Attachment U

Final Status Survey Report #23 Documentation

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FSSR #23

FINAL

COLUMBUS CLOSURE PROJECT
FINAL STATUS SURVEY REPORT FOR UNAFFECTED LAND AREAS OUTSIDE THE WJN SITE FENCE LINE

Revision 1
June 16, 2006

Prepared by

ECC & E2 Closure Services
1425 State Route 142 East
West Jefferson, OH 43162

FSSR
#23

Contract Number: DE-AC24-04OH20171

FINAL Status Survey Report for the Unaffected Land Areas Outside the WJN Site Fence Line

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Contract Number: DE-AC24-04OH20171

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Contract Number: DE-AC24-04OH20171

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1.0 Introduction

This report contains the final status surveys (FSS) for the Unaffected Land Areas Outside the West Jefferson North (WJN) Site Fence Line located at the Columbus Closure Project (CCP), 1425 Plain City/Georgesville Road State Route 142 East, West Jefferson, OH 43162. Final status surveys were conducted according to the guidance presented in the *Manual for Conducting Surveys in Support of License Termination*, NUREG/CR-5849, and the *Radiological Characterization and Final Status Plan for Battelle Columbus Laboratories Decommissioning Project, West Jefferson Site*, DD-97-02 (Final Status Plan) (Battelle, 2000). The final status surveys were conducted primarily in July of 2005.

The intent of this final status survey report is to provide a complete and unambiguous record of the radiological status of the areas of interest. Sufficient information and data are provided to enable an independent recreation and evaluation at some future date of both the survey activities and the reported results for the excavation. Information in this report is also available in referenced technical basis documents, final status survey plans and procedures, and the *Battelle Memorial Institute Columbus Operations, Decommissioning Plan*, DD-93-19 (BMI Decommissioning Plan), and reporting and quality assurance procedures (ORAU, 1992).

To the extent practicable, this final status survey report is presented with minimal information incorporated by reference. This final status survey report has been generated following the comprehensive, annotated outline presented in Chapter 9 of NUREG-5849 (ORAU, 1992).

1.1 Background

On April 16, 1943, BMI, acting through what is now its Battelle Columbus Operations (BCO), entered into Contract No. W-7405-ENG-92 with the Manhattan Engineering District to perform atomic energy research and development (R&D) activities. BCO performed nuclear materials research and development at privately-owned facilities for the Manhattan Engineering District and its successor agencies – the Atomic Energy Commission (AEC), the Energy Research and Development Agency (ERDA), and the Department of Energy (DOE). Research and development continued until 1988 (Battelle, 2003a).

The BCO facilities at the King Avenue Site, Columbus, Ohio, and the West Jefferson North (WJN) and South (WJS) Sites, West Jefferson, Ohio, became partially radiologically contaminated as a result of the R&D activities. Decontamination of the King Avenue and WJS Sites has been completed and activities continue at the WJN site. The DOE, as the successor to the AEC and the Government's earlier work, is the agreed party with predominant liability and responsibility for decontamination and decommissioning (D&D) of the BCO facilities (Battelle, 2003a). The Assistant Secretary for Nuclear Energy of the DOE accepted the decontamination and decommissioning (D&D) of the WJN into the DOE's Surplus Facilities Management Program as a major

project (DOE, 1986). The DOE is the agency funding and managing the cleanup of the WJN (Battelle, 2003a). However, the site is not a DOE-owned facility.

BMI holds U.S. Nuclear Regulatory Commission (NRC) license number SNM-7. BMI has continually operated and conducted D&D activities in full compliance with this NRC license. The BMI Decommissioning Plan for the WJN site does not serve as a declaration to terminate SNM-7, but establish the criteria for performing D&D activities. The end goal of the BMI Decommissioning Plan is to reach unrestricted use conditions for the site (Battelle, 2003a).

