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U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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Subject: Docket No. 50-482: 2002 Annual Radiological Environmental
Operating Report

Gentlemen:

The enclosure contains the 2002 Annual Radiological Environmental Operating Report that is being submitted pursuant to Wolf Creek Generating Station (WCGS) Technical Specification 5.6.2. This report covers radiological environmental monitoring around WCGS for the period of January 1, 2002 through December 31, 2002.

There are no commitments contained in this correspondence. If you have any questions concerning this matter, please contact me at (620) 364-4038, or Ms. Jennifer Yunk at (620) 364-4272.

Very truly yours,

A handwritten signature in black ink that reads "Karl A. (Tony) Harris". The signature is written in a cursive, flowing style.

Karl A. (Tony) Harris

KAH/rlg

Enclosure

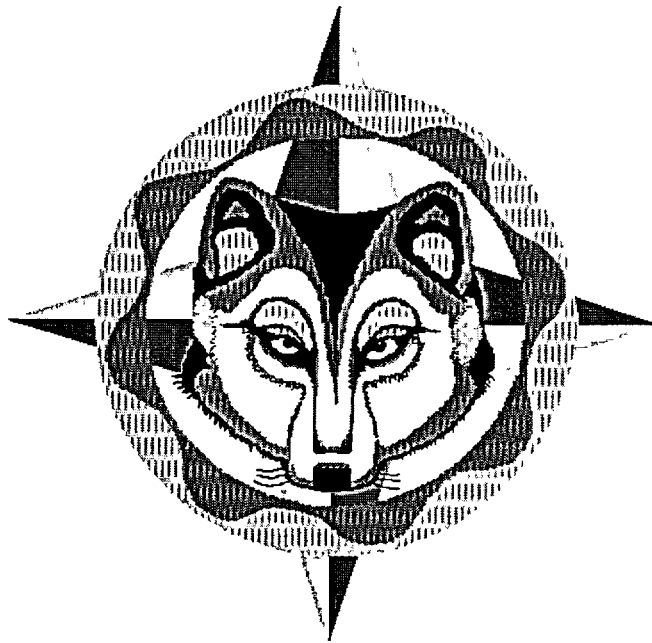
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WOLF CREEK NUCLEAR OPERATING CORPORATION

WOLF CREEK GENERATING STATION

**2002 ANNUAL RADIOLOGICAL
ENVIRONMENTAL OPERATING REPORT**



April 15, 2003

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INTRODUCTION

The 2002 Annual Radiological Environmental Operating Report for Wolf Creek Generating Station (WCGS) covers the period from January 1 through December 31, 2002. WCGS is located in Coffey County, Kansas, approximately five miles northeast of Burlington, Kansas.

Fuel loading commenced at WCGS on March 12, 1985. The operational phase of the Radiological Environmental Monitoring Program (REMP) began with initial criticality on May 22, 1985, and the first detectable quantities of radioactivity were reported in plant effluents in June 1985.

This report contains a description of the REMP conducted by Wolf Creek Nuclear Operating Corporation (WCNOC), results of sample analyses, a discussion of monitoring program results, a description of revisions to and deviations from the program, and the results of Interlaboratory Comparison Programs. Individual sample results and a summary of results in the Nuclear Regulatory Commission (NRC) Branch Technical Position specified format are included as appendices.

Plant-related activation, corrosion or fission products were not detected during 2002 in airborne particulate and radioiodine filters, ground water, drinking water, shoreline sediment, broadleaf vegetation, crops, terrestrial vegetation, aquatic vegetation, soil or deer samples. Activation, corrosion or fission products attributable to plant operation were detected during 2002 in surface water, fish, and bottom sediment samples.

Nuclides detected in REMP samples were below applicable NRC reporting levels, and program lower limits of detection were met.

I. PROGRAM DESCRIPTION

Radiological environmental samples were collected according to the schedule in WCGS procedure AP 07B-004, *Offsite Dose Calculation Manual (Radiological Environmental Monitoring Program)*. Environmental samples were collected by the WCGS Environmental Management group and were analyzed by Environmental, Inc. Detroit Edison processed environmental TLDs at the Enrico Fermi 2 plant. Table 1 lists sampling pathways and frequencies of sampling and analysis. Table 2 lists each sample location's distance and direction from the plant. Samples in addition to those required by the WCGS Offsite Dose Calculation Manual (ODCM) were also obtained.

The following is a description of the sampling and analysis program by individual pathways.

A. Airborne Pathway

Low volume air sampling pumps collected particulate and radioiodine samples on 47 mm glass fiber filters and charcoal canisters, respectively. The filters and charcoal canisters were changed out weekly, labeled, and shipped to Environmental, Inc. for analysis. The volume of air sampled was calculated from the average of initial and final flow rates and the total time of collection. Each pump was equipped with a time totalizer that was checked weekly against the elapsed time to identify electrical power outages.

Gross beta analysis of the air particulate samples was performed after a nominal 72-hour period to allow the radon and thoron daughter products to decay.

Weekly air particulate filters were combined into quarterly composites for each location and analyzed for gamma emitting isotopes.

Charcoal canisters were routinely counted in groups of five to determine the presence or absence of I-131. Positive indication of I-131 would have resulted in analysis of each individual charcoal canister.

Air samples were collected from six locations. Indicator locations 2, 18 and 37 are located in the three sectors with the highest ground level deposition constants (D/Q). Air sampling stations are also located in the community of New Strawn (indicator location 32), and a control location at Hartford (location 40). A control location at Harris (location 48) was added during the sample year. Distances and directions to sampling locations from the plant are listed in Table 2, indicator locations are shown in Figure 1, and the control locations are shown in Figure 5.

B. Direct Radiation Pathway

Panasonic UD-814-AQ thermoluminescent dosimeters (TLDs) were used at 48 locations during the sample year. The TLDs consist of one lithium-borate element and three calcium sulfate elements in a plastic case.

TLDs were typically positioned roughly 3 to 4 feet above the ground in plastic thermostat boxes. The thermostat boxes protect the TLDs from the elements and tampering. Two TLDs were placed at each designated location. Indicator TLD sample locations are illustrated in Figure 2 and control locations are shown in Figure 5. Table 2 provides the distance and direction of each location from the plant. Control locations were 39 (Beto Junction), 40 (Hartford) and 48 (Harris).

C. Waterborne Pathway

All water samples were analyzed to determine whether gamma emitters were present. In addition to gamma isotopic analysis, radiochemical analysis for I-131 was performed on drinking water and ground water samples. Gross beta analysis was also performed on drinking water samples. Tritium analysis was performed monthly by liquid scintillation for surface water and quarterly for drinking water. Tritium analysis was also performed quarterly on ground water samples. Water sampling locations are listed in Table 2 and are shown in Figures 3 and 5.

Monthly grab samples of surface water were collected from the outfall of John Redmond Reservoir (JRR) as a control location (location MUSH [Make-Up Screen House]) and from the discharge cove (DC) of Wolf Creek Lake as an indicator location.

Quarterly grab samples of ground water were collected from four wells. Location B-12 is hydrologically up gradient from the site and was used as a control location. Three locations (C-10, C-49 and D-65) are hydrologically down gradient from the site and were used as indicator sample locations. Duplicate samples were obtained from location C-49 and were labeled L-49. These duplicate samples served as laboratory quality checks.

Drinking water was sampled at the water treatment facilities for the towns of Burlington (control location BW-15) and LeRoy (indicator location LW-40). The Burlington facility is located upstream and the LeRoy facility is located downstream of the confluence of the discharge from Wolf Creek Lake and the Neosho River. Composite samples were obtained monthly from automatic samplers at each location that collected approximately 27 ml of drinking water every two hours.

Shoreline sediments were sampled semiannually for gamma analysis at the Wolf Creek Lake discharge cove (DC) indicator location and at the control location (JRR).

D. Ingestion Pathway

Because no sampling locations that produce milk for human consumption were identified within five miles of the plant, milk was not collected during the sample year.

Fish were sampled semiannually from the tail waters of JRR (control, Figure 4) and from Wolf Creek Lake (indicator, Figure 4) for gamma isotopic analysis. Several species of game fish and rough fish were sampled. Gamma isotopic analysis was performed on boneless meat portions of the fish. Fish were also analyzed for tritium.

Broadleaf vegetation samples were collected monthly when available during the growing season from five gardens. Three indicator (A-2, G-1 and L-1) gardens (Figure 4) and two control (D-1 and S-4) gardens (Figure 5) were sampled. Gamma isotopic analyses were performed on all samples.

Crop samples were obtained from two indicator locations (NR-D1 and NR-D2) downstream of the confluence of Wolf Creek and the Neosho River. The samples were irrigated with water from the Neosho River. Two crop samples were obtained from control location NR-U1; however, these samples were not irrigated with Neosho River water. Gamma isotopic analysis was performed on each sample. Crop sample locations are identified on Figure 5.

E. Additional Samples Collected (not required by AP 07B-004)

Surface water was collected monthly from the spillway (SP) of Wolf Creek Lake as an indicator location. The water samples were analyzed by gamma isotopic analysis and were also analyzed for tritium. These samples were collected as part of a cooperative sampling effort with the Kansas Department of Health and Environment (KDHE). The sample location is identified on Figure 3.

Drinking water indicator location NF-DW (Neosho Falls) was established near the end of the sample year. The drinking water sample was analyzed for gross beta, gamma emitters and I-131. This sample location was added due to the upcoming closure of the LeRoy drinking water treatment facility and is identified on Figure 5.

Shoreline sediments were collected for gamma analysis at the Environmental Education Area (EEA) and the Make-up Water Discharge Structure (MUDS). These samples were collected as part of a cooperative sampling effort with the KDHE. The sample locations are identified on Figure 3.

Bottom sediment samples were collected semiannually for gamma analysis at the Wolf Creek Lake discharge cove (DC) indicator location and the control location (JRR). These samples were collected as part of a cooperative sampling effort with the KDHE. The sample locations are identified on Figure 3.

Aquatic vegetation was collected for gamma analysis from indicator locations at the Wolf Creek Lake alternate discharge cove (DC ALT), the MUDS and the EEA. These samples were collected as part of a cooperative sampling effort with the KDHE. The sample locations are identified on Figure 3.

Terrestrial vegetation was sampled from indicator locations MUDS and EEA for gamma isotopic analyses. These samples were collected as part of a cooperative sampling effort with the KDHE. The sample locations are identified on Figure 4.

Soil was sampled from indicator locations MUDS and EEA for gamma isotopic analyses. These samples were collected as part of a cooperative sampling effort with the KDHE. The sample locations are identified on Figure 4.

A road-killed deer was sampled from indicator location B1.1 for gamma isotopic analyses. The sample was split with the KDHE. The sample location is identified on Figure 4.

Distance and direction information for the sampling locations listed in this section are outlined in Table 2.

II. DISCUSSION OF RESULTS

Analysis results for all pathways are summarized in Appendix B using the format described in Radiological Assessment Branch Technical Position, Revision 1, November 1979 (NRC Generic Letter 79-065). Results for individual samples are listed in Appendix C.

In this section, results are discussed by pathway and analysis type. Monitoring results are compared with control data, preoperational values, sources of radioactivity, and effluent releases when applicable. Trends or seasonal effects are discussed.

A. Airborne Pathway

Chart 1 graphically illustrates weekly gross beta results for the sample year. Chart 2 represents the historical smoothed averages of indicator and control gross beta data.

Charts 1 and 2 demonstrate how closely the indicator and control locations tracked together. Chart 2 reveals a seasonal cyclic trend in which gross beta values peak in the winter months (December or January) and decrease to a low point in the spring months (May or June). This trend is expected and is attributed to seasonal meteorological changes, i.e., changes in prevailing winds and precipitation.

The gross beta results of 2002 were compared to pre-operational monitoring results of 1983 and 1984. The weekly gross beta analyses range for 1983 and 1984 was 0.0064 to 0.084 pCi/m³. The 2002 weekly gross beta analyses range for indicator locations was 0.015 to 0.054 pCi/m³, which was within the 1983 and 1984 pre-operational range. Additionally, the

annual mean for indicator locations for 2002 (0.029 pCi/m³) was lower than the annual mean for 1983 (0.032 pCi/m³).

The gross beta results for the indicator locations were also compared to the control locations. The annual mean for indicator locations for 2002 (0.029 pCi/m³) was lower than the annual mean of the control locations (0.030 pCi/m³).

Naturally occurring Be-7 activity was detected, as was the case during pre-operational monitoring. In 1984, the range for Be-7 detected activity was 0.024 to 0.211 pCi/m³ for indicator locations, and the annual mean for indicator locations was 0.069 pCi/m³. In 2002, the range for Be-7 detected activity was 0.042 to 0.087 pCi/m³ for indicator locations, and the annual mean for indicator locations was 0.068 pCi/m³.

The control location annual mean for Be-7 detected activity (0.071 pCi/m³) was higher than the indicator locations annual mean (0.068 pCi/m³).

Required lower limits of detection were met and I-131 activity was not detected in the weekly analysis of charcoal filters at any location.

No effects of plant operation were seen via the airborne pathway for the year, and no unusual trends were noted.

B. Direct Radiation Pathway

Quarterly gamma exposures measured at each location are shown in Table 3. Measured values have been converted to a standard 90-day quarter.

The annual mean of all indicator locations in 2002 was 0.226 mR/day and the annual mean for the control locations was 0.211 mR/day. These results are similar to the pre-operational results for 1981. In 1981, the annual mean of all indicator locations was 0.21 mR/day and annual mean for the control locations was 0.19 mR/day.

In 2002, the indicator location with the highest annual mean (0.272 mR/day) was location 47. Location 47 was added to the sampling program in 1997 and has since been the indicator location with the highest annual mean. The close proximity of location 47 to the Radwaste Building is likely the reason direct radiation levels are higher at this location.

Results from TLDs located near the plant (less than three miles), which would be most affected by changes in plant operation, were combined into quarterly averages. These nearsite averages, using locations 1, 2, 7-14, 18, 26-30, 37 and 38, are compared to control location results (locations 39 and 40) in Chart 3. Chart 3 also includes preoperational data for comparison. The nearsite TLD locations have historically trended higher than the control locations both prior to and after WCGS became operational.

C. Waterborne Pathway

(1) Surface Water

Tritium, attributable to WCGS operation, was detected in all surface water samples collected from Wolf Creek Lake during 2002. An adult drinking 2 liters per day of surface water collected from the Wolf Creek Lake discharge cove, using the annual mean of detected tritium activity (13,522 pCi/liter), would receive a committed effective dose equivalent of 0.617 mRem per year. An adult drinking 2 liters per day of surface water collected from the Wolf Creek Lake discharge cove, using the highest detected tritium activity (19,002 pCi/liter), would receive a committed effective dose equivalent of 0.868 mRem per year. Chart 4 illustrates smoothed tritium data for location DC from startup in May 1985 through 2002.

It can be seen in Chart 4 that monthly surface water tritium concentrations have trended upward since plant startup. This is expected until the average tritium concentration of the lake reaches equilibrium.

Required lower limits of detection were met and tritium activity was not detected in samples obtained from the control location (MUSH).

During pre-operational environmental radiological monitoring, measured radiological activity was not detected in surface water samples.

Tritium was the only activity detected in surface water samples and no unusual trends were noted.

(2) Ground Water

Required lower limits of detection were met and radioactivity was not detected in any ground water samples.

(3) Drinking Water

Chart 5 illustrates the historical drinking water gross beta data and how closely the gross beta results compared for the indicator and control locations.

Gross beta activity was detected in all drinking water samples. The annual mean of the control location gross beta activity (4.8 pCi/liter) was the same as the annual mean of the indicator locations (4.8 pCi/liter). The 2002 annual means of gross beta activity for both the control and indicator locations were lower than those of the pre-operational monitoring year of 1984. In 1984, the annual mean of the control location gross beta activity was 6.4 pCi/liter, and the annual mean of the indicator location gross beta activity was 7.5 pCi/liter.

Required lower limits of detection were met. Tritium activity was not detected in any drinking water samples. Additionally, radionuclides were not detected by the I-131 or gamma isotopic analyses.

Activity due to plant operation was not evident in drinking water samples during 2002 and no unusual trends were noted.

(4) Shoreline Sediment

Naturally occurring K-40 was detected in samples obtained from indicator locations (7,770–9,809 pCi/kg, dry) and in samples obtained from control locations (10,795–11,585 pCi/kg, dry). K-40 was also detected during pre-operational shoreline sediment monitoring.

Required lower limits of detection were met and K-40 was the only activity detected in shoreline sediment samples.

Activity due to plant operation was not evident in shoreline sediment samples during 2002 and no unusual trends were noted.

D. Ingestion Pathway

(1) Milk

Milk was not collected during the sample year since no indicator locations within five miles of the plant were identified during the Land Use Census.

(2) Fish

Naturally occurring K-40 activity was detected in all fish samples. K-40 activity was also detected during pre-operational fish monitoring.

During 2002, fish were also analyzed for tritium. All fish samples taken from Wolf Creek Lake had tritium activity detected (8,109.8 pCi/kg annual mean). The detected tritium activity was attributable to plant operation. An adult consuming 21 kilograms of fish, at the maximum measured tritium concentration for 2002 (9,170 pCi/kg), would receive a committed effective dose equivalent of 0.012 mRem.

Tritium activity was not detected in the control samples collected from JRR.

No other radionuclides were detected in fish during the year. The ODCM required lower limits of detection were met and no unusual trends were noted.

(3) Broadleaf Vegetation

Gamma analyses of broadleaf vegetation samples obtained from indicator and control locations detected naturally occurring gamma emitters Be-7 and K-40. Be-7 and K-40 activity was also detected pre-operationally.

One mustard green sample obtained from indicator location (L-1) had Cs-137 activity (41.5 +/- 23.8 pCi/kg wet) detected. The lab re-analyzed the mustard green sample and the Cs-137 activity detected was 29.8 +/- 22.2 pCi/kg wet. The measured Cs-137 activity was attributed to fallout and not to a recently produced fission product associated with plant operation. Cs-137 activity was detected preoperationally in food and garden samples and has been detected at the control location during plant operation.

The ODCM required lower limits of detection were met and no unusual trends were noted. Activity attributable to plant operation was not detected.

(4) Crop Samples

Gamma analysis detected naturally occurring K-40 to be present in all of the samples. K-40 activity was also detected during pre-operational crop monitoring. K-40 was the only activity detected in crop samples. The ODCM required lower limits of detection were met and no unusual trends were noted.

E. Additional Samples Collected (not required by AP 07B-004)

(1) Bottom Sediment

Naturally occurring K-40 was detected in all of the bottom sediment samples. K-40 activity was also detected during pre-operational bottom sediment monitoring.

Co-60 activity (227.8 and 307.7 pCi/kg) was detected in the samples obtained from the Wolf Creek Lake discharge cove. Co-60 activity was attributable to plant operation and has been identified in plant effluents. Co-60 activity was not detected in pre-operational environmental monitoring and was not detected in samples collected from control location JRR during 2002.

Cs-137 activity (262.7 and 280.5 pCi/kg) was detected in the indicator samples obtained from the Wolf Creek Lake discharge cove. A portion of this activity is due to fallout and a portion of this activity is likely plant-related since Cs-134 activity has been detected in the past. Cs-137 activity was detected in pre-operational samples, and the results for 2002 indicator bottom sediment samples were within the pre-operational range. (Cs-137 activity detected in 1981 and 1982 was in the range of 79 to 950 pCi/kg. The decay corrected range of pre-operational Cs-137 activity detected is approximately 49 to 585 pCi/kg.) Cs-137 activity has been identified in plant effluents. Cs-137 activity (165.3 and 105.8 pCi/kg) was also detected in the control location samples.

Chart 6 plots the Cs-137 detected activity from the discharge cove indicator location and JRR control location bottom sediment samples. The detected Cs-137 activity measured from the discharge cove location reflects a decreasing trend. The Chart 6 trend line indicates that as expected, Cs-137 activity detected at the JRR control location has been decreasing.

No other radionuclides were detected in bottom sediment samples and no unusual trends were noted.

(2) Aquatic Vegetation

Naturally occurring Be-7 and K-40 activity were detected in samples collected in 2002 and were also detected during pre-operational monitoring.

No other radionuclides were detected in aquatic vegetation samples and no unusual trends were noted.

(3) Terrestrial Vegetation

Naturally occurring K-40 activity was detected in the samples. No other radionuclides were detected. No unusual trends were identified.

(4) Soil

Naturally occurring K-40 activity was detected in both of the soil samples. K-40 activity was also detected during pre-operational soil monitoring.

Cs-137 (153.2 and 200.7 pCi/kg) activity was detected in the soil samples. The pre-operational Cs-137 results (255 to 2,160 pCi/kg) for soil samples were decay corrected. The decay corrected pre-operational range is approximately 172 to 1453 pCi/kg. The measured Cs-137 activity of the soil samples obtained during 2002 are within or below the decay corrected pre-operational range. Cs-137 activity was not detected in air samples collected during 2002. The measured Cs-137 activity in the soil sample was likely due to previous fallout and not to a recently produced fission product associated with plant operation.

No unusual trends were identified.

5) Deer

Gamma analysis detected naturally occurring K-40 (2,629.7 +/- 388.1 pCi/kg wet) activity in the deer sample obtained from indicator location B1.1. K-40 activity was also detected during pre-operational monitoring. K-40 was the only activity detected in the deer sample. No unusual trends were noted.

III. ANNUAL LAND USE CENSUS RESULTS

Summary

An annual Land Use Census of rural residents within five miles of WCGS was completed during 2002. The two broadleaf vegetation locations with the highest calculated annual average D/Q rankings were G1.6-QURD1384 and N2.38-RRDR9. AP 07B-004, Offsite Dose Calculation Manual (Radiological Environmental Monitoring Program) specifies that an "alternate location may be used to provide continued monitoring". The third-ranked garden was at location H3.30-QURD1175. Tables 4 and 5 contain the summarized results and illustrated changes.

Background

Section 5.2, Attachment A, of the ODCM procedure (AP 07B-004), directs that "a Land Use Census shall be conducted annually during the growing season to identify the nearest (1) milk animal, (2) residence, and (3) garden of greater than 500 square feet producing broadleaf vegetation in each of the 16 meteorological sections within five miles of the WCGS site" and "the results of the Land Use Census shall be included in the Annual Radiological Environmental Operating Report."

Table 5-1, Attachment A, of the ODCM (AP 07B-004) requires that broadleaf vegetation samples be collected from two indicator locations with the highest calculated annual average D/Q.

Table 5-1, Attachment A, of the ODCM (AP 07B-004) also requires that milk samples be collected from three indicator locations within five miles of the site having the highest dose potential.

Methodology

Surveys were sent to the rural residents within five miles of WCGS. A follow-up mailing was sent to residents who did not respond. The survey excluded the residents of New Strawn, Burlington and a trailer park just north of Burlington. These locations were excluded due to the large number of households and the low likelihood that information gained from these residences would affect the locations chosen for REMP sampling. Of the 178 surveys mailed to the rural residents, 152 were returned by mail or completed by conversing with the residents. The remaining surveys were partially completed with information obtained by driving by the locations.

Results

Table 4 reflects the nearest residences, milk animals and broadleaf gardens. Table 5 lists the changes as compared to the 2001 Land Use Census results for milk animals and gardens producing broadleaf vegetation.

Changes in the nearest residence occurred in sectors B, F, M, N and R. No milk locations were identified. Eight location changes were noted for the nearest garden producing broadleaf vegetation.

IV. PROGRAM REVISIONS/CHANGES

Based upon the evaluation of Performance Improvement Request 20011640, the air sample control location was changed from Hartford, Kansas (location 40) to Harris, Kansas (location 48) and the broadleaf vegetation control location was changed from Hartford, Kansas (S-4) to Harris, Kansas (location D-1).

V. PROGRAM DEVIATIONS

Air Particulate and Radioiodine

Due to an ice storm that occurred from January 29 through February 2, 2002, electrical power outages were experienced at air sample locations 2, 18, 32 and 40. (Performance Improvement Request 20020393)

VI. INTERLABORATORY COMPARISON PROGRAM RESULTS

During 2002, Environmental, Inc. was contracted to perform radiological analysis of environmental samples for WCNOC. The lab participated in the Environmental Resource Associates (ERA) Proficiency Testing Program. Appendix A is the Interlaboratory Comparison Program Results for Environmental, Inc. TLD intercomparison results, in-house spikes, blanks, duplicates and mixed analyte performance evaluation program results are also contained in Appendix A.

Table 6 is a summary of statistical results of performance testing of TLDs processed at Enrico Fermi 2 by Detroit Edison, which participated in the National Voluntary Laboratory Accreditation Program.

VII. COMPARISON TO THE RADIOACTIVE EFFLUENTS RELEASE PROGRAM

As described in the sections discussing radioisotopes found in the surface water from Wolf Creek Lake, dose that may be received as a result of tritium released from WCGS is consistent with the theoretical doses calculated by the Radioactive Effluent Release Program.

Chart 7 indicates that the dose to a man resulting from drinking surface water from Wolf Creek Lake was within a reasonable expected value. Dose for the surface water was determined using the December tritium activity detected for each calendar year at the discharge cove. Released tritium maximum organ dose (mRem) values were obtained from Annual Radioactive Effluent Release Reports and are not cumulative (i.e., the values reflected are the totals for the respective years).

An adult drinking 2 liters per day of surface water collected from the Wolf Creek Lake discharge cove, using the 2002 December detected tritium activity from the discharge cove (12,341 pCi/liter), would receive a committed effective dose equivalent of 0.563 mRem per year. This information was derived from radiological environmental monitoring.

The maximum organ dose for tritium released in liquid effluents in 2002 was 0.299 mRem. This information was obtained from the Annual Radioactive Effluent Release Report.

The tritium dose values are being compared on a qualitative basis. It is not expected that the annual doses, as calculated in the Annual Radioactive Effluent Release Report, would compare directly to those calculated from the REMP. The Annual Radioactive Effluent Release Report provides a 'snap shot' of potential dose resulting from the year's releases. The REMP data indicate the accumulated result of releasing tritium into the cooling lake since the start of plant operation.

TABLE 1

**2002 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM DESCRIPTION
(SAMPLE COLLECTION SPECIFIED BY ODCM)**

EXPOSURE PATHWAY/ SAMPLE	NUMBER OF SAMPLES AND SAMPLE LOCATIONS	SAMPLING AND COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
AIRBORNE	(See Figures 1 & 5)		
Radioiodine and Particulates	Samples from five locations	Continuous sampler operation with sample collection weekly, or more frequently if required, by dust loading.	Analyze radioiodine canister weekly for I-131
	Samples from locations near the site boundary in three sectors having the highest calculated annual average D/Q (Locations 2, 18 and 37 on Figure 1)		Analyze particulate filter weekly for gross beta activity; perform quarterly gamma isotopic analysis composite (by location)
	Sample from the vicinity of a community having the highest calculated annual average D/Q (Location 32 on Figure 1, New Strawn)		
	Sample from a control location 9.5 to 18.5 miles distant in the lowest ranked D/Q sector (Location 48 on Figure 5)		

TABLE 1 (Cont.)

EXPOSURE PATHWAY/ SAMPLE	NUMBER OF SAMPLES AND SAMPLE LOCATIONS	SAMPLING AND COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
DIRECT RADIATION	<p>(See Figures 2 & 5)</p> <p>40 routine monitoring stations with two or more dosimeters measuring dose continuously, placed as follows:</p> <p>An inner ring of stations, one in each meteorological sector 0-3 mile range from the site (Locations 1, 7-9, 11-13, 18, 26, 27, 29-31, 37, 38 and 47 on Figure 2).</p> <p>An outer ring of stations, one in each meteorological sector in the 3-5 mile range from the site (Locations 4-6, 15-17, 19-25, and 33-36 on Figure 2). Five sectors [A, B, D, G, and L] contain an additional station (Locations 2, 3, 10, 14 and 28).</p> <p>The balance of the stations to be placed in special interest areas such as population centers (Locations 23 and 32), nearby residences</p>	Quarterly	Gamma dose quarterly

TABLE 1 (Cont.)

EXPOSURE PATHWAY/ SAMPLE	NUMBER OF SAMPLES AND SAMPLE LOCATIONS	SAMPLING AND COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
DIRECT RADIATION (cont.)	(many locations are near a residence), schools (Location 23), and in one or two areas to serve as control stations 10-20 miles distant from the site (Locations 39 and 40 on Figure 5).		
WATERBORNE	(See Figure 3)		
Surface	One sample upstream (Location MUSH on Figure 3) and one sample downstream (Location DC on Figure 3).	Monthly grab sample	Monthly gamma isotopic analysis and composite for tritium analysis quarterly
Ground	Samples from one or two sources only if likely to be affected. Indicator samples at locations hydrologically down gradient of the site (Locations C-10, C-49, and D-65 on Figure 3); Control sample at a location hydrologically up gradient of the site (Location B-12 on Figure 3).	Quarterly grab sample	Quarterly gamma isotopic and tritium analysis

TABLE 1 (Cont.)

EXPOSURE PATHWAY/ SAMPLE	NUMBER OF SAMPLES AND SAMPLE LOCATIONS	SAMPLING AND COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
WATERBORNE (cont.)			
Drinking	Sample of municipal water supply at an indicator location downstream of the site (Location LW-40 on Figure 5); control sample from location upstream of the site (Location BW-15 on Figure 3).	Monthly Composite	Monthly gamma isotopic analysis and gross beta analysis of composite sample. Quarterly tritium analysis of composites.
Shoreline Sediment	One sample from the vicinity of Wolf Creek Lake discharge cove; control sample from John Redmond Reservoir (Locations DC and JRR respectively on Figure 3).	Semiannually	Semiannual gamma isotopic analysis
INGESTION	(See Figures 4 & 5)		
Milk	Samples from milking animals at three indicator locations within five miles of the site having the highest dose potential (currently there are no locations producing milk for human consumption within five miles of the site); one sample from a control location greater than 10 miles from the site if indicator locations are sampled.	Semimonthly April to November; monthly December-March	Gamma isotopic analysis and I-131 analysis of each sample

TABLE 1 (Cont.)

