.55E-15
ESE	2500	Ac-228	1.24E-08	2.24E-15	3.13E-16	2.55E-15
ESE	2500	Th-228	1.24E-08	2.24E-15	3.13E-16	2.55E-15
ESE	2500	Ra-224	1.24E-08	2.24E-15	3.13E-16	2.55E-15
ESE	2500	Rn-220	1.51E-08	0.00E+00	0.00E+00	0.00E+00
ESE	2500	Po-216	1.24E-08	2.24E-15	3.13E-16	2.55E-15
ESE	2500	Pb-212	1.24E-08	2.24E-15	3.13E-16	2.55E-15
ESE	2500	Bi-212	1.24E-08	2.24E-15	3.13E-16	2.55E-15
ESE	2500	Po-212	7.97E-09	1.43E-15	2.01E-16	1.64E-15
ESE	2500	Tl-208	4.47E-09	8.04E-16	1.12E-16	9.17E-16
ESE	3500	U-238	1.86E-09	3.35E-16	5.73E-17	3.92E-16
ESE	3500	Th-234	1.86E-09	3.35E-16	5.73E-17	3.92E-16
ESE	3500	Pa-234m	1.86E-09	3.34E-16	5.72E-17	3.91E-16
ESE	3500	Pa-234	1.83E-09	3.30E-16	5.65E-17	3.87E-16
ESE	3500	U-234	1.86E-09	3.35E-16	5.73E-17	3.92E-16
ESE	3500	Th-230	1.86E-09	3.35E-16	5.73E-17	3.92E-16
ESE	3500	Ra-226	1.61E-08	2.91E-15	4.97E-16	3.40E-15
ESE	3500	Rn-222	2.03E-08	0.00E+00	0.00E+00	0.00E+00
ESE	3500	Po-218	1.61E-08	2.91E-15	4.97E-16	3.40E-15
ESE	3500	Pb-214	1.61E-08	2.91E-15	4.97E-16	3.40E-15
ESE	3500	Bi-214	1.61E-08	2.91E-15	4.97E-16	3.40E-15
ESE	3500	Po-214	1.61E-08	2.91E-15	4.97E-16	3.40E-15
ESE	3500	Pb-210	1.57E-08	2.82E-15	4.82E-16	3.30E-15
ESE	3500	Bi-210	1.57E-08	2.82E-15	4.82E-16	3.30E-15
ESE	3500	Po-210	1.57E-08	2.82E-15	4.82E-16	3.30E-15
ESE	3500	At-218	3.23E-12	5.81E-19	9.94E-20	6.80E-19
ESE	3500	Th-232	4.74E-10	8.54E-17	1.46E-17	1.00E-16
ESE	3500	Ra-228	7.16E-09	1.29E-15	2.20E-16	1.51E-15
ESE	3500	Ac-228	7.16E-09	1.29E-15	2.20E-16	1.51E-15
ESE	3500	Th-228	7.16E-09	1.29E-15	2.20E-16	1.51E-15
ESE	3500	Ra-224	7.16E-09	1.29E-15	2.20E-16	1.51E-15
ESE	3500	Rn-220	8.98E-09	0.00E+00	0.00E+00	0.00E+00
ESE	3500	Po-216	7.16E-09	1.29E-15	2.20E-16	1.51E-15
ESE	3500	Pb-212	7.16E-09	1.29E-15	2.20E-16	1.51E-15
ESE	3500	Bi-212	7.16E-09	1.29E-15	2.20E-16	1.51E-15
ESE	3500	Po-212	4.59E-09	8.25E-16	1.41E-16	9.67E-16
ESE	3500	Tl-208	2.57E-09	4.63E-16	7.92E-17	5.42E-16
ESE	4500	U-238	1.26E-09	2.26E-16	4.40E-17	2.70E-16
ESE	4500	Th-234	1.26E-09	2.26E-16	4.40E-17	2.70E-16
ESE	4500	Pa-234m	1.25E-09	2.26E-16	4.39E-17	2.70E-16
ESE	4500	Pa-234	1.24E-09	2.23E-16	4.34E-17	2.66E-16
ESE	4500	U-234	1.26E-09	2.26E-16	4.40E-17	2.70E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
ESE	4500	Th-230	1.26E-09	2.26E-16	4.40E-17	2.70E-16
ESE	4500	Ra-226	1.09E-08	1.96E-15	3.82E-16	2.34E-15
ESE	4500	Rn-222	1.41E-08	0.00E+00	0.00E+00	0.00E+00
ESE	4500	Po-218	1.09E-08	1.96E-15	3.82E-16	2.34E-15
ESE	4500	Pb-214	1.09E-08	1.96E-15	3.82E-16	2.34E-15
ESE	4500	Bi-214	1.09E-08	1.96E-15	3.82E-16	2.34E-15
ESE	4500	Po-214	1.09E-08	1.96E-15	3.82E-16	2.34E-15
ESE	4500	Pb-210	1.06E-08	1.90E-15	3.70E-16	2.27E-15
ESE	4500	Bi-210	1.06E-08	1.90E-15	3.70E-16	2.27E-15
ESE	4500	Po-210	1.06E-08	1.90E-15	3.70E-16	2.27E-15
ESE	4500	At-218	2.18E-12	3.92E-19	7.63E-20	4.69E-19
ESE	4500	Th-232	3.20E-10	5.77E-17	1.12E-17	6.89E-17
ESE	4500	Ra-228	4.83E-09	8.70E-16	1.69E-16	1.04E-15
ESE	4500	Ac-228	4.83E-09	8.70E-16	1.69E-16	1.04E-15
ESE	4500	Th-228	4.83E-09	8.70E-16	1.69E-16	1.04E-15
ESE	4500	Ra-224	4.83E-09	8.70E-16	1.69E-16	1.04E-15
ESE	4500	Rn-220	6.25E-09	0.00E+00	0.00E+00	0.00E+00
ESE	4500	Po-216	4.83E-09	8.70E-16	1.69E-16	1.04E-15
ESE	4500	Pb-212	4.83E-09	8.70E-16	1.69E-16	1.04E-15
ESE	4500	Bi-212	4.83E-09	8.70E-16	1.69E-16	1.04E-15
ESE	4500	Po-212	3.10E-09	5.58E-16	1.08E-16	6.66E-16
ESE	4500	Tl-208	1.74E-09	3.13E-16	6.08E-17	3.73E-16
ESE	5500	U-238	9.20E-10	1.66E-16	3.56E-17	2.01E-16
ESE	5500	Th-234	9.20E-10	1.66E-16	3.56E-17	2.01E-16
ESE	5500	Pa-234m	9.19E-10	1.65E-16	3.56E-17	2.01E-16
ESE	5500	Pa-234	9.07E-10	1.63E-16	3.51E-17	1.98E-16
ESE	5500	U-234	9.20E-10	1.66E-16	3.56E-17	2.01E-16
ESE	5500	Th-230	9.20E-10	1.66E-16	3.56E-17	2.01E-16
ESE	5500	Ra-226	7.99E-09	1.44E-15	3.09E-16	1.75E-15
ESE	5500	Rn-222	1.06E-08	0.00E+00	0.00E+00	0.00E+00
ESE	5500	Po-218	7.99E-09	1.44E-15	3.09E-16	1.75E-15
ESE	5500	Pb-214	7.99E-09	1.44E-15	3.09E-16	1.75E-15
ESE	5500	Bi-214	7.99E-09	1.44E-15	3.09E-16	1.75E-15
ESE	5500	Po-214	7.99E-09	1.44E-15	3.09E-16	1.75E-15
ESE	5500	Pb-210	7.75E-09	1.40E-15	3.00E-16	1.70E-15
ESE	5500	Bi-210	7.75E-09	1.40E-15	3.00E-16	1.70E-15
ESE	5500	Po-210	7.75E-09	1.40E-15	3.00E-16	1.70E-15
ESE	5500	At-218	1.60E-12	2.87E-19	6.18E-20	3.49E-19
ESE	5500	Th-232	2.35E-10	4.22E-17	9.08E-18	5.13E-17
ESE	5500	Ra-228	3.54E-09	6.37E-16	1.37E-16	7.74E-16
ESE	5500	Ac-228	3.54E-09	6.37E-16	1.37E-16	7.74E-16
ESE	5500	Th-228	3.54E-09	6.37E-16	1.37E-16	7.74E-16
ESE	5500	Ra-224	3.54E-09	6.37E-16	1.37E-16	7.74E-16
ESE	5500	Rn-220	4.69E-09	0.00E+00	0.00E+00	0.00E+00
ESE	5500	Po-216	3.54E-09	6.37E-16	1.37E-16	7.74E-16
ESE	5500	Pb-212	3.54E-09	6.37E-16	1.37E-16	7.74E-16
ESE	5500	Bi-212	3.54E-09	6.37E-16	1.37E-16	7.74E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
ESE	5500	Po-212	2.27E-09	4.08E-16	8.78E-17	4.96E-16
ESE	5500	Tl-208	1.27E-09	2.29E-16	4.92E-17	2.78E-16
ESE	7000	U-238	6.24E-10	1.12E-16	2.75E-17	1.40E-16
ESE	7000	Th-234	6.24E-10	1.12E-16	2.75E-17	1.40E-16
ESE	7000	Pa-234m	6.23E-10	1.12E-16	2.74E-17	1.40E-16
ESE	7000	Pa-234	6.15E-10	1.11E-16	2.71E-17	1.38E-16
ESE	7000	U-234	6.24E-10	1.12E-16	2.75E-17	1.40E-16
ESE	7000	Th-230	6.24E-10	1.12E-16	2.75E-17	1.40E-16
ESE	7000	Ra-226	5.41E-09	9.74E-16	2.39E-16	1.21E-15
ESE	7000	Rn-222	7.48E-09	0.00E+00	0.00E+00	0.00E+00
ESE	7000	Po-218	5.41E-09	9.74E-16	2.39E-16	1.21E-15
ESE	7000	Pb-214	5.41E-09	9.74E-16	2.39E-16	1.21E-15
ESE	7000	Bi-214	5.41E-09	9.74E-16	2.39E-16	1.21E-15
ESE	7000	Po-214	5.41E-09	9.74E-16	2.39E-16	1.21E-15
ESE	7000	Pb-210	5.25E-09	9.46E-16	2.32E-16	1.18E-15
ESE	7000	Bi-210	5.25E-09	9.46E-16	2.32E-16	1.18E-15
ESE	7000	Po-210	5.25E-09	9.46E-16	2.32E-16	1.18E-15
ESE	7000	At-218	1.08E-12	1.95E-19	4.77E-20	2.43E-19
ESE	7000	Th-232	1.59E-10	2.86E-17	7.01E-18	3.56E-17
ESE	7000	Ra-228	2.40E-09	4.32E-16	1.06E-16	5.38E-16
ESE	7000	Ac-228	2.40E-09	4.32E-16	1.06E-16	5.38E-16
ESE	7000	Th-228	2.40E-09	4.32E-16	1.06E-16	5.38E-16
ESE	7000	Ra-224	2.40E-09	4.32E-16	1.06E-16	5.38E-16
ESE	7000	Rn-220	3.32E-09	0.00E+00	0.00E+00	0.00E+00
ESE	7000	Po-216	2.40E-09	4.32E-16	1.06E-16	5.38E-16
ESE	7000	Pb-212	2.40E-09	4.32E-16	1.06E-16	5.38E-16
ESE	7000	Bi-212	2.40E-09	4.32E-16	1.06E-16	5.38E-16
ESE	7000	Po-212	1.54E-09	2.77E-16	6.78E-17	3.45E-16
ESE	7000	Tl-208	8.62E-10	1.55E-16	3.80E-17	1.93E-16
E	50	U-238	3.55E-06	6.38E-13	4.41E-15	6.43E-13
E	50	Th-234	3.55E-06	6.38E-13	4.41E-15	6.43E-13
E	50	Pa-234m	3.54E-06	6.37E-13	4.40E-15	6.42E-13
E	50	Pa-234	3.50E-06	6.29E-13	4.35E-15	6.34E-13
E	50	U-234	3.55E-06	6.38E-13	4.41E-15	6.43E-13
E	50	Th-230	3.55E-06	6.38E-13	4.41E-15	6.43E-13
E	50	Ra-226	3.08E-05	5.54E-12	3.83E-14	5.58E-12
E	50	Rn-222	3.12E-05	0.00E+00	0.00E+00	0.00E+00
E	50	Po-218	3.08E-05	5.54E-12	3.83E-14	5.58E-12
E	50	Pb-214	3.08E-05	5.54E-12	3.83E-14	5.58E-12
E	50	Bi-214	3.08E-05	5.54E-12	3.83E-14	5.58E-12
E	50	Po-214	3.08E-05	5.54E-12	3.83E-14	5.58E-12
E	50	Pb-210	2.99E-05	5.38E-12	3.71E-14	5.41E-12
E	50	Bi-210	2.99E-05	5.38E-12	3.71E-14	5.41E-12
E	50	Po-210	2.99E-05	5.38E-12	3.71E-14	5.41E-12
E	50	At-218	6.15E-09	1.11E-15	7.65E-18	1.12E-15
E	50	Th-232	9.04E-07	1.63E-13	1.12E-15	1.64E-13
E	50	Ra-228	1.36E-05	2.46E-12	1.70E-14	2.47E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
E	50	Ac-228	1.36E-05	2.46E-12	1.70E-14	2.47E-12
E	50	Th-228	1.36E-05	2.46E-12	1.70E-14	2.47E-12
E	50	Ra-224	1.36E-05	2.46E-12	1.70E-14	2.47E-12
E	50	Rn-220	1.38E-05	0.00E+00	0.00E+00	0.00E+00
E	50	Po-216	1.36E-05	2.46E-12	1.70E-14	2.47E-12
E	50	Pb-212	1.36E-05	2.46E-12	1.70E-14	2.47E-12
E	50	Bi-212	1.36E-05	2.46E-12	1.70E-14	2.47E-12
E	50	Po-212	8.74E-06	1.57E-12	1.09E-14	1.58E-12
E	50	Tl-208	4.90E-06	8.82E-13	6.10E-15	8.89E-13
E	100	U-238	1.22E-06	2.20E-13	2.27E-15	2.23E-13
E	100	Th-234	1.22E-06	2.20E-13	2.27E-15	2.23E-13
E	100	Pa-234m	1.22E-06	2.20E-13	2.26E-15	2.22E-13
E	100	Pa-234	1.21E-06	2.17E-13	2.24E-15	2.20E-13
E	100	U-234	1.22E-06	2.20E-13	2.27E-15	2.23E-13
E	100	Th-230	1.22E-06	2.20E-13	2.27E-15	2.23E-13
E	100	Ra-226	1.06E-05	1.91E-12	1.97E-14	1.93E-12
E	100	Rn-222	1.10E-05	0.00E+00	0.00E+00	0.00E+00
E	100	Po-218	1.06E-05	1.91E-12	1.97E-14	1.93E-12
E	100	Pb-214	1.06E-05	1.91E-12	1.97E-14	1.93E-12
E	100	Bi-214	1.06E-05	1.91E-12	1.97E-14	1.93E-12
E	100	Po-214	1.06E-05	1.91E-12	1.97E-14	1.93E-12
E	100	Pb-210	1.03E-05	1.86E-12	1.91E-14	1.88E-12
E	100	Bi-210	1.03E-05	1.86E-12	1.91E-14	1.88E-12
E	100	Po-210	1.03E-05	1.86E-12	1.91E-14	1.88E-12
E	100	At-218	2.12E-09	3.82E-16	3.94E-18	3.86E-16
E	100	Th-232	3.12E-07	5.62E-14	5.79E-16	5.68E-14
E	100	Ra-228	4.71E-06	8.48E-13	8.73E-15	8.57E-13
E	100	Ac-228	4.71E-06	8.48E-13	8.73E-15	8.57E-13
E	100	Th-228	4.71E-06	8.48E-13	8.73E-15	8.57E-13
E	100	Ra-224	4.71E-06	8.48E-13	8.73E-15	8.57E-13
E	100	Rn-220	4.87E-06	0.00E+00	0.00E+00	0.00E+00
E	100	Po-216	4.71E-06	8.48E-13	8.73E-15	8.57E-13
E	100	Pb-212	4.71E-06	8.48E-13	8.73E-15	8.57E-13
E	100	Bi-212	4.71E-06	8.48E-13	8.73E-15	8.57E-13
E	100	Po-212	3.02E-06	5.43E-13	5.59E-15	5.49E-13
E	100	Tl-208	1.69E-06	3.05E-13	3.14E-15	3.08E-13
E	150	U-238	5.94E-07	1.07E-13	1.50E-15	1.08E-13
E	150	Th-234	5.94E-07	1.07E-13	1.50E-15	1.08E-13
E	150	Pa-234m	5.93E-07	1.07E-13	1.50E-15	1.08E-13
E	150	Pa-234	5.86E-07	1.05E-13	1.48E-15	1.07E-13
E	150	U-234	5.94E-07	1.07E-13	1.50E-15	1.08E-13
E	150	Th-230	5.94E-07	1.07E-13	1.50E-15	1.08E-13
E	150	Ra-226	5.15E-06	9.28E-13	1.30E-14	9.41E-13
E	150	Rn-222	5.42E-06	0.00E+00	0.00E+00	0.00E+00
E	150	Po-218	5.15E-06	9.28E-13	1.30E-14	9.41E-13
E	150	Pb-214	5.15E-06	9.28E-13	1.30E-14	9.41E-13
E	150	Bi-214	5.15E-06	9.28E-13	1.30E-14	9.41E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
E	150	Po-214	5.15E-06	9.28E-13	1.30E-14	9.41E-13
E	150	Pb-210	5.00E-06	9.00E-13	1.26E-14	9.13E-13
E	150	Bi-210	5.00E-06	9.00E-13	1.26E-14	9.13E-13
E	150	Po-210	5.00E-06	9.00E-13	1.26E-14	9.13E-13
E	150	At-218	1.03E-09	1.85E-16	2.60E-18	1.88E-16
E	150	Th-232	1.51E-07	2.73E-14	3.82E-16	2.76E-14
E	150	Ra-228	2.28E-06	4.11E-13	5.77E-15	4.17E-13
E	150	Ac-228	2.28E-06	4.11E-13	5.77E-15	4.17E-13
E	150	Th-228	2.28E-06	4.11E-13	5.77E-15	4.17E-13
E	150	Ra-224	2.28E-06	4.11E-13	5.77E-15	4.17E-13
E	150	Rn-220	2.40E-06	0.00E+00	0.00E+00	0.00E+00
E	150	Po-216	2.28E-06	4.11E-13	5.77E-15	4.17E-13
E	150	Pb-212	2.28E-06	4.11E-13	5.77E-15	4.17E-13
E	150	Bi-212	2.28E-06	4.11E-13	5.77E-15	4.17E-13
E	150	Po-212	1.46E-06	2.64E-13	3.70E-15	2.67E-13
E	150	Tl-208	8.21E-07	1.48E-13	2.07E-15	1.50E-13
E	250	U-238	2.30E-07	4.14E-14	8.89E-16	4.23E-14
E	250	Th-234	2.30E-07	4.14E-14	8.89E-16	4.23E-14
E	250	Pa-234m	2.30E-07	4.13E-14	8.87E-16	4.22E-14
E	250	Pa-234	2.27E-07	4.08E-14	8.76E-16	4.17E-14
E	250	U-234	2.30E-07	4.14E-14	8.89E-16	4.23E-14
E	250	Th-230	2.30E-07	4.14E-14	8.89E-16	4.23E-14
E	250	Ra-226	2.00E-06	3.59E-13	7.71E-15	3.67E-13
E	250	Rn-222	2.14E-06	0.00E+00	0.00E+00	0.00E+00
E	250	Po-218	2.00E-06	3.59E-13	7.71E-15	3.67E-13
E	250	Pb-214	2.00E-06	3.59E-13	7.71E-15	3.67E-13
E	250	Bi-214	2.00E-06	3.59E-13	7.71E-15	3.67E-13
E	250	Po-214	2.00E-06	3.59E-13	7.71E-15	3.67E-13
E	250	Pb-210	1.94E-06	3.49E-13	7.48E-15	3.56E-13
E	250	Bi-210	1.94E-06	3.49E-13	7.48E-15	3.56E-13
E	250	Po-210	1.94E-06	3.49E-13	7.48E-15	3.56E-13
E	250	At-218	3.99E-10	7.18E-17	1.54E-18	7.34E-17
E	250	Th-232	5.86E-08	1.06E-14	2.27E-16	1.08E-14
E	250	Ra-228	8.85E-07	1.59E-13	3.42E-15	1.63E-13
E	250	Ac-228	8.85E-07	1.59E-13	3.42E-15	1.63E-13
E	250	Th-228	8.85E-07	1.59E-13	3.42E-15	1.63E-13
E	250	Ra-224	8.85E-07	1.59E-13	3.42E-15	1.63E-13
E	250	Rn-220	9.50E-07	0.00E+00	0.00E+00	0.00E+00
E	250	Po-216	8.85E-07	1.59E-13	3.42E-15	1.63E-13
E	250	Pb-212	8.85E-07	1.59E-13	3.42E-15	1.63E-13
E	250	Bi-212	8.85E-07	1.59E-13	3.42E-15	1.63E-13
E	250	Po-212	5.67E-07	1.02E-13	2.19E-15	1.04E-13
E	250	Tl-208	3.18E-07	5.72E-14	1.23E-15	5.85E-14
E	350	U-238	1.22E-07	2.19E-14	6.29E-16	2.25E-14
E	350	Th-234	1.22E-07	2.19E-14	6.29E-16	2.25E-14
E	350	Pa-234m	1.21E-07	2.18E-14	6.28E-16	2.25E-14
E	350	Pa-234	1.20E-07	2.16E-14	6.20E-16	2.22E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
E	350	U-234	1.22E-07	2.19E-14	6.29E-16	2.25E-14
E	350	Th-230	1.22E-07	2.19E-14	6.29E-16	2.25E-14
E	350	Ra-226	1.05E-06	1.90E-13	5.46E-15	1.95E-13
E	350	Rn-222	1.15E-06	0.00E+00	0.00E+00	0.00E+00
E	350	Po-218	1.05E-06	1.90E-13	5.46E-15	1.95E-13
E	350	Pb-214	1.05E-06	1.90E-13	5.46E-15	1.95E-13
E	350	Bi-214	1.05E-06	1.90E-13	5.46E-15	1.95E-13
E	350	Po-214	1.05E-06	1.90E-13	5.46E-15	1.95E-13
E	350	Pb-210	1.02E-06	1.84E-13	5.30E-15	1.90E-13
E	350	Bi-210	1.02E-06	1.84E-13	5.30E-15	1.90E-13
E	350	Po-210	1.02E-06	1.84E-13	5.30E-15	1.90E-13
E	350	At-218	2.11E-10	3.80E-17	1.09E-18	3.91E-17
E	350	Th-232	3.10E-08	5.58E-15	1.60E-16	5.74E-15
E	350	Ra-228	4.68E-07	8.42E-14	2.42E-15	8.66E-14
E	350	Ac-228	4.68E-07	8.42E-14	2.42E-15	8.66E-14
E	350	Th-228	4.68E-07	8.42E-14	2.42E-15	8.66E-14
E	350	Ra-224	4.68E-07	8.42E-14	2.42E-15	8.66E-14
E	350	Rn-220	5.11E-07	0.00E+00	0.00E+00	0.00E+00
E	350	Po-216	4.68E-07	8.42E-14	2.42E-15	8.66E-14
E	350	Pb-212	4.68E-07	8.42E-14	2.42E-15	8.66E-14
E	350	Bi-212	4.68E-07	8.42E-14	2.42E-15	8.66E-14
E	350	Po-212	3.00E-07	5.39E-14	1.55E-15	5.55E-14
E	350	Tl-208	1.68E-07	3.02E-14	8.70E-16	3.11E-14
E	450	U-238	7.53E-08	1.35E-14	4.86E-16	1.40E-14
E	450	Th-234	7.53E-08	1.35E-14	4.86E-16	1.40E-14
E	450	Pa-234m	7.51E-08	1.35E-14	4.85E-16	1.40E-14
E	450	Pa-234	7.42E-08	1.34E-14	4.79E-16	1.38E-14
E	450	U-234	7.53E-08	1.35E-14	4.86E-16	1.40E-14
E	450	Th-230	7.53E-08	1.35E-14	4.86E-16	1.40E-14
E	450	Ra-226	6.53E-07	1.18E-13	4.22E-15	1.22E-13
E	450	Rn-222	7.22E-07	0.00E+00	0.00E+00	0.00E+00
E	450	Po-218	6.53E-07	1.18E-13	4.22E-15	1.22E-13
E	450	Pb-214	6.53E-07	1.18E-13	4.22E-15	1.22E-13
E	450	Bi-214	6.53E-07	1.18E-13	4.22E-15	1.22E-13
E	450	Po-214	6.53E-07	1.18E-13	4.22E-15	1.22E-13
E	450	Pb-210	6.34E-07	1.14E-13	4.09E-15	1.18E-13
E	450	Bi-210	6.34E-07	1.14E-13	4.09E-15	1.18E-13
E	450	Po-210	6.34E-07	1.14E-13	4.09E-15	1.18E-13
E	450	At-218	1.31E-10	2.35E-17	8.43E-19	2.43E-17
E	450	Th-232	1.92E-08	3.45E-15	1.24E-16	3.58E-15
E	450	Ra-228	2.90E-07	5.21E-14	1.87E-15	5.40E-14
E	450	Ac-228	2.90E-07	5.21E-14	1.87E-15	5.40E-14
E	450	Th-228	2.90E-07	5.21E-14	1.87E-15	5.40E-14
E	450	Ra-224	2.90E-07	5.21E-14	1.87E-15	5.40E-14
E	450	Rn-220	3.20E-07	0.00E+00	0.00E+00	0.00E+00
E	450	Po-216	2.90E-07	5.21E-14	1.87E-15	5.40E-14
E	450	Pb-212	2.90E-07	5.21E-14	1.87E-15	5.40E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
E	450	Bi-212	2.90E-07	5.21E-14	1.87E-15	5.40E-14
E	450	Po-212	1.86E-07	3.34E-14	1.20E-15	3.46E-14
E	450	Tl-208	1.04E-07	1.87E-14	6.72E-16	1.94E-14
E	750	U-238	2.83E-08	5.09E-15	2.87E-16	5.38E-15
E	750	Th-234	2.83E-08	5.09E-15	2.87E-16	5.38E-15
E	750	Pa-234m	2.82E-08	5.08E-15	2.87E-16	5.37E-15
E	750	Pa-234	2.79E-08	5.02E-15	2.83E-16	5.30E-15
E	750	U-234	2.83E-08	5.09E-15	2.87E-16	5.38E-15
E	750	Th-230	2.83E-08	5.09E-15	2.87E-16	5.38E-15
E	750	Ra-226	2.45E-07	4.42E-14	2.49E-15	4.67E-14
E	750	Rn-222	2.79E-07	0.00E+00	0.00E+00	0.00E+00
E	750	Po-218	2.45E-07	4.42E-14	2.49E-15	4.67E-14
E	750	Pb-214	2.45E-07	4.42E-14	2.49E-15	4.67E-14
E	750	Bi-214	2.45E-07	4.42E-14	2.49E-15	4.67E-14
E	750	Po-214	2.45E-07	4.42E-14	2.49E-15	4.67E-14
E	750	Pb-210	2.38E-07	4.29E-14	2.42E-15	4.53E-14
E	750	Bi-210	2.38E-07	4.29E-14	2.42E-15	4.53E-14
E	750	Po-210	2.38E-07	4.29E-14	2.42E-15	4.53E-14
E	750	At-218	4.91E-11	8.83E-18	4.99E-19	9.33E-18
E	750	Th-232	7.21E-09	1.30E-15	7.33E-17	1.37E-15
E	750	Ra-228	1.09E-07	1.96E-14	1.11E-15	2.07E-14
E	750	Ac-228	1.09E-07	1.96E-14	1.11E-15	2.07E-14
E	750	Th-228	1.09E-07	1.96E-14	1.11E-15	2.07E-14
E	750	Ra-224	1.09E-07	1.96E-14	1.11E-15	2.07E-14
E	750	Rn-220	1.23E-07	0.00E+00	0.00E+00	0.00E+00
E	750	Po-216	1.09E-07	1.96E-14	1.11E-15	2.07E-14
E	750	Pb-212	1.09E-07	1.96E-14	1.11E-15	2.07E-14
E	750	Bi-212	1.09E-07	1.96E-14	1.11E-15	2.07E-14
E	750	Po-212	6.97E-08	1.26E-14	7.08E-16	1.33E-14
E	750	Tl-208	3.91E-08	7.04E-15	3.97E-16	7.43E-15
E	1500	U-238	8.06E-09	1.45E-15	1.41E-16	1.59E-15
E	1500	Th-234	8.06E-09	1.45E-15	1.41E-16	1.59E-15
E	1500	Pa-234m	8.04E-09	1.45E-15	1.40E-16	1.59E-15
E	1500	Pa-234	7.94E-09	1.43E-15	1.39E-16	1.57E-15
E	1500	U-234	8.06E-09	1.45E-15	1.41E-16	1.59E-15
E	1500	Th-230	8.06E-09	1.45E-15	1.41E-16	1.59E-15
E	1500	Ra-226	6.99E-08	1.26E-14	1.22E-15	1.38E-14
E	1500	Rn-222	8.27E-08	0.00E+00	0.00E+00	0.00E+00
E	1500	Po-218	6.99E-08	1.26E-14	1.22E-15	1.38E-14
E	1500	Pb-214	6.99E-08	1.26E-14	1.22E-15	1.38E-14
E	1500	Bi-214	6.99E-08	1.26E-14	1.22E-15	1.38E-14
E	1500	Po-214	6.99E-08	1.26E-14	1.22E-15	1.38E-14
E	1500	Pb-210	6.78E-08	1.22E-14	1.18E-15	1.34E-14
E	1500	Bi-210	6.78E-08	1.22E-14	1.18E-15	1.34E-14
E	1500	Po-210	6.78E-08	1.22E-14	1.18E-15	1.34E-14
E	1500	At-218	1.40E-11	2.52E-18	2.44E-19	2.76E-18
E	1500	Th-232	2.05E-09	3.70E-16	3.58E-17	4.06E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
E	1500	Ra-228	3.10E-08	5.58E-15	5.41E-16	6.12E-15
E	1500	Ac-228	3.10E-08	5.58E-15	5.41E-16	6.12E-15
E	1500	Th-228	3.10E-08	5.58E-15	5.41E-16	6.12E-15
E	1500	Ra-224	3.10E-08	5.58E-15	5.41E-16	6.12E-15