The DOE has contracted ECC&E2 Closure Services, LLC (Closure Services), to safely remove DOE radioactive material and contamination from the WJN site. Removal of radioactive material will be to levels allowing future use of the site without radiological restrictions as described in the BMI Decommissioning Plan. Closure Services has conducted characterization and final status surveys for the unaffected land areas outside the WJN Site Fence Line to demonstrate that these areas are available for unrestricted release.

2.0 Site Description

Created in 1984, the Battelle Columbus Decommissioning Project (BCLDP) is a remediation project that includes nine buildings at the King Avenue site and six at the WJN site. The CCP is the successor of the BCLDP. Three former research facilities, Buildings JN-1, JN-2, and JN-3 have been demolished, as well as the Building JN-6 Guard House. Building JN-4 Complex and the WJN Well House are the remaining facilities at WJN. Several outfalls, filter beds, and wells were also excavated and transported for offsite disposal. Final condition of the WJN is complete backfill to previous grade, seeding, and repair of the site fence line. See **Figure 1** for site map of the CCP.

2.1 Area Description

The unaffected areas outside the WJN Site Fence Line includes the following designated areas:

- The access road to SR 142 and the parking lots,
- The Filter Bed Service Road,
- The area to the North and Outside the Filter Bed's Affected Area Fence Line,
- The area to the South and Outside the Filter Bed's Affected Area Fence Line,
- Six storm water sewer outfalls and a storm water sewer manhole,
- The area to the Southwest of the WJN Restricted Area Fence Line, and
- The area immediately adjacent to the WJN Perimeter Fence Line.

The total area encompasses roughly 803 grids of ten by ten meters each or 80,300 m^2 or approximately 19.8 acres. **Figure 2** presents each area in relation to the CCP as a whole. Individual grid maps of these areas are presented as **Figures 3 through 8. Figure 9** details the locations of the storm water sewer outfalls and manhole.

Two classifications of areas are used in NUREG-5849 (NRC, 1992) and are termed **affected** or **unaffected.** These classifications are defined as:

> **Affected Areas:** Areas that have potential radioactive contamination (based on plant operating history) or known radioactive contamination (based on past or preliminary radiological surveillance). This would normally include areas where radioactive materials were used and stored, where records indicate spills or other unusual occurrences that could have resulted in spread of contamination, and where radioactive materials were buried. Areas immediately surrounding or adjacent to locations where radioactive materials were used, stored, or buried are included in this classification because of the potential for inadvertent spread of contamination.

Unaffected Areas: All areas not classified as affected. These areas are not expected to contain residual radioactivity, based on knowledge of site history and previous information.

The six areas and storm water sewer outfalls covered in this FSS Report are considered Unaffected Areas as defined in NUREG/CR-5849. In accordance with DD-97-02, Section 6.4, Unaffected Areas will be reclassified as Affected Areas if activity levels exceed 25 percent of the applicable release criteria.

3.0 Decommissioning Activities

3.1 Decommissioning Objective

The objective of the final status surveys performed within the six unaffected areas was to statistically demonstrate that the grounds are free of residual radioactive contamination. The grounds are determined to be free of residual radioactive contamination when soil contamination levels are below those presented in DD-93-03, Rev. 0, "Volumetric Release Criteria Technical Basis Document for Battelle Columbus Laboratory Decommissioning Project" (Battelle, 1993A). **Table 1** presents the volumetric release criteria as presented in DD-93-03, Rev. 0.

4.0 Final Status Survey Procedures

Planning and implementation of the final status survey of the six unaffected areas adhered to the requirements of the DD-97-02 (Battelle, 2000).

4.1 Sampling Parameters

In accordance with DD-97-02, Section 6.4.3, a minimum of 6 soil samples were collected from each of the six unaffected areas.