EXPOSURE PATHWAY/ SAMPLE	NUMBER OF SAMPLES AND SAMPLE LOCATIONS	SAMPLING AND COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
INGESTION (cont.)			
Fish	Indicator samples of 1 to 3 recreationally important species from Wolf Creek Lake; control samples of similar species from John Redmond Reservoir spillway (Figure 4).	Semiannually	Gamma isotopic analysis on edible portions
Broadleaf Vegetation	Samples of available broadleaf vegetation from two indicator locations with highest calculated annual average D/Q (Locations G-1 and A-2 and alternate location L-1); sample of similar broadleaf vegetation from a control location 9.5 to 18.5 miles distant in the lowest ranked D/Q sector (Location D-1 on Figure 5).	Monthly when available	Gamma isotopic analysis on edible portions
Irrigated Crops	Sample of crops irrigated with water from the Neosho River downstream of the Neosho River - Wolf Creek confluence (Location NR-D1 and NR-D2 on Figure 5).	At time of harvest	Gamma isotopic analysis on edible portions

TABLE 2
SAMPLE LOCATION NUMBERS, DISTANCES (Miles) AND DIRECTIONS

Location Number	Distance/ Direction	Location Number	Distance/ Direction	Location Number	Distance/ Direction
Air Particulates and Radioiodine					
2	2.7/N				
18	3.0/SSE				
32	3.2/WNW				
37	2.1/NNW				
40	>15.0/WNW				
48	14.7/ENE				
TLDs					
1	1.4/N	17	3.6/SE	33	3.7/WNW
2	2.7/N	18	3.0/SSE	34	4.0/NW
3	3.0/NNE	19	4.0/SSE	35	4.6/NNW
4	4.0/NNE	20	3.3/S	36	4.2/N
5	4.0/NE	21	3.8/S	37	2.1/NNW
6	4.4/ENE	22	4.1/SSW	38	1.2/NW
7	1.9/NE	23	4.5/SW	39	13.0/N
8	1.6/NNE	24	4.1/WSW	40	>15.0/WNW
9	2.0/ENE	25	3.6/W	41	0.8/NNW
10	2.4/ENE	26	2.6/WSW	42	0.8/SSE
11	1.6/E	27	2.1/SW	43	0.8/WNW
12	1.8/ESE	28	2.8/SW	44	3.0/NNW
13	1.5/SE	29	2.6/SSW	45	1.6/WNW
14	2.6/SE	30	2.2/W	46	1.5/WNW
15	4.5/ESE	31	3.0/WNW	47	0.16/S
16	4.2/E	32	3.2/WNW	48	14.7/ENE
Ground water		Drinking water		Surface water	
B-12	2.2/NNE	BW-15	3.9/SW	MUSH	3.6/W
C-10	2.8/W	LW-40	>10.0/SSE	DC	0.6/WNW
C-49/L-49	2.9/SW	NF-DW	>15.0/SSE	SP	2.9/S
D-65	3.9/S				
Deer		Broadleaf vegetation		Crops	
B1.1	1.1/NNE	A-2	4.9/N	NR-D1	9.2/S
		D-1	14.7/ENE	NR-D2	>10.0/S
		G-1	1.6/SE	NR-U1	4.2/SW
		L-1	2.6/SW		
		S-4	>15.0/WNW		
Fish		Shoreline Sediment		Aquatic Vegetation	
WCL	0.6/WNW	DC	0.6/WNW	DC ALT	1.5/NW
JRR	4.0/W	EEA	3.0/NNW	EEA	3.0/NNW
		JRR	4.0/W	MUDS	1.5/WNW
		MUDS	1.5/WNW		
Terrestrial Vegetation & Soil			Bottom Sediment		
EEA	3.0/NNW	DC	0.6/WNW		
MUDS	1.5/WNW	JRR	4.0/W		

TABLE 3
First and Second Quarter TLD Results
(mR/90 day qtr)

First Quarter				Second Quarter			
Location	Days	90 Day Avg.	2 std dev	Location	Days	90 Day Avg.	2 std dev
1	80.2	21.9	4.0	1	109.9	20.2	0.9
2	80.1	20.6	1.8	2	109.9	18.8	1.2
3	80.1	20.4	0.5	3	111.8	19.4	0.9
4	80.1	21.6	1.2	4	111.8	20.0	1.3
5	80.1	19.7	1.6	5	111.8	18.7	1.0
6	80.1	22.4	2.5	6	111.8	18.7	1.5
7	80.1	20.5	3.9	7	110.8	18.6	1.0
8	80.1	22.3	1.8	8	110.9	20.0	1.2
9	80.1	19.6	1.2	9	110.9	18.0	1.3
10	80.1	22.7	3.1	10	110.0	19.8	0.8
11	80.1	24.1	3.5	11	110.0	20.7	1.5
12	80.1	23.6	1.6	12	110.9	19.4	1.2
13	80.1	22.6	1.4	13	110.9	20.7	0.9
14	80.1	21.3	2.0	14	110.8	20.0	1.4
15	80.1	23.2	9.3	15	111.8	21.6	5.2
16	80.1	21.0	0.7	16	111.8	20.5	1.7
17	80.1	20.8	1.5	17	110.8	20.0	2.0
18	80.1	20.3	1.9	18	110.0	19.1	1.1
19	80.9	21.1	1.4	19	109.1	24.3	3.1
20	80.9	20.5	0.7	20	109.2	20.5	1.2
21	80.9	17.5	0.4	21	109.1	19.4	0.9
22	80.9	19.9	1.1	22	109.1	20.0	1.5
23	80.9	19.8	1.3	23	109.1	23.0	1.9
24	80.9	19.5	1.7	24	109.1	20.7	2.2
25	80.9	17.9	0.9	25	109.1	17.9	1.2
26	81.0	18.6	1.1	26	109.8	18.2	1.1
27	81.0	19.9	0.9	27	109.0	19.9	0.8
28	81.0	17.5	1.2	28	109.0	18.2	0.8
29	81.0	16.8	1.2	29	109.0	16.9	1.1
30	81.1	20.4	1.1	30	109.8	20.1	1.3
31	80.9	19.2	1.2	31	109.1	19.3	1.8
32	80.9	18.7	1.1	32	109.1	18.5	0.8
33	80.9	20.8	0.9	33	109.1	20.7	1.1
34	80.8	20.4	1.0	34	110.0	19.8	1.8
35	80.1	20.0	1.3	35	109.9	19.6	1.0
36	80.1	19.8	1.2	36	109.9	20.1	1.3
37	80.2	19.3	1.0	37	109.9	18.6	0.7
38	80.2	21.1	1.5	38	109.9	22.8	4.9
39	80.8	19.2	1.0	39	110.0	18.8	1.2
40	80.8	17.1	1.0	40	110.0	18.4	1.5
41	80.2	21.1	0.9	41	109.9	20.0	1.4
42	80.0	14.7	0.6	42	111.9	14.3	1.2
43	80.0	14.1	0.9	43	111.9	13.2	0.7
44	80.2	20.0	1.5	44	109.9	19.4	1.6
45	81.1	20.9	0.9	45	109.8	20.7	0.5
46	81.1	20.2	1.6	46	109.8	18.9	1.5
47	80.0	23.0	1.8	47	111.8	24.9	0.3

TABLE 3 (Cont.)
Third and Fourth Quarter TLD Results
(mR/90 day qtr)

Third Quarter				Fourth Quarter			
Location	Days	90 Day Avg.	2 std dev	Location	Days	90 Day Avg.	2 std dev
1	90.0	22.5	1.4	1	93.2	21.0	1.4
2	91.0	20.9	1.2	2	92.0	19.8	1.1
3	89.1	21.6	1.1	3	93.0	20.3	1.0
4	89.1	22.5	1.5	4	93.0	20.7	1.0
5	89.1	20.9	1.5	5	93.0	19.6	1.4
6	89.1	20.4	0.7	6	92.9	19.2	0.7
7	89.0	20.9	0.9	7	93.2	19.4	0.8
8	89.0	22.2	0.6	8	93.2	20.9	1.0
9	89.0	19.8	1.1	9	93.2	18.8	1.1
10	89.8	21.8	0.9	10	94.0	20.5	1.4
11	89.8	22.9	1.0	11	93.1	21.6	1.2
12	89.1	21.9	1.3	12	93.1	20.6	1.2
13	89.1	22.4	1.5	13	93.1	21.2	0.7
14	89.1	22.1	1.0	14	93.0	21.0	1.1
15	89.1	21.7	1.7	15	92.9	20.5	1.2
16	89.1	21.4	2.0	16	92.9	20.9	1.6
17	89.1	21.4	1.5	17	93.0	21.2	0.5
18	90.0	21.0	0.9	18	93.0	22.1	2.9
19	90.0	21.7	1.2	19	93.9	22.5	3.6
20	90.0	21.9	1.1	20	93.9	21.5	1.4
21	90.0	18.6	1.2	21	93.9	19.1	1.4
22	91.0	21.8	1.6	22	92.9	22.5	2.9
23	91.0	20.4	0.7	23	92.9	20.9	2.3
24	91.0	20.9	1.4	24	92.9	21.0	1.8
25	91.0	19.5	2.5	25	92.9	19.7	1.2
26	90.2	20.7	1.7	26	92.9	19.8	0.9
27	91.0	21.1	1.3	27	92.9	20.7	0.6
28	91.0	18.9	1.3	28	92.9	18.3	1.2
29	91.0	17.7	1.4	29	92.9	17.5	0.8
30	90.2	21.4	1.5	30	92.9	21.3	1.2
31	91.0	20.3	1.8	31	91.9	20.2	1.0
32	91.0	19.8	1.5	32	91.9	20.1	1.0
33	91.0	22.4	1.4	33	92.9	21.6	0.9
34	90.2	22.3	1.5	34	92.9	21.5	1.3
35	91.0	21.4	1.0	35	92.2	21.9	1.8
36	91.0	20.8	1.5	36	92.2	20.9	1.5
37	91.0	20.0	1.9	37	92.0	20.3	1.6
38	91.0	22.4	1.8	38	92.0	21.3	1.4
39	90.0	20.4	0.8	39	92.2	20.3	0.6
40	90.0	18.2	0.7	40	92.1	18.0	1.3
41	90.0	21.8	1.7	41	93.2	21.7	1.5
42	87.9	15.1	1.0	42	93.2	16.7	4.0
43	87.9	14.4	1.1	43	93.2	14.5	0.8
44	91.1	22.1	1.6	44	91.9	22.2	3.7
45	90.2	22.4	1.2	45	92.9	21.8	0.7
46	90.2	20.4	1.5	46	92.9	20.2	1.5
47	88.1	27.7	3.2	47	93.2	22.4	1.5
				48	92.2	20.6	1.6

TABLE 4
2002 Land Use Census Data

Location of Nearest:

Sector	Residence	Milking Animals	Broadleaf Garden
A	A2.60-17TE1520	None	A4.91-OXRD1940
B	B3.53-QURD1755	None	B3.53-QURD1755
C	C1.92-16RD1655	None	C3.58-RERD1675
D	D2.03-QULA1571	None	D3.10-16RD1829
E	E1.77-QULA1485	None	E4.40-TRRD1551
F	F1.57-14RD1711	None	F2.44-RERD1391
G	G1.56-QURD1384	None	G1.56-QURD1384
H	H3.09-12RD1711	None	H3.30-QURD1175
J	J3.70-11RD1540	None	J3.80-11RD1535
K	K2.70-12LA1439	None	K4.1-NARD1120
L	L2.10-NARD1339	None	L2.83-NARD1250
M	M2.47-14RD1322	None	M3.00-13LA1290
N	N1.71-NARD1441	None	N2.38-RRDR9
P	P2.76-HW751534	None	P4.70-KARD1675
Q	Q1.36-NALA1574	None	None
R	R2.08-NALN1650	None	None

Locations are identified based upon the following protocol:

EXAMPLE: A1.40-16RD1525

First letter is based upon sector, thus "A" designates this residence is in sector A.

The number immediately following the first letter designates the distance (in miles) from the reactor.

The characters following the dash represent a unique identifier based upon location address.

The example is in sector A, 1.40 miles from the reactor, at 1525 16th Road.

TABLE 5
Comparison of 2001 and 2002 Land Use Census Milk and Garden Data

SECTOR	2001 MILKING ANIMALS	2002 MILKING ANIMALS	2001 CLOSEST GARDEN PRODUCING BROADLEAF VEGETATION	2002 CLOSEST GARDEN PRODUCING BROADLEAF VEGETATION	D/Q RANKING
A	None	None	None	<u>A4.91-OXRD1940</u>	4
B	None	None	B3.6-QURD1755	B3.53-QURD1755	7
C	None	None	C1.9-16RD1655	<u>C3.58-RERD1675</u>	13
D	None	None	D3.2-RERD1601	<u>D3.10-16RD1829</u>	12
E	None	None	None	<u>E4.40-TRRD1551</u>	14
F	None	None	F2.5-RERD1391	F2.44-RERD1391	5
G	None	None	G1.6-QURD1384	G1.56-QURD1384	1
H	None	None	H3.5-QURD1175	H3.30-QURD1175	3
J	None	None	J3.8-11RD1531	<u>J3.80-11RD1535</u>	10
K	None	None	K4.1-NARD1120	K4.1-NARD1120	9
L	None	None	L2.6-NARD1309	<u>L2.83-NARD1250</u>	8
M	None	None	M3-13LA1290	M3.00-13LA1290	6
N	None	None	None	<u>N2.38-RRDR9</u>	2
P	None	None	P3.4-16RD1198	<u>P4.70-KARD1675</u>	11
Q	None	None	None	None	
R	None	None	None	None	

NOTE: Entries underlined indicate changes from the 2001 Land Use Census.

TABLE 6

Dosimetry Performance Testing Results

NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM

PERSONNEL DOSIMETRY PERFORMANCE TESTING

SUMMARY OF STATISTICAL RESULTS

PROCESSOR NAME: DETROIT EDISON COMPANY
 PROCESSOR CODE: 100529 B
 DOSIMETER DESCRIPTION: PANASONIC UD-802AS/ISA 820
 TEST RESULTS FOR QUARTER: 200204
 TESTING STATUS: RENEWAL
 TYPE OF DOSIMETER: WHOLE BODY
 REPORT PRINTED: 16 January 2003

CATEGORY	SHALLOW DEPTH				DEEP DEPTH			
	B	S	B + S	L	B	S	B + S	L
IA		NOT TESTED			-0.006	0.046	0.052	0.30
IB		NOT TESTED				NOT TESTED		
IC		NOT TESTED				NOT TESTED		
IIA	-0.076	0.053	0.129	0.40	-0.048	0.082	0.130	0.40
IIB		NOT TESTED				NOT TESTED		
IIC		NOT TESTED				NOT TESTED		
IID		NOT TESTED				NOT TESTED		
IIIA	-0.027	0.090	0.117	0.40		NOT TESTED		
IIIB		NOT TESTED				NOT TESTED		
IIIC		NOT TESTED				NOT TESTED		
IVA	0.011	0.056	0.067	0.40	0.017	0.081	0.098	0.40
IVB		NOT TESTED				NOT TESTED		
IVC		NOT TESTED				NOT TESTED		
V	-0.044	0.107	0.151	0.40	0.002	0.148	0.149	0.40
VI-TOTAL		NOT TESTED			-0.033	0.041	0.074	0.40
VI-NEUTRON		NOT TESTED			0.016	0.181	0.197	0.40

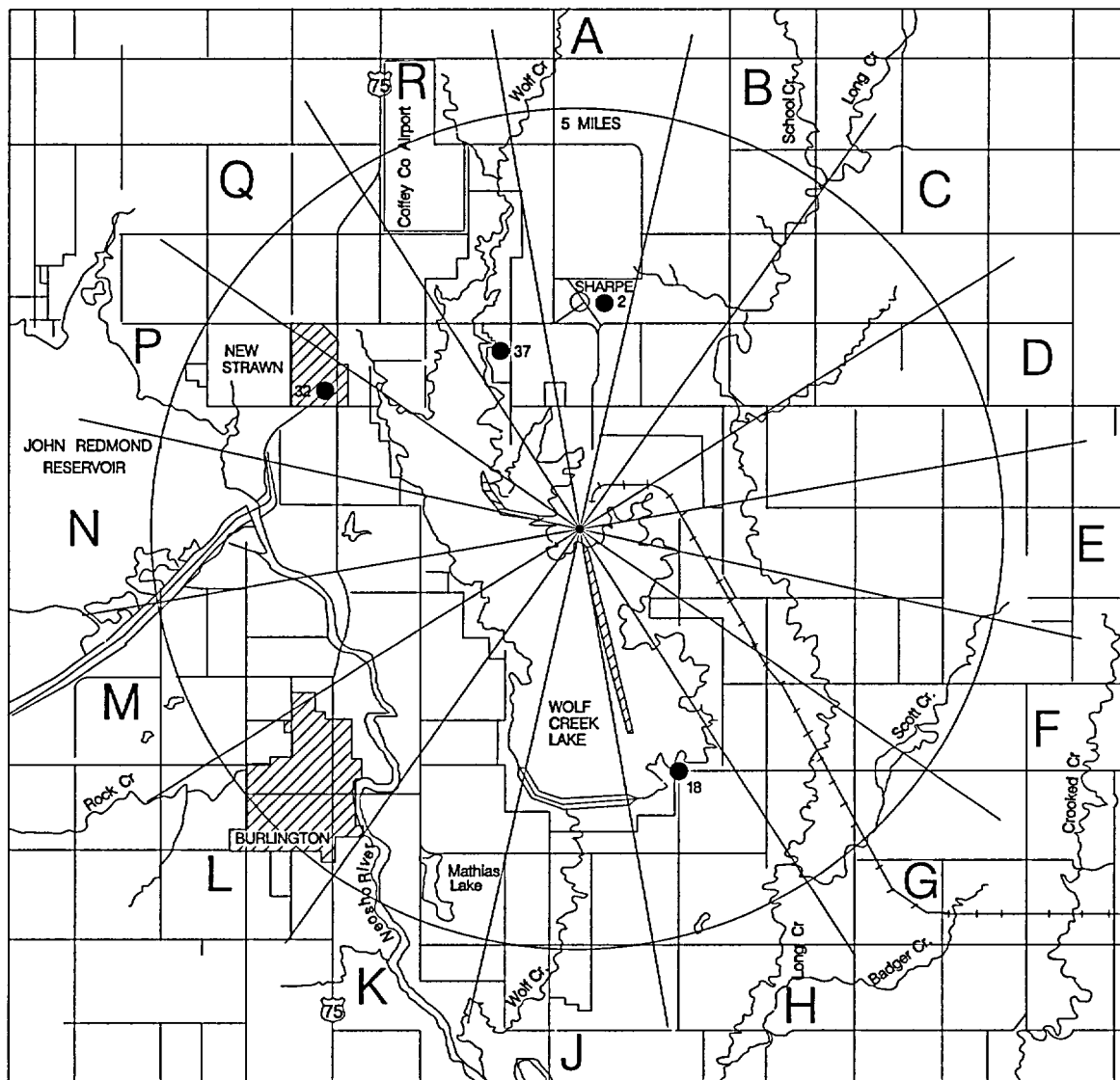
B = Bias

S = Standard Deviation

L = Limit

The laboratory successfully completed ANSI N13.11(2001)/NVLAP testing in categories IA, IIA, IIIA, IVA, VA and VIC.

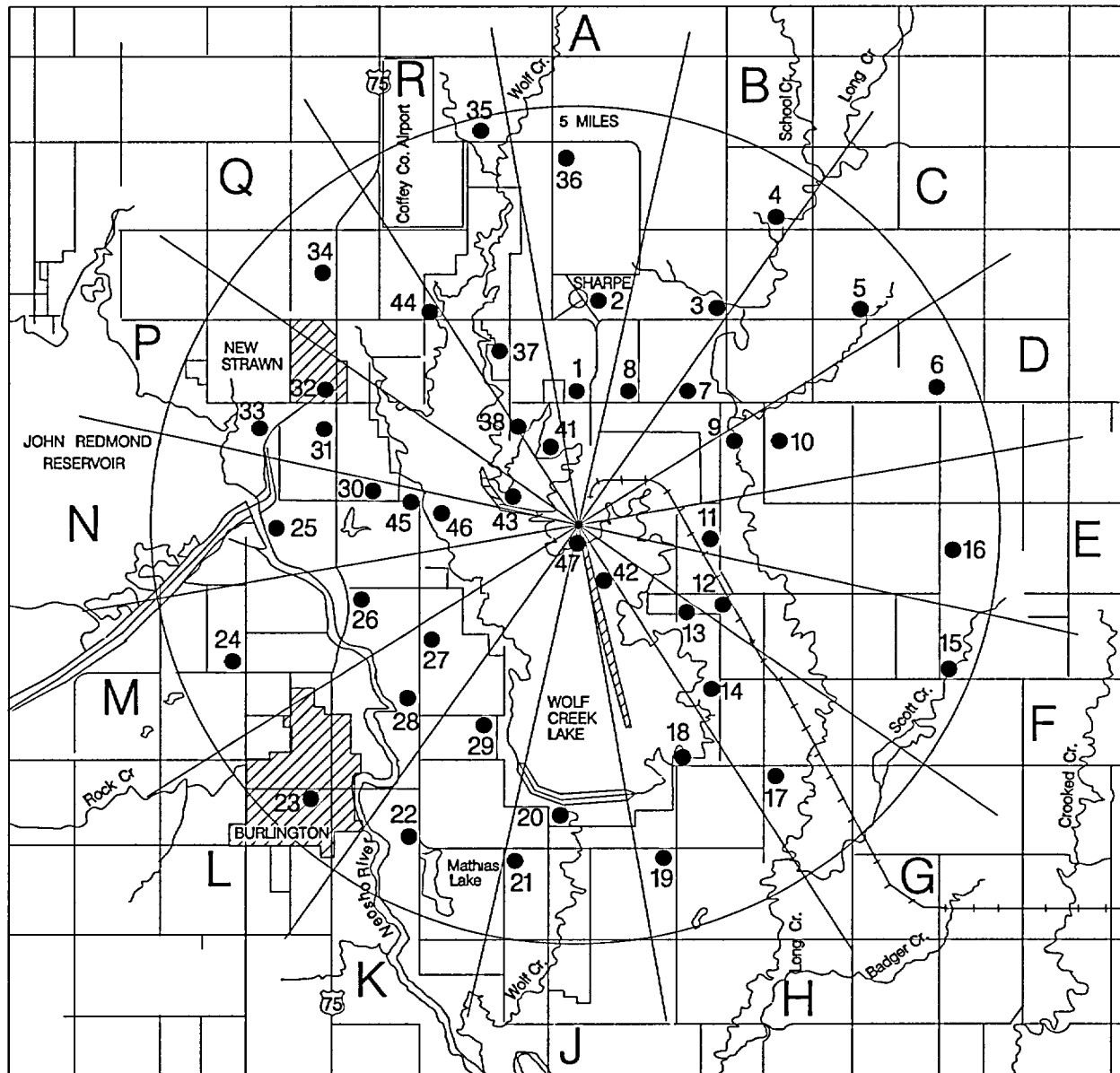
FIGURE 1



AIRBORNE PATHWAY SAMPLING LOCATIONS

● = AIRBORNE PARTICULATE AND RADIOIODINE

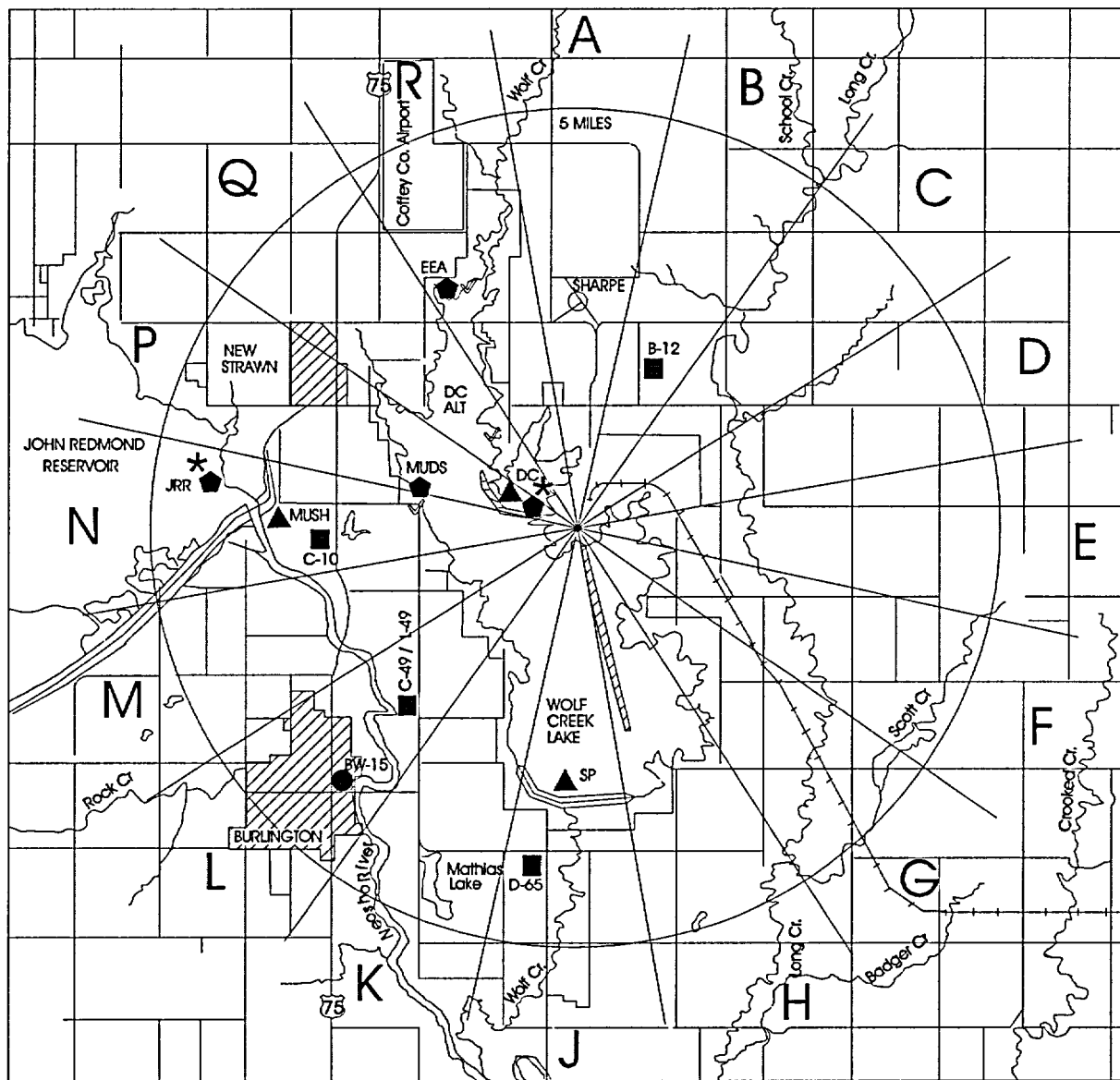
FIGURE 2



DIRECT RADIATION PATHWAY SAMPLING LOCATIONS

● = TLD LOCATIONS

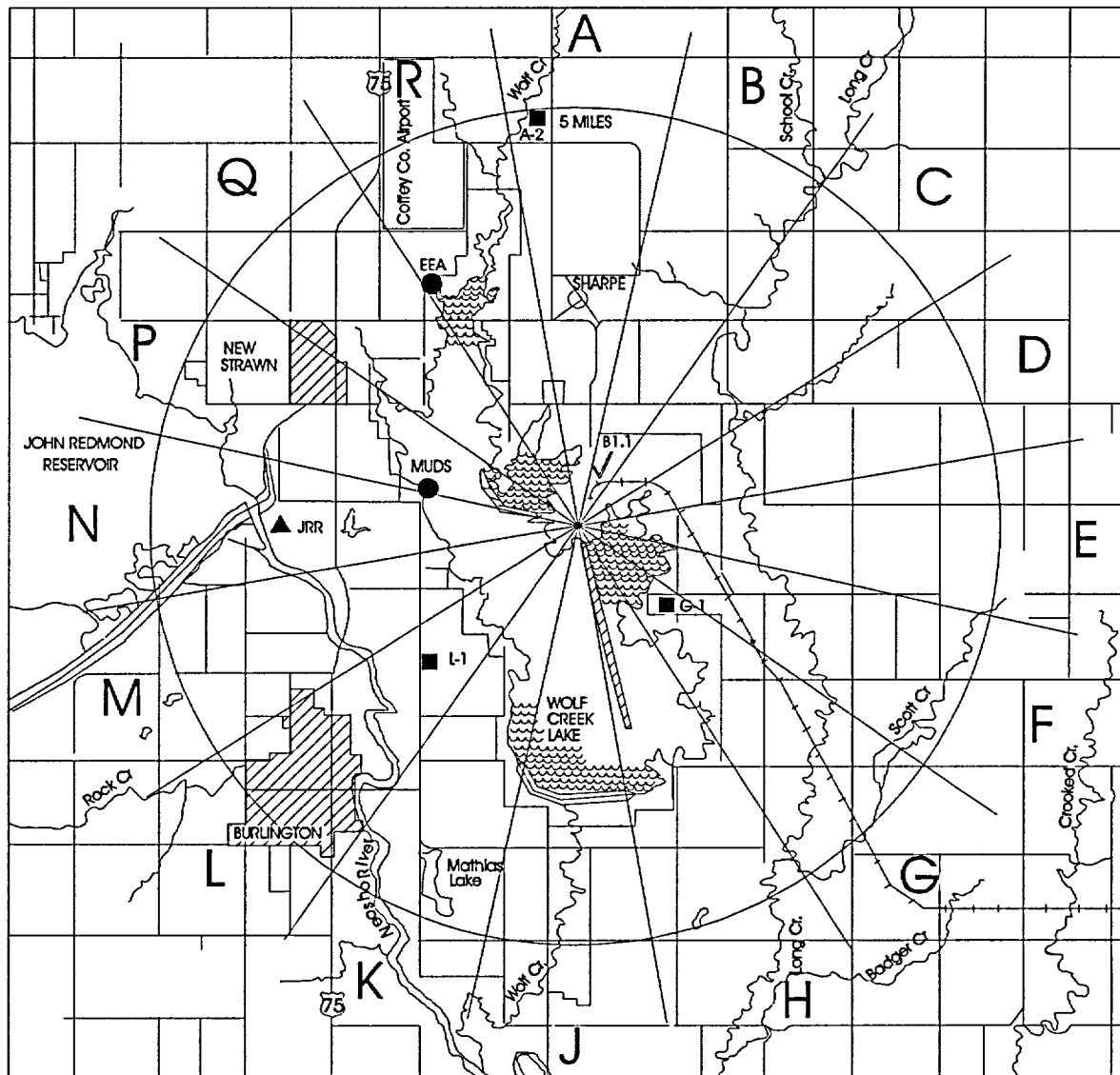
FIGURE 3



WATERBORNE PATHWAY SAMPLING LOCATIONS

- | | |
|---------------------|------------------------|
| ● = DRINKING WATER | ▲ = SURFACE WATER |
| ■ = GROUND WATER | ◆ = SHORELINE SEDIMENT |
| * = BOTTOM SEDIMENT | ✓ = AQUATIC VEGETATION |