E	1500	Rn-220	3.67E-08	0.00E+00	0.00E+00	0.00E+00
E	1500	Po-216	3.10E-08	5.58E-15	5.41E-16	6.12E-15
E	1500	Pb-212	3.10E-08	5.58E-15	5.41E-16	6.12E-15
E	1500	Bi-212	3.10E-08	5.58E-15	5.41E-16	6.12E-15
E	1500	Po-212	1.99E-08	3.57E-15	3.47E-16	3.92E-15
E	1500	Tl-208	1.11E-08	2.00E-15	1.94E-16	2.20E-15
E	2500	U-238	3.33E-09	6.00E-16	8.29E-17	6.83E-16
E	2500	Th-234	3.33E-09	6.00E-16	8.29E-17	6.83E-16
E	2500	Pa-234m	3.32E-09	5.98E-16	8.28E-17	6.81E-16
E	2500	Pa-234	3.28E-09	5.91E-16	8.17E-17	6.73E-16
E	2500	U-234	3.33E-09	6.00E-16	8.29E-17	6.83E-16
E	2500	Th-230	3.33E-09	6.00E-16	8.29E-17	6.83E-16
E	2500	Ra-226	2.89E-08	5.20E-15	7.20E-16	5.92E-15
E	2500	Rn-222	3.54E-08	0.00E+00	0.00E+00	0.00E+00
E	2500	Po-218	2.89E-08	5.20E-15	7.20E-16	5.92E-15
E	2500	Pb-214	2.89E-08	5.20E-15	7.20E-16	5.92E-15
E	2500	Bi-214	2.89E-08	5.20E-15	7.20E-16	5.92E-15
E	2500	Po-214	2.89E-08	5.20E-15	7.19E-16	5.92E-15
E	2500	Pb-210	2.81E-08	5.05E-15	6.98E-16	5.75E-15
E	2500	Bi-210	2.81E-08	5.05E-15	6.98E-16	5.75E-15
E	2500	Po-210	2.81E-08	5.05E-15	6.98E-16	5.75E-15
E	2500	At-218	5.78E-12	1.04E-18	1.44E-19	1.18E-18
E	2500	Th-232	8.49E-10	1.53E-16	2.11E-17	1.74E-16
E	2500	Ra-228	1.28E-08	2.31E-15	3.19E-16	2.63E-15
E	2500	Ac-228	1.28E-08	2.31E-15	3.19E-16	2.63E-15
E	2500	Th-228	1.28E-08	2.31E-15	3.19E-16	2.63E-15
E	2500	Ra-224	1.28E-08	2.31E-15	3.19E-16	2.63E-15
E	2500	Rn-220	1.57E-08	0.00E+00	0.00E+00	0.00E+00
E	2500	Po-216	1.28E-08	2.31E-15	3.19E-16	2.63E-15
E	2500	Pb-212	1.28E-08	2.31E-15	3.19E-16	2.63E-15
E	2500	Bi-212	1.28E-08	2.31E-15	3.19E-16	2.63E-15
E	2500	Po-212	8.21E-09	1.48E-15	2.04E-16	1.68E-15
E	2500	Tl-208	4.60E-09	8.29E-16	1.15E-16	9.43E-16
E	3500	U-238	1.92E-09	3.45E-16	5.83E-17	4.03E-16
E	3500	Th-234	1.92E-09	3.45E-16	5.83E-17	4.03E-16
E	3500	Pa-234m	1.91E-09	3.44E-16	5.82E-17	4.02E-16
E	3500	Pa-234	1.89E-09	3.40E-16	5.75E-17	3.98E-16
E	3500	U-234	1.92E-09	3.45E-16	5.83E-17	4.03E-16
E	3500	Th-230	1.92E-09	3.45E-16	5.83E-17	4.03E-16
E	3500	Ra-226	1.66E-08	2.99E-15	5.06E-16	3.50E-15
E	3500	Rn-222	2.10E-08	0.00E+00	0.00E+00	0.00E+00
E	3500	Po-218	1.66E-08	2.99E-15	5.06E-16	3.50E-15
E	3500	Pb-214	1.66E-08	2.99E-15	5.06E-16	3.50E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
E	3500	Bi-214	1.66E-08	2.99E-15	5.06E-16	3.50E-15
E	3500	Po-214	1.66E-08	2.99E-15	5.06E-16	3.50E-15
E	3500	Pb-210	1.61E-08	2.90E-15	4.91E-16	3.40E-15
E	3500	Bi-210	1.61E-08	2.90E-15	4.91E-16	3.40E-15
E	3500	Po-210	1.61E-08	2.90E-15	4.91E-16	3.40E-15
E	3500	At-218	3.32E-12	5.98E-19	1.01E-19	7.00E-19
E	3500	Th-232	4.89E-10	8.79E-17	1.49E-17	1.03E-16
E	3500	Ra-228	7.37E-09	1.33E-15	2.24E-16	1.55E-15
E	3500	Ac-228	7.37E-09	1.33E-15	2.24E-16	1.55E-15
E	3500	Th-228	7.37E-09	1.33E-15	2.24E-16	1.55E-15
E	3500	Ra-224	7.37E-09	1.33E-15	2.24E-16	1.55E-15
E	3500	Rn-220	9.31E-09	0.00E+00	0.00E+00	0.00E+00
E	3500	Po-216	7.37E-09	1.33E-15	2.24E-16	1.55E-15
E	3500	Pb-212	7.37E-09	1.33E-15	2.24E-16	1.55E-15
E	3500	Bi-212	7.37E-09	1.33E-15	2.24E-16	1.55E-15
E	3500	Po-212	4.72E-09	8.50E-16	1.44E-16	9.94E-16
E	3500	Tl-208	2.65E-09	4.77E-16	8.06E-17	5.57E-16
E	4500	U-238	1.29E-09	2.33E-16	4.48E-17	2.78E-16
E	4500	Th-234	1.29E-09	2.33E-16	4.48E-17	2.78E-16
E	4500	Pa-234m	1.29E-09	2.33E-16	4.47E-17	2.77E-16
E	4500	Pa-234	1.28E-09	2.30E-16	4.41E-17	2.74E-16
E	4500	U-234	1.29E-09	2.33E-16	4.48E-17	2.78E-16
E	4500	Th-230	1.29E-09	2.33E-16	4.48E-17	2.78E-16
E	4500	Ra-226	1.12E-08	2.02E-15	3.88E-16	2.41E-15
E	4500	Rn-222	1.46E-08	0.00E+00	0.00E+00	0.00E+00
E	4500	Po-218	1.12E-08	2.02E-15	3.88E-16	2.41E-15
E	4500	Pb-214	1.12E-08	2.02E-15	3.88E-16	2.41E-15
E	4500	Bi-214	1.12E-08	2.02E-15	3.88E-16	2.41E-15
E	4500	Po-214	1.12E-08	2.02E-15	3.88E-16	2.41E-15
E	4500	Pb-210	1.09E-08	1.96E-15	3.77E-16	2.34E-15
E	4500	Bi-210	1.09E-08	1.96E-15	3.77E-16	2.34E-15
E	4500	Po-210	1.09E-08	1.96E-15	3.77E-16	2.34E-15
E	4500	At-218	2.25E-12	4.04E-19	7.77E-20	4.82E-19
E	4500	Th-232	3.30E-10	5.94E-17	1.14E-17	7.08E-17
E	4500	Ra-228	4.98E-09	8.96E-16	1.72E-16	1.07E-15
E	4500	Ac-228	4.98E-09	8.96E-16	1.72E-16	1.07E-15
E	4500	Th-228	4.98E-09	8.96E-16	1.72E-16	1.07E-15
E	4500	Ra-224	4.98E-09	8.96E-16	1.72E-16	1.07E-15
E	4500	Rn-220	6.49E-09	0.00E+00	0.00E+00	0.00E+00
E	4500	Po-216	4.98E-09	8.96E-16	1.72E-16	1.07E-15
E	4500	Pb-212	4.98E-09	8.96E-16	1.72E-16	1.07E-15
E	4500	Bi-212	4.98E-09	8.96E-16	1.72E-16	1.07E-15
E	4500	Po-212	3.19E-09	5.75E-16	1.10E-16	6.85E-16
E	4500	Tl-208	1.79E-09	3.22E-16	6.19E-17	3.84E-16
E	5500	U-238	9.48E-10	1.71E-16	3.63E-17	2.07E-16
E	5500	Th-234	9.48E-10	1.71E-16	3.63E-17	2.07E-16
E	5500	Pa-234m	9.47E-10	1.70E-16	3.62E-17	2.07E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
E	5500	Pa-234	9.35E-10	1.68E-16	3.57E-17	2.04E-16
E	5500	U-234	9.48E-10	1.71E-16	3.63E-17	2.07E-16
E	5500	Th-230	9.48E-10	1.71E-16	3.63E-17	2.07E-16
E	5500	Ra-226	8.23E-09	1.48E-15	3.15E-16	1.80E-15
E	5500	Rn-222	1.10E-08	0.00E+00	0.00E+00	0.00E+00
E	5500	Po-218	8.23E-09	1.48E-15	3.15E-16	1.80E-15
E	5500	Pb-214	8.23E-09	1.48E-15	3.15E-16	1.80E-15
E	5500	Bi-214	8.23E-09	1.48E-15	3.15E-16	1.80E-15
E	5500	Po-214	8.23E-09	1.48E-15	3.15E-16	1.80E-15
E	5500	Pb-210	7.99E-09	1.44E-15	3.05E-16	1.74E-15
E	5500	Bi-210	7.99E-09	1.44E-15	3.05E-16	1.74E-15
E	5500	Po-210	7.99E-09	1.44E-15	3.05E-16	1.74E-15
E	5500	At-218	1.65E-12	2.96E-19	6.29E-20	3.59E-19
E	5500	Th-232	2.42E-10	4.35E-17	9.24E-18	5.28E-17
E	5500	Ra-228	3.65E-09	6.57E-16	1.39E-16	7.96E-16
E	5500	Ac-228	3.65E-09	6.57E-16	1.39E-16	7.96E-16
E	5500	Th-228	3.65E-09	6.57E-16	1.39E-16	7.96E-16
E	5500	Ra-224	3.65E-09	6.57E-16	1.39E-16	7.96E-16
E	5500	Rn-220	4.86E-09	0.00E+00	0.00E+00	0.00E+00
E	5500	Po-216	3.65E-09	6.57E-16	1.39E-16	7.96E-16
E	5500	Pb-212	3.65E-09	6.57E-16	1.39E-16	7.96E-16
E	5500	Bi-212	3.65E-09	6.57E-16	1.39E-16	7.96E-16
E	5500	Po-212	2.34E-09	4.21E-16	8.94E-17	5.10E-16
E	5500	Tl-208	1.31E-09	2.36E-16	5.01E-17	2.86E-16
E	7000	U-238	6.43E-10	1.16E-16	2.79E-17	1.44E-16
E	7000	Th-234	6.43E-10	1.16E-16	2.79E-17	1.44E-16
E	7000	Pa-234m	6.42E-10	1.15E-16	2.79E-17	1.43E-16
E	7000	Pa-234	6.34E-10	1.14E-16	2.76E-17	1.42E-16
E	7000	U-234	6.43E-10	1.16E-16	2.79E-17	1.44E-16
E	7000	Th-230	6.43E-10	1.16E-16	2.79E-17	1.44E-16
E	7000	Ra-226	5.58E-09	1.00E-15	2.43E-16	1.25E-15
E	7000	Rn-222	7.77E-09	0.00E+00	0.00E+00	0.00E+00
E	7000	Po-218	5.58E-09	1.00E-15	2.43E-16	1.25E-15
E	7000	Pb-214	5.58E-09	1.00E-15	2.43E-16	1.25E-15
E	7000	Bi-214	5.58E-09	1.00E-15	2.43E-16	1.25E-15
E	7000	Po-214	5.58E-09	1.00E-15	2.42E-16	1.25E-15
E	7000	Pb-210	5.41E-09	9.74E-16	2.35E-16	1.21E-15
E	7000	Bi-210	5.41E-09	9.74E-16	2.35E-16	1.21E-15
E	7000	Po-210	5.41E-09	9.74E-16	2.35E-16	1.21E-15
E	7000	At-218	1.12E-12	2.01E-19	4.85E-20	2.49E-19
E	7000	Th-232	1.64E-10	2.95E-17	7.13E-18	3.66E-17
E	7000	Ra-228	2.47E-09	4.45E-16	1.08E-16	5.53E-16
E	7000	Ac-228	2.47E-09	4.45E-16	1.08E-16	5.53E-16
E	7000	Th-228	2.47E-09	4.45E-16	1.08E-16	5.53E-16
E	7000	Ra-224	2.47E-09	4.45E-16	1.08E-16	5.53E-16
E	7000	Rn-220	3.44E-09	0.00E+00	0.00E+00	0.00E+00
E	7000	Po-216	2.47E-09	4.45E-16	1.08E-16	5.53E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
E	7000	Pb-212	2.47E-09	4.45E-16	1.08E-16	5.53E-16
E	7000	Bi-212	2.47E-09	4.45E-16	1.08E-16	5.53E-16
E	7000	Po-212	1.58E-09	2.85E-16	6.89E-17	3.54E-16
E	7000	Tl-208	8.88E-10	1.60E-16	3.86E-17	1.99E-16
ENE	50	U-238	3.77E-06	6.79E-13	4.38E-15	6.84E-13
ENE	50	Th-234	3.77E-06	6.79E-13	4.38E-15	6.84E-13
ENE	50	Pa-234m	3.77E-06	6.78E-13	4.38E-15	6.82E-13
ENE	50	Pa-234	3.72E-06	6.70E-13	4.32E-15	6.74E-13
ENE	50	U-234	3.77E-06	6.79E-13	4.38E-15	6.84E-13
ENE	50	Th-230	3.77E-06	6.79E-13	4.38E-15	6.84E-13
ENE	50	Ra-226	3.27E-05	5.89E-12	3.80E-14	5.93E-12
ENE	50	Rn-222	3.32E-05	0.00E+00	0.00E+00	0.00E+00
ENE	50	Po-218	3.27E-05	5.89E-12	3.80E-14	5.93E-12
ENE	50	Pb-214	3.27E-05	5.89E-12	3.80E-14	5.93E-12
ENE	50	Bi-214	3.27E-05	5.89E-12	3.80E-14	5.93E-12
ENE	50	Po-214	3.27E-05	5.89E-12	3.80E-14	5.93E-12
ENE	50	Pb-210	3.18E-05	5.72E-12	3.69E-14	5.76E-12
ENE	50	Bi-210	3.18E-05	5.72E-12	3.69E-14	5.76E-12
ENE	50	Po-210	3.18E-05	5.72E-12	3.69E-14	5.76E-12
ENE	50	At-218	6.55E-09	1.18E-15	7.61E-18	1.19E-15
ENE	50	Th-232	9.62E-07	1.73E-13	1.12E-15	1.74E-13
ENE	50	Ra-228	1.45E-05	2.61E-12	1.69E-14	2.63E-12
ENE	50	Ac-228	1.45E-05	2.61E-12	1.69E-14	2.63E-12
ENE	50	Th-228	1.45E-05	2.61E-12	1.69E-14	2.63E-12
ENE	50	Ra-224	1.45E-05	2.61E-12	1.69E-14	2.63E-12
ENE	50	Rn-220	1.47E-05	0.00E+00	0.00E+00	0.00E+00
ENE	50	Po-216	1.45E-05	2.61E-12	1.69E-14	2.63E-12
ENE	50	Pb-212	1.45E-05	2.61E-12	1.69E-14	2.63E-12
ENE	50	Bi-212	1.45E-05	2.61E-12	1.69E-14	2.63E-12
ENE	50	Po-212	9.30E-06	1.67E-12	1.08E-14	1.69E-12
ENE	50	Tl-208	5.22E-06	9.39E-13	6.06E-15	9.45E-13
ENE	100	U-238	1.05E-06	1.89E-13	1.73E-15	1.91E-13
ENE	100	Th-234	1.05E-06	1.89E-13	1.73E-15	1.91E-13
ENE	100	Pa-234m	1.05E-06	1.89E-13	1.73E-15	1.91E-13
ENE	100	Pa-234	1.04E-06	1.87E-13	1.71E-15	1.88E-13
ENE	100	U-234	1.05E-06	1.89E-13	1.73E-15	1.91E-13
ENE	100	Th-230	1.05E-06	1.89E-13	1.73E-15	1.91E-13
ENE	100	Ra-226	9.12E-06	1.64E-12	1.50E-14	1.66E-12
ENE	100	Rn-222	9.49E-06	0.00E+00	0.00E+00	0.00E+00
ENE	100	Po-218	9.12E-06	1.64E-12	1.50E-14	1.66E-12
ENE	100	Pb-214	9.12E-06	1.64E-12	1.50E-14	1.66E-12
ENE	100	Bi-214	9.12E-06	1.64E-12	1.50E-14	1.66E-12
ENE	100	Po-214	9.12E-06	1.64E-12	1.50E-14	1.66E-12
ENE	100	Pb-210	8.85E-06	1.59E-12	1.46E-14	1.61E-12
ENE	100	Bi-210	8.85E-06	1.59E-12	1.46E-14	1.61E-12
ENE	100	Po-210	8.85E-06	1.59E-12	1.46E-14	1.61E-12
ENE	100	At-218	1.82E-09	3.28E-16	3.00E-18	3.31E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
ENE	100	Th-232	2.68E-07	4.82E-14	4.42E-16	4.87E-14
ENE	100	Ra-228	4.04E-06	7.28E-13	6.66E-15	7.35E-13
ENE	100	Ac-228	4.04E-06	7.28E-13	6.66E-15	7.35E-13
ENE	100	Th-228	4.04E-06	7.28E-13	6.66E-15	7.35E-13
ENE	100	Ra-224	4.04E-06	7.28E-13	6.66E-15	7.35E-13
ENE	100	Rn-220	4.21E-06	0.00E+00	0.00E+00	0.00E+00
ENE	100	Po-216	4.04E-06	7.28E-13	6.66E-15	7.35E-13
ENE	100	Pb-212	4.04E-06	7.28E-13	6.66E-15	7.35E-13
ENE	100	Bi-212	4.04E-06	7.28E-13	6.66E-15	7.35E-13
ENE	100	Po-212	2.59E-06	4.66E-13	4.27E-15	4.71E-13
ENE	100	Tl-208	1.45E-06	2.62E-13	2.39E-15	2.64E-13
ENE	150	U-238	5.12E-07	9.22E-14	1.14E-15	9.33E-14
ENE	150	Th-234	5.12E-07	9.22E-14	1.14E-15	9.33E-14
ENE	150	Pa-234m	5.11E-07	9.20E-14	1.14E-15	9.32E-14
ENE	150	Pa-234	5.05E-07	9.09E-14	1.12E-15	9.20E-14
ENE	150	U-234	5.12E-07	9.22E-14	1.14E-15	9.33E-14
ENE	150	Th-230	5.12E-07	9.22E-14	1.14E-15	9.33E-14
ENE	150	Ra-226	4.45E-06	8.00E-13	9.90E-15	8.10E-13
ENE	150	Rn-222	4.72E-06	0.00E+00	0.00E+00	0.00E+00
ENE	150	Po-218	4.45E-06	8.00E-13	9.90E-15	8.10E-13
ENE	150	Pb-214	4.45E-06	8.00E-13	9.90E-15	8.10E-13
ENE	150	Bi-214	4.45E-06	8.00E-13	9.90E-15	8.10E-13
ENE	150	Po-214	4.44E-06	8.00E-13	9.90E-15	8.10E-13
ENE	150	Pb-210	4.31E-06	7.76E-13	9.61E-15	7.86E-13
ENE	150	Bi-210	4.31E-06	7.76E-13	9.61E-15	7.86E-13
ENE	150	Po-210	4.31E-06	7.76E-13	9.61E-15	7.86E-13
ENE	150	At-218	8.89E-10	1.60E-16	1.98E-18	1.62E-16
ENE	150	Th-232	1.31E-07	2.35E-14	2.91E-16	2.38E-14
ENE	150	Ra-228	1.97E-06	3.55E-13	4.39E-15	3.59E-13
ENE	150	Ac-228	1.97E-06	3.55E-13	4.39E-15	3.59E-13
ENE	150	Th-228	1.97E-06	3.55E-13	4.39E-15	3.59E-13
ENE	150	Ra-224	1.97E-06	3.55E-13	4.39E-15	3.59E-13
ENE	150	Rn-220	2.09E-06	0.00E+00	0.00E+00	0.00E+00
ENE	150	Po-216	1.97E-06	3.55E-13	4.39E-15	3.59E-13
ENE	150	Pb-212	1.97E-06	3.55E-13	4.39E-15	3.59E-13
ENE	150	Bi-212	1.97E-06	3.55E-13	4.39E-15	3.59E-13
ENE	150	Po-212	1.26E-06	2.27E-13	2.81E-15	2.30E-13
ENE	150	Tl-208	7.08E-07	1.27E-13	1.58E-15	1.29E-13
ENE	250	U-238	1.98E-07	3.56E-14	6.74E-16	3.63E-14
ENE	250	Th-234	1.98E-07	3.56E-14	6.74E-16	3.63E-14
ENE	250	Pa-234m	1.97E-07	3.55E-14	6.73E-16	3.62E-14
ENE	250	Pa-234	1.95E-07	3.51E-14	6.65E-16	3.58E-14
ENE	250	U-234	1.98E-07	3.56E-14	6.74E-16	3.63E-14
ENE	250	Th-230	1.98E-07	3.56E-14	6.74E-16	3.63E-14
ENE	250	Ra-226	1.72E-06	3.09E-13	5.85E-15	3.15E-13
ENE	250	Rn-222	1.87E-06	0.00E+00	0.00E+00	0.00E+00
ENE	250	Po-218	1.72E-06	3.09E-13	5.85E-15	3.15E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
ENE	250	Pb-214	1.72E-06	3.09E-13	5.85E-15	3.15E-13
ENE	250	Bi-214	1.72E-06	3.09E-13	5.85E-15	3.15E-13
ENE	250	Po-214	1.72E-06	3.09E-13	5.85E-15	3.15E-13
ENE	250	Pb-210	1.67E-06	3.00E-13	5.68E-15	3.05E-13
ENE	250	Bi-210	1.67E-06	3.00E-13	5.68E-15	3.05E-13
ENE	250	Po-210	1.67E-06	3.00E-13	5.68E-15	3.05E-13
ENE	250	At-218	3.43E-10	6.18E-17	1.17E-18	6.29E-17
ENE	250	Th-232	5.04E-08	9.08E-15	1.72E-16	9.25E-15
ENE	250	Ra-228	7.61E-07	1.37E-13	2.59E-15	1.40E-13
ENE	250	Ac-228	7.61E-07	1.37E-13	2.59E-15	1.40E-13
ENE	250	Th-228	7.61E-07	1.37E-13	2.59E-15	1.40E-13
ENE	250	Ra-224	7.61E-07	1.37E-13	2.59E-15	1.40E-13
ENE	250	Rn-220	8.29E-07	0.00E+00	0.00E+00	0.00E+00
ENE	250	Po-216	7.61E-07	1.37E-13	2.59E-15	1.40E-13
ENE	250	Pb-212	7.61E-07	1.37E-13	2.59E-15	1.40E-13
ENE	250	Bi-212	7.61E-07	1.37E-13	2.59E-15	1.40E-13
ENE	250	Po-212	4.88E-07	8.78E-14	1.66E-15	8.94E-14
ENE	250	Tl-208	2.73E-07	4.92E-14	9.32E-16	5.01E-14
ENE	350	U-238	1.04E-07	1.87E-14	4.76E-16	1.92E-14
ENE	350	Th-234	1.04E-07	1.87E-14	4.76E-16	1.92E-14
ENE	350	Pa-234m	1.04E-07	1.87E-14	4.75E-16	1.92E-14
ENE	350	Pa-234	1.03E-07	1.85E-14	4.69E-16	1.89E-14
ENE	350	U-234	1.04E-07	1.87E-14	4.76E-16	1.92E-14
ENE	350	Th-230	1.04E-07	1.87E-14	4.76E-16	1.92E-14
ENE	350	Ra-226	9.03E-07	1.62E-13	4.13E-15	1.67E-13
ENE	350	Rn-222	1.00E-06	0.00E+00	0.00E+00	0.00E+00
ENE	350	Po-218	9.03E-07	1.62E-13	4.13E-15	1.67E-13
ENE	350	Pb-214	9.03E-07	1.62E-13	4.13E-15	1.67E-13
ENE	350	Bi-214	9.03E-07	1.62E-13	4.13E-15	1.67E-13
ENE	350	Po-214	9.03E-07	1.62E-13	4.13E-15	1.67E-13
ENE	350	Pb-210	8.76E-07	1.58E-13	4.01E-15	1.62E-13
ENE	350	Bi-210	8.76E-07	1.58E-13	4.01E-15	1.62E-13
ENE	350	Po-210	8.76E-07	1.58E-13	4.01E-15	1.62E-13
ENE	350	At-218	1.80E-10	3.25E-17	8.25E-19	3.33E-17
ENE	350	Th-232	2.65E-08	4.77E-15	1.21E-16	4.90E-15
ENE	350	Ra-228	4.00E-07	7.20E-14	1.83E-15	7.39E-14
ENE	350	Ac-228	4.00E-07	7.20E-14	1.83E-15	7.39E-14
ENE	350	Th-228	4.00E-07	7.20E-14	1.83E-15	7.39E-14
ENE	350	Ra-224	4.00E-07	7.20E-14	1.83E-15	7.39E-14
ENE	350	Rn-220	4.45E-07	0.00E+00	0.00E+00	0.00E+00
ENE	350	Po-216	4.00E-07	7.20E-14	1.83E-15	7.39E-14
ENE	350	Pb-212	4.00E-07	7.20E-14	1.83E-15	7.39E-14
ENE	350	Bi-212	4.00E-07	7.20E-14	1.83E-15	7.39E-14
ENE	350	Po-212	2.56E-07	4.62E-14	1.17E-15	4.73E-14
ENE	350	Tl-208	1.44E-07	2.59E-14	6.58E-16	2.65E-14
ENE	450	U-238	6.41E-08	1.15E-14	3.67E-16	1.19E-14
ENE	450	Th-234	6.41E-08	1.15E-14	3.67E-16	1.19E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
ENE	450	Pa-234m	6.40E-08	1.15E-14	3.66E-16	1.19E-14
ENE	450	Pa-234	6.32E-08	1.14E-14	3.62E-16	1.17E-14
ENE	450	U-234	6.41E-08	1.15E-14	3.67E-16	1.19E-14
ENE	450	Th-230	6.41E-08	1.15E-14	3.67E-16	1.19E-14
ENE	450	Ra-226	5.56E-07	1.00E-13	3.18E-15	1.03E-13
ENE	450	Rn-222	6.29E-07	0.00E+00	0.00E+00	0.00E+00
ENE	450	Po-218	5.56E-07	1.00E-13	3.18E-15	1.03E-13
ENE	450	Pb-214	5.56E-07	1.00E-13	3.18E-15	1.03E-13
ENE	450	Bi-214	5.56E-07	1.00E-13	3.18E-15	1.03E-13
ENE	450	Po-214	5.56E-07	1.00E-13	3.18E-15	1.03E-13
ENE	450	Pb-210	5.40E-07	9.72E-14	3.09E-15	1.00E-13
ENE	450	Bi-210	5.40E-07	9.72E-14	3.09E-15	1.00E-13
ENE	450	Po-210	5.40E-07	9.72E-14	3.09E-15	1.00E-13
ENE	450	At-218	1.11E-10	2.00E-17	6.36E-19	2.07E-17
ENE	450	Th-232	1.63E-08	2.94E-15	9.35E-17	3.04E-15
ENE	450	Ra-228	2.47E-07	4.44E-14	1.41E-15	4.58E-14
ENE	450	Ac-228	2.47E-07	4.44E-14	1.41E-15	4.58E-14
ENE	450	Th-228	2.47E-07	4.44E-14	1.41E-15	4.58E-14
ENE	450	Ra-224	2.47E-07	4.44E-14	1.41E-15	4.58E-14
ENE	450	Rn-220	2.79E-07	0.00E+00	0.00E+00	0.00E+00
ENE	450	Po-216	2.47E-07	4.44E-14	1.41E-15	4.58E-14
ENE	450	Pb-212	2.47E-07	4.44E-14	1.41E-15	4.58E-14
ENE	450	Bi-212	2.47E-07	4.44E-14	1.41E-15	4.58E-14
ENE	450	Po-212	1.58E-07	2.85E-14	9.04E-16	2.94E-14
ENE	450	Tl-208	8.86E-08	1.60E-14	5.07E-16	1.65E-14
ENE	750	U-238	2.38E-08	4.29E-15	2.16E-16	4.51E-15
ENE	750	Th-234	2.38E-08	4.29E-15	2.16E-16	4.51E-15
ENE	750	Pa-234m	2.38E-08	4.28E-15	2.15E-16	4.50E-15
ENE	750	Pa-234	2.35E-08	4.23E-15	2.13E-16	4.44E-15
ENE	750	U-234	2.38E-08	4.29E-15	2.16E-16	4.51E-15
ENE	750	Th-230	2.38E-08	4.29E-15	2.16E-16	4.51E-15
ENE	750	Ra-226	2.07E-07	3.72E-14	1.87E-15	3.91E-14
ENE	750	Rn-222	2.42E-07	0.00E+00	0.00E+00	0.00E+00
ENE	750	Po-218	2.07E-07	3.72E-14	1.87E-15	3.91E-14
ENE	750	Pb-214	2.07E-07	3.72E-14	1.87E-15	3.91E-14
ENE	750	Bi-214	2.07E-07	3.72E-14	1.87E-15	3.91E-14
ENE	750	Po-214	2.07E-07	3.72E-14	1.87E-15	3.91E-14
ENE	750	Pb-210	2.01E-07	3.61E-14	1.82E-15	3.79E-14
ENE	750	Bi-210	2.01E-07	3.61E-14	1.82E-15	3.79E-14
ENE	750	Po-210	2.01E-07	3.61E-14	1.82E-15	3.79E-14
ENE	750	At-218	4.14E-11	7.44E-18	3.74E-19	7.82E-18
ENE	750	Th-232	6.08E-09	1.09E-15	5.50E-17	1.15E-15
ENE	750	Ra-228	9.17E-08	1.65E-14	8.30E-16	1.73E-14
ENE	750	Ac-228	9.17E-08	1.65E-14	8.30E-16	1.73E-14
ENE	750	Th-228	9.17E-08	1.65E-14	8.30E-16	1.73E-14
ENE	750	Ra-224	9.17E-08	1.65E-14	8.30E-16	1.73E-14
ENE	750	Rn-220	1.07E-07	0.00E+00	0.00E+00	0.00E+00