4.2 Major Contaminants Identified

Based upon the previous remedial activities performed on the affected areas of the CCP, Cesium-137 (Cs-137) is the isotope of concern. Other radioisotopes present include Cobalt-60 (Co-60), Europium-152 (Eu-152) and Eu-154, Americium-241 (Am-241), Srontium-90 (Sr-90), Plutonium-238 (Pu), and Pu-239. Cesium-137 is used as a surrogate for the other radioisotopes present in the soils as the Cs-137 activity is the predominant radionuclide and also possesses one of the lowest cleanup criterions of 15 picoCuries per gram (pCi/g). Two modified cleanup criteria have been used at the CCP during the project and use Cs-137 as a surrogate to quickly evaluate results. The first modified criteria was used for the filter bed areas, the second was used for the JN-1 foundation excavations. The modified criteria for the two areas are Cs-137 values of 11, and 7.3 pCi/g, respectively. The modified screening criterion of 7.3 pCi/g has been selected for use in the unaffected areas as a conservative measure. **Table 2** includes ratios of individual radionuclides compared to Cs-137 as well as the analytical results from samples of the Building JN-1 foundation, backyard, and the Bog Area. Remediation samples were collected between October and November of 2005. These ratios are used for the six unaffected areas outside the WJN Restricted Area Fence Line.

4.2.1 *Guidelines Established*

Table 1 presents the guidelines for residual radioactivity concentrations for soil and solid volumes as applied to the Unaffected Land Areas outside the WJN fence line. Criteria for residual radioactivity concentrations in soil are defined in the "Volumetric Release Criteria Technical Basis Document for Battelle Columbus Laboratories Decommissioning Project," DD-93-03. (Battelle, 1993). **Table 1** values have been generated primarily from various regulatory requirements, technical documents, and from soil guidelines generated by computer pathway analyses. Requirements such as those found in DOE Order 5400.5 have been incorporated into the volumetric release criteria. DOE Order 5400.5, Section IV.a.2, provides generic guidelines for residual concentrations of Ra-226, Ra-228, Th-230, and Th-232 that have been incorporated into the volumetric release criteria. Additionally, NRC Guidance has been received by the CCP establishing the soil radioactivity concentration guidelines for Co-60, Sr-90, Cs-137, Ra-226, and Ra-228, and for natural, enriched and depleted uranium.

Compliance to the cleanup criteria presented in **Table 1** is demonstrated through a "fraction of limit." The total quantity and activity concentration of each RCOC is calculated using the average isotopic ratio listed in **Table 2**, with the exception of the Cs-137 to Pu-241 ratio of 2.8. Calculated results for Co-60, Cs-137, Sr-90, Eu-152 and 154, Pu-239, 240 and 241, and Am-241 are then compared to the respective release criteria and a "fraction of the limit" is calculated. The "fraction of the limit" is determined by summing the ratios of each isotopic concentration to the respective release limit. Summed ratios must be less than one to meet sample release criteria. A modified screening criteria of 7.3 pCi/g for Cs-137 has been calculated using the "fraction of the limit" using the data provided in **Table 2**.

Exposure rates were compared to the 5 microRoentgen per hour (μR/hr) above mean background limit listed in DD-97-02, Rev. 0 (Battelle, 2000). Survey measurements are those 1-meter above the ground surface. The calculated mean background exposure rate and the 95 percent confidence intervals used for the CCP open area grounds is 8 ± 2 μR/hr. Compliance to the limit is met when the exposure rate survey is less then or equal to the limits of DD-97-02, Rev. 0. Initial compliance screening is met if individual exposure rates are less than or equal to 13 μR/hr. Further assessment of compliance allows for exposure rates to be averaged over a 100 m^2 gird area to meet the limit of less than or equal to 5 μR/hr above background at 1-meter above the ground surface. Additionally, exposure rates over any discreet area may not exceed 5 μR/hr above background.

Data collected from trench-like culverts located on Battelle property unassociated with site operations indicate a geometry effect, increasing the background exposure rates inside the trenches by 3 to 5 μR/hr. Trench exposure rate measurements must be less than or equal to 18 μR/hr. The same compliance assessment is applied to these measurements as stated above.