FIGURE 4



INGESTION PATHWAY SAMPLING LOCATIONS

- ▲ = FISH (JRR)
- = BROADLEAF VEGETATION / IRRIGATED CROPS
- ~~~~~ = FISH (WCL)
- = TERRESTRIAL VEGETATION AND SOIL
- ✓ = DEER

FIGURE 5

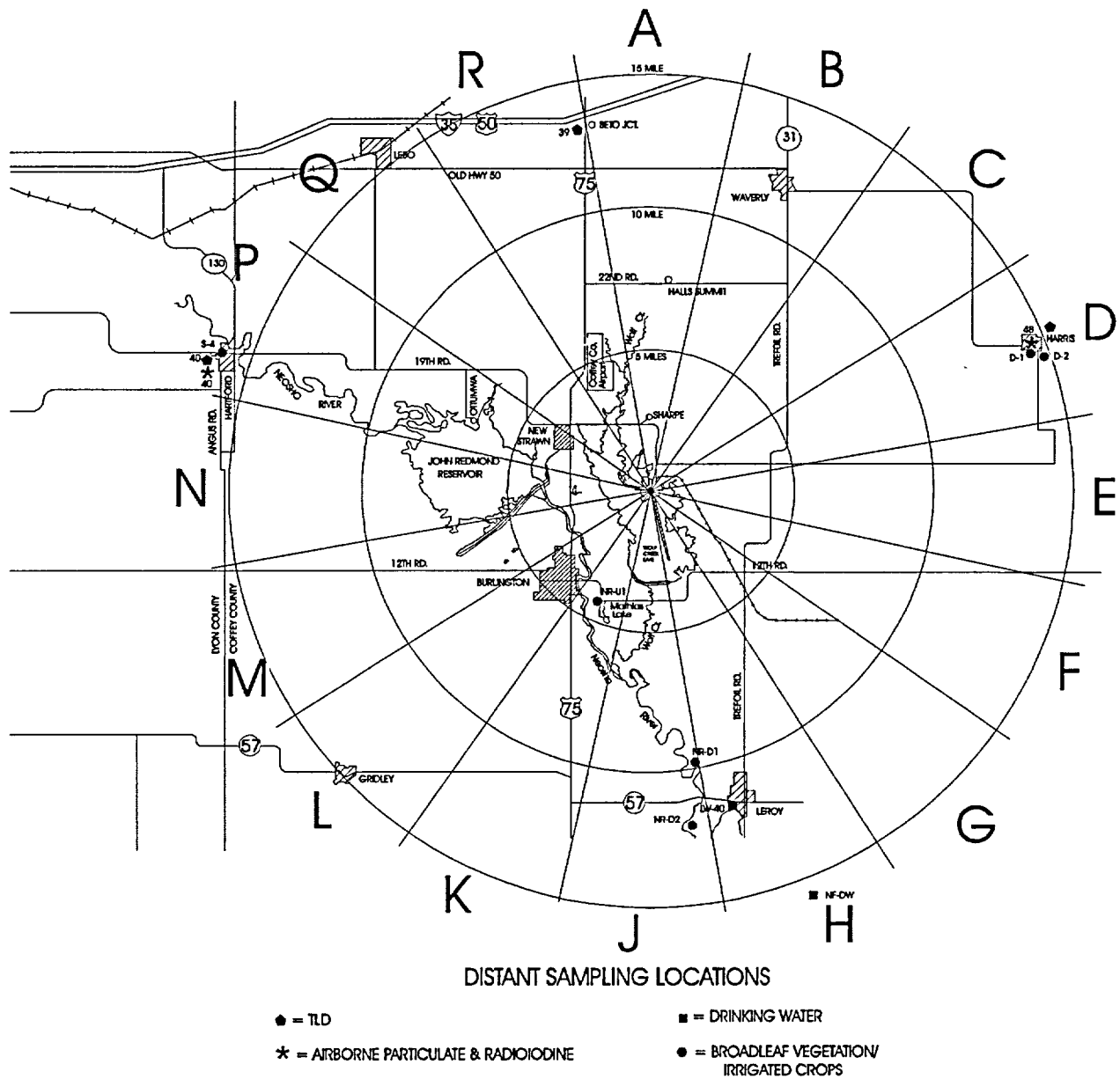


CHART 1

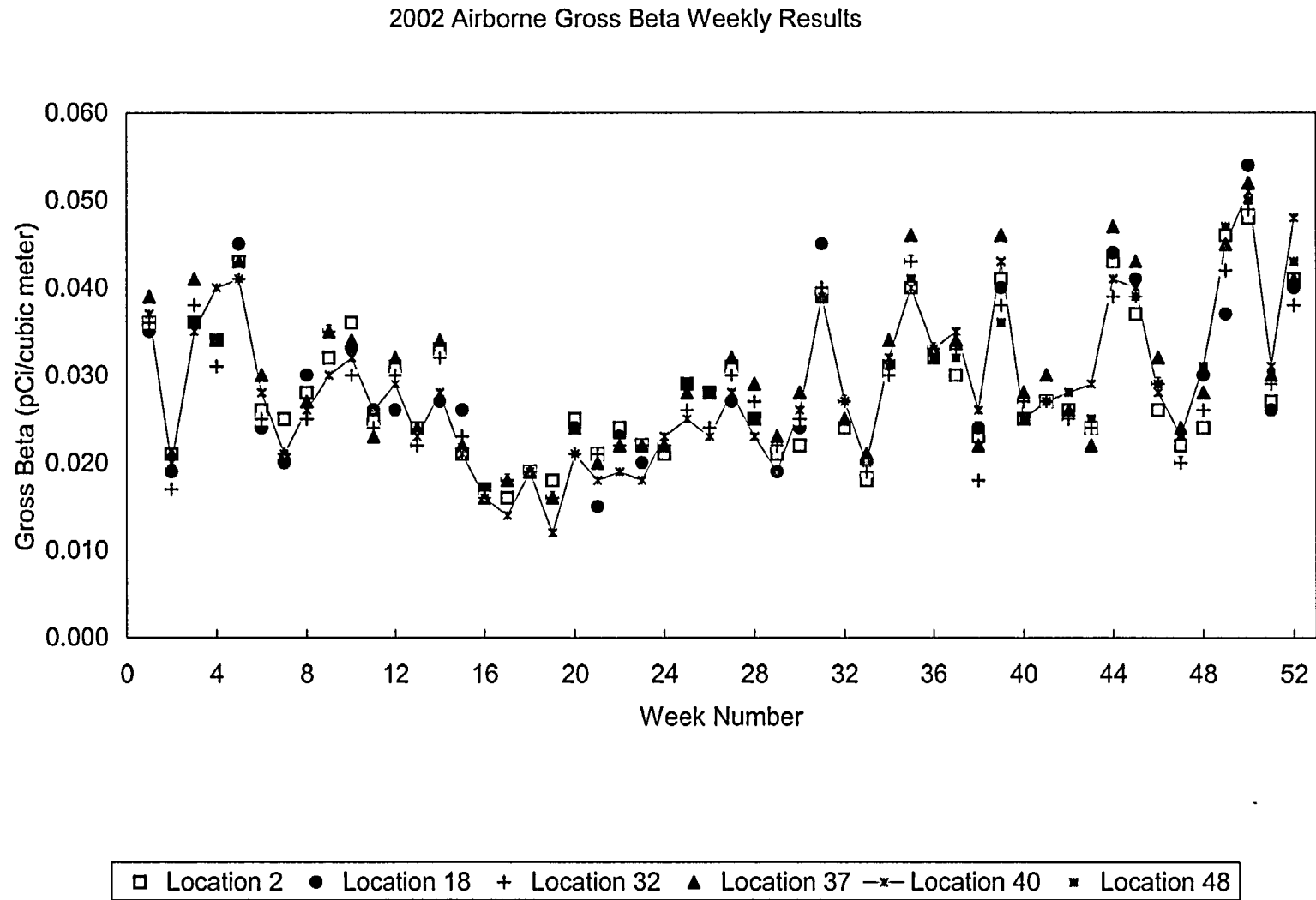


CHART 2

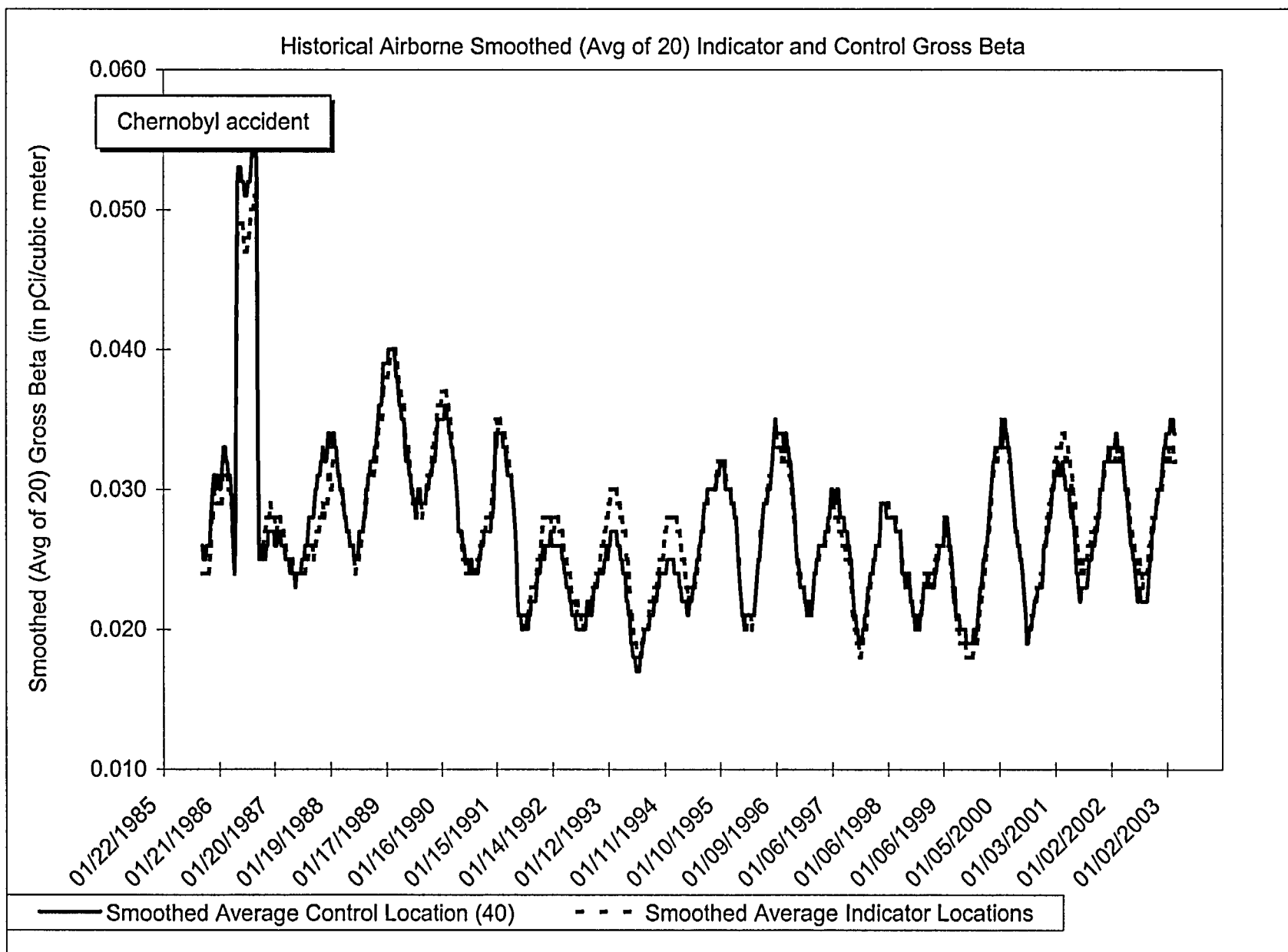


CHART 3

TLD Nearsite Locations and Control Locations

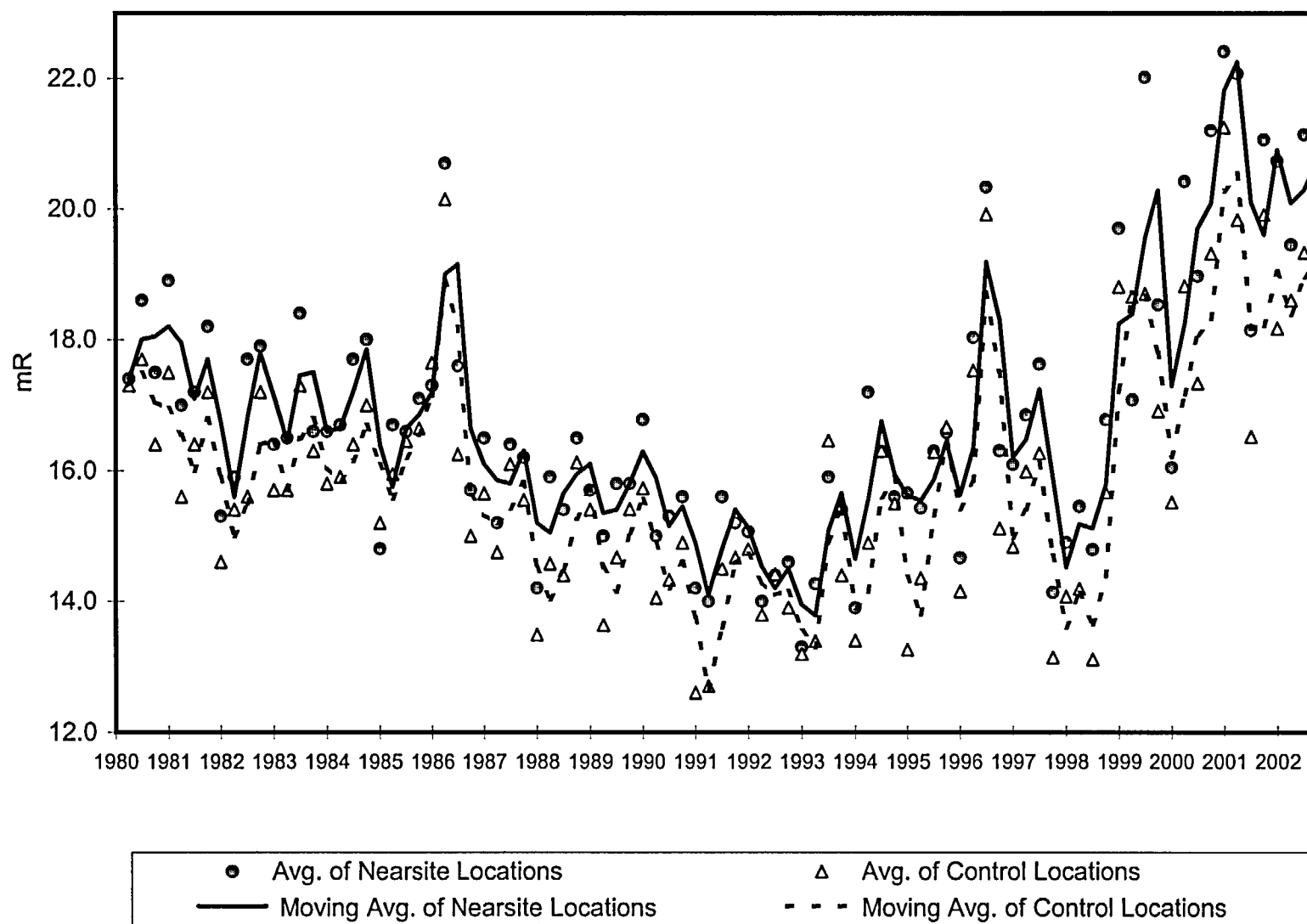


CHART 4

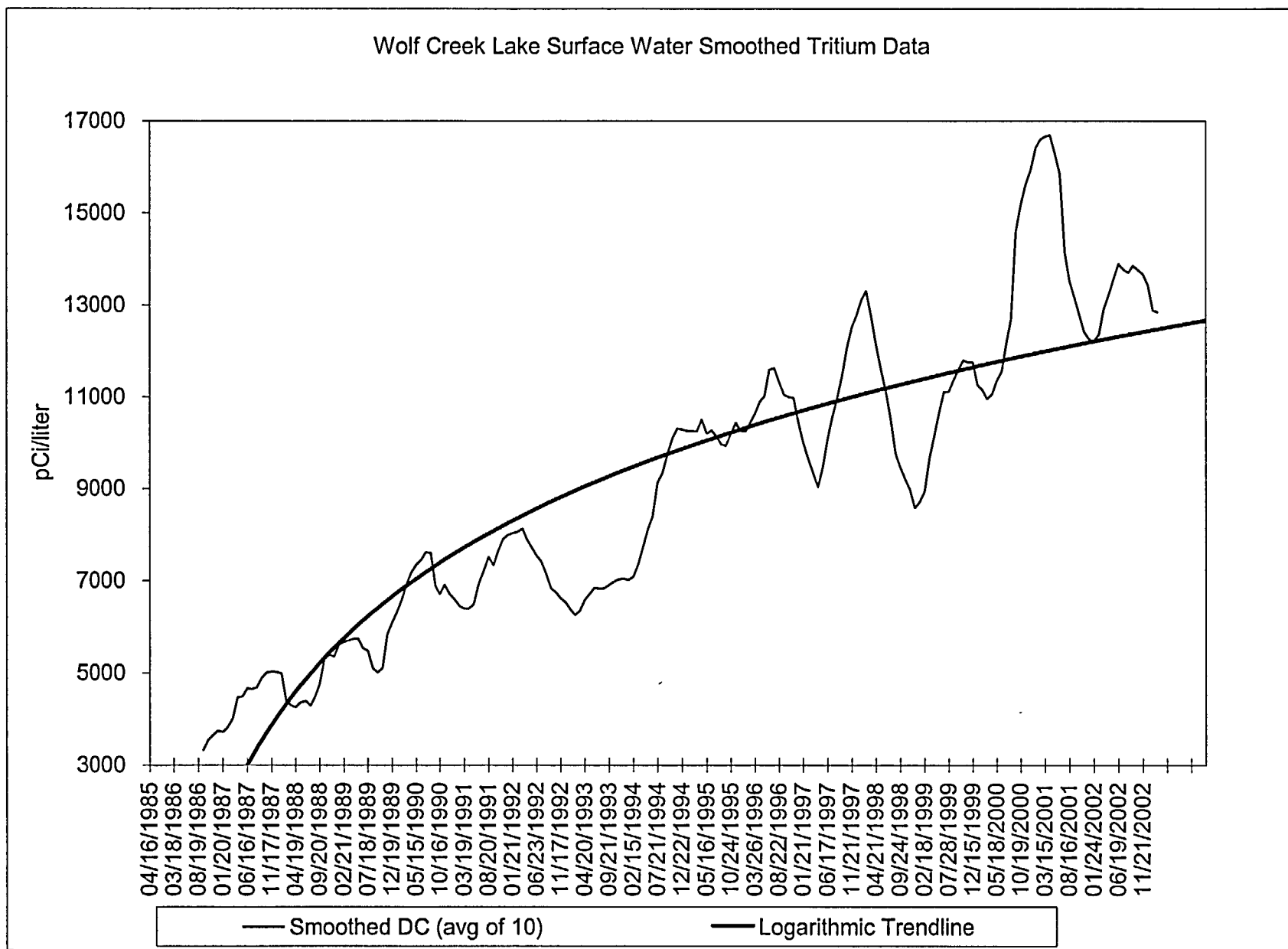


CHART 5

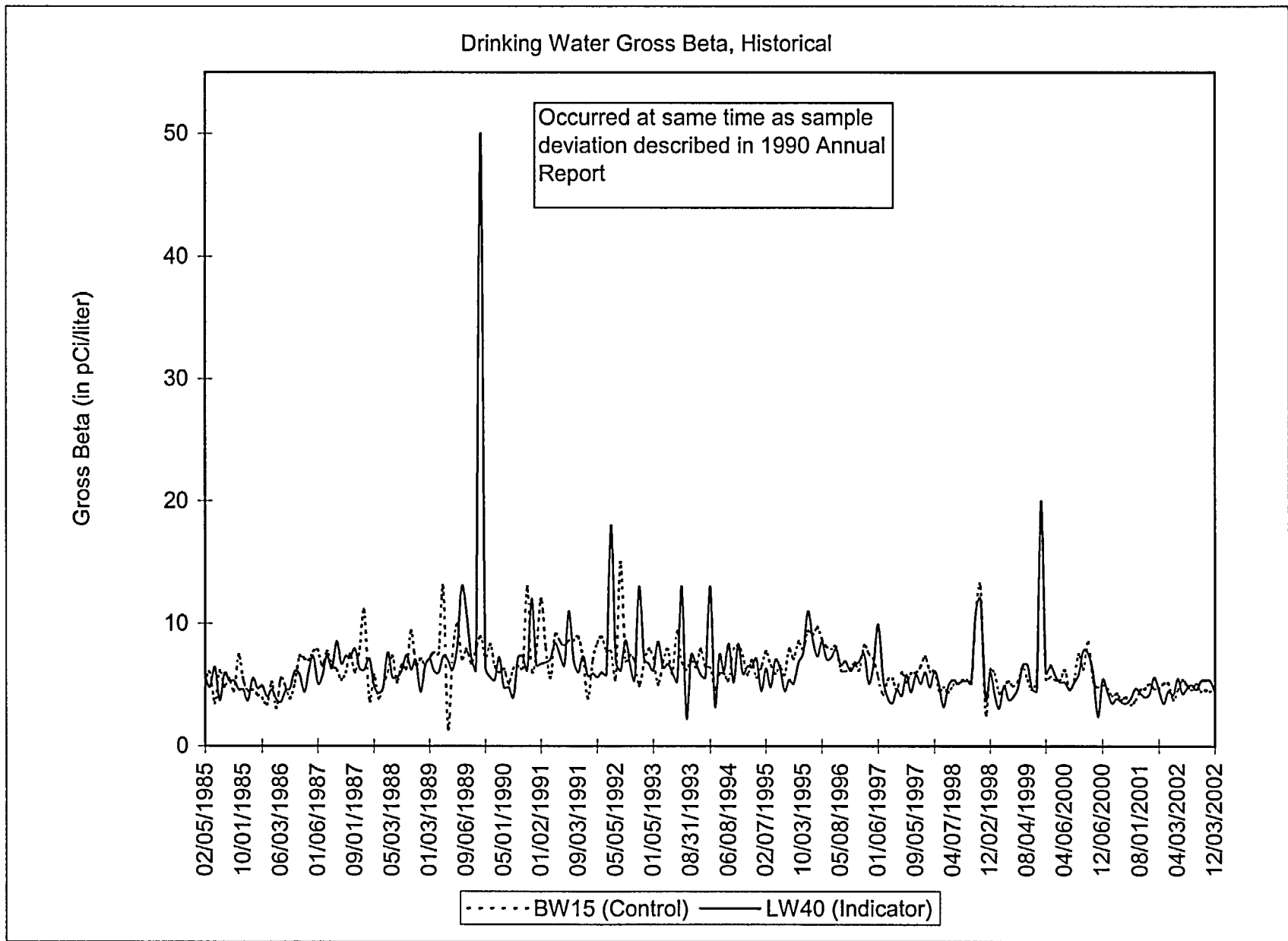


CHART 6

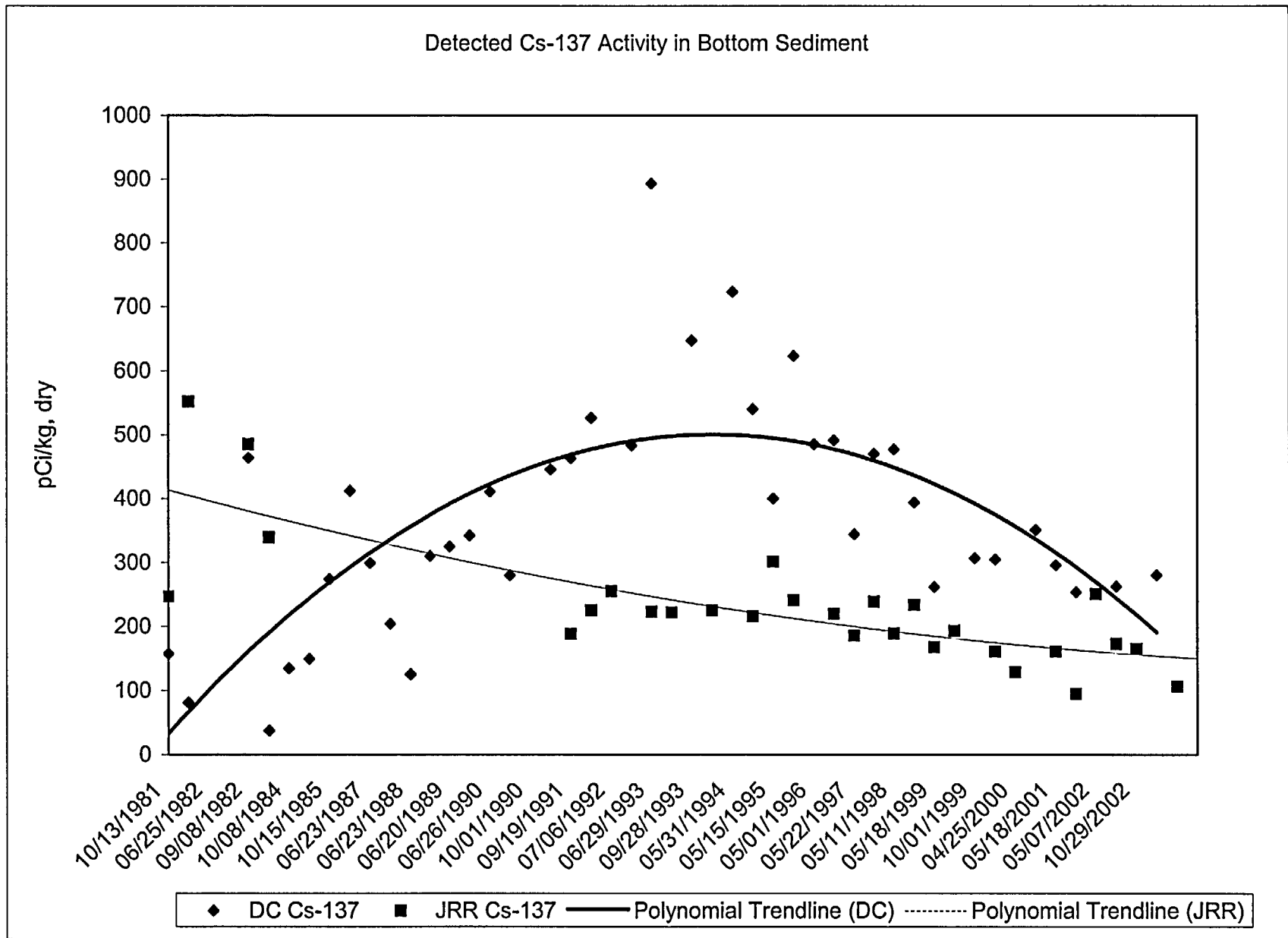
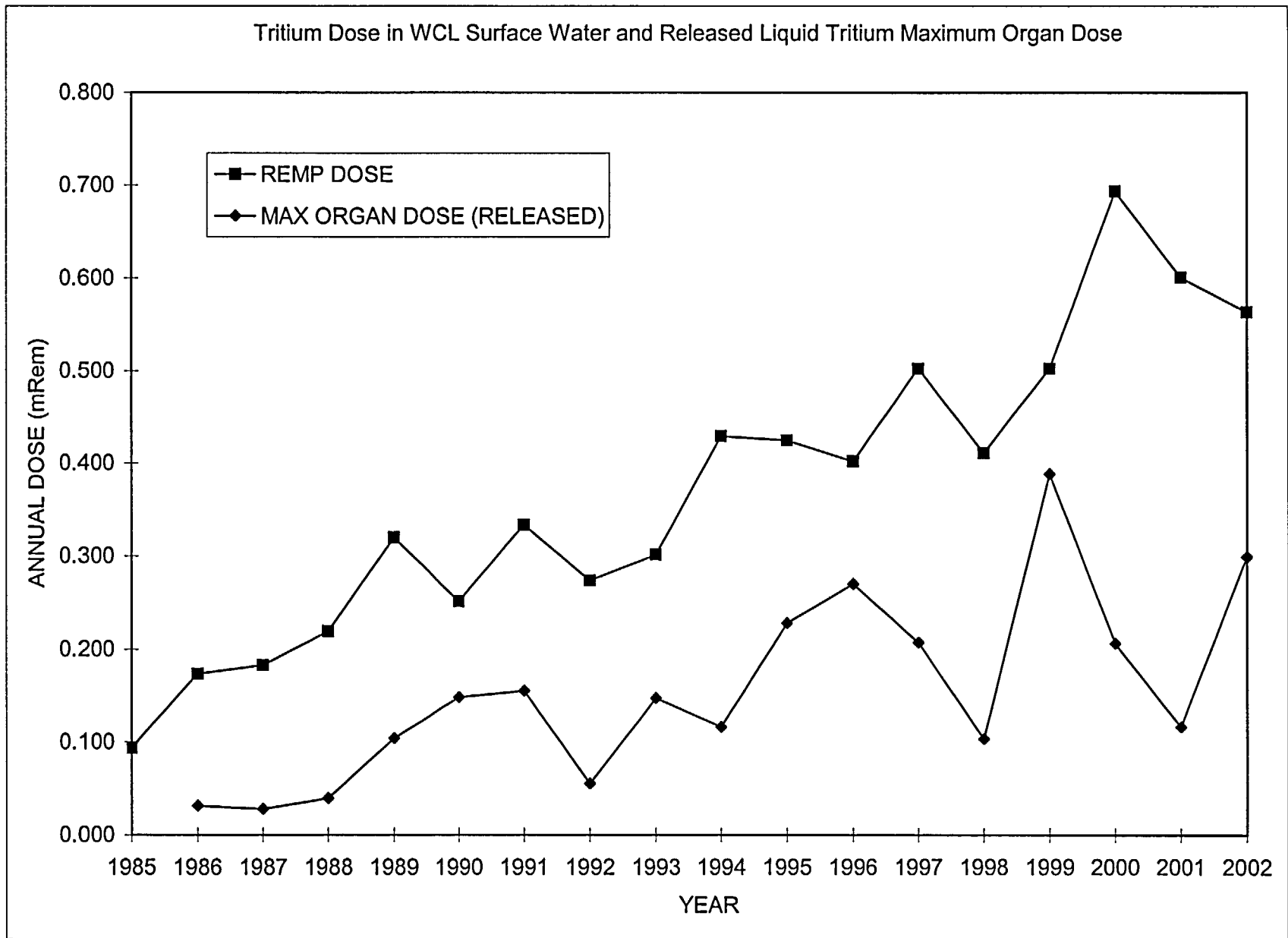
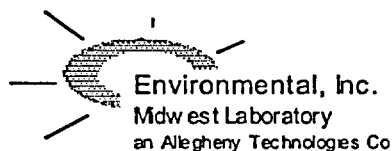


CHART 7





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APPENDIX A

INTERLABORATORY COMPARISON PROGRAM RESULTS

NOTE: Environmental Inc., Midwest Laboratory participates in intercomparison studies administered by Environmental Resources Associates, and serves as a replacement for studies conducted previously by the U.S. EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada. Results are reported in Appendix A. TLD Intercomparison results, in-house spikes, blanks, duplicates and mixed analyte performance evaluation program results are also reported. Appendix A is updated four times a year; the complete Appendix is included in March, June, September and December monthly progress reports only.

January, 2002 through December, 2002

Appendix A

Interlaboratory Comparison Program Results

Environmental, Inc., Midwest Laboratory, formerly Teledyne Brown Engineering Environmental Services Midwest Laboratory has participated in interlaboratory comparison (crosscheck) programs since the formulation of its quality control program in December 1971. These programs are operated by agencies which supply environmental type samples (e.g., milk or water) containing concentrations of radionuclides known to the issuing agency but not to participant laboratories. The purpose of such a program is to provide an independent check on a laboratory's analytical procedures and to alert it of any possible problems.

Participant laboratories measure the concentration of specified radionuclides and report them to the issuing agency. Several months later, the agency reports the known values to the participant laboratories and specifies control limits. Results consistently higher or lower than the known values or outside the control limits indicate a need to check the instruments or procedures used.

Results in Table A-1 were obtained through participation in the environmental sample crosscheck program administered by Environmental Resources Associates, serving as a replacement for studies conducted previously by the U.S. EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada.

The results in Table A-2 were obtained for Thermoluminescent Dosimeters (TLDs), via International Intercomparison of Environmental Dosimeters under the sponsorships listed in Table A-2. Results of internal laboratory testing is also listed.

Table A-3 lists results of the analyses on in-house "spiked" samples for the past twelve months. All samples are prepared using NIST traceable sources. Data for previous years available upon request.

Table A-4 lists results of the analyses on in-house "blank" samples for the past twelve months. Data for previous years available upon request. request.

Table A-5 list results of the in-house "duplicate" program for the past twelve months. Acceptance is based on the difference of the results being less than the sum of the errors. Data for previous years available upon request.

The results in Table A-6 were obtained through participation in the Mixed Analyte Performance Evaluation Program.

The results in Table A-7 were obtained through participation in the Environmental Measurement Laboratory Quality Assessment Program.

Attachment A lists acceptance criteria for "spiked" samples.

Out-of-limit results are explained directly below the result.

Attachment A

ACCEPTANCE CRITERIA FOR "SPIKED" SAMPLES

LABORATORY PRECISION: ONE STANDARD DEVIATION VALUES FOR VARIOUS ANALYSES^a

Analysis	Level	One standard deviation for single determination
Gamma Emitters	5 to 100 pCi/liter or kg > 100 pCi/liter or kg	5.0 pCi/liter 5% of known value
Strontium-89 ^b	5 to 50 pCi/liter or kg > 50 pCi/liter or kg	5.0 pCi/liter 10% of known value
Strontium-90 ^b	2 to 30 pCi/liter or kg > 30 pCi/liter or kg	5.0 pCi/liter 10% of known value
Potassium-40	> 0.1 g/liter or kg	5% of known value
Gross alpha	20 pCi/liter > 20 pCi/liter	5.0 pCi/liter 25% of known value
Gross beta	100 pCi/liter > 100 pCi/liter	5.0 pCi/liter 5% of known value
Tritium	4,000 pCi/liter > 4,000 pCi/liter	1s = (pCi/liter) = 169.85 x (known) ^{0.0933} 10% of known value
Radium-226,-228	0.1 pCi/liter	15% of known value
Plutonium	0.1 pCi/liter, gram, or sample	10% of known value
Iodine-131, Iodine-129 ^b	55 pCi/liter > 55 pCi/liter	6.0 pCi/liter 10% of known value
Uranium-238, Nickel-63 ^b Technetium-99 ^b	35 pCi/liter > 35 pCi/liter	6.0 pCi/liter 15% of known value
Iron-55 ^b	50 to 100 pCi/liter > 100 pCi/liter	10 pCi/liter 10% of known value
Others ^b	---	20% of known value

^a From EPA publication, "Environmental Radioactivity Laboratory Intercomparison Studies Program, Fiscal Year, 1981-1982, EPA-600/4-81-004.

^b Laboratory limit.

TABLE A-1. Interlaboratory Comparison Crosscheck program, Environmental Resource Associates (ERA)^a.

Lab Code	Date	Analysis	Concentration (pCi/L)		
			Laboratory Result ^b	ERA Result ^c	Control Limits
STW-940	02/20/02	Sr-89	53.0 ± 2.5	55.3 ± 5.0	46.6 - 64.0
STW-940	02/20/02	Sr-90	16.6 ± 0.5	15.9 ± 5.0	7.2 - 24.6
STW-942	02/20/02	Gr. Alpha	6.5 ± 0.6	8.0 ± 5.0	0.0 - 16.7
STW-942	02/20/02	Gr. Beta	45.7 ± 3.1	48.3 ± 5.0	39.6 - 57.0
STW-944	02/20/02	Ba-133	25.8 ± 1.5	28.9 ± 5.0	20.2 - 37.6
STW-944	02/20/02	Co-60	76.9 ± 2.7	73.4 ± 5.0	64.7 - 82.1
STW-944	02/20/02	Cs-134	38.7 ± 1.6	42.1 ± 5.0	33.4 - 50.8
STW-944	02/20/02	Cs-137	92.9 ± 2.7	88.8 ± 5.0	80.1 - 97.5
STW-944	02/20/02	Ra-226	15.3 ± 0.7	14.3 ± 2.2	10.6 - 18.0
STW-944	02/20/02	Ra-228	17.5 ± 0.4	16.9 ± 4.2	9.6 - 24.2
STW-944	02/20/02	Uranium	23.8 ± 1.1	28.3 ± 3.0	23.1 - 33.5
STW-944	02/20/02	Zn-65	361.0 ± 9.2	359.0 ± 35.9	298.0 - 420.0
STW-951	05/22/02	Gr. Alpha	23.9 ± 2.5	22.8 ± 5.7	13.0 - 32.6
STW-951	05/22/02	Ra-226	5.9 ± 0.5	6.1 ± 0.9	4.5 - 7.7
STW-951	05/22/02	Ra-228	5.6 ± 0.9	4.5 ± 1.1	2.6 - 6.5
STW-951	05/22/02	Uranium	7.6 ± 0.2	9.3 ± 3.0	4.1 - 14.5
STW-952	05/22/02	Co-60	37.9 ± 0.7	39.1 ± 5.0	30.4 - 47.8
STW-952	05/22/02	Cs-134	14.5 ± 0.8	17.1 ± 5.0	8.4 - 25.8
STW-952	05/22/02	Cs-137	50.0 ± 2.0	52.1 ± 5.0	43.4 - 60.8
STW-952	05/22/02	Gr. Beta	171.0 ± 2.5	189.0 ± 28.4	140.0 - 238.0
STW-952	05/22/02	Sr-89	28.4 ± 4.8	31.7 ± 5.0	23.0 - 40.4
STW-952	05/22/02	Sr-90	32.4 ± 3.1	28.3 ± 5.0	19.6 - 37.0
STW-953 ^d	05/22/02	H-3	13900.0 ± 100.0	17400.0 ± 1740.0	14400.0 - 20400.0
STW-954	05/22/02	I-131	14.6 ± 0.3	14.7 ± 2.0	11.2 - 18.2
STW-965	08/21/02	Ba-133	71.9 ± 2.1	80.0 ± 8.0	66.4 - 93.6
STW-965	08/21/02	Co-60	23.8 ± 1.0	23.3 ± 5.0	14.6 - 32.0
STW-965	08/21/02	Cs-134 ^e	62.9 ± 1.2	71.7 ± 5.0	63.0 - 80.4
STW-965	08/21/02	Cs-137	219.3 ± 10.7	214.0 ± 10.7	195.0 - 233.0
STW-965	08/21/02	Gr. Alpha	74.4 ± 0.6	58.8 ± 14.7	33.5 - 84.1
STW-965	08/21/02	Gr. Beta	26.7 ± 0.4	21.9 ± 2.2	13.2 - 30.6
STW-965	08/21/02	Ra-226	5.0 ± 0.5	5.0 ± 0.8	3.7 - 6.3
STW-965	08/21/02	Ra-228	6.0 ± 0.7	4.7 ± 1.2	2.7 - 6.7
STW-965	08/21/02	Sr-89	28.4 ± 1.5	29.0 ± 5.0	20.3 - 37.7
STW-965	08/21/02	Sr-90	36.5 ± 1.1	36.4 ± 5.0	27.7 - 45.1
STW-965	08/21/02	Uranium	4.1 ± 0.1	5.0 ± 3.0	0.0 - 10.2
STW-965	08/21/02	Zn-65	92.4 ± 2.2	95.7 ± 9.6	79.4 - 112.0
STW-966	11/20/02	Gr. Alpha	9.3 ± 0.4	12.2 ± 5.0	3.5 - 20.9
STW-966	11/20/02	Gr. Beta	44.7 ± 1.0	47.0 ± 5.0	38.3 - 55.7
STW-967	11/20/02	H-3	10100.0 ± 38.7	10200.0 ± 1020.0	8440.0 - 12000.0
STW-968	11/20/02	Ra-226	11.6 ± 0.1	12.1 ± 1.8	9.0 - 15.2
STW-968	11/20/02	Ra-228	16.0 ± 1.4	15.1 ± 3.8	8.6 - 21.6
STW-968	11/20/02	Uranium	15.5 ± 0.5	19.2 ± 3.0	14.0 - 24.4
STW-969	11/20/02	I-131	6.0 ± 0.4	6.8 ± 2.0	3.3 - 10.2

TABLE A-1. Interlaboratory Comparison Crosscheck program, Environmental Resource Associates (ERA)^a.

Lab Code	Date	Analysis	Concentration (pCi/L)		
			Laboratory Result ^b	ERA Result ^c	Control Limits
STW-970	11/20/02	Co-60	104.0 ± 7.1	104.0 ± 5.2	95.0 - 113.0
STW-970	11/20/02	Cs-134	48.2 ± 2.3	55.5 ± 5.0	46.8 - 64.2
STW-970	11/20/02	Cs-137	109.0 ± 12.6	117.0 ± 5.9	107.0 - 127.0
STW-970	11/20/02	Gr. Beta	252.0 ± 26.8	288.0 ± 49.5	244.0 - 416.0
STW-970	11/20/02	Sr-89	43.2 ± 0.7	47.6 ± 5.0	38.9 - 56.3
STW-970	11/20/02	Sr-90	7.5 ± 0.2	7.6 ± 5.0	0.0 - 16.2
STW-971	11/20/02	Gr. Alpha	74.9 ± 1.5	103.0 ± 25.8	58.4 - 148.0
STW-971	11/20/02	Ra-226	8.9 ± 0.0	9.1 ± 1.4	6.7 - 11.5
STW-971	11/20/02	Ra-228	15.3 ± 0.1	17.8 ± 4.5	10.1 - 25.5
STW-971	11/20/02	Uranium	51.7 ± 1.6	61.7 ± 6.2	51.0 - 72.4

^a Results obtained by Environmental, Inc., Midwest Laboratory as a participant in the environmental samples crosscheck program operated by Environmental Resources Associates (ERA).

^b Unless otherwise indicated, the laboratory result is given as the mean ± standard deviation for three determinations.

^c Results are presented as the known values, expected laboratory precision (1 sigma, 1 determination) and control limits as provided by ERA.

^d Analysis was repeated; result of reanalysis: 16114±487 pCi/L.

^e ERA acknowledged an unacceptably high percentage of failure for Cs-134 and questioned its own control limits. No problems were identified in the analysis.

TABLE A-2. Crosscheck program results; Thermoluminescent Dosimetry, (TLDs).

Lab Code	TLD Type	Date	Measurement	Known Value	mR	Control Limits
					Lab Result ± 2 sigma	
<u>Environmental, Inc.</u>						
2001-1	CaSO4: Dy Cards	12/24/2001	Reader 1, #1	3.98	3.71 ± 0.12	2.79 - 5.17
2001-1	CaSO4: Dy Cards	12/24/2001	Reader 1, #1	3.98	3.38 ± 0.09	2.79 - 5.17
2001-1	CaSO4: Dy Cards	12/24/2001	Reader 1, #2	7.07	7.89 ± 0.18	4.95 - 9.19
2001-1	CaSO4: Dy Cards	12/24/2001	Reader 1, #2	7.07	7.64 ± 0.25	4.95 - 9.19
2001-1	CaSO4: Dy Cards	12/24/2001	Reader 1, #3	15.9	18.62 ± 0.40	11.13 - 20.67
2001-1	CaSO4: Dy Cards	12/24/2001	Reader 1, #3	15.9	19.58 ± 0.12	11.13 - 20.67
2001-1	CaSO4: Dy Cards	12/24/2001	Reader 1, #4	63.61	78.24 ± 1.23	44.53 - 82.69
2001-1	CaSO4: Dy Cards	12/24/2001	Reader 1, #4	63.61	79.89 ± 2.47	44.53 - 82.69
<u>Environmental, Inc.</u>						
2002-1	CaSO4: Dy Cards	5/28/2002	Reader 1, #1	4.84	4.44 ± 0.16	3.39 - 6.29
2002-1	CaSO4: Dy Cards	5/28/2002	Reader 1, #1	4.84	4.37 ± 0.20	3.39 - 6.29
2002-1	CaSO4: Dy Cards	5/28/2002	Reader 1, #2	8.60	9.08 ± 0.14	6.02 - 11.18
2002-1	CaSO4: Dy Cards	5/28/2002	Reader 1, #2	8.60	8.76 ± 0.16	6.02 - 11.18
2002-1	CaSO4: Dy Cards	5/28/2002	Reader 1, #3	19.34	22.14 ± 0.27	13.54 - 25.14
2002-1	CaSO4: Dy Cards	5/28/2002	Reader 1, #3	19.34	24.03 ± 0.30	13.54 - 25.14
2002-1	CaSO4: Dy Cards	5/28/2002	Reader 1, #4	77.36	92.77 ± 0.58	54.15 - 100.57
2002-1	CaSO4: Dy Cards	5/28/2002	Reader 1, #4	77.36	85.25 ± 0.37	54.15 - 100.57
<u>Environmental, Inc.</u>						
2002-2	CaSO4: Dy Cards	12/13/2002	Reader 1, 30	56.73	71.61 ± 1.79	39.71 - 73.75
2002-2	CaSO4: Dy Cards	12/13/2002	Reader 1, 45 ^a	25.21	33.49 ± 1.38	17.65 - 32.77
^a Precision of the distance (cm) measurement can significantly increase the error. The placement of the card holder on the table could account for the higher error.						
2002-2	CaSO4: Dy Cards	12/13/2002	Reader 1, 60	14.18	17.37 ± 1.24	9.93 - 18.43
2002-2	CaSO4: Dy Cards	12/13/2002	Reader 1, 75	9.08	10.65 ± 1.02	6.36 - 11.80
2002-2	CaSO4: Dy Cards	12/13/2002	Reader 1, 90	6.30	6.37 ± 0.54	4.41 - 8.19
2002-2	CaSO4: Dy Cards	12/13/2002	Reader 1, 120	3.55	4.60 ± 0.41	2.49 - 4.62
2002-2	CaSO4: Dy Cards	12/13/2002	Reader 1, 135	2.80	2.51 ± 0.23	1.96 - 3.64
2002-2	CaSO4: Dy Cards	12/13/2002	Reader 1, 150	2.28	2.22 ± 0.28	1.60 - 2.96

^c Control limits are based on Attachment A, Page A2 of this report.

TABLE A-3. In-House "Spike" Samples

Lab Code	Sample Type	Date	Analysis	Concentration (pCi/L) ^a		
				Laboratory results 2s, n=1 ^b	Known Activity	Control Limits ^c
SPW-11552	Water	1/7/2002	Gr. Alpha	35.33 ± 1.83	34.57	17.29 - 51.86
SPW-11552	Water	1/7/2002	Gr. Beta	112.62 ± 2.44	107.70	96.93 - 118.47
SPMI-595	Milk	1/31/2002	Cs-134	29.63 ± 4.98	27.10	17.10 - 37.10
SPMI-595	Milk	1/31/2002	Cs-137	51.31 ± 7.55	50.89	40.89 - 60.89
SPMI-597	Milk	1/31/2002	Co-60	44.18 ± 7.76	41.36	31.36 - 51.36
SPMI-597	Milk	1/31/2002	Cs-134	20.15 ± 5.08	22.59	12.59 - 32.59
SPMI-597	Milk	1/31/2002	Cs-137	54.88 ± 8.32	50.89	40.89 - 60.89
SPAP-594	Air Filter	2/6/2002	Gr. Beta	1.58 ± 0.02	1.55	0.00 - 11.55
SPW-599	Water	2/19/2002	H-3	47607 ± 595	50189	40151 - 60227
SPMI-1446	Milk	3/8/2002	I-131(G)	87.84 ± 11.47	85.20	75.20 - 95.20
SPW-1446	Water	3/8/2002	I-131	82.98 ± 1.20	85.20	68.16 - 102.24
SPW-1446	Water	3/8/2002	I-131(G)	92.75 ± 12.87	85.20	75.20 - 95.20
SPMI-1448	Milk	3/8/2002	I-131	88.00 ± 1.13	85.20	68.16 - 102.24
SPVE-1444	Vegetation	3/11/2002	I-131(G)	0.39 ± 0.04	0.42	0.25 - 0.58
SPAP-2078	Air Filter	4/8/2002	Gr. Beta	1.43 ± 0.01	1.55	0.00 - 11.55
SPW-2080	Water	4/5/2002	H-3	49121 ± 608	46912	37530 - 56294
SPF-2082	Fish	4/5/2002	Cs-134	0.83 ± 0.04	0.83	0.50 - 1.16
SPF-2082	Fish	4/5/2002	Cs-137	1.29 ± 0.07	1.35	0.81 - 1.89
SPMI-2084	Milk	4/8/2002	Cs-134	20.93 ± 5.82	24.69	14.69 - 34.69
SPMI-2084	Milk	4/8/2002	Cs-137	51.83 ± 10.23	50.56	40.56 - 60.56
SPMI-2084	Milk	4/8/2002	I-131	87.72 ± 1.28	88.37	70.70 - 106.04
SPMI-2084	Milk	4/8/2002	I-131(G)	84.08 ± 10.75	88.37	78.37 - 98.37
SPMI-2084	Milk	4/8/2002	Sr-90	62.81 ± 1.99	66.85	53.48 - 80.22
SPW-2115	Water	4/8/2002	I-131	82.42 ± 1.27	88.37	70.70 - 106.04
SPW-2116	Water	4/8/2002	Co-60	32.47 ± 5.78	33.09	23.09 - 43.09
SPW-2116	Water	4/8/2002	Cs-134	30.80 ± 3.60	28.80	18.80 - 38.80
SPW-2116	Water	4/8/2002	Cs-137	53.85 ± 7.07	50.56	40.56 - 60.56
SPW-2116	Water	4/8/2002	I-131(G)	79.09 ± 7.58	88.37	78.37 - 98.37
SPW-2116	Water	4/8/2002	Sr-90	70.35 ± 2.32	66.85	53.48 - 80.22
SPW-2019	Water	5/3/2002	Gr. Alpha	25.89 ± 1.71	34.57	17.29 - 51.86
SPW-2019	Water	5/3/2002	Gr. Beta	101.19 ± 2.37	107.70	96.93 - 118.47
SPCH-3064	Charcoal	5/11/2002	I-131(G)	0.74 ± 0.04	0.85	0.51 - 1.18
SPW-4682	Water	7/17/2002	H-3	40856 ± 548	46179	36943 - 55415
SPAP-4685	Air Filter	7/17/2002	Gr. Beta	1.58 ± 0.02	1.55	0.00 - 11.55
W-71702S	Water	7/17/2002	Fe-55	10463.00 ± 126.00	12200.60	9760.48 - 14640.72
W-71702S	Water	07/17/02	H-3	45779 ± 583	46179	36943 - 55415
W-71702S	Water	07/17/02	Ni-63	17.02 ± 1.50	17.10	10.26 - 23.94
SPVE-4910	Vegetation	07/22/02	Sr-90	10.22 ± 0.80	9.04	0.00 - 19.04
W-72302S	Water	07/23/02	Sr-90	21.43 ± 0.97	26.55	16.55 - 36.55
W-80102S	Water	08/01/02	Gr. Alpha	41.25 ± 4.58	34.45	17.23 - 51.68
W-80102S	Water	08/01/02	Gr. Beta	113.66 ± 5.30	107.70	96.93 - 118.47
W-80202S	Water	08/02/02	Tc-99	16.39 ± 0.72	14.13	2.13 - 26.13
SPW-7188	Water	10/25/02	Fe-55	20396 ± 265	22778	18222 - 27334
SPW-7190	Water	10/25/02	Ni-63	227.18 ± 11.60	170.80	102.48 - 239.12

TABLE A-3. In-House "Spike" Samples

Lab Code	Sample Type	Date	Analysis	Concentration (pCi/L)		
				Laboratory results 2s, n=1 ^b	Known Activity	Control Limits ^c
SPW-7192	Water	10/25/02	H-3	96310 ± 871	90963	72770 - 109156
SPW-7194	Water	10/25/02	C-14	42938 ± 167	49661	29796 - 69525
SPAP-7198	Air Filter	10/25/02	Gr. Beta	1.65 ± 0.02	1.53	0.00 - 11.53
SPW-7335	Water	10/30/02	Co-60	39.67 ± 7.38	37.05	27.05 - 47.05
SPW-7335	Water	10/30/02	Cs-134	33.09 ± 5.96	34.11	24.11 - 44.11
SPW-7335	Water	10/30/02	Cs-137	46.80 ± 10.39	49.90	39.90 - 59.90
SPMI-7336	Milk	10/30/02	Cs-134	34.40 ± 4.99	34.11	24.11 - 44.11
SPMI-7336	Milk	10/30/02	Cs-137	46.52 ± 8.52	49.91	39.91 - 59.91
SPF-7340	Fish	10/30/02	Cs-134	0.66 ± 0.03	0.68	0.41 - 0.95
SPF-7340	Fish	10/30/02	Cs-137	1.35 ± 0.05	1.33	0.80 - 1.86
SPS-8102	Sediment	11/01/02	Sr-90	14.69 ± 0.67	13.45	3.45 - 23.45

^a Results are reported in units of pCi/L, except for air filters (pCi/Filter), food products, vegetation, soil, sediment (pCi/g).

^b Results are based on single determinations.

^c Control limits are based on Attachment A, Page A2 of this report.

NOTE: For fish, Jello is used for the Spike matrix. For Vegetation, cabbage is used for the Spike matrix.

TABLE A-4. In-House "Blank" Samples

Lab Code	Sample Type	Date	Analysis	Concentration (pCi/L) ^a		
				Laboratory results (4.66σ)		Acceptance Criteria (4.66 σ)
				LLD	Activity ^b	
SPW-11551	water	1/7/2002	Gr. Alpha	0.47	0.45 ± 0.39	1
SPW-11551	water	1/7/2002	Gr. Beta	1.37	0.55 ± 1.03	3.2
SPAP-590	Air Filter	1/31/2002	Co-60	1.78		100
SPAP-590	Air Filter	1/31/2002	Cs-134	3.42		100
SPAP-590	Air Filter	1/31/2002	Cs-137	2.33		100
SPAP-590	Air Filter	1/31/2002	Gr. Beta	0.74	-0.096 ± 0.38	3.2
SPMI-596	Milk	1/31/2002	Co-60	3.54		10
SPMI-596	Milk	1/31/2002	Cs-134	3.24		10
SPMI-596	Milk	1/31/2002	Cs-137	3.89		10
SPMI-596	Milk	1/31/2002	K-40		1472.1 ± 101.50	0
SPW-598	water	1/31/2002	Co-60	2.30		10
SPW-598	water	1/31/2002	Cs-134	3.74		10
SPW-598	water	1/31/2002	Cs-137	3.23		10
SPW-600	water	1/31/2002	H-3	138.80	-96.5 ± 63.40	200
SPMI-1447	Milk	3/7/2002	I-131(G)	7.63		20
SPVE-1443	Vegetation	3/8/2002	I-131(G)	0.02		20
SPW-1445	water	3/8/2002	Co-60	2.76		10
SPW-1445	water	3/8/2002	Cs-134	2.87		10
SPW-1445	water	3/8/2002	Cs-137	4.34		10
SPW-1445	water	3/8/2002	I-131	0.45	0.17 ± 0.31	0.5
SPW-1445	water	3/8/2002	I-131(G)	6.50		20
SPMI-1447	Milk	3/8/2002	I-131	0.31	0.15 ± 0.22	0.5
SPAP-2077	Air Filter	4/8/2002	Gr. Beta	0.32	-0.055 ± 0.19	3.2
SPW-2079	water	4/5/2002	H-3	134.17	16.13 ± 67.39	200
SPF-2081	Fish	4/5/2002	Cs-134	7.67		100
SPF-2081	Fish	4/5/2002	Cs-137	9.54		100
SPMI-2083	Milk	4/8/2002	Cs-134	2.90		10
SPMI-2083	Milk	4/8/2002	Cs-137	3.03		10
SPMI-2083	Milk	4/8/2002	I-131	0.52	-0.38 ± 0.34	0.5
SPMI-2083	Milk ^c	4/8/2002	Sr-90	0.48	1.29 ± 0.36	1
SPW-2115	water	4/8/2002	Co-60	1.49		10
SPW-2115	water	4/8/2002	Cs-134	2.09		10