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
ENE	750	Po-216	9.17E-08	1.65E-14	8.30E-16	1.73E-14
ENE	750	Pb-212	9.17E-08	1.65E-14	8.30E-16	1.73E-14
ENE	750	Bi-212	9.17E-08	1.65E-14	8.30E-16	1.73E-14
ENE	750	Po-212	5.88E-08	1.06E-14	5.32E-16	1.11E-14
ENE	750	Tl-208	3.29E-08	5.93E-15	2.98E-16	6.23E-15
ENE	1500	U-238	6.71E-09	1.21E-15	1.05E-16	1.31E-15
ENE	1500	Th-234	6.71E-09	1.21E-15	1.05E-16	1.31E-15
ENE	1500	Pa-234m	6.70E-09	1.21E-15	1.05E-16	1.31E-15
ENE	1500	Pa-234	6.61E-09	1.19E-15	1.03E-16	1.29E-15
ENE	1500	U-234	6.71E-09	1.21E-15	1.05E-16	1.31E-15
ENE	1500	Th-230	6.71E-09	1.21E-15	1.05E-16	1.31E-15
ENE	1500	Ra-226	5.82E-08	1.05E-14	9.10E-16	1.14E-14
ENE	1500	Rn-222	7.16E-08	0.00E+00	0.00E+00	0.00E+00
ENE	1500	Po-218	5.82E-08	1.05E-14	9.10E-16	1.14E-14
ENE	1500	Pb-214	5.82E-08	1.05E-14	9.10E-16	1.14E-14
ENE	1500	Bi-214	5.82E-08	1.05E-14	9.10E-16	1.14E-14
ENE	1500	Po-214	5.82E-08	1.05E-14	9.10E-16	1.14E-14
ENE	1500	Pb-210	5.65E-08	1.02E-14	8.83E-16	1.11E-14
ENE	1500	Bi-210	5.65E-08	1.02E-14	8.83E-16	1.11E-14
ENE	1500	Po-210	5.65E-08	1.02E-14	8.83E-16	1.11E-14
ENE	1500	At-218	1.16E-11	2.09E-18	1.82E-19	2.28E-18
ENE	1500	Th-232	1.71E-09	3.08E-16	2.67E-17	3.35E-16
ENE	1500	Ra-228	2.58E-08	4.65E-15	4.03E-16	5.05E-15
ENE	1500	Ac-228	2.58E-08	4.65E-15	4.03E-16	5.05E-15
ENE	1500	Th-228	2.58E-08	4.65E-15	4.03E-16	5.05E-15
ENE	1500	Ra-224	2.58E-08	4.65E-15	4.03E-16	5.05E-15
ENE	1500	Rn-220	3.18E-08	0.00E+00	0.00E+00	0.00E+00
ENE	1500	Po-216	2.58E-08	4.65E-15	4.03E-16	5.05E-15
ENE	1500	Pb-212	2.58E-08	4.65E-15	4.03E-16	5.05E-15
ENE	1500	Bi-212	2.58E-08	4.65E-15	4.03E-16	5.05E-15
ENE	1500	Po-212	1.65E-08	2.98E-15	2.59E-16	3.24E-15
ENE	1500	Tl-208	9.27E-09	1.67E-15	1.45E-16	1.81E-15
ENE	2500	U-238	2.76E-09	4.96E-16	6.15E-17	5.58E-16
ENE	2500	Th-234	2.76E-09	4.96E-16	6.15E-17	5.58E-16
ENE	2500	Pa-234m	2.75E-09	4.95E-16	6.14E-17	5.57E-16
ENE	2500	Pa-234	2.72E-09	4.89E-16	6.07E-17	5.50E-16
ENE	2500	U-234	2.76E-09	4.96E-16	6.15E-17	5.58E-16
ENE	2500	Th-230	2.76E-09	4.96E-16	6.15E-17	5.58E-16
ENE	2500	Ra-226	2.39E-08	4.31E-15	5.34E-16	4.84E-15
ENE	2500	Rn-222	3.07E-08	0.00E+00	0.00E+00	0.00E+00
ENE	2500	Po-218	2.39E-08	4.31E-15	5.34E-16	4.84E-15
ENE	2500	Pb-214	2.39E-08	4.31E-15	5.34E-16	4.84E-15
ENE	2500	Bi-214	2.39E-08	4.31E-15	5.34E-16	4.84E-15
ENE	2500	Po-214	2.39E-08	4.31E-15	5.34E-16	4.84E-15
ENE	2500	Pb-210	2.32E-08	4.18E-15	5.18E-16	4.70E-15
ENE	2500	Bi-210	2.32E-08	4.18E-15	5.18E-16	4.70E-15
ENE	2500	Po-210	2.32E-08	4.18E-15	5.18E-16	4.70E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
ENE	2500	At-218	4.78E-12	8.61E-19	1.07E-19	9.68E-19
ENE	2500	Th-232	7.03E-10	1.27E-16	1.57E-17	1.42E-16
ENE	2500	Ra-228	1.06E-08	1.91E-15	2.37E-16	2.15E-15
ENE	2500	Ac-228	1.06E-08	1.91E-15	2.37E-16	2.15E-15
ENE	2500	Th-228	1.06E-08	1.91E-15	2.37E-16	2.15E-15
ENE	2500	Ra-224	1.06E-08	1.91E-15	2.37E-16	2.15E-15
ENE	2500	Rn-220	1.36E-08	0.00E+00	0.00E+00	0.00E+00
ENE	2500	Po-216	1.06E-08	1.91E-15	2.37E-16	2.15E-15
ENE	2500	Pb-212	1.06E-08	1.91E-15	2.37E-16	2.15E-15
ENE	2500	Bi-212	1.06E-08	1.91E-15	2.37E-16	2.15E-15
ENE	2500	Po-212	6.80E-09	1.22E-15	1.52E-16	1.38E-15
ENE	2500	Tl-208	3.81E-09	6.86E-16	8.51E-17	7.71E-16
ENE	3500	U-238	1.58E-09	2.84E-16	4.31E-17	3.28E-16
ENE	3500	Th-234	1.58E-09	2.84E-16	4.31E-17	3.28E-16
ENE	3500	Pa-234m	1.58E-09	2.84E-16	4.30E-17	3.27E-16
ENE	3500	Pa-234	1.56E-09	2.80E-16	4.25E-17	3.23E-16
ENE	3500	U-234	1.58E-09	2.84E-16	4.31E-17	3.28E-16
ENE	3500	Th-230	1.58E-09	2.84E-16	4.31E-17	3.28E-16
ENE	3500	Ra-226	1.37E-08	2.47E-15	3.74E-16	2.84E-15
ENE	3500	Rn-222	1.83E-08	0.00E+00	0.00E+00	0.00E+00
ENE	3500	Po-218	1.37E-08	2.47E-15	3.74E-16	2.84E-15
ENE	3500	Pb-214	1.37E-08	2.47E-15	3.74E-16	2.84E-15
ENE	3500	Bi-214	1.37E-08	2.47E-15	3.74E-16	2.84E-15
ENE	3500	Po-214	1.37E-08	2.47E-15	3.74E-16	2.84E-15
ENE	3500	Pb-210	1.33E-08	2.40E-15	3.63E-16	2.76E-15
ENE	3500	Bi-210	1.33E-08	2.40E-15	3.63E-16	2.76E-15
ENE	3500	Po-210	1.33E-08	2.40E-15	3.63E-16	2.76E-15
ENE	3500	At-218	2.74E-12	4.94E-19	7.48E-20	5.68E-19
ENE	3500	Th-232	4.03E-10	7.25E-17	1.10E-17	8.35E-17
ENE	3500	Ra-228	6.08E-09	1.09E-15	1.66E-16	1.26E-15
ENE	3500	Ac-228	6.08E-09	1.09E-15	1.66E-16	1.26E-15
ENE	3500	Th-228	6.08E-09	1.09E-15	1.66E-16	1.26E-15
ENE	3500	Ra-224	6.08E-09	1.09E-15	1.66E-16	1.26E-15
ENE	3500	Rn-220	8.12E-09	0.00E+00	0.00E+00	0.00E+00
ENE	3500	Po-216	6.08E-09	1.09E-15	1.66E-16	1.26E-15
ENE	3500	Pb-212	6.08E-09	1.09E-15	1.66E-16	1.26E-15
ENE	3500	Bi-212	6.08E-09	1.09E-15	1.66E-16	1.26E-15
ENE	3500	Po-212	3.90E-09	7.01E-16	1.06E-16	8.08E-16
ENE	3500	Tl-208	2.18E-09	3.93E-16	5.96E-17	4.53E-16
ENE	4500	U-238	1.06E-09	1.92E-16	3.29E-17	2.24E-16
ENE	4500	Th-234	1.06E-09	1.92E-16	3.29E-17	2.24E-16
ENE	4500	Pa-234m	1.06E-09	1.91E-16	3.29E-17	2.24E-16
ENE	4500	Pa-234	1.05E-09	1.89E-16	3.25E-17	2.21E-16
ENE	4500	U-234	1.06E-09	1.92E-16	3.29E-17	2.24E-16
ENE	4500	Th-230	1.06E-09	1.92E-16	3.29E-17	2.24E-16
ENE	4500	Ra-226	9.23E-09	1.66E-15	2.86E-16	1.95E-15
ENE	4500	Rn-222	1.28E-08	0.00E+00	0.00E+00	0.00E+00

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
ENE	4500	Po-218	9.23E-09	1.66E-15	2.86E-16	1.95E-15
ENE	4500	Pb-214	9.23E-09	1.66E-15	2.86E-16	1.95E-15
ENE	4500	Bi-214	9.23E-09	1.66E-15	2.86E-16	1.95E-15
ENE	4500	Po-214	9.23E-09	1.66E-15	2.86E-16	1.95E-15
ENE	4500	Pb-210	8.96E-09	1.61E-15	2.77E-16	1.89E-15
ENE	4500	Bi-210	8.96E-09	1.61E-15	2.77E-16	1.89E-15
ENE	4500	Po-210	8.96E-09	1.61E-15	2.77E-16	1.89E-15
ENE	4500	At-218	1.85E-12	3.32E-19	5.71E-20	3.89E-19
ENE	4500	Th-232	2.71E-10	4.88E-17	8.39E-18	5.72E-17
ENE	4500	Ra-228	4.09E-09	7.37E-16	1.27E-16	8.64E-16
ENE	4500	Ac-228	4.09E-09	7.37E-16	1.27E-16	8.64E-16
ENE	4500	Th-228	4.09E-09	7.37E-16	1.27E-16	8.64E-16
ENE	4500	Ra-224	4.09E-09	7.37E-16	1.27E-16	8.64E-16
ENE	4500	Rn-220	5.68E-09	0.00E+00	0.00E+00	0.00E+00
ENE	4500	Po-216	4.09E-09	7.37E-16	1.27E-16	8.64E-16
ENE	4500	Pb-212	4.09E-09	7.37E-16	1.27E-16	8.64E-16
ENE	4500	Bi-212	4.09E-09	7.37E-16	1.27E-16	8.64E-16
ENE	4500	Po-212	2.62E-09	4.72E-16	8.12E-17	5.53E-16
ENE	4500	Tl-208	1.47E-09	2.65E-16	4.55E-17	3.10E-16
ENE	5500	U-238	7.78E-10	1.40E-16	2.66E-17	1.67E-16
ENE	5500	Th-234	7.78E-10	1.40E-16	2.66E-17	1.67E-16
ENE	5500	Pa-234m	7.76E-10	1.40E-16	2.65E-17	1.66E-16
ENE	5500	Pa-234	7.67E-10	1.38E-16	2.62E-17	1.64E-16
ENE	5500	U-234	7.78E-10	1.40E-16	2.66E-17	1.67E-16
ENE	5500	Th-230	7.78E-10	1.40E-16	2.66E-17	1.67E-16
ENE	5500	Ra-226	6.75E-09	1.21E-15	2.31E-16	1.45E-15
ENE	5500	Rn-222	9.64E-09	0.00E+00	0.00E+00	0.00E+00
ENE	5500	Po-218	6.75E-09	1.21E-15	2.31E-16	1.45E-15
ENE	5500	Pb-214	6.75E-09	1.21E-15	2.31E-16	1.45E-15
ENE	5500	Bi-214	6.75E-09	1.21E-15	2.31E-16	1.45E-15
ENE	5500	Po-214	6.75E-09	1.21E-15	2.31E-16	1.45E-15
ENE	5500	Pb-210	6.55E-09	1.18E-15	2.24E-16	1.40E-15
ENE	5500	Bi-210	6.55E-09	1.18E-15	2.24E-16	1.40E-15
ENE	5500	Po-210	6.55E-09	1.18E-15	2.24E-16	1.40E-15
ENE	5500	At-218	1.35E-12	2.43E-19	4.61E-20	2.89E-19
ENE	5500	Th-232	1.98E-10	3.57E-17	6.78E-18	4.25E-17
ENE	5500	Ra-228	2.99E-09	5.39E-16	1.02E-16	6.41E-16
ENE	5500	Ac-228	2.99E-09	5.39E-16	1.02E-16	6.41E-16
ENE	5500	Th-228	2.99E-09	5.39E-16	1.02E-16	6.41E-16
ENE	5500	Ra-224	2.99E-09	5.39E-16	1.02E-16	6.41E-16
ENE	5500	Rn-220	4.28E-09	0.00E+00	0.00E+00	0.00E+00
ENE	5500	Po-216	2.99E-09	5.39E-16	1.02E-16	6.41E-16
ENE	5500	Pb-212	2.99E-09	5.39E-16	1.02E-16	6.41E-16
ENE	5500	Bi-212	2.99E-09	5.39E-16	1.02E-16	6.41E-16
ENE	5500	Po-212	1.92E-09	3.45E-16	6.55E-17	4.11E-16
ENE	5500	Tl-208	1.08E-09	1.94E-16	3.67E-17	2.30E-16
ENE	7000	U-238	5.23E-10	9.42E-17	2.04E-17	1.15E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
ENE	7000	Th-234	5.23E-10	9.42E-17	2.04E-17	1.15E-16
ENE	7000	Pa-234m	5.22E-10	9.40E-17	2.03E-17	1.14E-16
ENE	7000	Pa-234	5.16E-10	9.28E-17	2.01E-17	1.13E-16
ENE	7000	U-234	5.23E-10	9.42E-17	2.04E-17	1.15E-16
ENE	7000	Th-230	5.23E-10	9.42E-17	2.04E-17	1.15E-16
ENE	7000	Ra-226	4.54E-09	8.17E-16	1.77E-16	9.94E-16
ENE	7000	Rn-222	6.86E-09	0.00E+00	0.00E+00	0.00E+00
ENE	7000	Po-218	4.54E-09	8.17E-16	1.77E-16	9.94E-16
ENE	7000	Pb-214	4.54E-09	8.17E-16	1.77E-16	9.94E-16
ENE	7000	Bi-214	4.54E-09	8.17E-16	1.77E-16	9.94E-16
ENE	7000	Po-214	4.54E-09	8.17E-16	1.77E-16	9.94E-16
ENE	7000	Pb-210	4.41E-09	7.93E-16	1.71E-16	9.64E-16
ENE	7000	Bi-210	4.41E-09	7.93E-16	1.71E-16	9.64E-16
ENE	7000	Po-210	4.41E-09	7.93E-16	1.71E-16	9.64E-16
ENE	7000	At-218	9.08E-13	1.63E-19	3.53E-20	1.99E-19
ENE	7000	Th-232	1.33E-10	2.40E-17	5.19E-18	2.92E-17
ENE	7000	Ra-228	2.01E-09	3.62E-16	7.83E-17	4.41E-16
ENE	7000	Ac-228	2.01E-09	3.62E-16	7.83E-17	4.41E-16
ENE	7000	Th-228	2.01E-09	3.62E-16	7.83E-17	4.41E-16
ENE	7000	Ra-224	2.01E-09	3.62E-16	7.83E-17	4.41E-16
ENE	7000	Rn-220	3.04E-09	0.00E+00	0.00E+00	0.00E+00
ENE	7000	Po-216	2.01E-09	3.62E-16	7.83E-17	4.41E-16
ENE	7000	Pb-212	2.01E-09	3.62E-16	7.83E-17	4.41E-16
ENE	7000	Bi-212	2.01E-09	3.62E-16	7.83E-17	4.41E-16
ENE	7000	Po-212	1.29E-09	2.32E-16	5.02E-17	2.82E-16
ENE	7000	Tl-208	7.23E-10	1.30E-16	2.81E-17	1.58E-16
NE	50	U-238	7.22E-06	1.30E-12	7.70E-15	1.31E-12
NE	50	Th-234	7.22E-06	1.30E-12	7.70E-15	1.31E-12
NE	50	Pa-234m	7.20E-06	1.30E-12	7.69E-15	1.30E-12
NE	50	Pa-234	7.12E-06	1.28E-12	7.59E-15	1.29E-12
NE	50	U-234	7.22E-06	1.30E-12	7.70E-15	1.31E-12
NE	50	Th-230	7.22E-06	1.30E-12	7.70E-15	1.31E-12
NE	50	Ra-226	6.26E-05	1.13E-11	6.69E-14	1.13E-11
NE	50	Rn-222	6.34E-05	0.00E+00	0.00E+00	0.00E+00
NE	50	Po-218	6.26E-05	1.13E-11	6.69E-14	1.13E-11
NE	50	Pb-214	6.26E-05	1.13E-11	6.69E-14	1.13E-11
NE	50	Bi-214	6.26E-05	1.13E-11	6.69E-14	1.13E-11
NE	50	Po-214	6.26E-05	1.13E-11	6.68E-14	1.13E-11
NE	50	Pb-210	6.08E-05	1.09E-11	6.49E-14	1.10E-11
NE	50	Bi-210	6.08E-05	1.09E-11	6.49E-14	1.10E-11
NE	50	Po-210	6.08E-05	1.09E-11	6.49E-14	1.10E-11
NE	50	At-218	1.25E-08	2.25E-15	1.34E-17	2.27E-15
NE	50	Th-232	1.84E-06	3.31E-13	1.96E-15	3.33E-13
NE	50	Ra-228	2.78E-05	5.00E-12	2.96E-14	5.03E-12
NE	50	Ac-228	2.78E-05	5.00E-12	2.96E-14	5.03E-12
NE	50	Th-228	2.78E-05	5.00E-12	2.96E-14	5.03E-12
NE	50	Ra-224	2.78E-05	5.00E-12	2.96E-14	5.03E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NE	50	Rn-220	2.81E-05	0.00E+00	0.00E+00	0.00E+00
NE	50	Po-216	2.78E-05	5.00E-12	2.96E-14	5.03E-12
NE	50	Pb-212	2.78E-05	5.00E-12	2.96E-14	5.03E-12
NE	50	Bi-212	2.78E-05	5.00E-12	2.96E-14	5.03E-12
NE	50	Po-212	1.78E-05	3.20E-12	1.90E-14	3.22E-12
NE	50	Tl-208	9.98E-06	1.80E-12	1.06E-14	1.81E-12
NE	100	U-238	2.21E-06	3.99E-13	3.34E-15	4.02E-13
NE	100	Th-234	2.21E-06	3.99E-13	3.34E-15	4.02E-13
NE	100	Pa-234m	2.21E-06	3.98E-13	3.34E-15	4.01E-13
NE	100	Pa-234	2.18E-06	3.93E-13	3.30E-15	3.96E-13
NE	100	U-234	2.21E-06	3.99E-13	3.34E-15	4.02E-13
NE	100	Th-230	2.21E-06	3.99E-13	3.34E-15	4.02E-13
NE	100	Ra-226	1.92E-05	3.46E-12	2.90E-14	3.49E-12
NE	100	Rn-222	1.99E-05	0.00E+00	0.00E+00	0.00E+00
NE	100	Po-218	1.92E-05	3.46E-12	2.90E-14	3.49E-12
NE	100	Pb-214	1.92E-05	3.46E-12	2.90E-14	3.49E-12
NE	100	Bi-214	1.92E-05	3.46E-12	2.90E-14	3.49E-12
NE	100	Po-214	1.92E-05	3.46E-12	2.90E-14	3.49E-12
NE	100	Pb-210	1.86E-05	3.36E-12	2.81E-14	3.38E-12
NE	100	Bi-210	1.86E-05	3.36E-12	2.81E-14	3.38E-12
NE	100	Po-210	1.86E-05	3.36E-12	2.81E-14	3.38E-12
NE	100	At-218	3.84E-09	6.92E-16	5.80E-18	6.97E-16
NE	100	Th-232	5.65E-07	1.02E-13	8.52E-16	1.02E-13
NE	100	Ra-228	8.52E-06	1.53E-12	1.29E-14	1.55E-12
NE	100	Ac-228	8.52E-06	1.53E-12	1.29E-14	1.55E-12
NE	100	Th-228	8.52E-06	1.53E-12	1.29E-14	1.55E-12
NE	100	Ra-224	8.52E-06	1.53E-12	1.29E-14	1.55E-12
NE	100	Rn-220	8.83E-06	0.00E+00	0.00E+00	0.00E+00
NE	100	Po-216	8.52E-06	1.53E-12	1.29E-14	1.55E-12
NE	100	Pb-212	8.52E-06	1.53E-12	1.29E-14	1.55E-12
NE	100	Bi-212	8.52E-06	1.53E-12	1.29E-14	1.55E-12
NE	100	Po-212	5.46E-06	9.83E-13	8.24E-15	9.91E-13
NE	100	Tl-208	3.06E-06	5.51E-13	4.62E-15	5.56E-13
NE	150	U-238	1.08E-06	1.95E-13	2.20E-15	1.97E-13
NE	150	Th-234	1.08E-06	1.95E-13	2.20E-15	1.97E-13
NE	150	Pa-234m	1.08E-06	1.95E-13	2.20E-15	1.97E-13
NE	150	Pa-234	1.07E-06	1.92E-13	2.17E-15	1.95E-13
NE	150	U-234	1.08E-06	1.95E-13	2.20E-15	1.97E-13
NE	150	Th-230	1.08E-06	1.95E-13	2.20E-15	1.97E-13
NE	150	Ra-226	9.41E-06	1.69E-12	1.91E-14	1.71E-12
NE	150	Rn-222	9.93E-06	0.00E+00	0.00E+00	0.00E+00
NE	150	Po-218	9.41E-06	1.69E-12	1.91E-14	1.71E-12
NE	150	Pb-214	9.41E-06	1.69E-12	1.91E-14	1.71E-12
NE	150	Bi-214	9.41E-06	1.69E-12	1.91E-14	1.71E-12
NE	150	Po-214	9.41E-06	1.69E-12	1.91E-14	1.71E-12
NE	150	Pb-210	9.13E-06	1.64E-12	1.85E-14	1.66E-12
NE	150	Bi-210	9.13E-06	1.64E-12	1.85E-14	1.66E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NE	150	Po-210	9.13E-06	1.64E-12	1.85E-14	1.66E-12
NE	150	At-218	1.88E-09	3.39E-16	3.82E-18	3.43E-16
NE	150	Th-232	2.77E-07	4.98E-14	5.62E-16	5.03E-14
NE	150	Ra-228	4.17E-06	7.51E-13	8.47E-15	7.59E-13
NE	150	Ac-228	4.17E-06	7.51E-13	8.47E-15	7.59E-13
NE	150	Th-228	4.17E-06	7.51E-13	8.47E-15	7.59E-13
NE	150	Ra-224	4.17E-06	7.51E-13	8.47E-15	7.59E-13
NE	150	Rn-220	4.40E-06	0.00E+00	0.00E+00	0.00E+00
NE	150	Po-216	4.17E-06	7.51E-13	8.47E-15	7.59E-13
NE	150	Pb-212	4.17E-06	7.51E-13	8.47E-15	7.59E-13
NE	150	Bi-212	4.17E-06	7.51E-13	8.47E-15	7.59E-13
NE	150	Po-212	2.67E-06	4.81E-13	5.43E-15	4.87E-13
NE	150	Tl-208	1.50E-06	2.70E-13	3.04E-15	2.73E-13
NE	250	U-238	4.21E-07	7.58E-14	1.30E-15	7.71E-14
NE	250	Th-234	4.21E-07	7.58E-14	1.30E-15	7.71E-14
NE	250	Pa-234m	4.20E-07	7.56E-14	1.30E-15	7.69E-14
NE	250	Pa-234	4.15E-07	7.47E-14	1.28E-15	7.60E-14
NE	250	U-234	4.21E-07	7.58E-14	1.30E-15	7.71E-14
NE	250	Th-230	4.21E-07	7.58E-14	1.30E-15	7.71E-14
NE	250	Ra-226	3.65E-06	6.57E-13	1.13E-14	6.69E-13
NE	250	Rn-222	3.95E-06	0.00E+00	0.00E+00	0.00E+00
NE	250	Po-218	3.65E-06	6.57E-13	1.13E-14	6.69E-13
NE	250	Pb-214	3.65E-06	6.57E-13	1.13E-14	6.69E-13
NE	250	Bi-214	3.65E-06	6.57E-13	1.13E-14	6.69E-13
NE	250	Po-214	3.65E-06	6.57E-13	1.13E-14	6.69E-13
NE	250	Pb-210	3.54E-06	6.38E-13	1.10E-14	6.49E-13
NE	250	Bi-210	3.54E-06	6.38E-13	1.10E-14	6.49E-13
NE	250	Po-210	3.54E-06	6.38E-13	1.10E-14	6.49E-13
NE	250	At-218	7.30E-10	1.31E-16	2.26E-18	1.34E-16
NE	250	Th-232	1.07E-07	1.93E-14	3.32E-16	1.96E-14
NE	250	Ra-228	1.62E-06	2.91E-13	5.01E-15	2.96E-13
NE	250	Ac-228	1.62E-06	2.91E-13	5.01E-15	2.96E-13
NE	250	Th-228	1.62E-06	2.91E-13	5.01E-15	2.96E-13
NE	250	Ra-224	1.62E-06	2.91E-13	5.01E-15	2.96E-13
NE	250	Rn-220	1.75E-06	0.00E+00	0.00E+00	0.00E+00
NE	250	Po-216	1.62E-06	2.91E-13	5.01E-15	2.96E-13
NE	250	Pb-212	1.62E-06	2.91E-13	5.01E-15	2.96E-13
NE	250	Bi-212	1.62E-06	2.91E-13	5.01E-15	2.96E-13
NE	250	Po-212	1.04E-06	1.87E-13	3.21E-15	1.90E-13
NE	250	Tl-208	5.82E-07	1.05E-13	1.80E-15	1.07E-13
NE	350	U-238	2.22E-07	4.00E-14	9.19E-16	4.09E-14
NE	350	Th-234	2.22E-07	4.00E-14	9.19E-16	4.09E-14
NE	350	Pa-234m	2.22E-07	3.99E-14	9.17E-16	4.08E-14
NE	350	Pa-234	2.19E-07	3.94E-14	9.05E-16	4.03E-14
NE	350	U-234	2.22E-07	4.00E-14	9.19E-16	4.09E-14
NE	350	Th-230	2.22E-07	4.00E-14	9.19E-16	4.09E-14
NE	350	Ra-226	1.93E-06	3.47E-13	7.97E-15	3.55E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NE	350	Rn-222	2.12E-06	0.00E+00	0.00E+00	0.00E+00
NE	350	Po-218	1.93E-06	3.47E-13	7.97E-15	3.55E-13
NE	350	Pb-214	1.93E-06	3.47E-13	7.97E-15	3.55E-13
NE	350	Bi-214	1.93E-06	3.47E-13	7.97E-15	3.55E-13
NE	350	Po-214	1.93E-06	3.47E-13	7.97E-15	3.55E-13
NE	350	Pb-210	1.87E-06	3.36E-13	7.73E-15	3.44E-13
NE	350	Bi-210	1.87E-06	3.36E-13	7.73E-15	3.44E-13
NE	350	Po-210	1.87E-06	3.36E-13	7.73E-15	3.44E-13
NE	350	At-218	3.85E-10	6.93E-17	1.59E-18	7.09E-17
NE	350	Th-232	5.66E-08	1.02E-14	2.34E-16	1.04E-14
NE	350	Ra-228	8.54E-07	1.54E-13	3.53E-15	1.57E-13
NE	350	Ac-228	8.54E-07	1.54E-13	3.53E-15	1.57E-13
NE	350	Th-228	8.54E-07	1.54E-13	3.53E-15	1.57E-13
NE	350	Ra-224	8.54E-07	1.54E-13	3.53E-15	1.57E-13
NE	350	Rn-220	9.41E-07	0.00E+00	0.00E+00	0.00E+00
NE	350	Po-216	8.54E-07	1.54E-13	3.53E-15	1.57E-13
NE	350	Pb-212	8.54E-07	1.54E-13	3.53E-15	1.57E-13
NE	350	Bi-212	8.54E-07	1.54E-13	3.53E-15	1.57E-13
NE	350	Po-212	5.47E-07	9.85E-14	2.26E-15	1.01E-13
NE	350	Tl-208	3.07E-07	5.52E-14	1.27E-15	5.65E-14
NE	450	U-238	1.37E-07	2.47E-14	7.08E-16	2.54E-14
NE	450	Th-234	1.37E-07	2.47E-14	7.08E-16	2.54E-14
NE	450	Pa-234m	1.37E-07	2.46E-14	7.06E-16	2.53E-14
NE	450	Pa-234	1.35E-07	2.43E-14	6.98E-16	2.50E-14
NE	450	U-234	1.37E-07	2.47E-14	7.08E-16	2.54E-14
NE	450	Th-230	1.37E-07	2.47E-14	7.08E-16	2.54E-14
NE	450	Ra-226	1.19E-06	2.14E-13	6.14E-15	2.20E-13
NE	450	Rn-222	1.33E-06	0.00E+00	0.00E+00	0.00E+00
NE	450	Po-218	1.19E-06	2.14E-13	6.14E-15	2.20E-13
NE	450	Pb-214	1.19E-06	2.14E-13	6.14E-15	2.20E-13
NE	450	Bi-214	1.19E-06	2.14E-13	6.14E-15	2.20E-13
NE	450	Po-214	1.19E-06	2.14E-13	6.14E-15	2.20E-13
NE	450	Pb-210	1.15E-06	2.08E-13	5.96E-15	2.14E-13
NE	450	Bi-210	1.15E-06	2.08E-13	5.96E-15	2.14E-13
NE	450	Po-210	1.15E-06	2.08E-13	5.96E-15	2.14E-13
NE	450	At-218	2.38E-10	4.28E-17	1.23E-18	4.40E-17
NE	450	Th-232	3.50E-08	6.29E-15	1.81E-16	6.47E-15
NE	450	Ra-228	5.27E-07	9.49E-14	2.72E-15	9.77E-14
NE	450	Ac-228	5.27E-07	9.49E-14	2.72E-15	9.77E-14
NE	450	Th-228	5.27E-07	9.49E-14	2.72E-15	9.77E-14
NE	450	Ra-224	5.27E-07	9.49E-14	2.72E-15	9.77E-14
NE	450	Rn-220	5.90E-07	0.00E+00	0.00E+00	0.00E+00
NE	450	Po-216	5.27E-07	9.49E-14	2.72E-15	9.77E-14
NE	450	Pb-212	5.27E-07	9.49E-14	2.72E-15	9.77E-14
NE	450	Bi-212	5.27E-07	9.49E-14	2.72E-15	9.77E-14
NE	450	Po-212	3.38E-07	6.08E-14	1.75E-15	6.26E-14
NE	450	Tl-208	1.89E-07	3.41E-14	9.78E-16	3.51E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NE	750	U-238	5.12E-08	9.21E-15	4.17E-16	9.63E-15
NE	750	Th-234	5.12E-08	9.21E-15	4.17E-16	9.63E-15
NE	750	Pa-234m	5.11E-08	9.19E-15	4.16E-16	9.61E-15
NE	750	Pa-234	5.05E-08	9.08E-15	4.11E-16	9.49E-15
NE	750	U-234	5.12E-08	9.21E-15	4.17E-16	9.63E-15
NE	750	Th-230	5.12E-08	9.21E-15	4.17E-16	9.63E-15
NE	750	Ra-226	4.44E-07	7.99E-14	3.62E-15	8.36E-14
NE	750	Rn-222	5.12E-07	0.00E+00	0.00E+00	0.00E+00
NE	750	Po-218	4.44E-07	7.99E-14	3.62E-15	8.36E-14
NE	750	Pb-214	4.44E-07	7.99E-14	3.62E-15	8.36E-14
NE	750	Bi-214	4.44E-07	7.99E-14	3.62E-15	8.36E-14
NE	750	Po-214	4.44E-07	7.99E-14	3.61E-15	8.35E-14
NE	750	Pb-210	4.31E-07	7.76E-14	3.51E-15	8.11E-14
NE	750	Bi-210	4.31E-07	7.76E-14	3.51E-15	8.11E-14
NE	750	Po-210	4.31E-07	7.76E-14	3.51E-15	8.11E-14
NE	750	At-218	8.88E-11	1.60E-17	7.23E-19	1.67E-17
NE	750	Th-232	1.31E-08	2.35E-15	1.06E-16	2.46E-15
NE	750	Ra-228	1.97E-07	3.54E-14	1.60E-15	3.70E-14
NE	750	Ac-228	1.97E-07	3.54E-14	1.60E-15	3.70E-14
NE	750	Th-228	1.97E-07	3.54E-14	1.60E-15	3.70E-14
NE	750	Ra-224	1.97E-07	3.54E-14	1.60E-15	3.70E-14
NE	750	Rn-220	2.27E-07	0.00E+00	0.00E+00	0.00E+00
NE	750	Po-216	1.97E-07	3.54E-14	1.60E-15	3.70E-14
NE	750	Pb-212	1.97E-07	3.54E-14	1.60E-15	3.70E-14
NE	750	Bi-212	1.97E-07	3.54E-14	1.60E-15	3.70E-14
NE	750	Po-212	1.26E-07	2.27E-14	1.03E-15	2.37E-14
NE	750	Tl-208	7.07E-08	1.27E-14	5.76E-16	1.33E-14
NE	1500	U-238	1.45E-08	2.61E-15	2.02E-16	2.82E-15
NE	1500	Th-234	1.45E-08	2.61E-15	2.02E-16	2.82E-15
NE	1500	Pa-234m	1.45E-08	2.61E-15	2.02E-16	2.81E-15
NE	1500	Pa-234	1.43E-08	2.58E-15	1.99E-16	2.78E-15
NE	1500	U-234	1.45E-08	2.61E-15	2.02E-16	2.82E-15
NE	1500	Th-230	1.45E-08	2.61E-15	2.02E-16	2.82E-15
NE	1500	Ra-226	1.26E-07	2.27E-14	1.76E-15	2.44E-14
NE	1500	Rn-222	1.52E-07	0.00E+00	0.00E+00	0.00E+00
NE	1500	Po-218	1.26E-07	2.27E-14	1.76E-15	2.44E-14
NE	1500	Pb-214	1.26E-07	2.27E-14	1.76E-15	2.44E-14
NE	1500	Bi-214	1.26E-07	2.27E-14	1.76E-15	2.44E-14
NE	1500	Po-214	1.26E-07	2.27E-14	1.76E-15	2.44E-14
NE	1500	Pb-210	1.22E-07	2.20E-14	1.70E-15	2.37E-14
NE	1500	Bi-210	1.22E-07	2.20E-14	1.70E-15	2.37E-14
NE	1500	Po-210	1.22E-07	2.20E-14	1.70E-15	2.37E-14
NE	1500	At-218	2.52E-11	4.54E-18	3.51E-19	4.89E-18
NE	1500	Th-232	3.70E-09	6.67E-16	5.16E-17	7.18E-16
NE	1500	Ra-228	5.59E-08	1.01E-14	7.78E-16	1.08E-14
NE	1500	Ac-228	5.59E-08	1.01E-14	7.78E-16	1.08E-14
NE	1500	Th-228	5.59E-08	1.01E-14	7.78E-16	1.08E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NE	1500	Ra-224	5.59E-08	1.01E-14	7.78E-16	1.08E-14
NE	1500	Rn-220	6.75E-08	0.00E+00	0.00E+00	0.00E+00
NE	1500	Po-216	5.59E-08	1.01E-14	7.78E-16	1.08E-14
NE	1500	Pb-212	5.59E-08	1.01E-14	7.78E-16	1.08E-14
NE	1500	Bi-212	5.59E-08	1.01E-14	7.78E-16	1.08E-14
NE	1500	Po-212	3.58E-08	6.45E-15	4.99E-16	6.94E-15
NE	1500	Tl-208	2.01E-08	3.61E-15	2.80E-16	3.89E-15
NE	2500	U-238	6.01E-09	1.08E-15	1.19E-16	1.20E-15
NE	2500	Th-234	6.01E-09	1.08E-15	1.19E-16	1.20E-15
NE	2500	Pa-234m	6.00E-09	1.08E-15	1.18E-16	1.20E-15
NE	2500	Pa-234	5.93E-09	1.07E-15	1.17E-16	1.18E-15
NE	2500	U-234	6.01E-09	1.08E-15	1.19E-16	1.20E-15
NE	2500	Th-230	6.01E-09	1.08E-15	1.19E-16	1.20E-15
NE	2500	Ra-226	5.22E-08	9.39E-15	1.03E-15	1.04E-14
NE	2500	Rn-222	6.55E-08	0.00E+00	0.00E+00	0.00E+00
NE	2500	Po-218	5.22E-08	9.39E-15	1.03E-15	1.04E-14
NE	2500	Pb-214	5.22E-08	9.39E-15	1.03E-15	1.04E-14
NE	2500	Bi-214	5.22E-08	9.39E-15	1.03E-15	1.04E-14
NE	2500	Po-214	5.22E-08	9.39E-15	1.03E-15	1.04E-14
NE	2500	Pb-210	5.06E-08	9.12E-15	1.00E-15	1.01E-14
NE	2500	Bi-210	5.06E-08	9.12E-15	1.00E-15	1.01E-14
NE	2500	Po-210	5.06E-08	9.12E-15	1.00E-15	1.01E-14
NE	2500	At-218	1.04E-11	1.88E-18	2.06E-19	2.08E-18
NE	2500	Th-232	1.53E-09	2.76E-16	3.03E-17	3.06E-16
NE	2500	Ra-228	2.31E-08	4.16E-15	4.57E-16	4.62E-15
NE	2500	Ac-228	2.31E-08	4.16E-15	4.57E-16	4.62E-15
NE	2500	Th-228	2.31E-08	4.16E-15	4.57E-16	4.62E-15
NE	2500	Ra-224	2.31E-08	4.16E-15	4.57E-16	4.62E-15
NE	2500	Rn-220	2.90E-08	0.00E+00	0.00E+00	0.00E+00
NE	2500	Po-216	2.31E-08	4.16E-15	4.57E-16	4.62E-15
NE	2500	Pb-212	2.31E-08	4.16E-15	4.57E-16	4.62E-15
NE	2500	Bi-212	2.31E-08	4.16E-15	4.57E-16	4.62E-15
NE	2500	Po-212	1.48E-08	2.67E-15	2.93E-16	2.96E-15
NE	2500	Tl-208	8.31E-09	1.50E-15	1.64E-16	1.66E-15
NE	3500	U-238	3.47E-09	6.25E-16	8.31E-17	7.08E-16
NE	3500	Th-234	3.47E-09	6.25E-16	8.31E-17	7.08E-16
NE	3500	Pa-234m	3.46E-09	6.24E-16	8.29E-17	7.07E-16
NE	3500	Pa-234	3.42E-09	6.16E-16	8.19E-17	6.98E-16
NE	3500	U-234	3.47E-09	6.25E-16	8.31E-17	7.08E-16
NE	3500	Th-230	3.47E-09	6.25E-16	8.31E-17	7.08E-16
NE	3500	Ra-226	3.01E-08	5.42E-15	7.21E-16	6.14E-15
NE	3500	Rn-222	3.92E-08	0.00E+00	0.00E+00	0.00E+00
NE	3500	Po-218	3.01E-08	5.42E-15	7.21E-16	6.14E-15
NE	3500	Pb-214	3.01E-08	5.42E-15	7.21E-16	6.14E-15
NE	3500	Bi-214	3.01E-08	5.42E-15	7.21E-16	6.14E-15
NE	3500	Po-214	3.01E-08	5.42E-15	7.21E-16	6.14E-15
NE	3500	Pb-210	2.92E-08	5.26E-15	7.00E-16	5.96E-15