SPW-2115	water	4/8/2002	Cs-137	3.78		10
SPW-2115	water	4/8/2002	I-131	0.50	-0.16 ± 0.33	0.5
SPW-2115	water	4/8/2002	I-131(G)	3.30		20
SPW-2115	water	4/8/2002	Sr-90	0.66	0.10 ± 0.32	1
SPW-2018	water	4/22/2002	Gr. Alpha	0.56	-0.24 ± 0.38	1
SPW-2018	water	4/22/2002	Gr. Beta	1.38	3.19 ± 1.03	3.2
SPch-3063	Charcoal	5/11/2002	I-131(G)	8.27		9.6
SPW-4683	water	7/17/2002	H-3	129.00	-62.8 ± 60.30	200
W-71702	water	7/17/2002	Fe-55	33.61	-1.72 ± 15.63	1000
W-71702	water	7/17/2002	Ni-63	2.56	0.71 ± 1.37	20
W-71802B	water	7/18/2002	Gr. Alpha	0.48	0.31 ± 0.36	1
W-71802B	water	7/18/2002	Gr. Beta	1.33	0.9 ± 0.95	3.2

TABLE A-4. In-House "Blank" Samples

Lab Code	Sample Type	Date	Analysis	Concentration (pCi/L) ^a		
				Laboratory results (4.66σ)		Acceptance
				LLD	Activity ^b	Criteria (4.66 σ)
W-72302	water	7/23/2002	Sr-90	0.27	0.027 ± 0.13	1
W-80202	water	8/2/2002	Tc-99	0.34	-0.051 ± 0.16	10
SPW-7189	water	10/25/2002	Fe-55	978.21	21.77 ± 595.33	1000
SPW-7191	water	10/25/2002	Ni-63	11.74	4.47 ± 7.24	20
SPW-7193	water	10/25/2002	H-3	146.00	-92 ± 65.00	200
SPAP-7199	Air Filter	10/25/2002	Gr. Beta	0.00	-0.0024 ± 0.00	3.2
SPMI-7333	Milk	10/30/2002	Cs-134	5.30		10
SPMI-7333	Milk	10/30/2002	Cs-137	4.80		10
SPW-7334	water	10/30/2002	Co-60	3.69		10
SPW-7334	water	10/30/2002	Cs-134	5.37		10
SPW-7334	water	10/30/2002	Cs-137	3.90		10
SPF-7339	Fish	10/30/2002	Cs-134	4.69		100
SPF-7339	Fish	10/30/2002	Cs-137	11.18		100

^a Liquid sample results are reported in pCi/Liter, air filters(pCi/filter), charcoal (pCi/charcoal canister), and solid samples (pCi/kg)

^b The activity reported is the net activity result.

^c Low levels of Sr-90 are still detected in the environment. A concentration of (1-5 pCi/L) in milk is not unusual.

TABLE A-5. In-House "Duplicate" Samples

Lab Code	Date	Analysis	Concentration (pCi/L) ^a		Averaged Result
			First Result	Second Result	
CF-20, 21	1/2/2002	Be-7	0.47 ± 0.25	0.37 ± 0.12	0.42 ± 0.14
CF-20, 21	1/2/2002	Gr. Beta	7.82 ± 0.20	7.95 ± 0.21	7.89 ± 0.14
CF-20, 21	1/2/2002	K-40	6.65 ± 0.55	6.53 ± 0.36	6.59 ± 0.33
CF-20, 21	1/2/2002	Sr-90	0.01 ± 0.01	0.01 ± 0.01	0.01 ± 0.00
AP-11804, 11805	1/2/2002	Be-7	0.054 ± 0.011	0.049 ± 0.019	0.052 ± 0.011
AP-11825, 11826	1/2/2002	Be-7	0.053 ± 0.013	0.043 ± 0.013	0.048 ± 0.009
AP-11846, 11847	1/2/2002	Be-7	0.054 ± 0.018	0.048 ± 0.016	0.051 ± 0.012
WW-150, 151	1/7/2002	Gr. Beta	1.26 ± 0.50	1.04 ± 0.46	1.15 ± 0.34
MI-124, 125	1/8/2002	K-40	1332.30 ± 158.90	1271.70 ± 151.50	1302.00 ± 109.77
W-172, 173	1/8/2002	H-3	153.00 ± 68.00	148.00 ± 68.00	150.50 ± 48.08
SW-11698, 11699	1/8/2002	Gr. Alpha	2.51 ± 1.36	3.71 ± 1.80	3.11 ± 1.13
SW-11698, 11699	1/8/2002	Gr. Beta	7.68 ± 1.33	8.49 ± 1.43	8.09 ± 0.98
U-275, 276	1/10/2002	Gr. Alpha	1.40 ± 1.00	1.10 ± 1.20	1.25 ± 0.78
LW-356, 357	1/16/2002	Gr. Beta	3.47 ± 0.65	2.94 ± 0.61	3.21 ± 0.45
LW-377, 378	1/16/2002	Gr. Beta	2.75 ± 0.68	2.84 ± 0.61	2.79 ± 0.46
SW-525, 526	1/30/2002	Gr. Alpha	0.56 ± 0.35	0.24 ± 0.35	0.40 ± 0.25
SW-525, 526	1/30/2002	Gr. Beta	2.29 ± 0.41	2.58 ± 0.39	2.43 ± 0.28
DW-504, 505	1/31/2002	Gr. Alpha	2.30 ± 1.70	3.90 ± 1.40	3.10 ± 1.10
MI-649, 650	2/5/2002	K-40	1319.40 ± 176.70	1210.80 ± 118.20	1265.10 ± 106.29
DW-697, 698	2/6/2002	Gr. Beta	5.10 ± 1.20	4.70 ± 1.20	4.90 ± 0.85
DW-927, 928	2/8/2002	Sr-90	0.69 ± 0.29	0.71 ± 0.29	0.70 ± 0.21
W-973, 974	2/18/2002	Fe-55	7.29 ± 0.97	6.86 ± 0.94	7.08 ± 0.68
W-1673, 1674	2/25/2002	H-3	2640.00 ± 155.00	2908.00 ± 161.00	2774.00 ± 111.74
SWT-1395, 1396	2/26/2002	Gr. Beta	2.96 ± 0.59	2.29 ± 0.53	2.63 ± 0.40
MI-1268, 1269	2/27/2002	K-40	1460.50 ± 162.50	1573.00 ± 168.00	1516.75 ± 116.87
MI-1268, 1269	2/27/2002	Sr-90	0.77 ± 0.36	0.95 ± 0.40	0.86 ± 0.27
MI-1332, 1333	3/5/2002	K-40	1503.00 ± 164.00	1305.00 ± 168.00	1404.00 ± 117.39
MI-1332, 1333	3/5/2002	Sr-90	1.35 ± 0.38	1.07 ± 0.40	1.21 ± 0.28
MI-1458, 1459	3/6/2002	K-40	1411.70 ± 166.70	1390.00 ± 172.30	1400.85 ± 119.87
DW-10100, 10101	3/9/2002	Gr. Alpha	4.10 ± 1.70	1.80 ± 1.60	2.95 ± 1.17
DW-10111, 10112	3/9/2002	Gr. Alpha	7.10 ± 2.00	8.30 ± 2.30	7.70 ± 1.52
MI-1521, 1522	3/11/2002	K-40	1270.80 ± 103.30	1369.10 ± 121.60	1319.95 ± 79.78
MI-1521, 1522	3/11/2002	Sr-90	1.69 ± 0.46	2.46 ± 0.49	2.07 ± 0.34
MI-1541, 1542	3/11/2002	K-40	1562.20 ± 122.80	1529.30 ± 126.10	1545.75 ± 88.01
MI-1541, 1542	3/11/2002	Sr-90	0.85 ± 0.57	1.48 ± 0.43	1.16 ± 0.36
LW-1651, 1652	3/14/2002	Gr. Beta	2.90 ± 0.57	2.57 ± 0.56	2.74 ± 0.40
DW-10134, 10135	3/16/2002	Gr. Alpha	5.60 ± 1.90	5.40 ± 1.60	5.50 ± 1.24
WW-1694, 1695	3/18/2002	Gr. Beta	1.79 ± 0.59	1.53 ± 0.50	1.66 ± 0.39
SO-1715, 1716	3/19/2002	Cs-137	0.03 ± 0.01	0.02 ± 0.01	0.03 ± 0.01
SO-1715, 1716	3/19/2002	Gr. Beta	18.50 ± 1.70	19.10 ± 1.70	18.80 ± 1.20
DW-10302, 10303	3/20/2002	Gr. Alpha	2.30 ± 1.40	3.30 ± 1.60	2.80 ± 1.06
W-1758, 1759	3/25/2002	Gr. Alpha	2.50 ± 0.70	2.30 ± 0.60	2.40 ± 0.46
W-1758, 1759	3/25/2002	Gr. Beta	4.10 ± 1.20	2.50 ± 1.10	3.30 ± 0.81

TABLE A-5. In-House "Duplicate" Samples

Lab Code	Date	Analysis	Concentration (pCi/L) ^a		Averaged Result
			First Result	Second Result	
MI-1926, 1927	3/26/2002	K-40	1414.00 ± 115.00	1316.00 ± 128.00	1365.00 ± 86.04
MI-1926, 1927	3/26/2002	Sr-90	2.30 ± 0.70	2.40 ± 0.70	2.35 ± 0.49
SWU-2010, 2011	3/26/2002	Gr. Beta	2.90 ± 0.60	2.20 ± 0.50	2.55 ± 0.39
DW-10376, 10377	3/27/2002	Gr. Beta	10.50 ± 1.30	10.10 ± 1.50	10.30 ± 0.99
AP-2479, 2480	3/28/2002	Be-7	0.064 ± 0.023	0.068 ± 0.014	0.066 ± 0.013
DW-10395, 10396	3/29/2002	Gr. Alpha	10.20 ± 2.10	14.60 ± 2.40	12.40 ± 1.59
LW-2181, 2182	3/31/2002	Gr. Beta	2.98 ± 0.68	1.99 ± 0.70	2.48 ± 0.49
LW-2181, 2182	3/31/2002	H-3	2694.43 ± 156.53	2688.84 ± 156.40	2691.64 ± 110.64
CW-2437, 2438	3/31/2002	Gr. Beta	1.09 ± 0.61	1.14 ± 0.58	1.11 ± 0.42
CW-2437, 2438	3/31/2002	H-3	6456.70 ± 229.20	6292.80 ± 226.52	6374.75 ± 161.12
MI-1947, 1948	4/1/2002	K-40	1421.40 ± 130.90	1256.80 ± 104.20	1339.10 ± 83.65
AP-2458, 2459	4/1/2002	Be-7	0.077 ± 0.011	0.081 ± 0.010	0.079 ± 0.008
DW-10409, 10410	4/1/2002	Gr. Alpha	39.30 ± 4.00	35.30 ± 3.60	37.30 ± 2.69
MI-2052, 2053	4/3/2002	K-40	1283.70 ± 103.20	1434.80 ± 147.90	1359.25 ± 90.17
MI-2052, 2053	4/3/2002	Sr-90	0.81 ± 0.36	0.75 ± 0.35	0.78 ± 0.25
AP-2711, 2712	4/3/2002	Be-7	0.071 ± 0.01	0.07 ± 0.01	0.07 ± 0.01
W-938, 939	4/9/2002	Ni-63	1.73 ± 0.10	1.82 ± 0.10	1.78 ± 0.07
SS-2202, 2203	4/9/2002	Gr. Beta	5.83 ± 1.16	5.52 ± 1.19	5.67 ± 0.83
SS-2202, 2203	4/9/2002	K-40	5.75 ± 0.48	6.11 ± 0.51	5.93 ± 0.35
F-2307, 2308	4/10/2002	K-40	2.75 ± 0.27	2.49 ± 0.32	2.62 ± 0.21
DW-10476, 10477	4/12/2002	Gr. Alpha	5.10 ± 1.30	3.90 ± 1.60	4.50 ± 1.03
W-2244, 2245	4/15/2002	Gr. Beta	1.70 ± 1.10	1.60 ± 1.00	1.65 ± 0.74
DW-10509, 10510	4/17/2002	Gr. Alpha	6.00 ± 2.00	7.30 ± 1.80	6.65 ± 1.35
SW-2690, 2691	4/24/2002	Gr. Beta	2.25 ± 0.68	2.15 ± 0.59	2.20 ± 0.45
SO-2903, 2904	4/24/2002	Be-7	1.22 ± 0.57	0.78 ± 0.43	1.00 ± 0.36
SO-2903, 2904	4/24/2002	Cs-137	0.13 ± 0.05	0.09 ± 0.05	0.11 ± 0.04
SO-2903, 2904	4/24/2002	K-40	21.06 ± 1.48	19.91 ± 1.16	20.48 ± 0.94
DW-10562, 10563	4/24/2002	Gr. Alpha	2.17 ± 1.13	3.25 ± 1.54	2.71 ± 0.96
DW-10578, 10579	4/29/2002	Gr. Alpha	8.20 ± 2.20	7.40 ± 2.00	7.80 ± 1.49
SO-2861, 2862	4/30/2002	Cs-137	236.40 ± 46.00	200.70 ± 52.60	218.55 ± 34.94
SO-2861, 2862	4/30/2002	K-40	10191.00 ± 784.60	11025.00 ± 941.30	10608.00 ± 612.71
SL-2819, 2820	5/1/2002	Be-7	805.70 ± 301.50	860.73 ± 164.80	833.22 ± 171.80
SL-2819, 2820	5/1/2002	Gr. Beta	5566.00 ± 124.00	5359.00 ± 122.00	5462.50 ± 86.98
SL-2819, 2820	5/1/2002	K-40	5524.00 ± 632.90	5277.50 ± 431.40	5400.75 ± 382.97
SL-2840, 2841	5/1/2002	Be-7	1010.00 ± 352.10	872.95 ± 181.70	941.48 ± 198.11
SL-2840, 2841	5/1/2002	Gr. Beta	4399.00 ± 221.80	4593.00 ± 276.00	4496.00 ± 177.04
SL-2840, 2841	5/1/2002	K-40	2422.80 ± 352.10	2254.10 ± 371.40	2338.45 ± 255.89
MI-2971, 2972	5/5/2002	K-40	1338.90 ± 83.44	1345.80 ± 100.90	1342.35 ± 65.47
MI-2971, 2972	5/5/2002	Sr-90	0.83 ± 0.47	1.65 ± 0.46	1.24 ± 0.33
DW-10603, 10604	5/6/2002	Gr. Alpha	6.30 ± 1.70	5.50 ± 1.60	5.90 ± 1.17
SS-3037, 3038	5/9/2002	K-40	11585.00 ± 749.00	11612.00 ± 787.00	11598.50 ± 543.22
MI-3124, 3125	5/13/2002	K-40	1329.50 ± 103.80	1373.00 ± 107.40	1351.25 ± 74.68
MI-3208, 3209	5/14/2002	K-40	1494.60 ± 158.40	1462.60 ± 182.50	1478.60 ± 120.83
LW-3250, 3251	5/15/2002	Gr. Beta	3.14 ± 0.55	3.28 ± 0.63	3.21 ± 0.42

TABLE A-5. In-House "Duplicate" Samples

Lab Code	Date	Analysis	Concentration (pCi/L) ^a		Averaged Result
			First Result	Second Result	
CF-3292, 3293	5/20/2002	K-40	1.33 ± 0.99	1.14 ± 0.91	1.23 ± 0.67
MI-3376, 3377	5/26/2002	K-40	1333.30 ± 159.40	1090.70 ± 143.40	1212.00 ± 107.21
MI-3418, 3419	5/28/2002	K-40	1423.70 ± 121.30	1443.30 ± 164.30	1433.50 ± 102.11
SWT-3461, 3462	5/28/2002	Gr. Beta	2.65 ± 0.54	3.28 ± 0.60	2.97 ± 0.40
SO-3503, 3504	5/29/2002	Cs-137	0.17 ± 0.04	0.18 ± 0.05	0.18 ± 0.03
SO-3503, 3504	5/29/2002	Gr. Beta	27.72 ± 2.26	25.45 ± 2.03	26.58 ± 1.52
SO-3503, 3504	5/29/2002	K-40	20.24 ± 1.19	20.54 ± 1.24	20.39 ± 0.86
SL-3545, 3546	6/3/2002	Gr. Beta	4436.00 ± 90.00	4281.00 ± 89.00	4358.50 ± 63.29
SL-3545, 3546	6/3/2002	K-40	4684.20 ± 734.40	5242.50 ± 884.50	4963.35 ± 574.82
DW-10754, 10755	6/6/2002	Sr-90	0.50 ± 0.30	0.60 ± 0.30	0.55 ± 0.21
SW-3777, 3778	6/11/2002	Gr. Alpha	4.42 ± 1.50	2.97 ± 1.40	3.70 ± 1.02
SW-3777, 3778	6/11/2002	Gr. Beta	7.57 ± 1.22	6.83 ± 1.16	7.20 ± 0.84
MI-3798, 3799	6/11/2002	K-40	1433.40 ± 124.20	1401.20 ± 96.96	1417.30 ± 78.78
LW-3924, 3925	6/13/2002	Gr. Beta	3.05 ± 0.59	3.38 ± 0.72	3.21 ± 0.46
MI-3966, 3967	6/18/2002	K-40	1245.20 ± 109.20	1340.20 ± 121.90	1292.70 ± 81.83
MI-3966, 3967	6/18/2002	Sr-90	2.38 ± 0.51	2.63 ± 0.52	2.51 ± 0.36
MI-3987, 3988	6/19/2002	Sr-90	0.98 ± 0.35	0.97 ± 0.35	0.98 ± 0.25
MI-4095, 4096	6/25/2002	K-40	1256.10 ± 138.20	1199.00 ± 128.30	1227.55 ± 94.29
SWU-4221, 4222	6/25/2002	Gr. Beta	6.89 ± 1.97	5.38 ± 1.93	6.13 ± 1.38
LW-4179, 4180	6/27/2002	Gr. Beta	2.37 ± 0.58	2.00 ± 0.62	2.19 ± 0.42
G-4329, 4330	7/1/2002	Be-7	1394.80 ± 538.40	1098.10 ± 437.40	1246.45 ± 346.84
G-4329, 4330	7/1/2002	Gr. Beta	8.10 ± 0.27	8.00 ± 0.25	8.05 ± 0.18
G-4329, 4330	7/1/2002	K-40	7758.20 ± 1100.00	8399.80 ± 929.30	8079.00 ± 720.00
SL-4337, 4338	7/1/2002	Be-7	1480.90 ± 223.80	1726.40 ± 552.60	1603.65 ± 298.10
SL-4337, 4338	7/1/2002	Cs-137	32.30 ± 14.70	50.97 ± 27.10	41.64 ± 15.42
SL-4337, 4338	7/1/2002	Gr. Beta	5262.40 ± 522.10	5432.40 ± 540.00	5347.40 ± 375.56
SL-4337, 4338	7/1/2002	K-40	2249.00 ± 381.90	2989.90 ± 509.60	2619.45 ± 318.41
AP-4864, 4865	7/1/2002	Be-7	0.085 ± 0.009	0.085 ± 0.006	0.085 ± 0.006
MI-4359, 4360	7/2/2002	K-40	1390.10 ± 168.30	1567.40 ± 194.30	1478.75 ± 128.53
AP-4569, 4570	7/2/2002	Be-7	0.068 ± 0.016	0.086 ± 0.018	0.077 ± 0.012
AP-4843, 4844	7/2/2002	Be-7	0.077 ± 0.016	0.090 ± 0.020	0.084 ± 0.013
AP-4789, 4790	7/3/2002	Be-7	0.080 ± 0.013	0.078 ± 0.015	0.079 ± 0.010
SWU-4810, 4811	7/3/2002	Gr. Beta	2.40 ± 0.84	2.47 ± 0.88	2.43 ± 0.61
MI-4548, 4549	7/9/2002	K-40	1511.80 ± 127.00	1446.80 ± 101.80	1479.30 ± 81.38
DW-4737, 4738	7/12/2002	I-131	0.52 ± 0.20	0.49 ± 0.29	0.51 ± 0.18
MI-4632, 4633	7/15/2002	K-40	1198.40 ± 114.10	1371.30 ± 146.90	1284.85 ± 93.00
MI-5054, 5055	7/30/2002	K-40	1428.80 ± 105.60	1344.30 ± 106.40	1386.55 ± 74.95
G-5075, 5076	7/30/2002	Gr. Beta	7.11 ± 0.07	6.99 ± 0.07	7.05 ± 0.05
SWU-5124, 5125	7/30/2002	Gr. Beta	1.75 ± 0.84	1.90 ± 0.78	1.82 ± 0.57
G-5151, 5152	7/31/2002	Be-7	1.82 ± 0.30	2.05 ± 0.32	1.93 ± 0.22
G-5151, 5152	7/31/2002	K-40	5.13 ± 0.66	5.72 ± 0.70	5.42 ± 0.48
MI-5103, 5104	8/2/2002	K-40	1415.90 ± 70.57	1423.80 ± 129.20	1419.85 ± 73.61
LW-5434, 5435	8/5/2002	Gr. Beta	2.77 ± 0.35	2.26 ± 0.35	2.52 ± 0.25
MI-5215, 5216	8/7/2002	K-40	1361.10 ± 111.90	1358.30 ± 115.80	1359.70 ± 80.52

TABLE A-5. In-House "Duplicate" Samples

Lab Code	Date	Analysis	Concentration (pCi/L) ^a		Averaged Result
			First Result	Second Result	
MI-5355, 5356	8/13/2002	K-40	1405.00 ± 165.80	1549.30 ± 114.40	1477.15 ± 100.72
F-5413, 5414	8/15/2002	Gr. Beta	2.37 ± 0.10	2.55 ± 0.10	2.46 ± 0.07
F-5413, 5414	8/15/2002	K-40	1.47 ± 0.32	1.73 ± 0.43	1.60 ± 0.27
MI-5603, 5604	8/26/2002	I-131	0.64 ± 0.34	0.52 ± 0.36	0.58 ± 0.25
MI-5603, 5604	8/26/2002	K-40	1353.60 ± 83.13	1261.40 ± 117.80	1307.50 ± 72.09
MI-5578, 5579	8/27/2002	K-40	1301.50 ± 161.70	1381.60 ± 111.20	1341.55 ± 98.12
VE-5682, 5683	8/28/2002	Be-7	0.29 ± 0.10	0.25 ± 0.11	0.27 ± 0.08
VE-5682, 5683	8/28/2002	Gr. Beta	3.79 ± 0.08	3.80 ± 0.08	3.79 ± 0.06
VE-5682, 5683	8/28/2002	K-40	3.06 ± 0.29	3.31 ± 0.42	3.18 ± 0.25
WW-6188, 6189	8/31/2002	Gr. Beta	2.70 ± 0.57	2.30 ± 0.57	2.50 ± 0.41
SL-5724, 5725	9/3/2002	Be-7	0.92 ± 0.19	1.04 ± 0.23	0.98 ± 0.15
SL-5724, 5725	9/3/2002	Cs-137	0.05 ± 0.02	0.05 ± 0.02	0.05 ± 0.01
SL-5724, 5725	9/3/2002	K-40	2.09 ± 0.31	2.28 ± 0.48	2.19 ± 0.29
MI-5877, 5878	9/9/2002	K-40	1340.70 ± 165.00	1168.50 ± 172.50	1254.60 ± 119.35
MI-6157, 6158	9/19/2002	K-40	1372.10 ± 115.10	1136.50 ± 222.70	1254.30 ± 125.34
MI-6258, 6259	9/24/2002	K-40	1328.60 ± 201.00	1312.60 ± 118.60	1320.60 ± 116.69
LW-6278, 6279	9/30/2002	Gr. Beta	2.15 ± 0.51	1.70 ± 0.50	1.93 ± 0.36
MI-6385, 6386	10/1/2002	K-40	1297.10 ± 168.90	1310.10 ± 128.30	1303.60 ± 106.05
BS-6453, 6454	10/1/2002	Cs-137	0.43 ± 0.03	0.44 ± 0.03	0.44 ± 0.02
BS-6453, 6454	10/1/2002	K-40	16.50 ± 0.51	16.80 ± 0.61	16.65 ± 0.40
SO-6478, 6479	10/1/2002	Cs-137	0.074 ± 0.016	0.070 ± 0.016	0.072 ± 0.011
SO-6478, 6479	10/1/2002	Gr. Alpha	8.01 ± 4.36	7.55 ± 4.57	7.78 ± 3.16
SO-6478, 6479	10/1/2002	Gr. Beta	30.41 ± 4.07	33.04 ± 4.28	31.73 ± 2.95
SO-6478, 6479	10/1/2002	K-40	19.82 ± 0.53	20.39 ± 0.58	20.10 ± 0.39
SO-6478, 6479	10/1/2002	Sr-90	0.087 ± 0.017	0.094 ± 0.020	0.091 ± 0.013
AP-6641, 6642	10/1/2002	Be-7	0.070 ± 0.016	0.080 ± 0.015	0.075 ± 0.011
MI-6544, 6545	10/2/2002	K-40	1331.60 ± 125.20	1326.50 ± 171.60	1329.05 ± 106.21
AP-6857, 6858	10/3/2002	Be-7	0.062 ± 0.015	0.071 ± 0.015	0.066 ± 0.010
AP-6857, 6858	10/3/2002	Be-7	0.062 ± 0.015	0.071 ± 0.015	0.066 ± 0.010
AP-6857, 6858	10/3/2002	Be-7	0.062 ± 0.015	0.071 ± 0.015	0.066 ± 0.010
BS-6620, 6621	10/7/2002	Co-60	0.090 ± 0.020	0.11 ± 0.02	0.10 ± 0.01
BS-6620, 6621	10/7/2002	Cs-137	0.62 ± 0.04	0.63 ± 0.03	0.62 ± 0.02
BS-6620, 6621	10/7/2002	K-40	11.38 ± 0.48	10.78 ± 0.52	11.08 ± 0.35
MI-6651, 6652	10/8/2002	K-40	1565.50 ± 141.00	1640.60 ± 189.20	1603.05 ± 117.98
G-6760, 6761	10/9/2002	Be-7	2.17 ± 0.49	2.31 ± 0.34	2.24 ± 0.30
G-6760, 6761	10/9/2002	K-40	6.24 ± 1.00	6.61 ± 0.60	6.42 ± 0.58
SWU-7054, 7055	10/10/2002	Gr. Beta	3.09 ± 0.57	2.06 ± 0.52	2.57 ± 0.39
U-7126, 7127	10/11/2002	Gr. Beta	2.61 ± 1.24	2.61 ± 1.08	2.61 ± 0.82
XW-7768, 7769	10/14/2002	Cs-137	2.25 ± 0.25	2.09 ± 0.18	2.17 ± 0.15
XW-7768, 7769	10/14/2002	H-3	2.63 ± 0.10	2.64 ± 0.10	2.64 ± 0.07
F-7148, 7149	10/15/2002	K-40	2.57 ± 0.28	2.98 ± 0.44	2.77 ± 0.26
BS-7337, 7338	10/23/2002	Co-60	0.083 ± 0.025	0.073 ± 0.031	0.078 ± 0.020
BS-7337, 7338	10/23/2002	Cs-137	0.082 ± 0.019	0.11 ± 0.04	0.10 ± 0.02
BS-7337, 7338	10/23/2002	Gr. Beta	12.54 ± 2.34	12.99 ± 2.22	12.77 ± 1.61
SO-7407, 7408	10/29/2002	Cs-137	0.14 ± 0.03	0.15 ± 0.03	0.15 ± 0.02
SO-7407, 7408	10/29/2002	Gr. Beta	16.73 ± 2.21	16.62 ± 2.27	16.67 ± 1.58
SO-7407, 7408	10/29/2002	K-40	12.05 ± 0.61	12.27 ± 0.81	12.16 ± 0.51

TABLE A-5. In-House "Duplicate" Samples

Lab Code	Date	Analysis	Concentration (pCi/L) ^a		Averaged Result
			First Result	Second Result	
MI-7428, 7429	10/29/2002	K-40	1542.60 ± 213.00	1355.80 ± 185.70	1449.20 ± 141.29
pw-7621, 7622	10/30/2002	Gr. Beta	2.22 ± 0.92	2.08 ± 0.83	2.15 ± 0.62
TD-7653, 7654	10/31/2002	H-3	11122.00 ± 387.00	11259.00 ± 390.00	11190.50 ± 274.71
SW-7569, 7570	11/5/2002	Gr. Beta	15.90 ± 1.25	16.24 ± 1.27	16.07 ± 0.89
SW-7569, 7570	11/5/2002	K-40	14.79 ± 1.48	14.79 ± 1.48	14.79 ± 1.05
SO-8010, 8011	11/7/2002	Cs-137	0.11 ± 0.02	0.11 ± 0.03	0.11 ± 0.02
SO-8010, 8011	11/7/2002	K-40	6.91 ± 0.54	7.21 ± 0.54	7.06 ± 0.38
VE-7747, 7748	11/11/2002	Gr. Beta	3.59 ± 0.05	3.25 ± 0.05	3.42 ± 0.03
VE-7747, 7748	11/11/2002	K-40	3.17 ± 0.36	3.26 ± 0.46	3.22 ± 0.29
MI-7789, 7790	11/13/2002	K-40	1319.30 ± 167.60	1301.20 ± 140.70	1310.25 ± 109.41
DW-8082, 8083	11/29/2002	I-131	0.83 ± 0.24	0.98 ± 0.22	0.90 ± 0.16
SW-8054, 8055	12/2/2002	Gr. Beta	2.60 ± 0.46	2.21 ± 0.39	2.41 ± 0.30
SW-8054, 8055	12/2/2002	K-40	1.44 ± 0.14	1.43 ± 0.14	1.44 ± 0.10
MI-8105, 8106	12/4/2002	K-40	1300.60 ± 111.30	1315.40 ± 108.90	1308.00 ± 77.86
TD-8298, 8299	12/5/2002	H-3	355.00 ± 94.00	469.00 ± 99.00	412.00 ± 68.26
MI-8396, 8397	12/17/2002	K-40	1409.20 ± 117.30	1449.60 ± 108.60	1429.40 ± 79.93
SWT-8654, 8655	12/30/2002	Gr. Beta	1.63 ± 0.50	1.40 ± 0.47	1.51 ± 0.34
AP-8783, 8784	12/31/2002	Be-7	0.044 ± 0.009	0.042 ± 0.008	0.043 ± 0.006

Note: Duplicate analyses are performed on every twentieth sample received in-house. Results are not listed for those analyses with activities that measure below the LLD.

^a Results are reported in units of pCi/L, except for air filters (pCi/Filter), food products, vegetation, soil, sediment (pCi/g).

TABLE A-6. Department of Energy's Mixed Analyte Performance Evaluation Program (MAPEP)^a.

Lab Code	Type	Date	Analysis	Laboratory result	Concentration ^b	
					Known Activity	Control Limits ^c
STW-939	water	12/01/01	Am-241	1.25 ± 0.0	1.19 ± 0.0	0.83 - 1.6
STW-939	water	12/01/01	Co-57	138.9 ± 0.5	143 ± 14.3	100.1 - 185.9
STW-939	water	12/01/01	Co-60	139.1 ± 0.5	141 ± 14.1	98.7 - 183.3
STW-939	water	12/01/01	Cs-134	25.16 ± 0.2	28.5 ± 0.3	19.95 - 37.1
STW-939	water	12/01/01	Cs-137	279.96 ± 0.9	286 ± 28.6	200.2 - 371.8
STW-939 ^d	water	12/01/01	Fe-55	19.68 ± 23.2	9.2 ± 0.9	6.44 - 12.0
STW-939	water	12/01/01	Mn-54	253.64 ± 0.9	246 ± 0.2	172.2 - 319.8
STW-939	water	12/01/01	Ni-63	65.88 ± 1.9	88.3 ± 8.8	61.81 - 114.8
STW-939 ^e	water	12/01/01	Pu-238	0.060 ± 0.01	0.0 ± 0.0	-
STW-939	water	12/01/01	Pu-239/40	2.79 ± 0.0	2.99 ± 0.3	2.09 - 3.9
STW-939	water	12/01/01	Sr-90	4.88 ± 0.3	4.8 ± 0.5	3.36 - 6.2
STW-939	water	12/01/01	U-233/4	0.89 ± 0.0	0.98 ± 0.1	0.69 - 1.3
STW-939	water	12/01/01	U-238	6.75 ± 0.0	7.8 ± 0.8	5.46 - 10.1