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NE	3500	Bi-210	2.92E-08	5.26E-15	7.00E-16	5.96E-15
NE	3500	Po-210	2.92E-08	5.26E-15	7.00E-16	5.96E-15
NE	3500	At-218	6.02E-12	1.08E-18	1.44E-19	1.23E-18
NE	3500	Th-232	8.85E-10	1.59E-16	2.12E-17	1.81E-16
NE	3500	Ra-228	1.34E-08	2.40E-15	3.20E-16	2.72E-15
NE	3500	Ac-228	1.34E-08	2.40E-15	3.20E-16	2.72E-15
NE	3500	Th-228	1.34E-08	2.40E-15	3.20E-16	2.72E-15
NE	3500	Ra-224	1.34E-08	2.40E-15	3.20E-16	2.72E-15
NE	3500	Rn-220	1.74E-08	0.00E+00	0.00E+00	0.00E+00
NE	3500	Po-216	1.34E-08	2.40E-15	3.20E-16	2.72E-15
NE	3500	Pb-212	1.34E-08	2.40E-15	3.20E-16	2.72E-15
NE	3500	Bi-212	1.34E-08	2.40E-15	3.20E-16	2.72E-15
NE	3500	Po-212	8.56E-09	1.54E-15	2.05E-16	1.75E-15
NE	3500	Tl-208	4.80E-09	8.64E-16	1.15E-16	9.79E-16
NE	4500	U-238	2.35E-09	4.24E-16	6.35E-17	4.87E-16
NE	4500	Th-234	2.35E-09	4.24E-16	6.35E-17	4.87E-16
NE	4500	Pa-234m	2.35E-09	4.23E-16	6.33E-17	4.86E-16
NE	4500	Pa-234	2.32E-09	4.17E-16	6.26E-17	4.80E-16
NE	4500	U-234	2.35E-09	4.24E-16	6.35E-17	4.87E-16
NE	4500	Th-230	2.35E-09	4.24E-16	6.35E-17	4.87E-16
NE	4500	Ra-226	2.04E-08	3.68E-15	5.51E-16	4.23E-15
NE	4500	Rn-222	2.75E-08	0.00E+00	0.00E+00	0.00E+00
NE	4500	Po-218	2.04E-08	3.68E-15	5.51E-16	4.23E-15
NE	4500	Pb-214	2.04E-08	3.68E-15	5.51E-16	4.23E-15
NE	4500	Bi-214	2.04E-08	3.68E-15	5.51E-16	4.23E-15
NE	4500	Po-214	2.04E-08	3.67E-15	5.51E-16	4.22E-15
NE	4500	Pb-210	1.98E-08	3.57E-15	5.34E-16	4.10E-15
NE	4500	Bi-210	1.98E-08	3.57E-15	5.34E-16	4.10E-15
NE	4500	Po-210	1.98E-08	3.57E-15	5.34E-16	4.10E-15
NE	4500	At-218	4.08E-12	7.35E-19	1.10E-19	8.45E-19
NE	4500	Th-232	6.00E-10	1.08E-16	1.62E-17	1.24E-16
NE	4500	Ra-228	9.05E-09	1.63E-15	2.44E-16	1.87E-15
NE	4500	Ac-228	9.05E-09	1.63E-15	2.44E-16	1.87E-15
NE	4500	Th-228	9.05E-09	1.63E-15	2.44E-16	1.87E-15
NE	4500	Ra-224	9.05E-09	1.63E-15	2.44E-16	1.87E-15
NE	4500	Rn-220	1.22E-08	0.00E+00	0.00E+00	0.00E+00
NE	4500	Po-216	9.05E-09	1.63E-15	2.44E-16	1.87E-15
NE	4500	Pb-212	9.05E-09	1.63E-15	2.44E-16	1.87E-15
NE	4500	Bi-212	9.05E-09	1.63E-15	2.44E-16	1.87E-15
NE	4500	Po-212	5.80E-09	1.04E-15	1.56E-16	1.20E-15
NE	4500	Tl-208	3.25E-09	5.85E-16	8.77E-17	6.73E-16
NE	5500	U-238	1.73E-09	3.11E-16	5.12E-17	3.62E-16
NE	5500	Th-234	1.73E-09	3.11E-16	5.12E-17	3.62E-16
NE	5500	Pa-234m	1.72E-09	3.10E-16	5.11E-17	3.62E-16
NE	5500	Pa-234	1.70E-09	3.07E-16	5.05E-17	3.57E-16
NE	5500	U-234	1.73E-09	3.11E-16	5.12E-17	3.62E-16
NE	5500	Th-230	1.73E-09	3.11E-16	5.12E-17	3.62E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NE	5500	Ra-226	1.50E-08	2.70E-15	4.44E-16	3.14E-15
NE	5500	Rn-222	2.07E-08	0.00E+00	0.00E+00	0.00E+00
NE	5500	Po-218	1.50E-08	2.70E-15	4.44E-16	3.14E-15
NE	5500	Pb-214	1.50E-08	2.70E-15	4.44E-16	3.14E-15
NE	5500	Bi-214	1.50E-08	2.70E-15	4.44E-16	3.14E-15
NE	5500	Po-214	1.50E-08	2.70E-15	4.44E-16	3.14E-15
NE	5500	Pb-210	1.46E-08	2.62E-15	4.31E-16	3.05E-15
NE	5500	Bi-210	1.46E-08	2.62E-15	4.31E-16	3.05E-15
NE	5500	Po-210	1.46E-08	2.62E-15	4.31E-16	3.05E-15
NE	5500	At-218	3.00E-12	5.40E-19	8.88E-20	6.28E-19
NE	5500	Th-232	4.41E-10	7.93E-17	1.31E-17	9.24E-17
NE	5500	Ra-228	6.65E-09	1.20E-15	1.97E-16	1.39E-15
NE	5500	Ac-228	6.65E-09	1.20E-15	1.97E-16	1.39E-15
NE	5500	Th-228	6.65E-09	1.20E-15	1.97E-16	1.39E-15
NE	5500	Ra-224	6.65E-09	1.20E-15	1.97E-16	1.39E-15
NE	5500	Rn-220	9.18E-09	0.00E+00	0.00E+00	0.00E+00
NE	5500	Po-216	6.65E-09	1.20E-15	1.97E-16	1.39E-15
NE	5500	Pb-212	6.65E-09	1.20E-15	1.97E-16	1.39E-15
NE	5500	Bi-212	6.65E-09	1.20E-15	1.97E-16	1.39E-15
NE	5500	Po-212	4.26E-09	7.67E-16	1.26E-16	8.93E-16
NE	5500	Tl-208	2.39E-09	4.30E-16	7.08E-17	5.01E-16
NE	7000	U-238	1.17E-09	2.11E-16	3.92E-17	2.50E-16
NE	7000	Th-234	1.17E-09	2.11E-16	3.92E-17	2.50E-16
NE	7000	Pa-234m	1.17E-09	2.10E-16	3.91E-17	2.49E-16
NE	7000	Pa-234	1.15E-09	2.08E-16	3.86E-17	2.46E-16
NE	7000	U-234	1.17E-09	2.11E-16	3.92E-17	2.50E-16
NE	7000	Th-230	1.17E-09	2.11E-16	3.92E-17	2.50E-16
NE	7000	Ra-226	1.02E-08	1.83E-15	3.40E-16	2.17E-15
NE	7000	Rn-222	1.48E-08	0.00E+00	0.00E+00	0.00E+00
NE	7000	Po-218	1.02E-08	1.83E-15	3.40E-16	2.17E-15
NE	7000	Pb-214	1.02E-08	1.83E-15	3.40E-16	2.17E-15
NE	7000	Bi-214	1.02E-08	1.83E-15	3.40E-16	2.17E-15
NE	7000	Po-214	1.02E-08	1.83E-15	3.40E-16	2.17E-15
NE	7000	Pb-210	9.86E-09	1.77E-15	3.30E-16	2.10E-15
NE	7000	Bi-210	9.86E-09	1.77E-15	3.30E-16	2.10E-15
NE	7000	Po-210	9.86E-09	1.77E-15	3.30E-16	2.10E-15
NE	7000	At-218	2.03E-12	3.66E-19	6.80E-20	4.34E-19
NE	7000	Th-232	2.99E-10	5.37E-17	9.99E-18	6.37E-17
NE	7000	Ra-228	4.50E-09	8.11E-16	1.51E-16	9.61E-16
NE	7000	Ac-228	4.50E-09	8.11E-16	1.51E-16	9.61E-16
NE	7000	Th-228	4.50E-09	8.11E-16	1.51E-16	9.61E-16
NE	7000	Ra-224	4.50E-09	8.11E-16	1.51E-16	9.61E-16
NE	7000	Rn-220	6.54E-09	0.00E+00	0.00E+00	0.00E+00
NE	7000	Po-216	4.50E-09	8.11E-16	1.51E-16	9.61E-16
NE	7000	Pb-212	4.50E-09	8.11E-16	1.51E-16	9.61E-16
NE	7000	Bi-212	4.50E-09	8.11E-16	1.51E-16	9.61E-16
NE	7000	Po-212	2.89E-09	5.20E-16	9.66E-17	6.16E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NE	7000	Tl-208	1.62E-09	2.91E-16	5.42E-17	3.45E-16
NNE	50	U-238	1.61E-05	2.89E-12	1.60E-14	2.91E-12
NNE	50	Th-234	1.61E-05	2.89E-12	1.60E-14	2.91E-12
NNE	50	Pa-234m	1.60E-05	2.88E-12	1.60E-14	2.90E-12
NNE	50	Pa-234	1.58E-05	2.85E-12	1.58E-14	2.86E-12
NNE	50	U-234	1.61E-05	2.89E-12	1.60E-14	2.91E-12
NNE	50	Th-230	1.61E-05	2.89E-12	1.60E-14	2.91E-12
NNE	50	Ra-226	1.39E-04	2.51E-11	1.39E-13	2.52E-11
NNE	50	Rn-222	1.41E-04	0.00E+00	0.00E+00	0.00E+00
NNE	50	Po-218	1.39E-04	2.51E-11	1.39E-13	2.52E-11
NNE	50	Pb-214	1.39E-04	2.51E-11	1.39E-13	2.52E-11
NNE	50	Bi-214	1.39E-04	2.51E-11	1.39E-13	2.52E-11
NNE	50	Po-214	1.39E-04	2.51E-11	1.39E-13	2.52E-11
NNE	50	Pb-210	1.35E-04	2.43E-11	1.35E-13	2.45E-11
NNE	50	Bi-210	1.35E-04	2.43E-11	1.35E-13	2.45E-11
NNE	50	Po-210	1.35E-04	2.43E-11	1.35E-13	2.45E-11
NNE	50	At-218	2.79E-08	5.01E-15	2.77E-17	5.04E-15
NNE	50	Th-232	4.09E-06	7.37E-13	4.08E-15	7.41E-13
NNE	50	Ra-228	6.18E-05	1.11E-11	6.15E-14	1.12E-11
NNE	50	Ac-228	6.18E-05	1.11E-11	6.15E-14	1.12E-11
NNE	50	Th-228	6.18E-05	1.11E-11	6.15E-14	1.12E-11
NNE	50	Ra-224	6.18E-05	1.11E-11	6.15E-14	1.12E-11
NNE	50	Rn-220	6.25E-05	0.00E+00	0.00E+00	0.00E+00
NNE	50	Po-216	6.18E-05	1.11E-11	6.15E-14	1.12E-11
NNE	50	Pb-212	6.18E-05	1.11E-11	6.15E-14	1.12E-11
NNE	50	Bi-212	6.18E-05	1.11E-11	6.15E-14	1.12E-11
NNE	50	Po-212	3.96E-05	7.12E-12	3.94E-14	7.16E-12
NNE	50	Tl-208	2.22E-05	3.99E-12	2.21E-14	4.02E-12
NNE	100	U-238	5.17E-06	9.30E-13	7.14E-15	9.38E-13
NNE	100	Th-234	5.17E-06	9.30E-13	7.14E-15	9.38E-13
NNE	100	Pa-234m	5.16E-06	9.28E-13	7.13E-15	9.36E-13
NNE	100	Pa-234	5.10E-06	9.17E-13	7.04E-15	9.24E-13
NNE	100	U-234	5.17E-06	9.30E-13	7.14E-15	9.38E-13
NNE	100	Th-230	5.17E-06	9.30E-13	7.14E-15	9.38E-13
NNE	100	Ra-226	4.49E-05	8.07E-12	6.20E-14	8.14E-12
NNE	100	Rn-222	4.64E-05	0.00E+00	0.00E+00	0.00E+00
NNE	100	Po-218	4.49E-05	8.07E-12	6.20E-14	8.14E-12
NNE	100	Pb-214	4.49E-05	8.07E-12	6.20E-14	8.14E-12
NNE	100	Bi-214	4.49E-05	8.07E-12	6.20E-14	8.14E-12
NNE	100	Po-214	4.48E-05	8.07E-12	6.19E-14	8.13E-12
NNE	100	Pb-210	4.35E-05	7.83E-12	6.01E-14	7.89E-12
NNE	100	Bi-210	4.35E-05	7.83E-12	6.01E-14	7.89E-12
NNE	100	Po-210	4.35E-05	7.83E-12	6.01E-14	7.89E-12
NNE	100	At-218	8.97E-09	1.61E-15	1.24E-17	1.63E-15
NNE	100	Th-232	1.32E-06	2.37E-13	1.82E-15	2.39E-13
NNE	100	Ra-228	1.99E-05	3.58E-12	2.75E-14	3.61E-12
NNE	100	Ac-228	1.99E-05	3.58E-12	2.75E-14	3.61E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NNE	100	Th-228	1.99E-05	3.58E-12	2.75E-14	3.61E-12
NNE	100	Ra-224	1.99E-05	3.58E-12	2.75E-14	3.61E-12
NNE	100	Rn-220	2.06E-05	0.00E+00	0.00E+00	0.00E+00
NNE	100	Po-216	1.99E-05	3.58E-12	2.75E-14	3.61E-12
NNE	100	Pb-212	1.99E-05	3.58E-12	2.75E-14	3.61E-12
NNE	100	Bi-212	1.99E-05	3.58E-12	2.75E-14	3.61E-12
NNE	100	Po-212	1.27E-05	2.29E-12	1.76E-14	2.31E-12
NNE	100	Tl-208	7.14E-06	1.29E-12	9.87E-15	1.30E-12
NNE	150	U-238	2.54E-06	4.57E-13	4.71E-15	4.62E-13
NNE	150	Th-234	2.54E-06	4.57E-13	4.71E-15	4.62E-13
NNE	150	Pa-234m	2.54E-06	4.56E-13	4.70E-15	4.61E-13
NNE	150	Pa-234	2.51E-06	4.51E-13	4.64E-15	4.56E-13
NNE	150	U-234	2.54E-06	4.57E-13	4.71E-15	4.62E-13
NNE	150	Th-230	2.54E-06	4.57E-13	4.71E-15	4.62E-13
NNE	150	Ra-226	2.21E-05	3.97E-12	4.08E-14	4.01E-12
NNE	150	Rn-222	2.32E-05	0.00E+00	0.00E+00	0.00E+00
NNE	150	Po-218	2.21E-05	3.97E-12	4.08E-14	4.01E-12
NNE	150	Pb-214	2.21E-05	3.97E-12	4.08E-14	4.01E-12
NNE	150	Bi-214	2.21E-05	3.97E-12	4.08E-14	4.01E-12
NNE	150	Po-214	2.20E-05	3.97E-12	4.08E-14	4.01E-12
NNE	150	Pb-210	2.14E-05	3.85E-12	3.96E-14	3.89E-12
NNE	150	Bi-210	2.14E-05	3.85E-12	3.96E-14	3.89E-12
NNE	150	Po-210	2.14E-05	3.85E-12	3.96E-14	3.89E-12
NNE	150	At-218	4.41E-09	7.94E-16	8.16E-18	8.02E-16
NNE	150	Th-232	6.48E-07	1.17E-13	1.20E-15	1.18E-13
NNE	150	Ra-228	9.78E-06	1.76E-12	1.81E-14	1.78E-12
NNE	150	Ac-228	9.78E-06	1.76E-12	1.81E-14	1.78E-12
NNE	150	Th-228	9.78E-06	1.76E-12	1.81E-14	1.78E-12
NNE	150	Ra-224	9.78E-06	1.76E-12	1.81E-14	1.78E-12
NNE	150	Rn-220	1.03E-05	0.00E+00	0.00E+00	0.00E+00
NNE	150	Po-216	9.78E-06	1.76E-12	1.81E-14	1.78E-12
NNE	150	Pb-212	9.78E-06	1.76E-12	1.81E-14	1.78E-12
NNE	150	Bi-212	9.78E-06	1.76E-12	1.81E-14	1.78E-12
NNE	150	Po-212	6.26E-06	1.13E-12	1.16E-14	1.14E-12
NNE	150	Tl-208	3.51E-06	6.32E-13	6.50E-15	6.39E-13
NNE	250	U-238	9.90E-07	1.78E-13	2.78E-15	1.81E-13
NNE	250	Th-234	9.90E-07	1.78E-13	2.78E-15	1.81E-13
NNE	250	Pa-234m	9.88E-07	1.78E-13	2.77E-15	1.81E-13
NNE	250	Pa-234	9.76E-07	1.76E-13	2.74E-15	1.78E-13
NNE	250	U-234	9.90E-07	1.78E-13	2.78E-15	1.81E-13
NNE	250	Th-230	9.90E-07	1.78E-13	2.78E-15	1.81E-13
NNE	250	Ra-226	8.59E-06	1.55E-12	2.41E-14	1.57E-12
NNE	250	Rn-222	9.24E-06	0.00E+00	0.00E+00	0.00E+00
NNE	250	Po-218	8.59E-06	1.55E-12	2.41E-14	1.57E-12
NNE	250	Pb-214	8.59E-06	1.55E-12	2.41E-14	1.57E-12
NNE	250	Bi-214	8.59E-06	1.55E-12	2.41E-14	1.57E-12
NNE	250	Po-214	8.59E-06	1.55E-12	2.41E-14	1.57E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NNE	250	Pb-210	8.34E-06	1.50E-12	2.34E-14	1.52E-12
NNE	250	Bi-210	8.34E-06	1.50E-12	2.34E-14	1.52E-12
NNE	250	Po-210	8.34E-06	1.50E-12	2.34E-14	1.52E-12
NNE	250	At-218	1.72E-09	3.09E-16	4.82E-18	3.14E-16
NNE	250	Th-232	2.52E-07	4.54E-14	7.09E-16	4.61E-14
NNE	250	Ra-228	3.81E-06	6.85E-13	1.07E-14	6.96E-13
NNE	250	Ac-228	3.81E-06	6.85E-13	1.07E-14	6.96E-13
NNE	250	Th-228	3.81E-06	6.85E-13	1.07E-14	6.96E-13
NNE	250	Ra-224	3.81E-06	6.85E-13	1.07E-14	6.96E-13
NNE	250	Rn-220	4.10E-06	0.00E+00	0.00E+00	0.00E+00
NNE	250	Po-216	3.81E-06	6.85E-13	1.07E-14	6.96E-13
NNE	250	Pb-212	3.81E-06	6.85E-13	1.07E-14	6.96E-13
NNE	250	Bi-212	3.81E-06	6.85E-13	1.07E-14	6.96E-13
NNE	250	Po-212	2.44E-06	4.39E-13	6.85E-15	4.46E-13
NNE	250	Tl-208	1.37E-06	2.46E-13	3.84E-15	2.50E-13
NNE	350	U-238	5.23E-07	9.42E-14	1.96E-15	9.62E-14
NNE	350	Th-234	5.23E-07	9.42E-14	1.96E-15	9.62E-14
NNE	350	Pa-234m	5.22E-07	9.40E-14	1.96E-15	9.60E-14
NNE	350	Pa-234	5.16E-07	9.29E-14	1.93E-15	9.48E-14
NNE	350	U-234	5.23E-07	9.42E-14	1.96E-15	9.62E-14
NNE	350	Th-230	5.23E-07	9.42E-14	1.96E-15	9.62E-14
NNE	350	Ra-226	4.54E-06	8.17E-13	1.70E-14	8.34E-13
NNE	350	Rn-222	4.97E-06	0.00E+00	0.00E+00	0.00E+00
NNE	350	Po-218	4.54E-06	8.17E-13	1.70E-14	8.34E-13
NNE	350	Pb-214	4.54E-06	8.17E-13	1.70E-14	8.34E-13
NNE	350	Bi-214	4.54E-06	8.17E-13	1.70E-14	8.34E-13
NNE	350	Po-214	4.54E-06	8.17E-13	1.70E-14	8.34E-13
NNE	350	Pb-210	4.41E-06	7.93E-13	1.65E-14	8.10E-13
NNE	350	Bi-210	4.41E-06	7.93E-13	1.65E-14	8.10E-13
NNE	350	Po-210	4.41E-06	7.93E-13	1.65E-14	8.10E-13
NNE	350	At-218	9.08E-10	1.63E-16	3.40E-18	1.67E-16
NNE	350	Th-232	1.33E-07	2.40E-14	5.00E-16	2.45E-14
NNE	350	Ra-228	2.01E-06	3.62E-13	7.55E-15	3.70E-13
NNE	350	Ac-228	2.01E-06	3.62E-13	7.55E-15	3.70E-13
NNE	350	Th-228	2.01E-06	3.62E-13	7.55E-15	3.70E-13
NNE	350	Ra-224	2.01E-06	3.62E-13	7.55E-15	3.70E-13
NNE	350	Rn-220	2.20E-06	0.00E+00	0.00E+00	0.00E+00
NNE	350	Po-216	2.01E-06	3.62E-13	7.55E-15	3.70E-13
NNE	350	Pb-212	2.01E-06	3.62E-13	7.55E-15	3.70E-13
NNE	350	Bi-212	2.01E-06	3.62E-13	7.55E-15	3.70E-13
NNE	350	Po-212	1.29E-06	2.32E-13	4.84E-15	2.37E-13
NNE	350	Tl-208	7.23E-07	1.30E-13	2.71E-15	1.33E-13
NNE	450	U-238	3.24E-07	5.83E-14	1.51E-15	5.98E-14
NNE	450	Th-234	3.24E-07	5.83E-14	1.51E-15	5.98E-14
NNE	450	Pa-234m	3.23E-07	5.82E-14	1.51E-15	5.97E-14
NNE	450	Pa-234	3.19E-07	5.75E-14	1.49E-15	5.89E-14
NNE	450	U-234	3.24E-07	5.83E-14	1.51E-15	5.98E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NNE	450	Th-230	3.24E-07	5.83E-14	1.51E-15	5.98E-14
NNE	450	Ra-226	2.81E-06	5.06E-13	1.31E-14	5.19E-13
NNE	450	Rn-222	3.12E-06	0.00E+00	0.00E+00	0.00E+00
NNE	450	Po-218	2.81E-06	5.06E-13	1.31E-14	5.19E-13
NNE	450	Pb-214	2.81E-06	5.06E-13	1.31E-14	5.19E-13
NNE	450	Bi-214	2.81E-06	5.06E-13	1.31E-14	5.19E-13
NNE	450	Po-214	2.81E-06	5.06E-13	1.31E-14	5.19E-13
NNE	450	Pb-210	2.73E-06	4.91E-13	1.27E-14	5.04E-13
NNE	450	Bi-210	2.73E-06	4.91E-13	1.27E-14	5.04E-13
NNE	450	Po-210	2.73E-06	4.91E-13	1.27E-14	5.04E-13
NNE	450	At-218	5.62E-10	1.01E-16	2.62E-18	1.04E-16
NNE	450	Th-232	8.26E-08	1.49E-14	3.86E-16	1.52E-14
NNE	450	Ra-228	1.25E-06	2.24E-13	5.82E-15	2.30E-13
NNE	450	Ac-228	1.25E-06	2.24E-13	5.82E-15	2.30E-13
NNE	450	Th-228	1.25E-06	2.24E-13	5.82E-15	2.30E-13
NNE	450	Ra-224	1.25E-06	2.24E-13	5.82E-15	2.30E-13
NNE	450	Rn-220	1.38E-06	0.00E+00	0.00E+00	0.00E+00
NNE	450	Po-216	1.25E-06	2.24E-13	5.82E-15	2.30E-13
NNE	450	Pb-212	1.25E-06	2.24E-13	5.82E-15	2.30E-13
NNE	450	Bi-212	1.25E-06	2.24E-13	5.82E-15	2.30E-13
NNE	450	Po-212	7.98E-07	1.44E-13	3.73E-15	1.47E-13
NNE	450	Tl-208	4.48E-07	8.06E-14	2.09E-15	8.26E-14
NNE	750	U-238	1.21E-07	2.18E-14	8.90E-16	2.27E-14
NNE	750	Th-234	1.21E-07	2.18E-14	8.90E-16	2.27E-14
NNE	750	Pa-234m	1.21E-07	2.18E-14	8.88E-16	2.27E-14
NNE	750	Pa-234	1.20E-07	2.15E-14	8.77E-16	2.24E-14
NNE	750	U-234	1.21E-07	2.18E-14	8.90E-16	2.27E-14
NNE	750	Th-230	1.21E-07	2.18E-14	8.90E-16	2.27E-14
NNE	750	Ra-226	1.05E-06	1.89E-13	7.72E-15	1.97E-13
NNE	750	Rn-222	1.20E-06	0.00E+00	0.00E+00	0.00E+00
NNE	750	Po-218	1.05E-06	1.89E-13	7.72E-15	1.97E-13
NNE	750	Pb-214	1.05E-06	1.89E-13	7.72E-15	1.97E-13
NNE	750	Bi-214	1.05E-06	1.89E-13	7.72E-15	1.97E-13
NNE	750	Po-214	1.05E-06	1.89E-13	7.72E-15	1.97E-13
NNE	750	Pb-210	1.02E-06	1.84E-13	7.49E-15	1.91E-13
NNE	750	Bi-210	1.02E-06	1.84E-13	7.49E-15	1.91E-13
NNE	750	Po-210	1.02E-06	1.84E-13	7.49E-15	1.91E-13
NNE	750	At-218	2.10E-10	3.79E-17	1.54E-18	3.94E-17
NNE	750	Th-232	3.09E-08	5.57E-15	2.27E-16	5.79E-15
NNE	750	Ra-228	4.67E-07	8.40E-14	3.42E-15	8.74E-14
NNE	750	Ac-228	4.67E-07	8.40E-14	3.42E-15	8.74E-14
NNE	750	Th-228	4.67E-07	8.40E-14	3.42E-15	8.74E-14
NNE	750	Ra-224	4.67E-07	8.40E-14	3.42E-15	8.74E-14
NNE	750	Rn-220	5.32E-07	0.00E+00	0.00E+00	0.00E+00
NNE	750	Po-216	4.67E-07	8.40E-14	3.42E-15	8.74E-14
NNE	750	Pb-212	4.67E-07	8.40E-14	3.42E-15	8.74E-14
NNE	750	Bi-212	4.67E-07	8.40E-14	3.42E-15	8.74E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NNE	750	Po-212	2.99E-07	5.38E-14	2.19E-15	5.60E-14
NNE	750	Tl-208	1.68E-07	3.02E-14	1.23E-15	3.14E-14
NNE	1500	U-238	3.47E-08	6.24E-15	4.32E-16	6.67E-15
NNE	1500	Th-234	3.47E-08	6.24E-15	4.32E-16	6.67E-15
NNE	1500	Pa-234m	3.46E-08	6.23E-15	4.31E-16	6.66E-15
NNE	1500	Pa-234	3.42E-08	6.15E-15	4.26E-16	6.58E-15
NNE	1500	U-234	3.47E-08	6.24E-15	4.32E-16	6.67E-15
NNE	1500	Th-230	3.47E-08	6.24E-15	4.32E-16	6.67E-15
NNE	1500	Ra-226	3.01E-07	5.42E-14	3.75E-15	5.79E-14
NNE	1500	Rn-222	3.59E-07	0.00E+00	0.00E+00	0.00E+00
NNE	1500	Po-218	3.01E-07	5.42E-14	3.75E-15	5.79E-14
NNE	1500	Pb-214	3.01E-07	5.42E-14	3.75E-15	5.79E-14
NNE	1500	Bi-214	3.01E-07	5.42E-14	3.75E-15	5.79E-14
NNE	1500	Po-214	3.01E-07	5.41E-14	3.75E-15	5.79E-14
NNE	1500	Pb-210	2.92E-07	5.26E-14	3.64E-15	5.62E-14
NNE	1500	Bi-210	2.92E-07	5.26E-14	3.64E-15	5.62E-14
NNE	1500	Po-210	2.92E-07	5.26E-14	3.64E-15	5.62E-14
NNE	1500	At-218	6.01E-11	1.08E-17	7.50E-19	1.16E-17
NNE	1500	Th-232	8.84E-09	1.59E-15	1.10E-16	1.70E-15
NNE	1500	Ra-228	1.33E-07	2.40E-14	1.66E-15	2.57E-14
NNE	1500	Ac-228	1.33E-07	2.40E-14	1.66E-15	2.57E-14
NNE	1500	Th-228	1.33E-07	2.40E-14	1.66E-15	2.57E-14
NNE	1500	Ra-224	1.33E-07	2.40E-14	1.66E-15	2.57E-14
NNE	1500	Rn-220	1.59E-07	0.00E+00	0.00E+00	0.00E+00
NNE	1500	Po-216	1.33E-07	2.40E-14	1.66E-15	2.57E-14
NNE	1500	Pb-212	1.33E-07	2.40E-14	1.66E-15	2.57E-14
NNE	1500	Bi-212	1.33E-07	2.40E-14	1.66E-15	2.57E-14
NNE	1500	Po-212	8.55E-08	1.54E-14	1.07E-15	1.65E-14
NNE	1500	Tl-208	4.79E-08	8.63E-15	5.97E-16	9.22E-15
NNE	2500	U-238	1.44E-08	2.60E-15	2.53E-16	2.85E-15
NNE	2500	Th-234	1.44E-08	2.60E-15	2.53E-16	2.85E-15
NNE	2500	Pa-234m	1.44E-08	2.59E-15	2.53E-16	2.85E-15
NNE	2500	Pa-234	1.42E-08	2.56E-15	2.50E-16	2.81E-15
NNE	2500	U-234	1.44E-08	2.60E-15	2.53E-16	2.85E-15
NNE	2500	Th-230	1.44E-08	2.60E-15	2.53E-16	2.85E-15
NNE	2500	Ra-226	1.25E-07	2.26E-14	2.20E-15	2.48E-14
NNE	2500	Rn-222	1.55E-07	0.00E+00	0.00E+00	0.00E+00
NNE	2500	Po-218	1.25E-07	2.26E-14	2.20E-15	2.48E-14
NNE	2500	Pb-214	1.25E-07	2.26E-14	2.20E-15	2.48E-14
NNE	2500	Bi-214	1.25E-07	2.26E-14	2.20E-15	2.48E-14
NNE	2500	Po-214	1.25E-07	2.26E-14	2.20E-15	2.48E-14
NNE	2500	Pb-210	1.22E-07	2.19E-14	2.13E-15	2.40E-14
NNE	2500	Bi-210	1.22E-07	2.19E-14	2.13E-15	2.40E-14
NNE	2500	Po-210	1.22E-07	2.19E-14	2.13E-15	2.40E-14
NNE	2500	At-218	2.51E-11	4.51E-18	4.40E-19	4.95E-18
NNE	2500	Th-232	3.68E-09	6.63E-16	6.46E-17	7.28E-16
NNE	2500	Ra-228	5.56E-08	1.00E-14	9.75E-16	1.10E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NNE	2500	Ac-228	5.56E-08	1.00E-14	9.75E-16	1.10E-14
NNE	2500	Th-228	5.56E-08	1.00E-14	9.75E-16	1.10E-14
NNE	2500	Ra-224	5.56E-08	1.00E-14	9.75E-16	1.10E-14
NNE	2500	Rn-220	6.86E-08	0.00E+00	0.00E+00	0.00E+00
NNE	2500	Po-216	5.56E-08	1.00E-14	9.75E-16	1.10E-14
NNE	2500	Pb-212	5.56E-08	1.00E-14	9.75E-16	1.10E-14
NNE	2500	Bi-212	5.56E-08	1.00E-14	9.75E-16	1.10E-14
NNE	2500	Po-212	3.56E-08	6.41E-15	6.25E-16	7.04E-15
NNE	2500	Tl-208	2.00E-08	3.59E-15	3.50E-16	3.94E-15
NNE	3500	U-238	8.38E-09	1.51E-15	1.77E-16	1.69E-15
NNE	3500	Th-234	8.38E-09	1.51E-15	1.77E-16	1.69E-15
NNE	3500	Pa-234m	8.37E-09	1.51E-15	1.77E-16	1.68E-15
NNE	3500	Pa-234	8.26E-09	1.49E-15	1.75E-16	1.66E-15
NNE	3500	U-234	8.38E-09	1.51E-15	1.77E-16	1.69E-15
NNE	3500	Th-230	8.38E-09	1.51E-15	1.77E-16	1.69E-15
NNE	3500	Ra-226	7.27E-08	1.31E-14	1.54E-15	1.46E-14
NNE	3500	Rn-222	9.28E-08	0.00E+00	0.00E+00	0.00E+00
NNE	3500	Po-218	7.27E-08	1.31E-14	1.54E-15	1.46E-14
NNE	3500	Pb-214	7.27E-08	1.31E-14	1.54E-15	1.46E-14
NNE	3500	Bi-214	7.27E-08	1.31E-14	1.54E-15	1.46E-14
NNE	3500	Po-214	7.27E-08	1.31E-14	1.54E-15	1.46E-14
NNE	3500	Pb-210	7.06E-08	1.27E-14	1.49E-15	1.42E-14
NNE	3500	Bi-210	7.06E-08	1.27E-14	1.49E-15	1.42E-14
NNE	3500	Po-210	7.06E-08	1.27E-14	1.49E-15	1.42E-14
NNE	3500	At-218	1.45E-11	2.62E-18	3.08E-19	2.93E-18
NNE	3500	Th-232	2.14E-09	3.85E-16	4.52E-17	4.30E-16
NNE	3500	Ra-228	3.22E-08	5.80E-15	6.82E-16	6.49E-15
NNE	3500	Ac-228	3.22E-08	5.80E-15	6.82E-16	6.49E-15
NNE	3500	Th-228	3.22E-08	5.80E-15	6.82E-16	6.49E-15
NNE	3500	Ra-224	3.22E-08	5.80E-15	6.82E-16	6.49E-15
NNE	3500	Rn-220	4.11E-08	0.00E+00	0.00E+00	0.00E+00
NNE	3500	Po-216	3.22E-08	5.80E-15	6.82E-16	6.49E-15
NNE	3500	Pb-212	3.22E-08	5.80E-15	6.82E-16	6.49E-15
NNE	3500	Bi-212	3.22E-08	5.80E-15	6.82E-16	6.49E-15
NNE	3500	Po-212	2.07E-08	3.72E-15	4.37E-16	4.16E-15
NNE	3500	Tl-208	1.16E-08	2.09E-15	2.45E-16	2.33E-15
NNE	4500	U-238	5.71E-09	1.03E-15	1.35E-16	1.16E-15
NNE	4500	Th-234	5.71E-09	1.03E-15	1.35E-16	1.16E-15
NNE	4500	Pa-234m	5.70E-09	1.03E-15	1.35E-16	1.16E-15
NNE	4500	Pa-234	5.63E-09	1.01E-15	1.33E-16	1.15E-15
NNE	4500	U-234	5.71E-09	1.03E-15	1.35E-16	1.16E-15
NNE	4500	Th-230	5.71E-09	1.03E-15	1.35E-16	1.16E-15
NNE	4500	Ra-226	4.95E-08	8.92E-15	1.17E-15	1.01E-14
NNE	4500	Rn-222	6.52E-08	0.00E+00	0.00E+00	0.00E+00
NNE	4500	Po-218	4.95E-08	8.92E-15	1.17E-15	1.01E-14
NNE	4500	Pb-214	4.95E-08	8.92E-15	1.17E-15	1.01E-14
NNE	4500	Bi-214	4.95E-08	8.92E-15	1.17E-15	1.01E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NNE	4500	Po-214	4.95E-08	8.91E-15	1.17E-15	1.01E-14
NNE	4500	Pb-210	4.81E-08	8.65E-15	1.14E-15	9.79E-15
NNE	4500	Bi-210	4.81E-08	8.65E-15	1.14E-15	9.79E-15
NNE	4500	Po-210	4.81E-08	8.65E-15	1.14E-15	9.79E-15
NNE	4500	At-218	9.90E-12	1.78E-18	2.35E-19	2.02E-18
NNE	4500	Th-232	1.46E-09	2.62E-16	3.45E-17	2.96E-16
NNE	4500	Ra-228	2.20E-08	3.95E-15	5.21E-16	4.47E-15
NNE	4500	Ac-228	2.20E-08	3.95E-15	5.21E-16	4.47E-15
NNE	4500	Th-228	2.20E-08	3.95E-15	5.21E-16	4.47E-15
NNE	4500	Ra-224	2.20E-08	3.95E-15	5.21E-16	4.47E-15
NNE	4500	Rn-220	2.89E-08	0.00E+00	0.00E+00	0.00E+00
NNE	4500	Po-216	2.20E-08	3.95E-15	5.21E-16	4.47E-15
NNE	4500	Pb-212	2.20E-08	3.95E-15	5.21E-16	4.47E-15
NNE	4500	Bi-212	2.20E-08	3.95E-15	5.21E-16	4.47E-15
NNE	4500	Po-212	1.41E-08	2.53E-15	3.34E-16	2.87E-15
NNE	4500	Tl-208	7.89E-09	1.42E-15	1.87E-16	1.61E-15
NNE	5500	U-238	4.21E-09	7.57E-16	1.09E-16	8.67E-16
NNE	5500	Th-234	4.21E-09	7.57E-16	1.09E-16	8.67E-16
NNE	5500	Pa-234m	4.20E-09	7.56E-16	1.09E-16	8.65E-16
NNE	5500	Pa-234	4.15E-09	7.47E-16	1.08E-16	8.54E-16
NNE	5500	U-234	4.21E-09	7.57E-16	1.09E-16	8.67E-16
NNE	5500	Th-230	4.21E-09	7.57E-16	1.09E-16	8.67E-16
NNE	5500	Ra-226	3.65E-08	6.57E-15	9.47E-16	7.52E-15
NNE	5500	Rn-222	4.92E-08	0.00E+00	0.00E+00	0.00E+00
NNE	5500	Po-218	3.65E-08	6.57E-15	9.47E-16	7.52E-15
NNE	5500	Pb-214	3.65E-08	6.57E-15	9.47E-16	7.52E-15
NNE	5500	Bi-214	3.65E-08	6.57E-15	9.47E-16	7.52E-15
NNE	5500	Po-214	3.65E-08	6.57E-15	9.47E-16	7.52E-15
NNE	5500	Pb-210	3.54E-08	6.38E-15	9.19E-16	7.30E-15
NNE	5500	Bi-210	3.54E-08	6.38E-15	9.19E-16	7.30E-15
NNE	5500	Po-210	3.54E-08	6.38E-15	9.19E-16	7.30E-15
NNE	5500	At-218	7.30E-12	1.31E-18	1.89E-19	1.50E-18
NNE	5500	Th-232	1.07E-09	1.93E-16	2.78E-17	2.21E-16
NNE	5500	Ra-228	1.62E-08	2.91E-15	4.20E-16	3.33E-15
NNE	5500	Ac-228	1.62E-08	2.91E-15	4.20E-16	3.33E-15
NNE	5500	Th-228	1.62E-08	2.91E-15	4.20E-16	3.33E-15
NNE	5500	Ra-224	1.62E-08	2.91E-15	4.20E-16	3.33E-15
NNE	5500	Rn-220	2.18E-08	0.00E+00	0.00E+00	0.00E+00
NNE	5500	Po-216	1.62E-08	2.91E-15	4.20E-16	3.33E-15
NNE	5500	Pb-212	1.62E-08	2.91E-15	4.20E-16	3.33E-15
NNE	5500	Bi-212	1.62E-08	2.91E-15	4.20E-16	3.33E-15
NNE	5500	Po-212	1.04E-08	1.87E-15	2.69E-16	2.14E-15
NNE	5500	Tl-208	5.82E-09	1.05E-15	1.51E-16	1.20E-15
NNE	7000	U-238	2.87E-09	5.16E-16	8.35E-17	6.00E-16
NNE	7000	Th-234	2.87E-09	5.16E-16	8.35E-17	6.00E-16
NNE	7000	Pa-234m	2.86E-09	5.15E-16	8.33E-17	5.98E-16
NNE	7000	Pa-234	2.83E-09	5.09E-16	8.23E-17	5.91E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT
AT TIME T = 500. SECONDS