STW-939	water	12/01/01	Zn-65	70.6 ± 1.1	67.3 ± 6.7	47.11 - 87.5
STSO-955	soil	10/16/02	Am-241	40.54 ± 2.7	43.5 ± 4.4	30.45 - 56.6
STSO-955	soil	10/16/02	Co-57	210.58 ± 2.0	246 ± 24.6	172.2 - 319.8
STSO-955	soil	10/16/02	Co-60	84.38 ± 0.9	87.5 ± 8.8	61.25 - 113.8
STSO-955	soil	10/16/02	Cs-134	692.6 ± 2.1	862 ± 86.0	603.4 - 1120.6
STSO-955	soil	10/16/02	Cs-137	96.98 ± 1.7	111 ± 11.1	77.7 - 144.3
STSO-955	soil	10/16/02	Fe-55	1714.6 ± 299.6	1870 ± 187.0	1309 - 2431.0
STSO-955	soil	10/16/02	Mn-54	509.74 ± 3.4	546 ± 54.6	382.2 - 709.8
STSO-955	soil	10/16/02	Ni-63	890.6 ± 22.4	1180 ± 118.0	826 - 1534.0
STSO-955	soil	10/16/02	Pu-238	34.04 ± 6.0	33.3 ± 3.3	23.31 - 43.3
STSO-955	soil	10/16/02	Pu-239/40	68.7 ± 3.7	72.9 ± 7.3	51.03 - 94.8
STSO-955 ^e	soil	10/16/02	Sr-90	1.5 ± 3.0	0.0 ± 0.0	-
STSO-955	soil	10/16/02	U-233/4	166.33 ± 3.8	229 ± 22.9	160.3 - 297.7
STSO-955	soil	10/16/02	U-238	169.76 ± 3.8	220 ± 22.0	154 - 286.0
STSO-955	soil	10/16/02	Zn-65	783.59 ± 6.4	809 ± 80.9	566.3 - 1051.7

^a Results obtained by Environmental, Inc. ,Midwest Laboratory as a participant in the Department of Energy's Mixed Analyte Performance Evaluation Program, Idaho Operations office, Idaho Falls, Idaho

^b All results are in Bq/kg or Bq/L as requested by the Department of Energy.

^c MAPEP results are presented as the known values and expected laboratory precision (1 sigma, 1 determination) and control limits as defined by the MAPEP.

^d Known activity below the laboratory LLD. The sample was recounted for 2000 minutes; result : 11.52 ± 5.55 Bq /L

^e Included in the testing series as a "false positive". No activity expected.

TABLE A-7. Environmental Measurements Laboratory Quality Assessment Program (EML)

Lab Code	Type	Date	Analysis	Concentration ^a		
				Laboratory results	EML Result ^b	Control Limits ^c
STW-945	Water	03/01/02	Am-241	1.68 ± 0.14	1.47	0.79 - 1.41
STW-945	Water	03/01/02	Co-60	349.20 ± 2.60	347.33	0.80 - 1.20
STW-945	Water	03/01/02	Cs-134	3.40 ± 0.60	3.36	0.80 - 1.30
STW-945	Water	03/01/02	Cs-137	57.20 ± 1.70	56.07	0.80 - 1.22
STW-945	Water	03/01/02	Pu-238	0.45 ± 0.11	0.49	0.74 - 1.20
STW-945	Water	03/01/02	Pu-239/40	4.47 ± 0.28	4.22	0.79 - 1.20
STW-945	Water	03/01/02	Sr-90	7.40 ± 1.30	7.58	0.69 - 1.34
STW-945	Water	03/01/02	Uranium	3.27 ± 0.43	2.84	0.75 - 1.33
STW-946	Water	03/01/02	Gr. Alpha	265.40 ± 7.70	375.00	0.58 - 1.29
STW-946	Water	03/01/02	Gr. Beta	930.60 ± 12.00	1030.00	0.61 - 1.43
STW-946	Water	03/01/02	H-3	226.30 ± 32.70	283.70	0.78 - 2.45
STSO-947	Soil	03/01/02	Ac-228	55.00 ± 5.50	51.17	0.80 - 1.38
STSO-947	Soil	03/01/02	Am-241	8.30 ± 3.30	10.93	0.65 - 2.28
STSO-947	Soil	03/01/02	Bi-212	49.20 ± 12.40	53.43	0.50 - 1.34
STSO-947	Soil	03/01/02	Bi-214	46.60 ± 3.10	53.93	0.78 - 1.42
STSO-947	Soil	03/01/02	Cs-137	1401.60 ± 9.10	1326.67	0.80 - 1.25
STSO-947	Soil	03/01/02	K-40	613.10 ± 28.10	621.67	0.80 - 1.32
STSO-947	Soil	03/01/02	Pb-212	51.60 ± 2.60	51.10	0.78 - 1.32
STSO-947	Soil	03/01/02	Pb-214	52.00 ± 3.60	54.37	0.76 - 1.46
STSO-947	Soil	03/01/02	Pu-239/40	14.70 ± 3.50	19.10	0.71 - 1.30
STSO-947	Soil	03/01/02	Sr-90	52.10 ± 6.30	53.76	0.67 - 2.90
STSO-947	Soil	03/01/02	Th-234	122.40 ± 6.30	89.30	0.63 - 2.35
STSO-947	Soil	03/01/02	Uranium	143.40 ± 9.40	194.77	0.71 - 1.32
STVE-948	Vegetation	03/01/02	Am-241	3.10 ± 2.20	2.23	0.73 - 2.02
STVE-948	Vegetation	03/01/02	Cm-244	0.90 ± 0.80	1.32	0.61 - 1.59
STVE-948	Vegetation	03/01/02	Co-60	13.50 ± 2.10	11.23	0.80 - 1.44
STVE-948	Vegetation	03/01/02	Cs-137	350.40 ± 6.30	313.67	0.80 - 1.31
STVE-948	Vegetation	03/01/02	K-40	940.80 ± 45.60	864.33	0.79 - 1.39
STVE-948 ^d	Vegetation	03/01/02	Pu-239/40	16.90 ± 0.70	3.54	0.69 - 1.31
STVE-948	Vegetation	03/01/02	Sr-90	543.40 ± 24.90	586.28	0.55 - 1.21
STAP-949	Air Filter	03/01/02	Am-241	0.09 ± 0.05	0.09	0.70 - 2.34
STAP-949	Air Filter	03/01/02	Co-60	30.10 ± 0.30	30.52	0.80 - 1.26
STAP-949	Air Filter	03/01/02	Cs-137	29.90 ± 0.30	28.23	0.80 - 1.32
STAP-949	Air Filter	03/01/02	Mn-54	40.40 ± 0.40	38.53	0.80 - 1.35
STAP-949	Air Filter	03/01/02	Pu-238	0.05 ± 0.02	0.06	0.67 - 1.33
STAP-949	Air Filter	03/01/02	Pu-239/40	0.15 ± 0.02	0.19	0.73 - 1.26
STAP-949	Air Filter	03/01/02	Sr-90	3.40 ± 0.40	4.83	0.53 - 1.84
STAP-949	Air Filter	03/01/02	Uranium	0.80 ± 0.20	0.61	0.79 - 2.10
STAP-950	Air Filter	03/01/02	Gr. Alpha	0.43 ± 0.04	0.53	0.73 - 1.43
STAP-950	Air Filter	03/01/02	Gr. Beta	1.34 ± 0.05	1.30	0.76 - 1.36
STW-959	Water	09/01/02	Am-241	3.00 ± 0.10	3.04	0.79 - 1.41
STW-959	Water	09/01/02	Co-60	258.40 ± 2.30	268.67	0.80 - 1.20
STW-959	Water	09/01/02	Cs-134	50.80 ± 3.30	60.20	0.80 - 1.30
STW-959	Water	09/01/02	Cs-137	80.10 ± 0.30	81.43	0.80 - 1.22
STW-959	Water	09/01/02	Cs-137	80.10 ± 0.30	81.43	0.80 - 1.22
STW-959	Water	09/01/02	Am-241	3.00 ± 0.10	3.04	0.79 - 1.41

TABLE A-7. Environmental Measurements Laboratory Quality Assessment Program (EML)^a.

Lab Code	Type	Date	Analysis	Laboratory results	Concentration ^b	
					EML Result ^c	Control Limits ^d
STW-959	Water	09/01/02	Am-241	3.00 ± 0.10	3.04	0.79 - 1.41
STW-959	Water	09/01/02	Co-60	258.40 ± 2.30	268.67	0.80 - 1.20
STW-959	Water	09/01/02	Cs-134	50.80 ± 3.30	60.20	0.80 - 1.30
STW-959	Water	09/01/02	Cs-137	80.10 ± 0.30	81.43	0.80 - 1.22
STW-959	Water	09/01/02	H-3	271.90 ± 20.90	227.30	0.78 - 2.45
STW-959	Water	09/01/02	Pu-238	4.40 ± 0.20	4.33	0.74 - 1.20
STW-959	Water	09/01/02	Pu-239/40	2.10 ± 0.10	2.07	0.79 - 1.20
STW-959	Water	09/01/02	Sr-90	9.70 ± 0.20	8.69	0.69 - 1.34
STW-959	Water	09/01/02	Uranium	5.60 ± 0.10	6.84	0.75 - 1.33
STW-960	Water	09/01/02	Gr. Alpha	204.90 ± 3.20	210.00	0.58 - 1.29
STW-960	Water	09/01/02	Gr. Beta	852.00 ± 26.50	900.00	0.61 - 1.43
STSO-961	Soil	09/01/02	Ac-228	47.60 ± 1.90	42.30	0.80 - 1.38
STSO-961	Soil	09/01/02	Am-241	7.80 ± 1.40	6.77	0.65 - 2.28
STSO-961	Soil	09/01/02	Bi-212	45.60 ± 1.70	45.93	0.50 - 1.34
STSO-961 ^e	Soil	09/01/02	Bi-214	48.80 ± 4.90	33.63	0.78 - 1.42
STSO-961	Soil	09/01/02	Cs-137	819.60 ± 16.60	829.33	0.80 - 1.25
STSO-961	Soil	09/01/02	K-40	705.30 ± 31.40	637.67	0.80 - 1.32
STSO-961	Soil	09/01/02	Pb-212	48.60 ± 3.40	43.43	0.78 - 1.32
STSO-961	Soil	09/01/02	Pb-214	51.10 ± 5.10	35.20	0.76 - 1.46
STSO-961 ^f	Soil	09/01/02	Pu-239/40	20.20 ± 0.80	12.90	0.71 - 1.30
STSO-961	Soil	09/01/02	Sr-90	38.50 ± 0.10	41.16	0.67 - 2.90
STSO-961	Soil	09/01/02	Uranium	58.90 ± 0.70	87.21	0.71 - 1.32
STVE-962	Vegetation	09/01/02	Am-241	2.10 ± 0.30	2.25	0.73 - 2.02
STVE-962	Vegetation	09/01/02	Cm-244	1.00 ± 0.30	1.25	0.61 - 1.59
STVE-962	Vegetation	09/01/02	Co-60	11.80 ± 1.50	9.66	0.80 - 1.44
STVE-962	Vegetation	09/01/02	Cs-137	340.30 ± 16.80	300.67	0.80 - 1.31
STVE-962	Vegetation	09/01/02	K-40	1646.00 ± 74.40	1480.00	0.79 - 1.39
STVE-962	Vegetation	09/01/02	Pu-239/40	3.00 ± 0.30	3.43	0.69 - 1.31
STVE-962	Vegetation	09/01/02	Sr-90	345.60 ± 97.80	476.26	0.55 - 1.21
STAP-963 ^g	Air Filter	09/01/02	Am-241	0.20 ± 0.01	0.19	0.70 - 2.34
STAP-963	Air Filter	09/01/02	Co-60	24.90 ± 0.60	23.00	0.80 - 1.26
STAP-963	Air Filter	09/01/02	Cs-137	38.00 ± 1.30	32.50	0.80 - 1.32
STAP-963	Air Filter	09/01/02	Mn-54	60.80 ± 1.90	52.20	0.80 - 1.35
STAP-963 ^g	Air Filter	09/01/02	Pu-238	0.11 ± 0.02	0.12	0.67 - 1.33
STAP-963 ^g	Air Filter	09/01/02	Pu-239/40	0.21 ± 0.01	0.21	0.73 - 1.26
STAP-963	Air Filter	09/01/02	Sr-90	5.20 ± 0.20	5.56	0.53 - 1.84
STAP-963 ^g	Air Filter	09/01/02	Uranium	0.41 ± 0.04	0.47	0.79 - 2.10
STAP-964	Air Filter	09/01/02	Gr. Alpha	0.40 ± 0.10	0.29	0.73 - 1.43
STAP-964	Air Filter	09/01/02	Gr. Beta	0.80 ± 0.10	0.87	0.76 - 1.36

^a Results are reported in Bq/L with the following exceptions: Air Filters (Bq/Filter), Soil and Vegetation (Bq/kg)^b The EML result listed is the mean of replicate determinations for each nuclide ± the standard error of the mean^c Control limits are reported by EML as the ratio of Reported Value / EML value.^d An error was found in the conversion from pCi/g to Bq/g. Corrected result : 2.84 ± 0.59 Bq/g^e Naturally-occurring radium daughters are present in the shield background, and a probable cause of the higher bias seen for isotopes of lead and bismuth.^f Reporting error. The average result of the triplicate analyses was 14.1 ± 5.7 Bq/kg^g STAP-963, Calculations for the transuranics analyses (Am-241, Uranium, Pu-238, -239/40) were not converted to Bq/total filter. The data listed is the result of recalculation.

Appendix B

Summary Tables in the format of NRC Radiological
Assessment Branch Technical Position
Revision 1, November 1979

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY
Name of Facility: Wolf Creek Generating Station Docket No.: 50-482
Location of Facility: Coffey County, Kansas Reporting Period: Annual 2002

Medium of Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analysis Performed	ODCM Lower Limit of Detection (LLD)	All Indicator Locations ** Mean (f) ** Range	Indicator Location with Highest Annual Mean Name Distance and Direction	** Mean (f) ** Range	Control Locations ** Mean (f) ** Range	Number of Nonroutine Reported Measurements **
Air Particulate (pCi/m ³)	Gross Beta (279)	0.01	.029 (208/208) (.015-.054)	37 2.1 miles NNW	.030 (52/52) (.016-.052)	Stations 40 & 48 .030 (71/71) (.012-.051)	0
	Gamma (22) Be-7	-	0.068 (16/16) (0.042-0.087)	2 2.7 miles N	0.071 (4/4) (0.049-0.087)	0.071 (6/6) (0.047-0.093)	0
	I-131 (279)	0.07	-(0/208)	N/A	N/A	-(0/71)	0
External Radiation (mR/day)	TLD (378)	-	0.226 (360/360) (0.146-0.307)	47 .16 miles S	0.272 (8/8) (0.249-0.307)	Stations 39, 40 & 48 0.211 (18/18) (0.190-0.229)	0
Surface Water (pCi/l)	Gamma (36)		-(0/24)	N/A	N/A	MUSH -(0/12)	0
	Tritium (36)	3000	13280 (24/24) (10852-19002)	DC 0.6 miles WNW	13522 (12/12) (10852-19002)	-(0/12)	0
Ground Water (pCi/l)	I-131 (20)	1	-(0/16)	N/A	N/A	B-12 -(0/4)	0
	Gamma (20)		-(0/16)	N/A	N/A	-(0/4)	0
	Tritium (20)	3000	-(0/16)	N/A	N/A	-(0/4)	0

** Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (f)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY
Name of Facility: Wolf Creek Generating Station Docket No.: 50-482
Location of Facility: Coffey County, Kansas Reporting Period: Annual 2002

Medium of Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analysis Performed	ODCM Lower Limit of Detection (LLD)	All Indicator Locations ** Mean (f) ** Range	Indicator Location with Highest Annual Mean Name Distance and Direction	** Mean (f) ** Range	Control Locations ** Mean (f) ** Range	Number of Nonroutine Reported Measurements **
Drinking Water (pCi/l)	I-131 (25)	1	-(0-13)	N/A	N/A	BW-15 -(0/12)	0
	Gross Beta (25)	4	4.8 (13/13) (3.5-5.7)	NF-DW >15.0 miles SSE	5.7 (1/1)	4.8 (12/12) (3.8-5.4)	0
	Gamma (25)		-(0/13)	N/A	N/A	-(0/12)	0
	Tritium (8)	2000	-(0/4)	N/A	N/A	-(0/4)	0
Shoreline Sediment (pCi/kg dry)	Gamma (6)					JRR	
	K-40	-	9223.9 (4/4) (7770.5-9809.5)	EEA 3.0 miles NNW	9698.6 (1/1)	11190.0 (2/2) (10795.0-11585.0)	0
Fish (pCi/kg wet)	Gamma (17)					JRR	
	K-40	-	2862.1 (10/10) (1685.8-3390.7)	WCL 0.6 miles	2862.1 (10/10) (1685.8-3390.7)	3003.2 (7/7) (2429.7-3404.0)	0
	Tritium (17)	-	8109.8 (10/10) (6166.5-9170.0)	WCL 0.6 miles	8109.8 (10/10) (6166.5-9170.0)	-(0/7)	0
Broadleaf Vegetation (pCi/kg wet)	Gamma (22)					D-1 & S-4	
	Be-7	-	735.9 (9/12) (324.5-1572.2)	A-2 4.9 miles N	1346.4 (2/3) (1120.6-1572.2)	594.6 (9/10) (229.4-1707.8)	0
	K-40	-	4094.3 (12/12) (1519.1-5758.1)	A-2 4.9 miles N	4517.7 (3/3) (3099.2-5335.5)	4198.3 (10/10) (2364.4-7661.1)	0
	Cs-137		41.5 (1/12)	L-1 2.6 miles SW	41.5 (1/2)	-(0/10)	

** Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (f)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY
Name of Facility: Wolf Creek Generating Station Docket No.: 50-482
Location of Facility: Coffey County, Kansas Reporting Period: Annual 2002

Medium of Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analysis Performed	ODCM Lower Limit of Detection (LLD)	All Indicator Locations ** Mean (f) ** Range	Indicator Location with Highest Annual Mean Name Distance and Direction	** Mean (f) ** Range	Control Locations ** Mean (f) ** Range	Number of Nonroutine Reported Measurements **
Crops (pCi/kg wet)	Gamma (5)					NR-U1	
	K-40	-	10981 (3/3) (3217.8-15063)	NR-D1 9.2 miles S	15063 (1/1)	7717.5 (2/2) (2466-12969)	0
Bottom Sediment (pCi/kg dry)	Gamma (4)					JRR	
	K-40	-	14183 (2/2) (13383-14983)	DC 0.6 miles WNW	14183 (2/2) (13383-14983)	13255 (2/2) (12995-13515)	0
	Co-60	-	267.8 (2/2) (227.8-307.7)	DC 0.6 miles WNW	267.8 (2/2) (227.8-307.7)	- (0/2)	0
	Cs-137	-	271.6 (2/2) (262.7-280.5)	DC 0.6 miles WNW	271.6 (2/2) (262.7-280.5)	135.6 (2/2) (105.8-165.3)	0
Aquatic Vegetation (pCi/kg wet)	Gamma (3)					No Control	
	Be-7	-	818.8 (2/3) (643.1-994.4)	EEA 3.0 miles NNW	994.4 (1/1)		0
	K-40	-	2243.3 (3/3) (1796.8-3093.6)	DC ALT 1.5 miles NW	3093.6 (1/1)		0

** Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (f)

Name of Facility: Wolf Creek Generating Station Docket No.: 50-482
Location of Facility: Coffey County, Kansas Reporting Period: Annual 2002

**** Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (f)**

Appendix C
2002 Individual Sample Results

Wolf Creek Nuclear Operating Corporation

Air Particulate Filters

STATION NUMBER 02

Collection Start Date	Collection Stop Date	Volume M ³	Gross Beta Activity (pCi/Cu.M.)
0102	0109	310	0 036+-0 003
0109	0116	310	0 021+-0 003
0116	0123	310	0 036+-0 004
0123	0201	400	0.034+-0 003
0201	0206	210	0 043+-0 006
0206	0213	320	0 026+-0 003
0206*	0213	320	0 027+-0 003
0213	0221	370	0 025+-0 003
0221	0227	260	0 028+-0 004
0227	0306	290	0 032+-0 004
0306	0313	300	0 036+-0.004
0313	0320	300	0 025+-0.004
0320	0327	290	0 031+-0.004
0327	0403	290	0.024+-0 003
0403	0410	290	0.033+-0.004
0410	0417	300	0.021+-0 004
0417	0424	300	0 017+-0 003
0424	0501	310	0 016+-0 003
0501	0508	300	0 019+-0.003
0508	0514	260	0.018+-0 003
0514	0522	330	0 025+-0 003
0522	0529	300	0 021+-0 003
0529	0605	290	0 024+-0 003
0605	0613	340	0 022+-0 003
0613	0619	260	0 021+-0.003

* Duplicate

Wolf Creek Nuclear Operating Corporation

Air Particulate Filters
STATION NUMBER 02

Collection Start Date	Collection Stop Date	Volume M ³	Gross Beta Activity (pCi/Cu.M.)
0619	0626	300	0 029+-0.004
0626	0702	250	0 028+-0.004
0702	0710	340	0.031+-0.003
0710	0717	300	0 025+-0 003
0710*	0717	300	0.027+-0.003
0717	0725	360	0.021+-0 003
0725	0801	290	0.022+-0 004
0801	0807	270	0.039+-0 005
0807	0814	310	0.024+-0 004
0814	0821	290	0.018+-0 003
0821	0828	300	0 031+-0 003
0828	0904	320	0.040+-0 004
0904	0911	300	0.032+-0 004
0911	0918	300	0.030+-0 004
0918	0925	290	0.023+-0 004
0925	1002	302	0.041+-0 004
1002	1009	309	0 025+-0 003
1009	1016	299	0 027+-0 004
1016	1025	373	0 026+-0 003
1025	1030	216	0 024+-0 004
1030	1106	295	0 043+-0 004
1106	1113	303	0 037+-0 004
1113	1120	303	0 026+-0 004
1120	1126	258	0 022+-0 003
1126	1203	306	0 024+-0.004

* Duplicate

Wolf Creek Nuclear Operating Corporation

Air Particulate Filters

STATION NUMBER 02

Collection Start Date	Collection Stop Date	Volume M ³	Gross Beta Activity (pCi/Cu.M.)
1203	1211	345	0.046+-0.004
1211	1219	350	0.048+-0.004
1219	1226	302	0.027+-0.004
122602	010203	302	0.041+-0.004

* Duplicate

Wolf Creek Nuclear Operating Corporation

Air Particulate Filters

STATION NUMBER 18

Collection Start Date	Collection Stop Date	Volume M ³	Gross Beta Activity (pCi/Cu.M.)
0102	0109	300	0 035+-0 004
0109	0116	300	0.019+-0 003
0116	0123	300	0 036+-0 004
0123	0201	310	0.034+-0.004
0201	0206	210	0 045+-0 006
0206	0213	300	0 024+-0 003
0213	0221	360	0 020+-0 003
0221	0227	250	0 030+-0 004
0227	0306	300	0 035+-0 004
0227*	0306	300	0 034+-0 004
0306	0313	290	0 033+-0 004
0313	0320	300	0 026+-0 004
0320*	0327	300	0.030+-0.004
0320	0327	300	0 026+-0 003
0327	0403	300	0 022+-0 003
0327*	0403	300	0 024+-0.003
0403	0410	300	0 027+-0 003
0403*	0410	300	0 031+-0 003
0410	0417	300	0.026+-0 004
0417	0424	300	0.017+-0 003
0424	0501	310	0.018+-0 003
0501	0508	300	0 019+-0 003
0508	0514	270	0 016+-0 003
0514	0522	340	0 024+-0 003
0522	0529	300	0 015+-0 003

* Duplicate

Wolf Creek Nuclear Operating Corporation

Air Particulate Filters
STATION NUMBER 18

Collection Start Date	Collection Stop Date	Volume M ³	Gross Beta Activity (pCi/Cu.M.)
0529	0605	290	0.023+-0.003
0605	0613	340	0.020+-0.003
0613	0619	260	0.022+-0.003
0619	0626	300	0.029+-0.004
0626	0702	260	0.028+-0.004
0702	0710	350	0.027+-0.003
0710	0717	300	0.025+-0.003
0717	0725	360	0.019+-0.003
0725	0801	300	0.024+-0.004
0801	0807	260	0.045+-0.005
0807	0814	290	0.027+-0.004
0814	0821	300	0.020+-0.003
0814*	0821	300	0.020+-0.003
0821	0828	290	0.030+-0.003
0828	0904	290	0.043+-0.004
0904	0911	290	0.033+-0.004
0911	0918	310	0.033+-0.004
0918	0925	290	0.024+-0.004
0925	1002	300	0.040+-0.004
1002	1009	303	0.027+-0.003
1009*	1016	305	0.027+-0.004
1009	1016	305	0.027+-0.004
1016	1025	398	0.025+-0.003
1025	1030	219	0.024+-0.004
1025*	1030	219	0.028+-0.004

* Duplicate

Wolf Creek Nuclear Operating Corporation

Air Particulate Filters

STATION NUMBER 18

Collection Start Date	Collection Stop Date	Volume M ³	Gross Beta Activity (pCi/Cu.M.)
1030	1106	300	0 044+-0.004
1106	1113	303	0.041+-0.004
1113	1120	305	0 029+-0.004
1120	1126	256	0.020+-0 003
1126	1203	304	0.030+-0 004
1203	1211	344	0.037+-0.004
1211	1219	346	0.054+-0 004
1219	1226	304	0.026+-0 004
122602	010203	302	0 040+-0.004

* Duplicate

Wolf Creek Nuclear Operating Corporation

Air Particulate Filters
STATION NUMBER 32

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Collection Start Date	Collection Stop Date	Volume M ³	Gross Beta Activity (pCi/Cu.M.)
0102	0109	300	0 036+-0 004
0109	0116	300	0 017+-0 003
0116	0123	300	0 038+-0.004
0123	0201	390	0 031+-0.003
0201	0206	210	0 041+-0 005
0206	0213	300	0 025+-0 003
0213	0221	350	0 021+-0 003
0221	0227	250	0 025+-0 004
0221*	0227	250	0 028+-0 004
0227	0306	300	0 035+-0 004
0306	0313	300	0 030+-0 003
0313	0320	300	0 024+-0.004
0320	0327	300	0 030+-0 004
0327	0403	300	0 022+-0.003
0403	0410	300	0 032+-0 003
0410	0417	300	0 023+-0 004
0417	0424	300	0 016+-0 003
0424	0501	310	0 018+-0.003
0501	0508	300	0 019+-0 003
0508	0514	270	0 016+-0.003
0514	0522	340	0 021+-0 003
0522	0529	300	0.021+-0.003
0529	0605	290	0.022+-0 003
0605	0613	340	0.022+-0.003
0613	0619	260	0.022+-0 004

* Duplicate

Wolf Creek Nuclear Operating Corporation

Air Particulate Filters
STATION NUMBER 32

Collection Start Date	Collection Stop Date	Volume M ³	Gross Beta Activity (pCi/Cu.M.)
0619	0626	310	0 026+-0 003
0626	0702	260	0.024+-0 004
0702	0710	340	0 030+-0 003
0710	0717	300	0 027+-0 003
0717	0725	350	0 022+-0 003
0725	0801	300	0 025+-0 004
0801	0807	260	0 040+-0 005
0807	0814	300	0 027+-0 004
0814	0821	300	0 019+-0 003
0821	0828	300	0 030+-0 003
0828	0904	300	0.043+-0 004
0904	0911	300	0 033+-0 004
0911	0918	300	0 033+-0 004
0918	0925	280	0 018+-0 004
0925	1002	306	0 038+-0 004
1002	1009	303	0 027+-0.003
1009	1016	299	0 027+-0 004
1016	1025	388	0 025+-0 003
1025	1030	217	0 024+-0.004
1030	1106	300	0 039+-0 004
1106	1113	303	0.039+-0 004
1113	1120	303	0.029+-0 004
1120	1126	258	0 020+-0 003
1126	1203	305	0.026+-0 004
1203	1211	339	0 042+-0 004

* Duplicate

Wolf Creek Nuclear Operating Corporation

Air Particulate Filters

STATION NUMBER 32

Collection Start Date	Collection Stop Date	Volume M ³	Gross Beta Activity (pCi/Cu.M.)
1211	1219	342	0 049+-0.004
1219	1226	296	0 029+-0.004
122602	010203	302	0 038+-0.004

* Duplicate

Wolf Creek Nuclear Operating Corporation

Air Particulate Filters
STATION NUMBER 37

Collection Start Date	Collection Stop Date	Volume M ³	Gross Beta Activity (pCi/Cu.M.)
0102	0109	300	0 039+-0.004
0109	0116	300	0 021+-0 003
0116	0123	300	0 041+-0 004
0123	0201	390	0 034+-0 003
0201	0206	210	0 043+-0 005
0206	0213	300	0 030+-0 003
0213	0221	350	0 021+-0 003
0213*	0221	350	0 023+-0 003
0221	0227	250	0 027+-0 004
0227	0306	300	0 035+-0 004
0306	0313	300	0.034+-0 004
0313	0320	300	0.023+-0 004
0320	0327	300	0.032+-0.004
0327	0403	300	0.024+-0.003
0403	0410	290	0 034+-0.004
0410	0417	290	0 022+-0.004
0417	0424	280	0 016+-0.003
0424	0501	290	0 018+-0 003
0501	0508	310	0 019+-0 003
0508	0514	300	0 016+-0.003
0514	0522	360	0 024+-0 003
0522	0529	300	0 020+-0 003
0529	0605	280	0 022+-0 003
0529*	0605	280	0 022+-0 003
0605	0613	330	0 022+-0 003

* Duplicate

Wolf Creek Nuclear Operating Corporation

Air Particulate Filters
STATION NUMBER 37

Collection Start Date	Collection Stop Date	Volume M ³	Gross Beta Activity (pCi/Cu.M.)
0613	0619	250	0 022+-0 004
0619	0626	300	0 028+-0 003
0619*	0626	300	0 026+-0 003
0626	0702	250	0 028+-0 004
0702	0710	330	0 032+-0 003
0710	0717	300	0 029+-0 003
0717	0725	350	0.023+-0 003
0725	0801	290	0 028+-0 004
0801	0807	270	0.039+-0 005
0807	0814	290	0 025+-0 004
0814	0821	240	0 021+-0 004
0821	0828	290	0.034+-0.004
0828	0904	310	0 046+-0 004
0828*	0904	310	0 044+-0 004
0904	0911	300	0 033+-0 004
0911	0918	300	0.034+-0.004
0918	0925	280	0 022+-0 004
0925	1002	303	0.046+-0.004
0925*	1002	303	0 044+-0 004
1002	1009	308	0 028+-0 003
1009	1016	299	0 030+-0 004
1016	1025	387	0.026+-0 003
1025	1030	216	0 022+-0 004
1030	1106	295	0 047+-0.004
1106	1113	303	0 043+-0 004

* Duplicate

Wolf Creek Nuclear Operating Corporation

Air Particulate Filters
STATION NUMBER 37

Collection Start Date	Collection Stop Date	Volume M ³	Gross Beta Activity (pCi/Cu.M.)
1113	1120	303	0.032+-0 004
1120	1126	258	0.024+-0 003
1126	1203	305	0.028+-0 004
1203	1211	345	0.045+-0 004
1211	1219	344	0 052+-0 004
1219	1226	297	0.030+-0 004
1219*	1226	297	0.027+-0 004
122602	010203	297	0.041+-0 004

* Duplicate

Wolf Creek Nuclear Operating Corporation

Air Particulate Filters
STATION NUMBER 40

Collection Start Date	Collection Stop Date	Volume M ³	Gross Beta Activity (pCi/Cu.M.)
0102	0109	310	0.037+-0 004
0109	0116	300	0.020+-0 003
0116	0123	300	0 035+-0 004
0123	0201	340	0 040+-0 004
0201	0206	210	0 041+-0 005
0206	0213	300	0 028+-0 003
0213	0221	340	0 021+-0 003
0221	0227	260	0 026+-0 003
0227	0306	300	0 030+-0 003
0306	0313	300	0 032+-0 003
0313	0320	310	0 026+-0 004
0320	0327	300	0 029+-0 004
0327	0403	300	0 023+-0 003
0403	0410	300	0.028+-0 003
0410	0417	300	0 021+-0 004
0417	0424	300	0 016+-0 003
0424	0501	300	0 014+-0.003
0501	0508	290	0 019+-0.003
0508	0514	260	0 012+-0.003
0508*	0514	260	0 016+-0.003
0514	0522	340	0 021+-0 003
0522	0529	290	0 018+-0 003
0529	0605	270	0.019+-0 003
0605	0613	330	0 018+-0 003
0613	0619	240	0 023+-0 004

* Duplicate

Wolf Creek Nuclear Operating Corporation

Air Particulate Filters
STATION NUMBER 40

Collection Start Date	Collection Stop Date	Volume M ³	Gross Beta Activity (pCi/Cu.M.)
0619	0626	280	0 025+-0.003
0626	0702	260	0 023+-0.004
0702	0710	340	0 028+-0 003
0710	0717	320	0 023+-0.003
0717	0725	350	0 019+-0 003
0725	0801	290	0 026+-0 004
0801	0807	270	0 039+-0 005
0807	0814	300	0 027+-0 004
0814	0821	310	0 020+-0 003
0821	0828	300	0.032+-0.003
0828	0904	320	0 040+-0 004
0904	0911	300	0 033+-0 004
0911	0918	290	0 035+-0 004
0918	0925	280	0 026+-0 004
0925	1002	294	0 043+-0 004
1002	1009	293	0 025+-0 003
1009	1016	290	0 027+-0 004
1016	1025	376	0 028+-0 003
1025	1030	213	0 029+-0 004
1030	1106	290	0 041+-0 004
1106	1113	293	0 040+-0 004
1113	1120	293	0 028+-0 004
1120	1126	240	0 023+-0 004
1120*	1126	240	0 025+-0 004
1126	1203	283	0 031+-0 004

* Duplicate

Wolf Creek Nuclear Operating Corporation

Air Particulate Filters
STATION NUMBER 40

Collection Start Date	Collection Stop Date	Volume M ³	Gross Beta Activity (pCi/Cu.M.)
1203	1211	322	0 045+-0.004
1211	1219	327	0 051+-0.005
1219	1226	279	0 031+-0 004
122602*	010203	281	0.046+-0 004
122602	010203	281	0.048+-0 004

* Duplicate

Wolf Creek Nuclear Operating Corporation

Air Particulate Filters

STATION NUMBER 48

Collection Start Date	Collection Stop Date	Volume M ³	Gross Beta Activity (pCi/Cu.M.)
0821	0828	290	0 031+-0 004
0828	0904	290	0 041+-0 004
0904	0911	310	0 032+-0 003
0904*	0911	310	0 032+-0 003
0911	0918	310	0 032+-0 004
0918	0925	300	0 022+-0.004
0925	1002	300	0 036+-0 004
1002	1009	303	0 025+-0 003
1009	1016	310	0 027+-0 004
1016	1025	394	0 028+-0 003
1025	1030	221	0 025+-0 004
1030	1106	300	0 044+-0 004
1106	1113	303	0 039+-0 004
1113	1120	303	0 029+-0 004
1120	1126	258	0 023+-0.003
1126	1203	304	0 031+-0.004
1203	1211	346	0 047+-0.004
1211	1219	344	0 050+-0 004
1219	1226	304	0 030+-0 004
122602	010203	302	0 043+-0 004

* Duplicate

Wolf Creek Nuclear Operating Corporation
Air Particulate Filters
Isotopic Analysis on Quarterly Composite
(pCi/ Cu.M.)
STATION NUMBER 02
Gamma Spectrum Analysis
Dates Listed are Collection Start Dates

<u>0102</u>	<u>AIR PARTICULATES</u>	<u>0702</u>	<u>AIR PARTICULATES</u>
BE-7	0 067+-0 010	BE-7	0 087+-0 015
MN-54	<0 001	MN-54	<0 001
CO-58	<0 001	CO-58	<0 001
FE-59	<0 002	FE-59	<0 001
CO-60	<0 001	CO-60	<0 001
ZN-65	<0 001	ZN-65	<0 001
ZR-95	<0 001	ZR-95	<0 001
CS-134	<0 001	CS-134	<0 001
CS-137	<0 001	CS-137	<0 001
<u>0403</u>	<u>AIR PARTICULATES</u>	<u>1002</u>	<u>AIR PARTICULATES</u>
BE-7	0 079+-0 018	BE-7	0.049+-0 011
MN-54	<0 001	MN-54	<0.001
CO-58	<0 001	CO-58	<0 001
FE-59	<0 002	FE-59	<0 001
CO-60	<0 001	CO-60	<0 001
ZN-65	<0 002	ZN-65	<0 001
ZR-95	<0 001	ZR-95	<0 001
CS-134	<0 001	CS-134	<0 001
CS-137	<0 001	CS-137	<0 001

Wolf Creek Nuclear Operating Corporation
Air Particulate Filters
Isotopic Analysis on Quarterly Composite
(pCi/ Cu.M.)
STATION NUMBER 18
Gamma Spectrum Analysis
Dates Listed are Collection Start Dates

<u>0102</u>	<u>AIR PARTICULATES</u>	<u>0702</u>	<u>AIR PARTICULATES</u>
BE-7	0 069+-0 010	BE-7	0 076+-0 018
MN-54	<0 001	MN-54	<0 001
CO-58	<0 001	CO-58	<0 001
FE-59	<0 002	FE-59	<0 001
CO-60	<0 001	CO-60	<0 001
ZN-65	<0 001	ZN-65	<0 001
ZR-95	<0 001	ZR-95	<0 001
CS-134	<0 001	CS-134	<0 001
CS-137	<0 001	CS-137	<0 001
<u>0403</u>	<u>AIR PARTICULATES</u>	<u>1002</u>	<u>AIR PARTICULATES</u>
BE-7	0 077+-0 019	BE-7	0.042+-0 008
MN-54	<0 001	MN-54	<0 001
CO-58	<0 001	CO-58	<0 001
FE-59	<0 002	FE-59	<0 001
CO-60	<0 001	CO-60	<0 001
ZN-65	<0 001	ZN-65	<0 001
ZR-95	<0 001	ZR-95	<0 001
CS-134	<0 001	CS-134	<0 001
CS-137	<0 001	CS-137	<0 001

Wolf Creek Nuclear Operating Corporation
Air Particulate Filters
Isotopic Analysis on Quarterly Composite
(pCi/ Cu.M.)
STATION NUMBER 32
Gamma Spectrum Analysis
Dates Listed are Collection Start Dates

<u>0102</u>	<u>AIR PARTICULATES</u>	<u>0702</u>	<u>AIR PARTICULATES</u>
BE-7	0 068+-0 013	BE-7	0 083+-0 015
MN-54	<0 001	MN-54	<0 001
CO-58	<0 001	CO-58	<0 001
FE-59	<0 001	FE-59	<0 001
CO-60	<0 001	CO-60	<0 001
ZN-65	<0 001	ZN-65	<0 001
ZR-95	<0 001	ZR-95	<0 001
CS-134	<0 001	CS-134	<0 001
CS-137	<0 001	CS-137	<0 001
<u>0403</u>	<u>AIR PARTICULATES</u>	<u>1002</u>	<u>AIR PARTICULATES</u>
BE-7	0 074+-0 019	BE-7	0 052+-0 012
MN-54	<0 001	MN-54	<0 001
CO-58	<0 001	CO-58	<0 001
FE-59	<0 002	FE-59	<0 001
CO-60	<0 001	CO-60	<0 001
ZN-65	<0 001	ZN-65	<0 001
ZR-95	<0 001	ZR-95	<0 001
CS-134	<0 001	CS-134	<0 001
CS-137	<0 001	CS-137	<0 001

Wolf Creek Nuclear Operating Corporation
Air Particulate Filters
Isotopic Analysis on Quarterly Composite
(pCi/ Cu.M.)
STATION NUMBER 37
Gamma Spectrum Analysis
Dates Listed are Collection Start Dates

<u>0102</u>	<u>AIR PARTICULATES</u>	<u>0702</u>	<u>AIR PARTICULATES</u>
BE-7	0 063+-0 010	BE-7	0 073+-0 014
MN-54	<0 001	MN-54	<0 001
CO-58	<0 001	CO-58	<0 001
FE-59	<0 001	FE-59	<0 002
CO-60	<0 001	CO-60	<0 001
ZN-65	<0 001	ZN-65	<0 001
ZR-95	<0 001	ZR-95	<0 001
CS-134	<0 001	CS-134	<0.001
CS-137	<0 001	CS-137	<0 001
<u>0403</u>	<u>AIR PARTICULATES</u>	<u>1002</u>	<u>AIR PARTICULATES</u>
BE-7	0 080+-0 017	BE-7	0 045+-0 012
MN-54	<0 001	MN-54	<0 001
CO-58	<0 001	CO-58	<0 001
FE-59	<0 002	FE-59	<0 001
CO-60	<0 001	CO-60	<0 001
ZN-65	<0 001	ZN-65	<0 002
ZR-95	<0 001	ZR-95	<0 001
CS-134	<0 001	CS-134	<0 001
CS-137	<0 001	CS-137	<0 001

Wolf Creek Nuclear Operating Corporation
Air Particulate Filters
Isotopic Analysis on Quarterly Composite
(pCi/ Cu.M.)
STATION NUMBER 40
Gamma Spectrum Analysis
Dates Listed are Collection Start Dates

<u>0102</u>	<u>AIR PARTICULATES</u>	<u>0702</u>	<u>AIR PARTICULATES</u>
BE-7	0 073+-0 011	BE-7	0 084+-0 017
MN-54	<0 001	MN-54	<0 001
CO-58	<0 001	CO-58	<0 001
FE-59	<0 001	FE-59	<0 001
CO-60	<0 001	CO-60	<0 001
ZN-65	<0 001	ZN-65	<0 001
ZR-95	<0 001	ZR-95	<0 001
CS-134	<0 001	CS-134	<0 001
CS-137	<0 001	CS-137	<0 001
<u>0403</u>	<u>AIR PARTICULATES</u>	<u>1002</u>	<u>AIR PARTICULATES</u>
BE-7	0 079+-0 017	BE-7	0 047+-0 014
MN-54	<0 001	MN-54	<0 001
CO-58	<0 001	CO-58	<0 001
FE-59	<0 002	FE-59	<0 001
CO-60	<0 001	CO-60	<0 001
ZN-65	<0 001	ZN-65	<0 001
ZR-95	<0 001	ZR-95	<0 001
CS-134	<0 001	CS-134	<0 001
CS-137	<0 001	CS-137	<0 001

Wolf Creek Nuclear Operating Corporation
Air Particulate Filters
Isotopic Analysis on Quarterly Composite
(pCi/ Cu.M.)
STATION NUMBER 48
Gamma Spectrum Analysis
Dates Listed are Collection Start Dates

<u>0702</u>	<u>AIR PARTICULATES</u>
BE-7	0 093+-0.027
MN-54	<0 001
CO-58	<0 001
FE-59	<0 003
CO-60	<0 001
ZN-65	<0 001
ZR-95	<0 002
CS-134	<0 001
CS-137	<0 002

<u>1002</u>	<u>AIR PARTICULATES</u>
BE-7	0 048+-0 009
MN-54	<0 001
CO-58	<0 001
FE-59	<0 001
CO-60	<0 001
ZN-65	<0 001
ZR-95	<0 001
CS-134	<0 001
CS-137	<0 001

Wolf Creek Nuclear Operating Corporation

Charcoal Filters

STATION NUMBER 02

Collection Start Date	Collection Stop Date	Volume M ³	I-131 Activity (pCi/Cu.M.)
0102	0109	310	<0 015
0109	0116	310	<0.011
0116	0123	310	<0 010
0123	0201	400	<0 006
0201	0206	210	<0 019
0206	0213	320	<0 008
0213	0221	370	<0 010
0221	0227	260	<0 010
0227	0306	290	<0 010
0306	0313	300	<0 009
0313	0320	300	<0 007
0320	0327	290	<0 011
0327	0403	290	<0 009
0403	0410	290	<0 012
0410	0417	300	<0 008
0417	0424	300	<0 006
0424	0501	310	<0 009
0501	0508	300	<0 009
0508	0514	260	<0 015
0514	0522	330	<0 018
0522	0529	300	<0 006
0529	0605	290	<0 007
0605	0613	340	<0 012
0613	0619	260	<0 009
0619	0626	300	<0 012

Wolf Creek Nuclear Operating Corporation

Charcoal Filters

STATION NUMBER 02

Collection Start Date	Collection Stop Date	Volume M ³	I-131 Activity (pCi/Cu.M.)
0626	0702	250	<0 015
0702	0710	340	<0.007
0710	0717	300	<0.013
0717	0725	360	<0 010
0725	0801	290	<0 013
0801	0807	270	<0 012
0807	0814	310	<0 007
0814	0821	290	<0 010
0821	0828	300	<0 006
0828	0904	320	<0 014
0904	0911	300	<0 009
0911	0918	300	<0 008
0918	0925	290	<0 008
0925	1002	302	<0 012
1002	1009	309	<0 009
1009	1016	299	<0 010
1016	1025	373	<0 008
1025	1030	216	<0.010
1030	1106	295	<0 014
1106	1113	303	<0 010
1113	1120	303	<0 006
1120	1126	258	<0 009
1126	1203	306	<0 010
1203	1211	345	<0 005
1211	1219	350	<0 007

Wolf Creek Nuclear Operating Corporation

Charcoal Filters

STATION NUMBER 02

Collection Start Date	Collection Stop Date	Volume M ³	I-131 Activity (pCi/Cu.M.)
1219 122602	1226 010203	302 302	<0 015 <0 008

Wolf Creek Nuclear Operating Corporation

Charcoal Filters

STATION NUMBER 18

Collection Start Date	Collection Stop Date	Volume M ³	I-131 Activity (pCi/Cu.M.)
0102	0109	300	<0.016
0109	0116	300	<0.012
0116	0123	300	<0 010
0123	0201	310	<0 008
0201	0206	210	<0 019
0206	0213	300	<0 008
0213	0221	360	<0.010
0221	0227	250	<0 010
0227	0306	300	<0 010
0306	0313	290	<0 010
0313	0320	300	<0 007
0320	0327	300	<0 011
0327	0403	300	<0.009
0403	0410	300	<0 011
0410	0417	300	<0 008
0417	0424	300	<0 006
0424	0501	310	<0 009
0501	0508	300	<0 009
0508	0514	270	<0 015
0514	0522	340	<0 017
0522	0529	300	<0 006
0529	0605	290	<0.007
0605	0613	340	<0.012
0613	0619	260	<0.009
0619	0626	300	<0 012

Wolf Creek Nuclear Operating Corporation

Charcoal Filters
STATION NUMBER 18

Collection Start Date	Collection Stop Date	Volume M ³	I-131 Activity (pCi/Cu.M.)
0626	0702	260	<0 014
0702	0710	350	<0 007
0710	0717	300	<0 013
0717	0725	360	<0.010
0725	0801	300	<0 013
0801	0807	260	<0 013
0807	0814	290	<0 007
0814	0821	300	<0 009
0821	0828	290	<0 007
0828	0904	290	<0 016
0904	0911	290	<0.009
0911	0918	310	<0.008
0918	0925	290	<0.008
0925	1002	300	<0 012
1002	1009	303	<0 009
1009	1016	305	<0 010
1016	1025	398	<0 008
1025	1030	219	<0 009
1030	1106	300	<0 014
1106	1113	303	<0 010
1113	1120	305	<0 006
1120	1126	256	<0.009
1126	1203	304	<0.011
1203	1211	344	<0 005
1211	1219	346	<0 007

Wolf Creek Nuclear Operating Corporation

Charcoal Filters

STATION NUMBER 18

Collection Start Date	Collection Stop Date	Volume M ³	I-131 Activity (pCi/Cu.M.)
1219 122602	1226 010203	304 302	<0 015 <0 008

Wolf Creek Nuclear Operating Corporation

Charcoal Filters

STATION NUMBER 32

Collection Start Date	Collection Stop Date	Volume M ³	I-131 Activity (pCi/Cu.M.)
0102	0109	300	<0 016
0109	0116	300	<0 012
0116	0123	300	<0 010
0123	0201	390	<0 006
0201	0206	210	<0 019
0206	0213	300	<0 008
0213	0221	350	<0 011
0221	0227	250	<0 010
0227	0306	300	<0 010
0306	0313	300	<0 009
0313	0320	300	<0 007
0320	0327	300	<0 011
0327	0403	300	<0 009
0403	0410	300	<0 011
0410	0417	300	<0 008
0417	0424	300	<0 006
0424	0501	310	<0 009
0501	0508	300	<0 009
0508	0514	270	<0 015
0514	0522	340	<0 017
0522	0529	300	<0 006
0529	0605	290	<0 007
0605	0613	340	<0 012
0613	0619	260	<0 009
0619	0626	310	<0 011

Wolf Creek Nuclear Operating Corporation

Charcoal Filters

STATION NUMBER 32

Collection Start Date	Collection Stop Date	Volume M ³	I-131 Activity (pCi/Cu.M.)
0626	0702	260	<0 014
0702	0710	340	<0 007
0710	0717	300	<0 013
0717	0725	350	<0 010
0725	0801	300	<0 013
0801	0807	260	<0 013
0807	0814	300	<0 007
0814	0821	300	<0 009
0821	0828	300	<0 006
0828	0904	300	<0 015
0904	0911	300	<0 009
0911	0918	300	<0 008
0918	0925	280	<0 009
0925	1002	306	<0 012
1002	1009	303	<0.009
1009	1016	299	<0 010
1016	1025	388	<0.008
1025	1030	217	<0 010
1030	1106	300	<0.014
1106	1113	303	<0.010
1113	1120	303	<0 006
1120	1126	258	<0 009
1126	1203	305	<0 011
1203	1211	339	<0 005
1211	1219	342	<0 007

Wolf Creek Nuclear Operating Corporation

Charcoal Filters

STATION NUMBER 32

Collection Start Date	Collection Stop Date	Volume M ³	I-131 Activity (pCi/Cu.M.)
1219	1226	296	<0.015
122602	010203	302	<0.008

Wolf Creek Nuclear Operating Corporation

Charcoal Filters

STATION NUMBER 37

Collection Start Date	Collection Stop Date	Volume M ³	I-131 Activity (pCi/Cu.M.)
0102	0109	300	<0 016
0109	0116	300	<0 012
0116	0123	300	<0 010
0123	0201	390	<0 006
0201	0206	210	<0 019
0206	0213	300	<0 008
0213	0221	350	<0 011
0221	0227	250	<0 010
0227	0306	300	<0 010
0306	0313	300	<0.009
0313	0320	300	<0.007
0320	0327	300	<0.011
0327	0403	300	<0 009
0403	0410	290	<0 012
0410	0417	290	<0 008
0417	0424	280	<0 007
0424	0501	290	<0 009
0501	0508	310	<0 009
0508	0514	300	<0 013
0514	0522	360	<0 016
0522	0529	300	<0 006
0529	0605	280	<0 008
0605	0613	330	<0 012
0613	0619	250	<0 009
0619	0626	300	<0 012

Wolf Creek Nuclear Operating Corporation

Charcoal Filters
STATION NUMBER 37

Collection Start Date	Collection Stop Date	Volume M ³	I-131 Activity (pCi/Cu.M.)
0626	0702	250	<0 015
0702	0710	330	<0 008
0710	0717	300	<0 013
0717	0725	350	<0 010
0725	0801	290	<0 013
0801	0807	270	<0 012
0807	0814	290	<0 007
0814	0821	240	<0 012
0821	0828	290	<0.007
0828	0904	310	<0.015
0904	0911	300	<0 009
0911	0918	300	<0 008
0918	0925	280	<0 009
0925	1002	303	<0 012
1002	1009	308	<0 009
1009	1016	299	<0 010
1016	1025	387	<0 008
1025	1030	216	<0 010
1030	1106	295	<0 014
1106	1113	303	<0 010
1113	1120	303	<0 006
1120	1126	258	<0.009
1126	1203	305	<0 011
1203	1211	345	<0.005
1211	1219	344	<0 007

Wolf Creek Nuclear Operating Corporation

Charcoal Filters
STATION NUMBER 37

Collection Start Date	Collection Stop Date	Volume M ³	I-131 Activity (pCi/Cu.M.)
1219	1226	297	<0 015
122602	010203	297	<0 008

Wolf Creek Nuclear Operating Corporation

Charcoal Filters

STATION NUMBER 40

Collection Start Date	Collection Stop Date	Volume M ³	I-131 Activity (pCi/Cu.M.)
0102	0109	310	<0 015
0109	0116	300	<0 012
0116	0123	300	<0 010
0123	0201	340	<0 007
0201	0206	210	<0 019
0206	0213	300	<0 008
0213	0221	340	<0 011
0221	0227	260	<0 010
0227	0306	300	<0 010
0306	0313	300	<0 009
0313	0320	310	<0 006
0320	0327	300	<0 011
0327	0403	300	<0 009
0403	0410	300	<0 011
0410	0417	300	<0 008
0417	0424	300	<0 006