Wind Toward	Distance (meters)	Nuclide	Air Conc (pCi/m3)	Dry Depo Rate (pCi/cm2/s)	Wet Depo Rate (pCi/cm2/s)	Ground Depo Rate (pCi/cm2/s)
NNE	7000	U-234	2.87E-09	5.16E-16	8.35E-17	6.00E-16
NNE	7000	Th-230	2.87E-09	5.16E-16	8.35E-17	6.00E-16
NNE	7000	Ra-226	2.49E-08	4.48E-15	7.25E-16	5.20E-15
NNE	7000	Rn-222	3.51E-08	0.00E+00	0.00E+00	0.00E+00
NNE	7000	Po-218	2.49E-08	4.48E-15	7.25E-16	5.20E-15
NNE	7000	Pb-214	2.49E-08	4.48E-15	7.25E-16	5.20E-15
NNE	7000	Bi-214	2.49E-08	4.48E-15	7.25E-16	5.20E-15
NNE	7000	Po-214	2.49E-08	4.48E-15	7.24E-16	5.20E-15
NNE	7000	Pb-210	2.41E-08	4.35E-15	7.03E-16	5.05E-15
NNE	7000	Bi-210	2.41E-08	4.35E-15	7.03E-16	5.05E-15
NNE	7000	Po-210	2.41E-08	4.35E-15	7.03E-16	5.05E-15
NNE	7000	At-218	4.97E-12	8.95E-19	1.45E-19	1.04E-18
NNE	7000	Th-232	7.31E-10	1.32E-16	2.13E-17	1.53E-16
NNE	7000	Ra-228	1.10E-08	1.99E-15	3.21E-16	2.31E-15
NNE	7000	Ac-228	1.10E-08	1.99E-15	3.21E-16	2.31E-15
NNE	7000	Th-228	1.10E-08	1.99E-15	3.21E-16	2.31E-15
NNE	7000	Ra-224	1.10E-08	1.99E-15	3.21E-16	2.31E-15
NNE	7000	Rn-220	1.56E-08	0.00E+00	0.00E+00	0.00E+00
NNE	7000	Po-216	1.10E-08	1.99E-15	3.21E-16	2.31E-15
NNE	7000	Pb-212	1.10E-08	1.99E-15	3.21E-16	2.31E-15
NNE	7000	Bi-212	1.10E-08	1.99E-15	3.21E-16	2.31E-15
NNE	7000	Po-212	7.07E-09	1.27E-15	2.06E-16	1.48E-15
NNE	7000	Tl-208	3.96E-09	7.13E-16	1.15E-16	8.29E-16