0424	0501	300	<0 009
0501	0508	290	<0 010
0508	0514	260	<0 015
0514	0522	340	<0 017
0522	0529	290	<0 007
0529	0605	270	<0 008
0605	0613	330	<0 012
0613	0619	240	<0 010
0619	0626	280	<0.013

Wolf Creek Nuclear Operating Corporation
Charcoal Filters
STATION NUMBER 40

Collection Start Date	Collection Stop Date	Volume M ³	I-131 Activity (pCi/Cu.M.)
0626	0702	260	<0 014
0702	0710	340	<0 007
0710	0717	320	<0 012
0717	0725	350	<0 010
0725	0801	290	<0 013
0801	0807	270	<0 012
0807	0814	300	<0 007
0814	0821	310	<0 009
0821	0828	300	<0 006
0828	0904	320	<0 014
0904	0911	300	<0 009
0911	0918	290	<0 008
0918	0925	280	<0 009
0925	1002	294	<0 012
1002	1009	293	<0 010
1009	1016	290	<0 010
1016	1025	376	<0 008
1025	1030	213	<0 010
1030	1106	290	<0 015
1106	1113	293	<0 010
1113	1120	293	<0 007
1120	1126	240	<0 010
1126	1203	283	<0 011
1203	1211	322	<0 005
1211	1219	327	<0 008

Wolf Creek Nuclear Operating Corporation

Charcoal Filters
STATION NUMBER 40

Collection Start Date	Collection Stop Date	Volume M ³	I-131 Activity (pCi/Cu.M.)
1219 122602	1226 010203	279 281	<0 016 <0 008

Wolf Creek Nuclear Operating Corporation

Charcoal Filters
STATION NUMBER 48

Collection Start Date	Collection Stop Date	Volume M ³	I-131 Activity (pCi/Cu.M.)
0821	0828	290	<0 007
0828	0904	290	<0 016
0904	0911	310	<0 009
0911	0918	310	<0 008
0918	0925	300	<0.008
0925	1002	300	<0 012
1002	1009	303	<0.009
1009	1016	310	<0.010
1016	1025	394	<0.008
1025	1030	221	<0 009
1030	1106	300	<0 014
1106	1113	303	<0 010
1113	1120	303	<0 006
1120	1126	258	<0 009
1126	1203	304	<0.011
1203	1211	346	<0.005
1211	1219	344	<0 007
1219	1226	304	<0.015
122602	010203	302	<0 008

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Surface Water
(pCi/Liter)
STATION NUMBER DC
Gamma Spectrum and Tritium Analysis

<u>SURFACE WATER</u>	<u>0124</u>	<u>SURFACE WATER</u>	<u>0221</u>	<u>SURFACE WATER</u>	<u>0313</u>
MN-54	<4 5	MN-54	<2 6	MN-54	<2.9
CO-58	<3 7	CO-58	<2 3	CO-58	<2.9
FE-59	<9.4	FE-59	<1 8	FE-59	<2 9
CO-60	<4.6	CO-60	<2.5	CO-60	<3 8
ZN-65	<6 0	ZN-65	<2 7	ZN-65	<3 9
ZR-95	<5 0	ZR-95	<1.9	ZR-95	<3 5
I-131	<7 6	I-131	<3.4	I-131	<15.3
CS-134	<4 9	CS-134	<3 8	CS-134	<2 6
CS-137	<6 0	CS-137	<2.6	CS-137	<3.7
BA-140	<3 0	BA-140	<2 4	BA-140	<5 9
H-3	13232+-318	H-3	14751+-344	H-3	19002+-380

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Surface Water
(pCi/Liter)
STATION NUMBER DC
Gamma Spectrum and Tritium Analysis

<u>SURFACE WATER</u>	<u>0425</u>	<u>SURFACE WATER</u>	<u>0529</u>	<u>SURFACE WATER</u>	<u>0619</u>
MN-54	<3 4	MN-54	<2.0	MN-54	<1.2
CO-58	<2 3	CO-58	<2.4	CO-58	<1.1
FE-59	<7 0	FE-59	<4.3	FE-59	<3.9
CO-60	<2 6	CO-60	<2 9	CO-60	<1.1
ZN-65	<7.8	ZN-65	<4 5	ZN-65	<2.1
ZR-95	<3 4	ZR-95	<4 0	ZR-95	<1.4
I-131	<7 4	I-131	<19 5	I-131	<16 2
CS-134	<3.3	CS-134	<1.8	CS-134	<0.7
CS-137	<3 4	CS-137	<2.9	CS-137	<1.3
BA-140	<3 9	BA-140	<4 1	BA-140	<5.5
H-3	14567+-340	H-3	14905+-336	H-3	13810+-322

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Surface Water
(pCi/Liter)
STATION NUMBER DC
Gamma Spectrum and Tritium Analysis

<u>SURFACE WATER</u>	<u>0718</u>	<u>SURFACE WATER</u>	<u>0822</u>	<u>SURFACE WATER</u>	<u>0925</u>
MN-54	<3.0	MN-54	<1.7	MN-54	<3.4
CO-58	<4.5	CO-58	<1.6	CO-58	<2.0
FE-59	<9.9	FE-59	<3.5	FE-59	<4.4
CO-60	<4.9	CO-60	<1.7	CO-60	<2.9
ZN-65	<8.5	ZN-65	<3.1	ZN-65	<4.2
ZR-95	<4.6	ZR-95	<1.9	ZR-95	<2.6
I-131	<47.2	I-131	<6.0	I-131	<11.0
CS-134	<4.5	CS-134	<2.2	CS-134	<3.9
CS-137	<5.0	CS-137	<2.1	CS-137	<2.9
BA-140	<8.7	BA-140	<1.5	BA-140	<2.7
H-3	10894+-291	H-3	10852+-292	H-3	13365+-345

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Surface Water
(pCi/Liter)
STATION NUMBER DC
Gamma Spectrum and Tritium Analysis

<u>SURFACE WATER</u>	<u>1017</u>	<u>SURFACE WATER</u>	<u>1121</u>	<u>SURFACE WATER</u>	<u>1219</u>
MN-54	<5 7	MN-54	<4.1	MN-54	<2 8
CO-58	<4 9	CO-58	<4 2	CO-58	<4 0
FE-59	<8 4	FE-59	<3 4	FE-59	<4 6
CO-60	<3 3	CO-60	<3 1	CO-60	<6 4
ZN-65	<10.6	ZN-65	<3 6	ZN-65	<8 5
ZR-95	<4 9	ZR-95	<3 7	ZR-95	<3 6
I-131	<9 8	I-131	<5 2	I-131	<7 4
CS-134	<6 6	CS-134	<3 7	CS-134	<4 4
CS-137	<4.3	CS-137	<5 5	CS-137	<4 1
BA-140	<5 2	BA-140	<5 1	BA-140	<5 0
H-3	12271+-321	H-3	12279+-324	H-3	12341+-319

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Surface Water
(pCi/Liter)
STATION NUMBER MUSH
Gamma Spectrum and Tritium Analysis

<u>SURFACE WATER</u>	<u>0124</u>	<u>SURFACE WATER</u>	<u>0221</u>	<u>SURFACE WATER</u>	<u>0313</u>
MN-54	<5 6	MN-54	<2 8	MN-54	<1.8
CO-58	<3 2	CO-58	<3 5	CO-58	<1 6
FE-59	<6 6	FE-59	<5.4	FE-59	<4 3
CO-60	<5 9	CO-60	<3 3	CO-60	<3 1
ZN-65	<3.9	ZN-65	<6 7	ZN-65	<3 6
ZR-95	<4 3	ZR-95	<3 0	ZR-95	<2 9
I-131	<9 5	I-131	<6 1	I-131	<8 4
CS-134	<5 1	CS-134	<2.7	CS-134	<2 0
CS-137	<3.6	CS-137	<3.5	CS-137	<2.1
BA-140	<4 9	BA-140	<4.3	BA-140	<4 1
H-3	<131	H-3	<148	H-3	<132

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Surface Water
(pCi/Liter)
STATION NUMBER MUSH
Gamma Spectrum and Tritium Analysis

<u>SURFACE WATER</u>	<u>0425</u>	<u>SURFACE WATER</u>	<u>0529</u>	<u>SURFACE WATER</u>	<u>0619</u>
MN-54	<1.3	MN-54	<2.0	MN-54	<1.3
CO-58	<1.9	CO-58	<3.2	CO-58	<1.1
FE-59	<4.3	FE-59	<7.3	FE-59	<2.8
CO-60	<1.8	CO-60	<3.2	CO-60	<1.1
ZN-65	<3.1	ZN-65	<3.3	ZN-65	<2.2
ZR-95	<1.6	ZR-95	<4.9	ZR-95	<1.3
I-131	<3.7	I-131	<25.9	I-131	<20.1
CS-134	<2.2	CS-134	<2.0	CS-134	<1.0
CS-137	<2.0	CS-137	<2.4	CS-137	<0.9
BA-140	<3.7	BA-140	<6.9	BA-140	<5.8
H-3	<137	H-3	<141	H-3	<131

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Surface Water
(pCi/Liter)
STATION NUMBER MUSH
Gamma Spectrum and Tritium Analysis

<u>SURFACE WATER</u>	<u>0718</u>	<u>SURFACE WATER</u>	<u>0822</u>	<u>SURFACE WATER</u>	<u>0925</u>
MN-54	<4 1	MN-54	<6 4	MN-54	<4 1
CO-58	<5 5	CO-58	<5 4	CO-58	<3 3
FE-59	<12.3	FE-59	<8 9	FE-59	<5 0
CO-60	<3 6	CO-60	<5 2	CO-60	<3 3
ZN-65	<8 0	ZN-65	<5 2	ZN-65	<5.8
ZR-95	<7 7	ZR-95	<2 1	ZR-95	<3 9
I-131	<47 7	I-131	<13 5	I-131	<8 4
CS-134	<5 5	CS-134	<8 6	CS-134	<3 2
CS-137	<3 2	CS-137	<5 5	CS-137	<5 5
BA-140	<11.8	BA-140	<5 5	BA-140	<7 7
H-3	<126	H-3	<135	H-3	<181

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Surface Water
(pCi/Liter)
STATION NUMBER MUSH
Gamma Spectrum and Tritium Analysis

<u>SURFACE WATER</u>	<u>1017</u>	<u>SURFACE WATER</u>	<u>1121</u>	<u>SURFACE WATER</u>	<u>1219</u>
MN-54	<2.9	MN-54	<6 4	MN-54	<5 6
CO-58	<2.7	CO-58	<3 5	CO-58	<1.9
FE-59	<4 4	FE-59	<13 8	FE-59	<6 9
CO-60	<2.1	CO-60	<5 6	CO-60	<3 3
ZN-65	<2 6	ZN-65	<4 4	ZN-65	<4 5
ZR-95	<3.3	ZR-95	<3 4	ZR-95	<3 4
I-131	<8 1	I-131	<5 4	I-131	<8 3
CS-134	<2 6	CS-134	<5 0	CS-134	<4 2
CS-137	<2 3	CS-137	<6 0	CS-137	<6 0
BA-140	<2 5	BA-140	<6 7	BA-140	<5 3
H-3	<146	H-3	<142	H-3	<159

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Surface Water
(pCi/Liter)
STATION NUMBER MUSH
Gamma Spectrum and Tritium Analysis

<u>SURFACE WATER DUP</u>	<u>0529</u>
MN-54	<1.8
CO-58	<2 6
FE-59	<2 4
CO-60	<2 4
ZN-65	<1 6
ZR-95	<3 4
I-131	<19 3
CS-134	<2.4
CS-137	<3 4
BA-140	<9 4
H-3	<141

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Surface Water
(pCi/Liter)
STATION NUMBER SP
Gamma Spectrum and Tritium Analysis

<u>SURFACE WATER</u>	<u>0124</u>	<u>SURFACE WATER</u>	<u>0221</u>	<u>SURFACE WATER</u>	<u>0313</u>
MN-54	<4.0	MN-54	<5 7	MN-54	<1.8
CO-58	<3.4	CO-58	<3 8	CO-58	<1 6
FE-59	<4 2	FE-59	<9.1	FE-59	<4 4
CO-60	<3 3	CO-60	<6 0	CO-60	<2.8
ZN-65	<7.2	ZN-65	<5 8	ZN-65	<2 6
ZR-95	<4 1	ZR-95	<5.4	ZR-95	<2 0
I-131	<6 2	I-131	<8 4	I-131	<10.8
CS-134	<2 4	CS-134	<6 1	CS-134	<3 2
CS-137	<3 2	CS-137	<7 7	CS-137	<2 6
BA-140	<3.3	BA-140	<7 4	BA-140	<3 8
H-3	12607+-311	H-3	14571+-342	H-3	13040+-317

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Surface Water
(pCi/Liter)
STATION NUMBER SP
Gamma Spectrum and Tritium Analysis

<u>SURFACE WATER</u>	<u>0425</u>	<u>SURFACE WATER</u>	<u>0529</u>	<u>SURFACE WATER</u>	<u>0619</u>
MN-54	<1.5	MN-54	<3.1	MN-54	<0.7
CO-58	<1 1	CO-58	<3 2	CO-58	<1.5
FE-59	<2 7	FE-59	<6 4	FE-59	<3.1
CO-60	<1 7	CO-60	<2 7	CO-60	<1.0
ZN-65	<3.1	ZN-65	<2 0	ZN-65	<2.4
ZR-95	<2.5	ZR-95	<4.3	ZR-95	<2 0
I-131	<5.8	I-131	<24 3	I-131	<17.7
CS-134	<1.1	CS-134	<2 3	CS-134	<1 4
CS-137	<1 4	CS-137	<2 4	CS-137	<1 1
BA-140	<3.1	BA-140	<6 3	BA-140	<5 4
H-3	15377+-349	H-3	15149+-338	H-3	13440+-318

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Surface Water
(pCi/Liter)
STATION NUMBER SP
Gamma Spectrum and Tritium Analysis

<u>SURFACE WATER</u>	<u>0718</u>	<u>SURFACE WATER</u>	<u>0822</u>	<u>SURFACE WATER</u>	<u>0925</u>
MN-54	<3.7	MN-54	<1 3	MN-54	<4 7
CO-58	<5 2	CO-58	<1 5	CO-58	<4 0
FE-59	<10 5	FE-59	<3.8	FE-59	<7.6
CO-60	<3 5	CO-60	<1 5	CO-60	<3.2
ZN-65	<4 1	ZN-65	<3 7	ZN-65	<4 6
ZR-95	<3 6	ZR-95	<2 7	ZR-95	<5 9
I-131	<42 2	I-131	<4 0	I-131	<19.5
CS-134	<2.1	CS-134	<2 6	CS-134	<5 9
CS-137	<5 2	CS-137	<2.3	CS-137	<6 3
BA-140	<14 1	BA-140	<2.6	BA-140	<7.7
H-3	11112+-294	H-3	10871+-292	H-3	13619+-348

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Surface Water
(pCi/Liter)
STATION NUMBER SP
Gamma Spectrum and Tritium Analysis

<u>SURFACE WATER</u>	<u>1017</u>	<u>SURFACE WATER</u>	<u>1121</u>	<u>SURFACE WATER</u>	<u>1219</u>
MN-54	<2.1	MN-54	<2.8	MN-54	<2.4
CO-58	<2.8	CO-58	<1.6	CO-58	<1.5
FE-59	<3.5	FE-59	<4.1	FE-59	<5.0
CO-60	<2.4	CO-60	<2.5	CO-60	<1.7
ZN-65	<3.0	ZN-65	<5.7	ZN-65	<4.3
ZR-95	<2.8	ZR-95	<3.6	ZR-95	<2.3
I-131	<11.0	I-131	<5.6	I-131	<4.6
CS-134	<4.2	CS-134	<2.4	CS-134	<2.5
CS-137	<3.2	CS-137	<1.9	CS-137	<2.5
BA-140	<2.9	BA-140	<2.4	BA-140	<2.7
H-3	12159+-320	H-3	12096+-322	H-3	12399+-320

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER B-12
Gamma Spectrum Analysis

<u>GROUND WATER</u>	<u>0213</u>	<u>GROUND WATER</u>	<u>0514</u>	<u>GROUND WATER</u>	<u>0822</u>
MN-54	<1.7	MN-54	<4.3	MN-54	<3.3
CO-58	<1.2	CO-58	<4.2	CO-58	<4 8
FE-59	<1.2	FE-59	<5 5	FE-59	<8 3
CO-60	<1.8	CO-60	<2.7	CO-60	<3 3
ZN-65	<3 3	ZN-65	<5.3	ZN-65	<5 0
ZR-95	<0 9	ZR-95	<3.4	ZR-95	<5 3
CS-134	<1.8	CS-134	<4 2	CS-134	<5 3
CS-137	<2 3	CS-137	<3.9	CS-137	<4 7
BA-140	<0 2	BA-140	<2 6	BA-140	<3 9

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER B-12
Gamma Spectrum Analysis

<u>GROUND WATER</u>	<u>1115</u>
MN-54	<2 7
CO-58	<3 4
FE-59	<7.2
CO-60	<2 6
ZN-65	<7 3
ZR-95	<2 9
CS-134	<3 3
CS-137	<2 8
BA-140	<3.2

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER C-10
Gamma Spectrum Analysis

<u>GROUND WATER</u>	<u>0213</u>	<u>GROUND WATER</u>	<u>0514</u>	<u>GROUND WATER</u>	<u>0822</u>
MN-54	<1 8	MN-54	<2 4	MN-54	<3 8
CO-58	<1 1	CO-58	<1 8	CO-58	<3 0
FE-59	<2.1	FE-59	<4 7	FE-59	<3 4
CO-60	<1.8	CO-60	<2 1	CO-60	<3 4
ZN-65	<2.0	ZN-65	<3 1	ZN-65	<2.9
ZR-95	<1 9	ZR-95	<3.5	ZR-95	<2.0
CS-134	<2 0	CS-134	<1.9	CS-134	<4 9
CS-137	<1 6	CS-137	<2.9	CS-137	<3 8
BA-140	<1 3	BA-140	<3.6	BA-140	<4 6

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER C-10
Gamma Spectrum Analysis

<u>GROUND WATER</u>	<u>1115</u>
MN-54	<5.0
CO-58	<4 6
FE-59	<8.3
CO-60	<4 4
ZN-65	<8 5
ZR-95	<4 3
CS-134	<4 6
CS-137	<5 5
BA-140	<3.4

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER C-49
Gamma Spectrum Analysis

<u>GROUND WATER</u>	<u>0213</u>	<u>GROUND WATER</u>	<u>0514</u>	<u>GROUND WATER</u>	<u>0822</u>
MN-54	<3 4	MN-54	<2 2	MN-54	<6 2
CO-58	<2 8	CO-58	<1 6	CO-58	<4 2
FE-59	<4 3	FE-59	<4.3	FE-59	<8 2
CO-60	<2 9	CO-60	<2.1	CO-60	<4 3
ZN-65	<4 6	ZN-65	<4 2	ZN-65	<10 0
ZR-95	<2 0	ZR-95	<2.1	ZR-95	<5 3
CS-134	<3 2	CS-134	<3.4	CS-134	<4 1
CS-137	<2 5	CS-137	<2 9	CS-137	<5 5
BA-140	<2 8	BA-140	<2 8	BA-140	<5 8

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER C-49
Gamma Spectrum Analysis

<u>GROUND WATER</u>	<u>1115</u>
MN-54	<3 7
CO-58	<3 9
FE-59	<8 6
CO-60	<4 1
ZN-65	<7.0
ZR-95	<3 2
CS-134	<3 1
CS-137	<6 1
BA-140	<5 4

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER D-65
Gamma Spectrum Analysis

<u>GROUND WATER</u>	<u>0314</u>	<u>GROUND WATER</u>	<u>0514</u>	<u>GROUND WATER</u>	<u>0822</u>
MN-54	<4 4	MN-54	<5.7	MN-54	<3 5
CO-58	<3 8	CO-58	<3 0	CO-58	<2 4
FE-59	<7.5	FE-59	<7 2	FE-59	<4 4
CO-60	<2.6	CO-60	<5.7	CO-60	<3 5
ZN-65	<6 5	ZN-65	<7.3	ZN-65	<3.6
ZR-95	<2 6	ZR-95	<4 9	ZR-95	<4.4
CS-134	<4 9	CS-134	<4 9	CS-134	<3.2
CS-137	<4 4	CS-137	<4 7	CS-137	<5.3
BA-140	<5 3	BA-140	<3 7	BA-140	<4.3

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER D-65
Gamma Spectrum Analysis

<u>GROUND WATER</u>	<u>1115</u>
MN-54	<3.7
CO-58	<2.8
FE-59	<6.0
CO-60	<4.0
ZN-65	<9.3
ZR-95	<3.0
CS-134	<3.0
CS-137	<4.1
BA-140	<4.3

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER L-49
Gamma Spectrum Analysis

<u>GROUND WATER</u>	<u>0213</u>	<u>GROUND WATER</u>	<u>0514</u>	<u>GROUND WATER</u>	<u>0822</u>
MN-54	<1 4	MN-54	<3.9	MN-54	<6.6
CO-58	<1 7	CO-58	<3 8	CO-58	<5.1
FE-59	<2 8	FE-59	<5.8	FE-59	<6 4
CO-60	<1 4	CO-60	<4.2	CO-60	<5.5
ZN-65	<2 9	ZN-65	<8.5	ZN-65	<9 3
ZR-95	<1 5	ZR-95	<3 6	ZR-95	<5 0
CS-134	<2 2	CS-134	<2.4	CS-134	<7.2
CS-137	<1 9	CS-137	<6.1	CS-137	<4 6
BA-140	<2 3	BA-140	<3.1	BA-140	<4 5

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER L-49
Gamma Spectrum Analysis

<u>GROUND WATER</u>	<u>1115</u>
MN-54	<2.8
CO-58	<1.9
FE-59	<7.3
CO-60	<3.1
ZN-65	<5.0
ZR-95	<1.8
CS-134	<3.5
CS-137	<3.5
BA-140	<2.3

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER B-12
Tritium Analysis

Collection Date:	H-3
0213	<132
0514	<140
0822	<137
1115	<184

* Duplicate

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER C-10
Tritium Analysis

Collection Date:	H-3
0213	<132
0514	<140
0822	<137
1115	<184

* Duplicate

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER C-49
Tritium Analysis

Collection Date:	H-3
0213	<132
0514	<140
0822	<137
1115	<184

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER D-65
Tritium Analysis

Collection Date:	H-3
0314	<132
0514	<140
0822	<137
1115	<184

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER L-49
Tritium Analysis

Collection Date:	H-3
0213	<132
0514	<140
0822	<135
1115	<184

* Duplicate

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER B-12
Radiochemical Analysis

Collection Date:	I-131
0213	<0.4
0514	<0.4
0822	<0.4
1115	<0.3

* Duplicate

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER C-10
Radiochemical Analysis

Collection Date:	I-131
0213	<0.4
0514	<0.4
0822	<0.2
1115	<0.4

* Duplicate

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER C-49
Radiochemical Analysis

Collection Date	I-131
0213	<0.4
0514	<0.4
0822	<0.3
1115	<0.3

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER D-65
Radiochemical Analysis

Collection Date	I-131
0314	<0.3
0514	<0.4
0822	<0.4
1115	<0.2

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Ground Water
(pCi/Liter)
STATION NUMBER L-49
Radiochemical Analysis

Collection Date:	I-131
0213	<0.4
0514	<0.4
0822	<0.4
1115	<0.3

* Duplicate

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER BW15
Gamma Spectrum Analysis

<u>DRINKING WATER</u>	<u>0102</u>	<u>/</u>	<u>0206</u>	<u>DRINKING WATER</u>	<u>0206</u>	<u>/</u>	<u>0306</u>	<u>DRINKING WATER</u>	<u>0306</u>	<u>/</u>	<u>0403</u>
MN-54	<5.7			MN-54	<3 6			MN-54	<1 2		
CO-58	<5.5			CO-58	<3 8			CO-58	<1 3		
FE-59	<7.2			FE-59	<8 9			FE-59	<2 3		
CO-60	<7.1			CO-60	<5 0			CO-60	<1.4		
ZN-65	<9.0			ZN-65	<8 6			ZN-65	<2 7		
ZR-95	<4 7			ZR-95	<4 0			ZR-95	<1 6		
CS-134	<5 3			CS-134	<5 7			CS-134	<1 7		
CS-137	<3 3			CS-137	<4 8			CS-137	<1 6		
BA-140	<5 1			BA-140	<5 0			BA-140	<1 3		

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER BW15
Gamma Spectrum Analysis

<u>DRINKING WATER</u>	<u>0403</u>	<u>/ 0501</u>	<u>DRINKING WATER</u>	<u>0501</u>	<u>/ 0605</u>	<u>DRINKING WATER</u>	<u>0605</u>	<u>/ 0702</u>
MN-54	<2 6		MN-54	<4 4		MN-54	<2.4	
CO-58	<4 1		CO-58	<3 9		CO-58	<3.9	
FE-59	<6 9		FE-59	<4 8		FE-59	<10 1	
CO-60	<3 0		CO-60	<2 2		CO-60	<3 7	
ZN-65	<4 4		ZN-65	<6 7		ZN-65	<8 3	
ZR-95	<5 7		ZR-95	<3 6		ZR-95	<5 0	
CS-134	<6 4		CS-134	<4 3		CS-134	<3 6	
CS-137	<4 1		CS-137	<5 0		CS-137	<4 0	
BA-140	<2 9		BA-140	<3.7		BA-140	<3 6	

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER BW15
Gamma Spectrum Analysis

<u>DRINKING WATER</u>	<u>0702</u>	<u>/ 0807</u>	<u>DRINKING WATER</u>	<u>0807</u>	<u>/ 0905</u>	<u>DRINKING WATER</u>	<u>0905</u>	<u>/ 1002</u>
MN-54	<4 0		MN-54	<3 9		MN-54	<3 7	
CO-58	<2 5		CO-58	<4 1		CO-58	<4 8	
FE-59	<6 1		FE-59	<6 7		FE-59	<7 0	
CO-60	<4 4		CO-60	<3 1		CO-60	<4.1	
ZN-65	<3 8		ZN-65	<5 2		ZN-65	<5.7	
ZR-95	<2.8		ZR-95	<5 7		ZR-95	<4 6	
CS-134	<1.7		CS-134	<3 2		CS-134	<6 4	
CS-137	<5.4		CS-137	<5 1		CS-137	<3.9	
BA-140	<3.1		BA-140	<4 8		BA-140	<2.5	

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER BW15
Gamma Spectrum Analysis

<u>DRINKING WATER</u>	<u>1002</u>	<u>/ 1106</u>	<u>DRINKING WATER</u>	<u>1106</u>	<u>/ 1203</u>	<u>DRINKING WATER</u>	<u>1203</u>	<u>/ 010303</u>
MN-54	<4 0		MN-54	<4 6		MN-54	<4 3	
CO-58	<3 3		CO-58	<5 0		CO-58	<3 9	
FE-59	<5 8		FE-59	<6 3		FE-59	<6 0	
CO-60	<3.6		CO-60	<4.9		CO-60	<3 2	
ZN-65	<8.4		ZN-65	<14 0		ZN-65	<5 0	
ZR-95	<2.7		ZR-95	<6 6		ZR-95	<4 2	
CS-134	<3.3		CS-134	<6 9		CS-134	<5.9	
CS-137	<4.9		CS-137	<3 8		CS-137	<6 4	
BA-140	<3.9		BA-140	<4 9		BA-140	<5.0	

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER BW15
Gamma Spectrum Analysis

<u>DRINKING WATER</u> <u>DUP</u>	<u>0102</u>	<u>/ 0206</u>
MN-54	<3.2	
CO-58	<2.1	
FE-59	<8.5	
CO-60	<2.7	
ZN-65	<6.4	
ZR-95	<6.8	
CS-134	<4.0	
CS-137	<4.1	
BA-140	<3.8	

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER LW40
Gamma Spectrum Analysis

<u>DRINKING WATER</u>	<u>0102</u>	<u>/ 0206</u>	<u>DRINKING WATER</u>	<u>0206</u>	<u>/ 0306</u>	<u>DRINKING WATER</u>	<u>0306</u>	<u>/ 0403</u>
MN-54	<3 2		MN-54	<3 7		MN-54	<1.7	
CO-58	<3 1		CO-58	<1.9		CO-58	<1 3	
FE-59	<3.2		FE-59	<8 8		FE-59	<3 6	
CO-60	<3 2		CO-60	<4.5		CO-60	<0 8	
ZN-65	<6 2		ZN-65	<7 7		ZN-65	<2 7	
ZR-95	<2 1		ZR-95	<4 5		ZR-95	<2 0	
CS-134	<3 7		CS-134	<4 1		CS-134	<2.0	
CS-137	<4 0		CS-137	<4 8		CS-137	<1.8	
BA-140	<3 1		BA-140	<3 4		BA-140	<1.3	

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER LW40
Gamma Spectrum Analysis

<u>DRINKING WATER</u>	<u>0403</u>	<u>/ 0501</u>	<u>DRINKING WATER</u>	<u>0501</u>	<u>/ 0605</u>	<u>DRINKING WATER</u>	<u>0605</u>	<u>/ 0702</u>
MN-54	<4 0		MN-54	<4 1		MN-54	<6.1	
CO-58	<3 5		CO-58	<4 0		CO-58	<3.0	
FE-59	<5 5		FE-59	<6 0		FE-59	<8 5	
CO-60	<3 5		CO-60	<4 6		CO-60	<3.8	
ZN-65	<9.6		ZN-65	<9 7		ZN-65	<9 3	
ZR-95	<4 1		ZR-95	<3 8		ZR-95	<5.2	
CS-134	<3.8		CS-134	<4 1		CS-134	<4.3	
CS-137	<6 2		CS-137	<4 5		CS-137	<3 6	
BA-140	<2 8		BA-140	<4 8		BA-140	<6 5	

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER LW40
Gamma Spectrum Analysis

<u>DRINKING WATER</u>	<u>0702</u>	<u>/ 0807</u>	<u>DRINKING WATER</u>	<u>0807</u>	<u>/ 0905</u>	<u>DRINKING WATER</u>	<u>0905</u>	<u>/ 1002</u>
MN-54	<3 0		MN-54	<4 0		MN-54	<3 1	
CO-58	<2 5		CO-58	<2.3		CO-58	<1 0	
FE-59	<3 0		FE-59	<7.2		FE-59	<4 7	
CO-60	<3 0		CO-60	<5 0		CO-60	<2.8	
ZN-65	<6 5		ZN-65	<4 6		ZN-65	<2 5	
ZR-95	<3 2		ZR-95	<4 0		ZR-95	<2.8	
CS-134	<3 0		CS-134	<3 2		CS-134	<2.1	
CS-137	<3.2		CS-137	<4 3		CS-137	<2.3	
BA-140	<2.3		BA-140	<5 4		BA-140	<2.5	

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER LW40
Gamma Spectrum Analysis

<u>DRINKING WATER</u>	<u>1002</u>	<u>/ 1106</u>	<u>DRINKING WATER</u>	<u>1106</u>	<u>/ 1203</u>	<u>DRINKING WATER</u>	<u>1203</u>	<u>/ 010203</u>
MN-54	<2 5		MN-54	<5.3		MN-54	<3.0	
CO-58	<2 2		CO-58	<4 5		CO-58	<1 8	
FE-59	<3 7		FE-59	<6 7		FE-59	<4.1	
CO-60	<2 3		CO-60	<4 3		CO-60	<4 7	
ZN-65	<6 5		ZN-65	<10 0		ZN-65	<6 3	
ZR-95	<2 5		ZR-95	<5 1		ZR-95	<3.1	
CS-134	<3 8		CS-134	<5 6		CS-134	<3 7	
CS-137	<3 1		CS-137	<6 8		CS-137	<4 1	
BA-140	<2 3		BA-140	<4 7		BA-140	<3 8	

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER LW40
Gamma Spectrum Analysis

<u>DRINKING WATER DUP</u>	<u>0605</u>	<u>/ 0702</u>	<u>DRINKING WATER DUP</u>	<u>0702</u>	<u>/ 0807</u>
MN-54	<2 3		MN-54	<3.2	
CO-58	<3 0		CO-58	<3.7	
FE-59	<9 8		FE-59	<8.6	
CO-60	<3 1		CO-60	<2 3	
ZN-65	<7 2		ZN-65	<7 6	
ZR-95	<4 9		ZR-95	<4 2	
CS-134	<3.8		CS-134	<4 8	
CS-137	<4 9		CS-137	<5 3	
BA-140	<3 1		BA-140	<4 2	

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER NFDW
Gamma Spectrum Analysis

<u>DRINKING WATER</u>	<u>1212</u>	<u>/ 010203</u>
MN-54	<3	6
CO-58	<2	1
FE-59	<3.9	
CO-60	<2	4
ZN-65	<2	9
ZR-95	<2	1
CS-134	<4	1
CS-137	<2	1
BA-140	<3.1	

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER BW15
Radiochemical Analysis

Start Date:	Stop Date:	GR-B
0102*	0206	4 7+-1 2
0102	0206	5 1+-1.2
0206	0306	5 1+-1.1
0306	0403	3 8+-1 0
0403	0501	4 6+-1 1
0501	0605	5 4+-1.2
0605	0702	5 0+-1.1
0702	0807	4 6+-1.0
0807	0905	5 1+-1.2
0905	1002	4 5+-1.3
1002	1106	4.6+-1 0
1106	1203	4.5+-1.1
1203	010303	4.9+-1.1

* Duplicate

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER LW40
Radiochemical Analysis

Start Date:	Stop Date:	GR-B
0102	0206	3 5+-1.2
0206	0306	4 5+-1 0
0306	0403	4 2+-1.0
0403	0501	5 5+-1 0
0501	0605	4 3+-1 2
0605*	0702	4.7+-1.1
0605	0702	4.7+-1.0
0702*	0807	5 9+-1 1
0702	0807	5 0+-1.1
0807	0905	4 6+-1 1
0905	1002	5 3+-1.2
1002	1106	5 4+-1 1
1106	1203	5 3+-1 1
1203	010203	4 4+-1.1

* Duplicate

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER
NFDW
Radiochemical Analysis

Start Date:	Stop Date:	GR-B
1212	010203	5 7+-1.1

* Duplicate

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER BW15
Tritium Analysis

Start Date:	Stop Date:	H-3
0102	0403	<169
0403	0702	<129
0702	1002	<146
1002	010303	<164

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER LW40
Tritium Analysis

Start Date:	Stop Date:	H-3
0102	0403	<169
0403	0702	<129
0702	1002	<146
1002	010203	<164

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER BW15
Radiochemical Analysis

Start Date:	Stop Date:	I-131
0102*	0206	<0 4
0102	0206	<0 5
0206	0306	<0 3
0306	0403	<0 3
0403	0501	<0 4
0501	0605	<0 3
0605	0702	<0.4
0702	0807	<0 3
0807	0905	<0 3
0905	1002	<0 4
1002	1106	<0 3
1106	1203	<0 4
1203	010303	<0 2

* Duplicate

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER LW40
Radiochemical Analysis

Start Date:	Stop Date:	I-131
0102	0206	<0 4
0206	0306	<0 3
0306	0403	<0 3
0403	0501	<0.4
0501	0605	<0 3
0605*	0702	<0.4
0605	0702	<0 4
0702*	0807	<0 4
0702	0807	<0 4
0807	0905	<0 3
0905	1002	<0 4
1002	1106	<0 4
1106	1203	<0 4
1203	010203	<0 3

* Duplicate

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Drinking Water
(pCi/Liter)
STATION NUMBER
NFDW
Radiochemical Analysis

Start Date:	Stop Date:	I-131
1212	010203	<0.4

* Duplicate

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Shoreline Sediment
(pCi/KG DRY)
STATION NUMBER DC
Gamma Spectrum Analysis

<u>0605</u>	<u>SHORELINE SEDIMENT</u>
K-40	9809 5+-720 5
MN-54	<14 9
CO-58	<34 1
FE-59	<86 1
CO-60	<23 6
ZN-65	<57.3
CS-134	<40 2
CS-137	<31 2
<u>1107</u>	<u>SHORELINE SEDIMENT</u>
K-40	7770 5+-745.7
MN-54	<30 8
CO-58	<24 9
FE-59	<62 1
CO-60	<34 5
ZN-65	<70 6
CS-134	<45 0
CS-137	<37 3

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Shoreline Sediment
(pCi/KG DRY)
STATION NUMBER EEA
Gamma Spectrum Analysis

<u>0429</u>	<u>SHORELINE SEDIMENT</u>
K-40	9698 6+-840 4
MN-54	<33 5
CO-58	<34 4
FE-59	<55 5
CO-60	<31 1
ZN-65	<73 5
CS-134	<48 4
CS-137	<31 7

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Shoreline Sediment
(pCi/KG DRY)
STATION NUMBER JRR
Gamma Spectrum Analysis

<u>0507</u>	<u>SHORELINE SEDIMENT</u>
K-40	11585 0+-748.6
MN-54	<26 4
CO-58	<24 8
FE-59	<48.4
CO-60	<20 8
ZN-65	<58 0
CS-134	<42 5
CS-137	<21 5
<u>1029</u>	<u>SHORELINE SEDIMENT</u>
K-40	10795 0+-445.3
MN-54	<14 0
CO-58	<18 9
FE-59	<43 1
CO-60	<11 9
ZN-65	<30 4
CS-134	<23 0
CS-137	<16 8

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Shoreline Sediment
(pCi/KG DRY)
STATION NUMBER JRR (Duplication)
Gamma Spectrum Analysis

<u>0507</u>	<u>SHORELINE SEDIMENT DUP</u>
K-40	11612 0+-787 0
MN-54	<25 4
CO-58	<28 9
FE-59	<48 0
CO-60	<18 1
ZN-65	<64 5
CS-134	<45 8
CS-137	<29.3

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Waterborne
Shoreline Sediment
(pCi/KG DRY)
STATION NUMBER MUDS
Gamma Spectrum Analysis

<u>SHORELINE SEDIMENT</u>	<u>0430</u>
K-40	9616 9+-668.6
MN-54	<27 9
CO-58	<22 6
FE-59	<48 6
CO-60	<29 1
ZN-65	<55 4
CS-134	<43 7
CS-137	<25 6

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Ingestion
Fish
(pCi/KG WET)
STATION NUMBER JRR
Gamma Spectrum and Tritium Analysis

<u>BM BUFFALO</u>	<u>1029</u>	<u>CHANNEL CATFISH</u>	<u>0507</u>	<u>CHANNEL CATFISH</u>	<u>1029</u>
K-40	2725 0+-270 3	K-40	2429 7+-375.3	K-40	3123 7+-303.0
MN-54	<7 7	MN-54	<9 2	MN-54	<9.6
CO-58	<6 2	CO-58	<14 9	CO-58	<9 5
FE-59	<7 9	FE-59	<29 1	FE-59	<22 2
CO-60	<6 4	CO-60	<9.8	CO-60	<11.2
ZN-65	<24 2	ZN-65	<17 7	ZN-65	<31 9
CS-134	<4 4	CS-134	<14 7	CS-134	<11 1
CS-137	<7 7	CS-137	<8 5	CS-137	<8 1
H-3	<114	H-3	<83	H-3	<143

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Ingestion
Fish
(pCi/KG WET)
STATION NUMBER JRR
Gamma Spectrum and Tritium Analysis

<u>COMMON CARP</u>	<u>1029</u>	<u>FLATHEAD CATFISH</u>	<u>0507</u>	<u>SM.BUFFALO</u>	<u>1029</u>
K-40	3054.6+-441.7	K-40	3132.3+-338.8	K-40	3404.0+-308.7
MN-54	<11.7	MN-54	<7.7	MN-54	<7.5
CO-58	<9.6	CO-58	<14.4	CO-58	<7.7
FE-59	<27.5	FE-59	<38.1	FE-59	<17.7
CO-60	<10.7	CO-60	<12.9	CO-60	<11.7
ZN-65	<42.1	ZN-65	<25.6	ZN-65	<21.7
CS-134	<15.7	CS-134	<10.6	CS-134	<6.3
CS-137	<10.1	CS-137	<10.8	CS-137	<6.1
H-3	<136	H-3	<78	H-3	<116

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Ingestion
Fish
(pCi/KG WET)
STATION NUMBER JRR
Gamma Spectrum and Tritium Analysis

<u>WHITE CRAPPIE</u>	<u>0507</u>
K-40	3153.0+-374 0
MN-54	<14.6
CO-58	<17.2
FE-59	<25.7
CO-60	<7 0
ZN-65	<26 3
CS-134	<11.8
CS-137	<8 8
H-3	<101

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Ingestion
Fish
(pCi/KG WET)
STATION NUMBER WCL
Gamma Spectrum and Tritium Analysis

<u>BM BUFFALO</u>	<u>1010</u>	<u>CHANNEL CATFISH</u>	<u>0531</u>	<u>CHANNEL CATFISH</u>	<u>1010</u>
K-40	2786 9+-283 5	K-40	3336 2+-568.0	K-40	2805 3+-371.2
MN-54	<7 6	MN-54	<19 9	MN-54	<8 5
CO-58	<5 7	CO-58	<26 2	CO-58	<12 9
FE-59	<10 8	FE-59	<60 3	FE-59	<18.7
CO-60	<12 0	CO-60	<10 8	CO-60	<9.6
ZN-65	<8 8	ZN-65	<14 9	ZN-65	<14 5
CS-134	<6 5	CS-134	<16 7	CS-134	<10 8
CS-137	<7.9	CS-137	<12.8	CS-137	<9.4
H-3	7829.7+-216.3	H-3	9170+-224	H-3	7948 9+-221.3

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Ingestion
Fish
(pCi/KG WET)
STATION NUMBER WCL
Gamma Spectrum and Tritium Analysis

<u>COMMON CARP</u>	<u>0531</u>	<u>COMMON CARP</u>	<u>1010</u>	<u>SM BUFFALO</u>	<u>1010</u>
K-40	2809 0+-449 4	K-40	3093 1+-642 3	K-40	1685 8+-400 5
MN-54	<12 1	MN-54	<26 4	MN-54	<13 1
CO-58	<15 2	CO-58	<21.1	CO-58	<15 7
FE-59	<56 1	FE-59	<41.8	FE-59	<27 2
CO-60	<11 6	CO-60	<38 7	CO-60	<10 2
ZN-65	<31 1	ZN-65	<108 4	ZN-65	<36 4
CS-134	<18 4	CS-134	<32 3	CS-134	<12 7
CS-137	<16 3	CS-137	<29.1	CS-137	<10 5
H-3	9094+-215	H-3	7909 5+-223.1	H-3	7624 5+-210.2

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Ingestion
Fish
(pCi/KG WET)
STATION NUMBER WCL
Gamma Spectrum and Tritium Analysis

<u>WALLEYE</u>	<u>1010</u>	<u>WHITE BASS</u>	<u>0531</u>	<u>WHITE BASS</u>	<u>1010</u>
K-40	3390 7+-422 3	K-40	2875.4+-368 9	K-40	2727 0+-368 4
MN-54	<7 7	MN-54	<7.3	MN-54	<7.6
CO-58	<14 4	CO-58	<13 3	CO-58	<12 6
FE-59	<15.0	FE-59	<26 7	FE-59	<24 5
CO-60	<12 2	CO-60	<11.4	CO-60	<12 9
ZN-65	<33.1	ZN-65	<17.7	ZN-65	<10 7
CS-134	<12.9	CS-134	<12 7	CS-134	<6 2
CS-137	<14 4	CS-137	<12 9	CS-137	<11.1
H-3	6166 5+-179 7	H-3	8574+-234	H-3	8074.8+-232 7

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Ingestion
Fish
(pCi/KG WET)
STATION NUMBER WCL
Gamma Spectrum and Tritium Analysis

<u>WHITE CRAPPIE</u>	<u>1010</u>
K-40	3111.9+-464 3
MN-54	<9 2
CO-58	<14 0
FE-59	<38 3
CO-60	<15.7
ZN-65	<28 7
CS-134	<8 1
CS-137	<16 4
H-3	8706 0+-238 8

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Ingestion
Food/Garden Crops
(pCi/KG WET)
STATION NUMBER A-2
Gamma Spectrum Analysis

<u>0522</u>	<u>RHUBARB LEAVES</u>	<u>0717</u>	<u>RHUBARB LEAVES</u>
BE-7	1120 6+-228 1	BE-7	<113 6
K-40	5335 5+-563 7	K-40	3099 2+-348.1
MN-54	<11 5	MN-54	<11.0
CO-58	<20 0	CO-58	<10 8
FE-59	<48 9	FE-59	<18.3
CO-60	<12.3	CO-60	<13.7
ZN-65	<20 9	ZN-65	<9.5
ZR-95	<17.2	ZR-95	<5.5
I-131	<33 6	I-131	<13.6
CS-134	<11 9	CS-134	<9 2
CS-137	<16 8	CS-137	<7.8
<u>0619</u>	<u>RHUBARB LEAVES</u>		
BE-7	1572 2+-189.8		
K-40	5118.5+-371.2		
MN-54	<10.7		
CO-58	<10.5		
FE-59	<16.3		
CO-60	<11.1		
ZN-65	<28.4		
ZR-95	<6 9		
I-131	<13.8		
CS-134	<11.2		
CS-137	<8 4		

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Ingestion
Food/Garden Crops
(pCi/KG WET)
STATION NUMBER D-1
Gamma Spectrum Analysis

<u>0925</u>	<u>RHUBARB</u>	<u>1113</u>	<u>RHUBARB</u>
BE-7	530.8+-167.2	BE-7	496.4+-197.6
K-40	2364.4+-376.1	K-40	3552.0+-466.2
MN-54	<11.1	MN-54	<17.9
CO-58	<12.3	CO-58	<10.7
FE-59	<12.8	FE-59	<28.9
CO-60	<13.9	CO-60	<11.4
ZN-65	<9.4	ZN-65	<12.2
ZR-95	<10.4	ZR-95	<8.5
I-131	<25.1	I-131	<24.6
CS-134	<19.4	CS-134	<9.0
CS-137	<7.5	CS-137	<18.0
<u>1030</u>	<u>RHUBARB</u>	<u>1211</u>	<u>RHUBARB</u>
BE-7	447.3+-247.5	BE-7	<213.4
K-40	2761.9+-595.3	K-40	3863.0+-619.4
MN-54	<16.3	MN-54	<19.3
CO-58	<20.4	CO-58	<11.6
FE-59	<35.3	FE-59	<26.6
CO-60	<10.1	CO-60	<27.1
ZN-65	<15.4	ZN-65	<24.6
ZR-95	<16.4	ZR-95	<22.4
I-131	<23.5	I-131	<28.8
CS-134	<25.0	CS-134	<18.2
CS-137	<20.3	CS-137	<18.9

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Ingestion
Food/Garden Crops
(nCi/KG WET)

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Ingestion
Food/Garden Crops
(pCi/KG WET)
STATION NUMBER G-1
Gamma Spectrum Analysis

<u>1211</u>	<u>TURNIP GREENS</u>
BE-7	525 3+-187.7
K-40	3453 3+-440 7
MN-54	<15 7
CO-58	<13 1
FE-59	<31 6
CO-60	<14 2
ZN-65	<22 3
ZR-95	<16 3
I-131	<15 2
CS-134	<18 9
CS-137	<18 4

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Ingestion
Food/Garden Crops
(pCi/KG WET)
STATION NUMBER L-1
Gamma Spectrum Analysis

<u>0814</u>	<u>MUSTARD GREENS</u>
BE-7	402.7+-191.1
K-40	4257.5+-434.1
MN-54	<5.4
CO-58	<8 4
FE-59	<16 2
CO-60	<11.3
ZN-65	<21.8
ZR-95	<8 9
I-131	<7 3
CS-134	<12 6
CS-137	41.5+-23.8
<u>0925</u>	<u>GREEN BEAN PLANTS</u>
BE-7	1071.4+-276 3
K-40	1519.1+-483 1
MN-54	<14 4
CO-58	<20 4
FE-59	<38 7
CO-60	<11.4
ZN-65	<19.1
ZR-95	<19 5
I-131	<25 3
CS-134	<18 7
CS-137	<29.5

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Ingestion
Food/Garden Crops
(pCi/KG WET)
STATION NUMBER S-4
Gamma Spectrum Analysis

<u>0522</u>	<u>CABBAGE</u>	<u>0717</u>	<u>CABBAGE</u>	<u>0925</u>	<u>GREEN PEPPER LEAVES</u>
BE-7	424 2+-192 8	BE-7	229 4+-133 6	BE-7	389 3+-199 9
K-40	3295.8+-501.8	K-40	3818 2+-393.5	K-40	7661 1+-570 9
MN-54	<19 9	MN-54	<10.6	MN-54	<12 4
CO-58	<24 1	CO-58	<6 3	CO-58	<12 3
FE-59	<21 5	FE-59	<15 8	FE-59	<19 5
CO-60	<17.8	CO-60	<15 0	CO-60	<11 1
ZN-65	<48.0	ZN-65	<9.3	ZN-65	<14 4
ZR-95	<24 2	ZR-95	<15 6	ZR-95	<9 8
I-131	<33 8	I-131	<10.7	I-131	<15 8
CS-134	<15 4	CS-134	<9.7	CS-134	<12.7
CS-137	<18 2	CS-137	<8.9	CS-137	<7 3
<u>0619</u>	<u>CABBAGE</u>	<u>0814</u>	<u>COLLARD GREENS</u>	<u>1030</u>	<u>GREEN PEPPER LEAVES</u>
BE-7	777.8+-226.8	BE-7	348 7+-136 9	BE-7	1707 8+-342.5
K-40	3922 8+-655.2	K-40	3730.1+-388 8	K-40	7013.2+-941.7
MN-54	<22 3	MN-54	<10 9	MN-54	<27 4
CO-58	<15.8	CO-58	<6 9	CO-58	<11 1
FE-59	<52.2	FE-59	<16 0	FE-59	<60 4
CO-60	<26 6	CO-60	<11 1	CO-60	<25 8
ZN-65	<29.8	ZN-65	<15 8	ZN-65	<26 7
ZR-95	<18.9	ZR-95	<14 4	ZR-95	<26 1
I-131	<28.2	I-131	<8 0	I-131	<27 4
CS-134	<24 1	CS-134	<9 3	CS-134	<36 4
CS-137	<25.8	CS-137	<7 3	CS-137	<20 3

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Ingestion
Feed and Forage
(pCi/KG WET)
STATION NUMBER NR-D1
Gamma Spectrum Analysis

<u>SOYBEANS (IRRIGATED)</u>	<u>1122</u>
BE-7	<183 9
K-40	15063.0+-910 0
MN-54	<23 6
CO-58	<20 7
FE-59	<39 1
CO-60	<14 8
ZN-65	<61.4
ZR-95	<28 6
I-131	<47.3
CS-134	<21.9
CS-137	<21 8

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Ingestion
Feed and Forage
(pCi/KG WET)
STATION NUMBER NR-D2
Gamma Spectrum Analysis

<u>CORN (IRRIGATED)</u>	<u>1113</u>
BE-7	<145 3
K-40	3217 8+-447.8
MN-54	<15 9
CO-58	<14 7
FE-59	<26 2
CO-60	<17 4
ZN-65	<18 0
ZR-95	<13 4
I-131	<22 8
CS-134	<15 7
CS-137	<7.1
<u>SOYBEANS (IRRIGATED)</u>	<u>1113</u>
BE-7	<177.0
K-40	14663 0+-895 2
MN-54	<16 4
CO-58	<11.9
FE-59	<31 0
CO-60	<15.2
ZN-65	<56 5
ZR-95	<20.0
I-131	<21.3
CS-134	<15.1
CS-137	<19 6

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Ingestion
Feed and Forage
(pCi/KG WET)
STATION NUMBER NR-U1
Gamma Spectrum Analysis

<u>CORN</u>	<u>1120</u>	<u>SOYBEANS</u>	<u>1120</u>
BE-7	<109.1	BE-7	<147.3
K-40	2466 0+-375 0	K-40	12969 0+-874 9
MN-54	<10 8	MN-54	<12 6
CO-58	<9 3	CO-58	<9 5
FE-59	<24 2	FE-59	<51 9
CO-60	<11.4	CO-60	<28 7
ZN-65	<23.8	ZN-65	<41.0
ZR-95	<8.7	ZR-95	<23 8
I-131	<16 0	I-131	<26 4
CS-134	<11.8	CS-134	<22.5
CS-137	<13 2	CS-137	<19 0

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Aquatic
Sediment/Silt
(pCi/KG DRY)
STATION NUMBER DC
Gamma Spectrum Analysis

<u>0605</u>	<u>BOTTOM SEDIMENT</u>
K-40	13383 0+-817.6
MN-54	<32 3
CO-58	<42 1
FE-59	<95 2
CO-60	307 7+-36 4
ZN-65	<86 8
CS-134	<47 0
CS-137	262 7+-44 1
<u>1107</u>	<u>BOTTOM SEDIMENT</u>
K-40	14983 0+-885 5
MN-54	<38 6
CO-58	<32 8
FE-59	<60 0
CO-60	227.8+-44 1
ZN-65	<67 9
CS-134	<52 2
CS-137	280 5+-58 7

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Aquatic
Sediment/Silt
(pCi/KG DRY)
STATION NUMBER JRR
Gamma Spectrum Analysis

<u>0507</u>	<u>BOTTOM SEDIMENT</u>
K-40	12995 0+-1279 0
MN-54	<55 4
CO-58	<50 9
FE-59	<97 5
CO-60	<56 1
ZN-65	<122 5
CS-134	<50 6
CS-137	165 3+-73 9
<u>1029</u>	<u>BOTTOM SEDIMENT</u>
K-40	13515 0+-760 1
MN-54	<28 5
CO-58	<34 0
FE-59	<79 2
CO-60	<23.6
ZN-65	<81.6
CS-134	<44 4
CS-137	105.8+-34 6

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Aquatic
Vegetation - Aquatic
(pCi/KG WET)
STATION NUMBER DCAL
Gamma Spectrum Analysis

<u>0605</u>	<u>AM LOTUS</u>
BE-7	643 1+-182 3
K-40	3093.6+-468 3
MN-54	<13 6
CO-58	<22 0
FE-59	<37 7
CO-60	<15 7
ZN-65	<19 2
ZR-95	<13 3
I-131	<35 2
CS-134	<12 0
CS-137	<11 9

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Aquatic
Vegetation - Aquatic
(pCi/KG WET)
STATION NUMBER EEA
Gamma Spectrum Analysis

<u>0618</u>	<u>PONDWEED</u>
BE-7	994 4+-235 9
K-40	1839 6+-474 8
MN-54	<16 9
CO-58	<25 2
FE-59	<43 2
CO-60	<12 6
ZN-65	<24 8
ZR-95	<22 7
I-131	<55 8
CS-134	<35 1
CS-137	<22 8

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Aquatic
Vegetation - Aquatic
(pCi/KG WET)
STATION NUMBER MUDS
Gamma Spectrum Analysis

<u>0925</u>	<u>PONDWEED</u>
BE-7	<214 5
K-40	1796 8+-415 4
MN-54	<18 5
CO-58	<18 4
FE-59	<43 9
CO-60	<18 1
ZN-65	<44 0
ZR-95	<12 9
I-131	<23 1
CS-134	<22 4
CS-137	<14 0

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Terrestrial
Vegetation - Terrestrial
(pCi/KG WET)
STATION NUMBER EEA
Gamma Spectrum Analysis

<u>0429</u>	<u>PASTURAGE</u>
K-40	5830 8+-484 3
MN-54	<15 4
CO-58	<13 3
FE-59	<37 0
CO-60	<11.2
ZN-65	<33.8
CS-134	<14 5
CS-137	<19.2

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Terrestrial
Vegetation - Terrestrial
(pCi/KG WET)
STATION NUMBER MUDS
Gamma Spectrum Analysis

<u>0430</u>	<u>PASTURAGE</u>
K-40	5502 3+-975 7
MN-54	<36 2
CO-58	<29 5
FE-59	<88 5
CO-60	<31 2
ZN-65	<81 5
CS-134	<41 8
CS-137	<36 4

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Terrestrial
Soil
(pCi/KG DRY)
STATION NUMBER EEA
Gamma Spectrum Analysis

<u>0429</u>	<u>SOIL</u>
K-40	8986 8+-836 8
MN-54	<34 8
CO-58	<29 5
FE-59	<60 7
CO-60	<32.4
ZN-65	<71 3
CS-134	<45 3
CS-137	153 2+-46 0

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Terrestrial
Soil
(pCi/KG DRY)
STATION NUMBER MUDS
Gamma Spectrum Analysis

<u>0430</u>	<u>SOIL</u>
K-40	11025 0+-941 3
MN-54	<41 6
CO-58	<27 1
FE-59	<83.4
CO-60	<14 8
ZN-65	<71 2
CS-134	<45 6
CS-137	200 7+-52 6

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Terrestrial
Soil
(pCi/KG DRY)
STATION NUMBER MUDDS (Duplication)
Gamma Spectrum Analysis

<u>0430</u>	<u>SOIL DUP</u>
K-40	10191 0+-784 6
MN-54	<32.9
CO-58	<28 1
FE-59	<36 0
CO-60	<28 0
ZN-65	<70.2
CS-134	<47.2
CS-137	204 0+-46 0

Wolf Creek Nuclear Operating Corporation
Exposure Pathway - Ingestion
Deer
(pCi/KG WET)
STATION NUMBER B1.1
Gamma Spectrum

<u>DEER</u>	<u>1115</u>
K-40	2629.7+-388 1
MN-54	<12 6
CO-58	<11.6
FE-59	<19 4
CO-60	<10.5
ZN-65	<26.6
CS-134	<17.0
CS-137	<12 1