C A P 8 8 - P C

Version 3.0

Clean Air Act Assessment Package - 1988

C H I / Q T A B L E S

Non-Radon Population Assessment
Apr 22, 2014 12:09 pm

Facility: Clean Harbors Deer Trail
Address: 108555 East Highway 36
City: Deer Trail
State: CO Zip: 80105

Source Category: Secure Cell Disposal
Source Type: Area
Emission Year: 2013

Comments: 2013 Emmissions
2013 Emmissions

Dataset Name: CH2013
Dataset Date: 4/22/2014 11:54:00 AM
Wind File: C:\Program Files (x86)\CAP88-PC30\WindLib\23062.WND
Population File: C:\Users\kehoej1\Documents\Documents 020712\John Hackett Documents\CHDT Li

GROUND-LEVEL CHI/Q VALUES FOR U-238
SOLUBILITY: M
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Th-234
SOLUBILITY: S
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Pa-234m
SOLUBILITY: M
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.300E-03	6.008E-04	2.964E-04	1.157E-04	6.117E-05	3.784E-05	1.417E-05
NNW	8.477E-04	2.498E-04	1.231E-04	4.792E-05	2.529E-05	1.562E-05	5.826E-06
NW	5.819E-04	2.103E-04	1.034E-04	4.018E-05	2.120E-05	1.309E-05	4.887E-06
WNW	4.679E-04	1.650E-04	8.085E-05	3.143E-05	1.660E-05	1.027E-05	3.843E-06
W	3.443E-04	1.160E-04	5.639E-05	2.186E-05	1.156E-05	7.158E-06	2.690E-06
WSW	2.332E-04	6.774E-05	3.275E-05	1.268E-05	6.706E-06	4.156E-06	1.565E-06
SW	1.998E-04	6.241E-05	3.002E-05	1.161E-05	6.148E-06	3.815E-06	1.442E-06
SSW	2.600E-04	6.160E-05	2.969E-05	1.150E-05	6.094E-06	3.784E-06	1.432E-06
S	4.191E-04	1.724E-04	8.342E-05	3.241E-05	1.720E-05	1.069E-05	4.050E-06
SSE	3.088E-04	8.483E-05	4.107E-05	1.592E-05	8.431E-06	5.230E-06	1.973E-06
SE	2.334E-04	7.994E-05	3.885E-05	1.505E-05	7.950E-06	4.919E-06	1.846E-06
ESE	2.004E-04	6.296E-05	3.055E-05	1.184E-05	6.262E-06	3.879E-06	1.459E-06
E	1.887E-04	6.516E-05	3.161E-05	1.224E-05	6.469E-06	4.005E-06	1.505E-06
ENE	2.008E-04	5.594E-05	2.726E-05	1.053E-05	5.536E-06	3.412E-06	1.268E-06
NE	3.841E-04	1.178E-04	5.772E-05	2.240E-05	1.181E-05	7.296E-06	2.724E-06
NNE	8.543E-04	2.751E-04	1.352E-04	5.268E-05	2.785E-05	1.723E-05	6.455E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.054E-06	1.692E-06	9.837E-07	6.711E-07	4.954E-07	3.379E-07
NNW	1.656E-06	6.876E-07	3.982E-07	2.706E-07	1.992E-07	1.351E-07
NW	1.388E-06	5.757E-07	3.329E-07	2.259E-07	1.661E-07	1.126E-07
WNW	1.094E-06	4.539E-07	2.624E-07	1.780E-07	1.308E-07	8.878E-08
W	7.660E-07	3.166E-07	1.821E-07	1.230E-07	9.004E-08	6.097E-08
WSW	4.455E-07	1.837E-07	1.052E-07	7.083E-08	5.172E-08	3.493E-08
SW	4.117E-07	1.697E-07	9.714E-08	6.531E-08	4.765E-08	3.223E-08
SSW	4.092E-07	1.688E-07	9.674E-08	6.508E-08	4.750E-08	3.214E-08
S	1.163E-06	4.818E-07	2.771E-07	1.870E-07	1.368E-07	9.281E-08
SSE	5.637E-07	2.330E-07	1.338E-07	9.026E-08	6.602E-08	4.471E-08
SE	5.245E-07	2.165E-07	1.243E-07	8.377E-08	6.125E-08	4.134E-08
ESE	4.160E-07	1.721E-07	9.899E-08	6.687E-08	4.898E-08	3.320E-08
E	4.287E-07	1.773E-07	1.020E-07	6.889E-08	5.047E-08	3.421E-08
ENE	3.570E-07	1.467E-07	8.411E-08	5.663E-08	4.139E-08	2.784E-08
NE	7.730E-07	3.201E-07	1.848E-07	1.252E-07	9.196E-08	6.231E-08
NNE	1.845E-06	7.687E-07	4.461E-07	3.038E-07	2.239E-07	1.526E-07

GROUND-LEVEL CHI/Q VALUES FOR Pa-234
SOLUBILITY: M
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.284E-03	5.934E-04	2.928E-04	1.142E-04	6.042E-05	3.738E-05	1.400E-05
NNW	8.374E-04	2.467E-04	1.216E-04	4.733E-05	2.498E-05	1.543E-05	5.755E-06
NW	5.748E-04	2.078E-04	1.021E-04	3.969E-05	2.094E-05	1.293E-05	4.828E-06
WNW	4.622E-04	1.629E-04	7.987E-05	3.105E-05	1.640E-05	1.014E-05	3.796E-06
W	3.401E-04	1.146E-04	5.570E-05	2.160E-05	1.142E-05	7.071E-06	2.657E-06
WSW	2.303E-04	6.691E-05	3.235E-05	1.252E-05	6.624E-06	4.105E-06	1.546E-06
SW	1.973E-04	6.165E-05	2.966E-05	1.147E-05	6.073E-06	3.769E-06	1.425E-06
SSW	2.569E-04	6.085E-05	2.933E-05	1.136E-05	6.020E-06	3.738E-06	1.414E-06
S	4.140E-04	1.703E-04	8.240E-05	3.201E-05	1.699E-05	1.056E-05	4.001E-06
SSE	3.050E-04	8.380E-05	4.057E-05	1.573E-05	8.328E-06	5.166E-06	1.949E-06
SE	2.305E-04	7.896E-05	3.838E-05	1.487E-05	7.853E-06	4.859E-06	1.823E-06
ESE	1.980E-04	6.219E-05	3.018E-05	1.170E-05	6.186E-06	3.832E-06	1.441E-06
E	1.864E-04	6.437E-05	3.122E-05	1.209E-05	6.390E-06	3.956E-06	1.487E-06
ENE	1.984E-04	5.526E-05	2.693E-05	1.040E-05	5.468E-06	3.370E-06	1.253E-06
NE	3.794E-04	1.164E-04	5.701E-05	2.212E-05	1.167E-05	7.207E-06	2.690E-06
NNE	8.439E-04	2.717E-04	1.336E-04	5.203E-05	2.751E-05	1.702E-05	6.376E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.004E-06	1.671E-06	9.717E-07	6.629E-07	4.893E-07	3.338E-07
NNW	1.635E-06	6.792E-07	3.933E-07	2.673E-07	1.967E-07	1.334E-07
NW	1.371E-06	5.686E-07	3.288E-07	2.232E-07	1.641E-07	1.112E-07
WNW	1.081E-06	4.484E-07	2.592E-07	1.758E-07	1.292E-07	8.770E-08
W	7.567E-07	3.128E-07	1.799E-07	1.215E-07	8.894E-08	6.022E-08
WSW	4.401E-07	1.814E-07	1.040E-07	6.996E-08	5.108E-08	3.450E-08
SW	4.067E-07	1.676E-07	9.595E-08	6.451E-08	4.706E-08	3.184E-08
SSW	4.042E-07	1.668E-07	9.556E-08	6.429E-08	4.692E-08	3.175E-08
S	1.148E-06	4.759E-07	2.737E-07	1.847E-07	1.351E-07	9.167E-08
SSE	5.568E-07	2.302E-07	1.322E-07	8.916E-08	6.521E-08	4.416E-08
SE	5.181E-07	2.138E-07	1.228E-07	8.275E-08	6.051E-08	4.083E-08
ESE	4.109E-07	1.700E-07	9.778E-08	6.606E-08	4.838E-08	3.279E-08
E	4.235E-07	1.751E-07	1.007E-07	6.805E-08	4.986E-08	3.379E-08
ENE	3.527E-07	1.449E-07	8.308E-08	5.594E-08	4.089E-08	2.750E-08
NE	7.636E-07	3.162E-07	1.825E-07	1.237E-07	9.084E-08	6.155E-08
NNE	1.823E-06	7.594E-07	4.406E-07	3.000E-07	2.212E-07	1.507E-07

GROUND-LEVEL CHI/Q VALUES FOR U-234
SOLUBILITY: M
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Th-230
SOLUBILITY: S
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Ra-226
SOLUBILITY: M
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Rn-222
SOLUBILITY: G
CHEMFORM: unspecified
SIZE: 0
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.317E-03	6.228E-04	3.126E-04	1.248E-04	6.720E-05	4.216E-05	1.625E-05
NNW	8.599E-04	2.599E-04	1.306E-04	5.215E-05	2.808E-05	1.761E-05	6.786E-06
NW	5.905E-04	2.187E-04	1.095E-04	4.364E-05	2.347E-05	1.472E-05	5.668E-06
WNW	4.748E-04	1.713E-04	8.545E-05	3.402E-05	1.830E-05	1.148E-05	4.425E-06
W	3.493E-04	1.202E-04	5.935E-05	2.351E-05	1.264E-05	7.924E-06	3.057E-06
WSW	2.365E-04	7.019E-05	3.449E-05	1.364E-05	7.332E-06	4.600E-06	1.778E-06
SW	2.026E-04	6.441E-05	3.141E-05	1.237E-05	6.641E-06	4.165E-06	1.609E-06
SSW	2.636E-04	6.362E-05	3.110E-05	1.227E-05	6.596E-06	4.140E-06	1.602E-06
S	4.248E-04	1.780E-04	8.739E-05	3.460E-05	1.862E-05	1.170E-05	4.534E-06
SSE	3.132E-04	8.777E-05	4.314E-05	1.706E-05	9.175E-06	5.758E-06	2.226E-06
SE	2.368E-04	8.310E-05	4.113E-05	1.633E-05	8.785E-06	5.514E-06	2.131E-06
ESE	2.033E-04	6.516E-05	3.213E-05	1.272E-05	6.834E-06	4.285E-06	1.654E-06
E	1.915E-04	6.752E-05	3.329E-05	1.317E-05	7.078E-06	4.438E-06	1.712E-06
ENE	2.039E-04	5.832E-05	2.898E-05	1.149E-05	6.170E-06	3.864E-06	1.485E-06
NE	3.897E-04	1.224E-04	6.105E-05	2.427E-05	1.304E-05	8.173E-06	3.145E-06
NNE	8.661E-04	2.850E-04	1.425E-04	5.678E-05	3.055E-05	1.915E-05	7.381E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.861E-06	2.102E-06	1.264E-06	8.898E-07	6.725E-07	4.806E-07
NNW	2.027E-06	8.762E-07	5.267E-07	3.708E-07	2.803E-07	2.003E-07
NW	1.690E-06	7.289E-07	4.372E-07	3.072E-07	2.319E-07	1.654E-07
WNW	1.319E-06	5.680E-07	3.400E-07	2.385E-07	1.797E-07	1.280E-07
W	9.074E-07	3.880E-07	2.305E-07	1.606E-07	1.204E-07	8.524E-08
WSW	5.270E-07	2.247E-07	1.330E-07	9.231E-08	6.902E-08	4.871E-08
SW	4.754E-07	2.018E-07	1.188E-07	8.203E-08	6.110E-08	4.294E-08
SSW	4.742E-07	2.016E-07	1.188E-07	8.215E-08	6.123E-08	4.306E-08
S	1.348E-06	5.754E-07	3.404E-07	2.360E-07	1.763E-07	1.243E-07
SSE	6.606E-07	2.818E-07	1.669E-07	1.158E-07	8.664E-08	6.116E-08
SE	6.338E-07	2.716E-07	1.616E-07	1.127E-07	8.457E-08	5.993E-08
ESE	4.907E-07	2.098E-07	1.245E-07	8.669E-08	6.497E-08	4.598E-08
E	5.081E-07	2.173E-07	1.291E-07	8.992E-08	6.743E-08	4.775E-08
ENE	4.403E-07	1.887E-07	1.126E-07	7.878E-08	5.926E-08	4.213E-08
NE	9.357E-07	4.025E-07	2.408E-07	1.689E-07	1.273E-07	9.064E-08
NNE	2.204E-06	9.510E-07	5.703E-07	4.006E-07	3.024E-07	2.157E-07

GROUND-LEVEL CHI/Q VALUES FOR Po-218
SOLUBILITY: M
CHEMFORM: inorganic
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Pb-214
SOLUBILITY: M
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Bi-214
SOLUBILITY: M
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Po-214
SOLUBILITY: M
CHEMFORM: inorganic
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.019E-04	2.969E-04	1.159E-04	6.128E-05	3.791E-05	1.420E-05
NNW	8.493E-04	2.502E-04	1.233E-04	4.801E-05	2.533E-05	1.565E-05	5.837E-06
NW	5.829E-04	2.107E-04	1.036E-04	4.025E-05	2.124E-05	1.312E-05	4.896E-06
WNW	4.688E-04	1.653E-04	8.100E-05	3.149E-05	1.663E-05	1.029E-05	3.850E-06
W	3.449E-04	1.163E-04	5.650E-05	2.190E-05	1.158E-05	7.171E-06	2.695E-06
WSW	2.336E-04	6.786E-05	3.281E-05	1.270E-05	6.718E-06	4.163E-06	1.568E-06
SW	2.001E-04	6.252E-05	3.008E-05	1.163E-05	6.159E-06	3.823E-06	1.445E-06
SSW	2.605E-04	6.171E-05	2.975E-05	1.152E-05	6.105E-06	3.791E-06	1.434E-06
S	4.198E-04	1.727E-04	8.357E-05	3.247E-05	1.723E-05	1.071E-05	4.058E-06
SSE	3.094E-04	8.499E-05	4.114E-05	1.595E-05	8.447E-06	5.239E-06	1.977E-06
SE	2.338E-04	8.008E-05	3.892E-05	1.508E-05	7.964E-06	4.928E-06	1.849E-06
ESE	2.008E-04	6.307E-05	3.061E-05	1.186E-05	6.273E-06	3.886E-06	1.462E-06
E	1.891E-04	6.528E-05	3.167E-05	1.226E-05	6.481E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.605E-05	2.731E-05	1.055E-05	5.546E-06	3.418E-06	1.271E-06
NE	3.848E-04	1.181E-04	5.782E-05	2.244E-05	1.183E-05	7.310E-06	2.729E-06
NNE	8.559E-04	2.756E-04	1.355E-04	5.277E-05	2.790E-05	1.726E-05	6.467E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.061E-06	1.695E-06	9.855E-07	6.723E-07	4.963E-07	3.386E-07
NNW	1.659E-06	6.888E-07	3.989E-07	2.711E-07	1.995E-07	1.353E-07
NW	1.391E-06	5.767E-07	3.335E-07	2.263E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.547E-07	2.628E-07	1.783E-07	1.311E-07	8.895E-08
W	7.675E-07	3.172E-07	1.824E-07	1.232E-07	9.021E-08	6.108E-08
WSW	4.463E-07	1.840E-07	1.054E-07	7.096E-08	5.181E-08	3.499E-08
SW	4.124E-07	1.700E-07	9.732E-08	6.543E-08	4.773E-08	3.229E-08
SSW	4.099E-07	1.692E-07	9.692E-08	6.520E-08	4.759E-08	3.220E-08
S	1.165E-06	4.827E-07	2.776E-07	1.873E-07	1.371E-07	9.298E-08
SSE	5.647E-07	2.334E-07	1.341E-07	9.043E-08	6.614E-08	4.479E-08
SE	5.255E-07	2.169E-07	1.245E-07	8.392E-08	6.136E-08	4.141E-08
ESE	4.168E-07	1.724E-07	9.917E-08	6.699E-08	4.907E-08	3.326E-08
E	4.295E-07	1.776E-07	1.022E-07	6.902E-08	5.057E-08	3.427E-08
ENE	3.577E-07	1.470E-07	8.426E-08	5.674E-08	4.147E-08	2.789E-08
NE	7.744E-07	3.207E-07	1.851E-07	1.254E-07	9.213E-08	6.243E-08
NNE	1.848E-06	7.702E-07	4.469E-07	3.043E-07	2.243E-07	1.528E-07

GROUND-LEVEL CHI/Q VALUES FOR Pb-210
SOLUBILITY: M
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Bi-210
SOLUBILITY: M
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Po-210
SOLUBILITY: M
CHEMFORM: inorganic
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Th-232
SOLUBILITY: S
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Ra-228
SOLUBILITY: M
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Ac-228
SOLUBILITY: M
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Th-228
SOLUBILITY: S
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Ra-224
SOLUBILITY: M
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Rn-220
SOLUBILITY: G
CHEMFORM: unspecified
SIZE: 0
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.317E-03	6.228E-04	3.126E-04	1.248E-04	6.720E-05	4.216E-05	1.625E-05
NNW	8.599E-04	2.599E-04	1.306E-04	5.215E-05	2.808E-05	1.761E-05	6.786E-06
NW	5.905E-04	2.187E-04	1.095E-04	4.364E-05	2.347E-05	1.472E-05	5.668E-06
WNW	4.748E-04	1.713E-04	8.545E-05	3.402E-05	1.830E-05	1.148E-05	4.425E-06
W	3.493E-04	1.202E-04	5.935E-05	2.351E-05	1.264E-05	7.924E-06	3.057E-06
WSW	2.365E-04	7.019E-05	3.449E-05	1.364E-05	7.332E-06	4.600E-06	1.778E-06
SW	2.026E-04	6.441E-05	3.141E-05	1.237E-05	6.641E-06	4.165E-06	1.609E-06
SSW	2.636E-04	6.362E-05	3.110E-05	1.227E-05	6.596E-06	4.140E-06	1.602E-06
S	4.248E-04	1.780E-04	8.739E-05	3.460E-05	1.862E-05	1.170E-05	4.534E-06
SSE	3.132E-04	8.777E-05	4.314E-05	1.706E-05	9.175E-06	5.758E-06	2.226E-06
SE	2.368E-04	8.310E-05	4.113E-05	1.633E-05	8.785E-06	5.514E-06	2.131E-06
ESE	2.033E-04	6.516E-05	3.213E-05	1.272E-05	6.834E-06	4.285E-06	1.654E-06
E	1.915E-04	6.752E-05	3.329E-05	1.317E-05	7.078E-06	4.438E-06	1.712E-06
ENE	2.039E-04	5.832E-05	2.898E-05	1.149E-05	6.170E-06	3.864E-06	1.485E-06
NE	3.897E-04	1.224E-04	6.105E-05	2.427E-05	1.304E-05	8.173E-06	3.145E-06
NNE	8.661E-04	2.850E-04	1.425E-04	5.678E-05	3.055E-05	1.915E-05	7.381E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.861E-06	2.102E-06	1.264E-06	8.898E-07	6.725E-07	4.806E-07
NNW	2.027E-06	8.762E-07	5.267E-07	3.708E-07	2.803E-07	2.003E-07
NW	1.690E-06	7.289E-07	4.372E-07	3.072E-07	2.319E-07	1.654E-07
WNW	1.319E-06	5.680E-07	3.400E-07	2.385E-07	1.797E-07	1.280E-07
W	9.074E-07	3.880E-07	2.305E-07	1.606E-07	1.204E-07	8.524E-08
WSW	5.270E-07	2.247E-07	1.330E-07	9.231E-08	6.902E-08	4.871E-08
SW	4.754E-07	2.018E-07	1.188E-07	8.203E-08	6.110E-08	4.294E-08
SSW	4.742E-07	2.016E-07	1.188E-07	8.215E-08	6.123E-08	4.306E-08
S	1.348E-06	5.754E-07	3.404E-07	2.360E-07	1.763E-07	1.243E-07
SSE	6.606E-07	2.818E-07	1.669E-07	1.158E-07	8.664E-08	6.116E-08
SE	6.338E-07	2.716E-07	1.616E-07	1.127E-07	8.457E-08	5.993E-08
ESE	4.907E-07	2.098E-07	1.245E-07	8.669E-08	6.497E-08	4.598E-08
E	5.081E-07	2.173E-07	1.291E-07	8.992E-08	6.743E-08	4.775E-08
ENE	4.403E-07	1.887E-07	1.126E-07	7.878E-08	5.926E-08	4.213E-08
NE	9.357E-07	4.025E-07	2.408E-07	1.689E-07	1.273E-07	9.064E-08
NNE	2.204E-06	9.510E-07	5.703E-07	4.006E-07	3.024E-07	2.157E-07

GROUND-LEVEL CHI/Q VALUES FOR Po-216
SOLUBILITY: M
CHEMFORM: inorganic
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Pb-212
SOLUBILITY: M
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Bi-212
SOLUBILITY: M
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Po-212
SOLUBILITY: M
CHEMFORM: inorganic
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.020E-04	2.970E-04	1.159E-04	6.129E-05	3.792E-05	1.420E-05
NNW	8.495E-04	2.503E-04	1.234E-04	4.802E-05	2.534E-05	1.565E-05	5.838E-06
NW	5.830E-04	2.108E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.689E-04	1.653E-04	8.102E-05	3.149E-05	1.664E-05	1.029E-05	3.851E-06
W	3.450E-04	1.163E-04	5.651E-05	2.191E-05	1.158E-05	7.173E-06	2.696E-06
WSW	2.336E-04	6.788E-05	3.282E-05	1.270E-05	6.719E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.606E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.792E-06	1.435E-06
S	4.199E-04	1.727E-04	8.359E-05	3.247E-05	1.723E-05	1.071E-05	4.059E-06
SSE	3.094E-04	8.501E-05	4.115E-05	1.595E-05	8.448E-06	5.240E-06	1.977E-06
SE	2.339E-04	8.010E-05	3.893E-05	1.508E-05	7.966E-06	4.929E-06	1.850E-06
ESE	2.008E-04	6.308E-05	3.062E-05	1.187E-05	6.275E-06	3.887E-06	1.462E-06
E	1.891E-04	6.530E-05	3.167E-05	1.226E-05	6.482E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.606E-05	2.731E-05	1.055E-05	5.547E-06	3.419E-06	1.271E-06
NE	3.849E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.311E-06	2.729E-06
NNE	8.560E-04	2.756E-04	1.355E-04	5.278E-05	2.791E-05	1.727E-05	6.468E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.062E-06	1.695E-06	9.857E-07	6.725E-07	4.964E-07	3.386E-07
NNW	1.659E-06	6.890E-07	3.990E-07	2.711E-07	1.996E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.336E-07	2.264E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.784E-07	1.311E-07	8.896E-08
W	7.676E-07	3.173E-07	1.825E-07	1.232E-07	9.022E-08	6.109E-08
WSW	4.464E-07	1.840E-07	1.055E-07	7.097E-08	5.182E-08	3.500E-08
SW	4.125E-07	1.700E-07	9.734E-08	6.544E-08	4.774E-08	3.230E-08
SSW	4.100E-07	1.692E-07	9.694E-08	6.522E-08	4.760E-08	3.220E-08
S	1.165E-06	4.828E-07	2.776E-07	1.874E-07	1.371E-07	9.299E-08
SSE	5.648E-07	2.335E-07	1.341E-07	9.045E-08	6.615E-08	4.480E-08
SE	5.256E-07	2.169E-07	1.245E-07	8.394E-08	6.138E-08	4.142E-08
ESE	4.169E-07	1.724E-07	9.919E-08	6.701E-08	4.908E-08	3.327E-08
E	4.296E-07	1.776E-07	1.022E-07	6.903E-08	5.058E-08	3.428E-08
ENE	3.577E-07	1.470E-07	8.428E-08	5.675E-08	4.148E-08	2.790E-08
NE	7.746E-07	3.207E-07	1.851E-07	1.255E-07	9.215E-08	6.244E-08
NNE	1.849E-06	7.703E-07	4.470E-07	3.044E-07	2.244E-07	1.529E-07

GROUND-LEVEL CHI/Q VALUES FOR Tl-208
SOLUBILITY: M
CHEMFORM: unspecified
SIZE: 1
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)

Dir	50	100	150	250	350	450	750
N	1.302E-03	6.019E-04	2.970E-04	1.159E-04	6.128E-05	3.792E-05	1.420E-05
NNW	8.494E-04	2.502E-04	1.233E-04	4.801E-05	2.533E-05	1.565E-05	5.837E-06
NW	5.830E-04	2.107E-04	1.036E-04	4.026E-05	2.124E-05	1.312E-05	4.897E-06
WNW	4.688E-04	1.653E-04	8.101E-05	3.149E-05	1.663E-05	1.029E-05	3.850E-06
W	3.449E-04	1.163E-04	5.650E-05	2.190E-05	1.158E-05	7.172E-06	2.695E-06
WSW	2.336E-04	6.787E-05	3.282E-05	1.270E-05	6.718E-06	4.164E-06	1.568E-06
SW	2.002E-04	6.253E-05	3.008E-05	1.163E-05	6.160E-06	3.823E-06	1.445E-06
SSW	2.605E-04	6.172E-05	2.975E-05	1.152E-05	6.106E-06	3.791E-06	1.434E-06
S	4.199E-04	1.727E-04	8.358E-05	3.247E-05	1.723E-05	1.071E-05	4.058E-06
SSE	3.094E-04	8.500E-05	4.115E-05	1.595E-05	8.447E-06	5.240E-06	1.977E-06
SE	2.338E-04	8.009E-05	3.892E-05	1.508E-05	7.965E-06	4.929E-06	1.849E-06
ESE	2.008E-04	6.308E-05	3.061E-05	1.186E-05	6.274E-06	3.886E-06	1.462E-06
E	1.891E-04	6.529E-05	3.167E-05	1.226E-05	6.481E-06	4.013E-06	1.508E-06
ENE	2.012E-04	5.605E-05	2.731E-05	1.055E-05	5.546E-06	3.419E-06	1.271E-06
NE	3.848E-04	1.181E-04	5.783E-05	2.244E-05	1.184E-05	7.310E-06	2.729E-06
NNE	8.559E-04	2.756E-04	1.355E-04	5.278E-05	2.790E-05	1.726E-05	6.467E-06

Distance (meters)

Dir	1500	2500	3500	4500	5500	7000
N	4.061E-06	1.695E-06	9.856E-07	6.724E-07	4.963E-07	3.386E-07
NNW	1.659E-06	6.889E-07	3.990E-07	2.711E-07	1.995E-07	1.354E-07
NW	1.391E-06	5.768E-07	3.335E-07	2.263E-07	1.664E-07	1.128E-07
WNW	1.096E-06	4.548E-07	2.629E-07	1.783E-07	1.311E-07	8.895E-08
W	7.675E-07	3.172E-07	1.825E-07	1.232E-07	9.021E-08	6.108E-08
WSW	4.464E-07	1.840E-07	1.054E-07	7.096E-08	5.181E-08	3.499E-08
SW	4.125E-07	1.700E-07	9.732E-08	6.543E-08	4.774E-08	3.229E-08
SSW	4.100E-07	1.692E-07	9.693E-08	6.521E-08	4.759E-08	3.220E-08
S	1.165E-06	4.827E-07	2.776E-07	1.873E-07	1.371E-07	9.298E-08
SSE	5.647E-07	2.334E-07	1.341E-07	9.044E-08	6.614E-08	4.479E-08
SE	5.255E-07	2.169E-07	1.245E-07	8.393E-08	6.137E-08	4.141E-08
ESE	4.168E-07	1.724E-07	9.918E-08	6.700E-08	4.908E-08	3.326E-08
E	4.295E-07	1.776E-07	1.022E-07	6.903E-08	5.057E-08	3.427E-08
ENE	3.577E-07	1.470E-07	8.427E-08	5.674E-08	4.147E-08	2.789E-08
NE	7.745E-07	3.207E-07	1.851E-07	1.254E-07	9.214E-08	6.243E-08
NNE	1.849E-06	7.702E-07	4.469E-07	3.043E-07	2.243E-07	1.529E-07