5.0 Equipment and Procedures

5.1 Equipment

Survey instruments sensitive to gamma radiation are used to monitor the grounds for residual radioactive materials. Ludlum Model 44-10 two-inch by two-inch sodium iodide detectors with Eberline ESP-2 meters were used to scan the grounds. Ludlum Model 19 exposure rate meters were used to obtain μR/hr measurements.

Other instrumentation was used in the Onsite Radioanalytical Laboratory (RAL) to support of the final status survey includes:

- A VMS based Canberra Procount data acquisition system in conjunction with high purity germanium detectors for gamma spectroscopy of soil samples.
- A Tennelec Model LB5100 Simultaneous Alpha and Beta Gas Proportional Counter to count smear samples

5.2 Scanning Minimum Detectable Activities

Scanning minimum detectable concentration (MDC_{scan}) is determined to demonstrate that the MDC_{scan} is less than the modified Cs-137 cleanup criteria. The MDC_{scan} is calculated utilizing the methodology described in NUREG-1507 and the background count rate and a default detector response to Cs-137 (NRC, 1998). The equation used during the walkover surveys of the CCP incorporates a d' of 1.38 and a surveyor efficiency of 0.5. The ambient background in the area was 11,000 counts per minute (cpm). The following is the calculation of the MDC_{scan}:

b_i = (11,000 cpm) x (1 sec) x (1 min/60 sec) = 183 counts

MDCR = (1.38) x ($\sqrt{183 counts}$) x (60 sec/1min) = 1120 cpm

$MDCR_{surveyor}$ = 1120 cpm/ $\sqrt{0.5}$ = 1584 cpm

MDER = 1584 cpm/(900 cpm/μR/hr) = 1.76 μR/hr

$$MDC_{scan} = (5pCi/g) * \frac{1.76\mu R/hr}{1.307\mu R/hr} = 6.73pCi/g$$

5.3 Procedures

The Characterization Team was formally trained and qualified to applicable procedures prior to the initiation of the characterization and final status surveys. Documentation of training is maintained by CCP Project Records.

The following plans and procedures were utilized for the surveys:

DD-93-19, Rev. 5	Decommissioning Plan, Battelle Memorial Institute Columbus Operations
DD-97-02, Rev. 0	Radiological Characterization and Final Status Plan for BCLDP West Jefferson Site
SC-OP-004, Rev. 0	Radioactive Contamination Monitoring Requirements for Facility Surface Characterization
SC-SP-004.2, Rev. 3	Manual and Mechanical Collection of Surface and Subsurface Soil Samples in Support of Site Characterization

6.0 Survey Findings

6.1 Exposure Rate Surveys

The calculated mean background exposure rate and the 95 percent confidence intervals used for the CCP grounds are 8 ± 2 μR/hr. The exposure rate readings for the six unaffected areas are presented in the appropriate Tables. The exposure rate readings were individually compared to the mean background value of 8 ± 2 μR/hr in order to show compliance with the 5 μR /hr above background release criterion (grounds exposure rate surveys must be less than or equal to13 μR/hr to be compliant). The average one meter measurement was 8μR/hr, the minimum measurement was 4μR/hr and the maximum measurement was 13μR/hr. **Tables 3 through 8** present the exposure rate results for each area.

6.2 Grounds and Excavation Sampling

Soil samples of the six unaffected areas were taken at a minimum of six (6) locations distributed through each area in compliance with Section 6.4.3 of DD-97-02, Rev. 0. **Tables 3 through 8** present the sample results for each area. Additionally, biased samples were collected in the soil areas of the outfalls and manhole **Table 5**. These biased soil data were incorporated into the analysis of the O/S WJN Perimeter Fence area.

Compliance to the cleanup criteria presented in **Table 1** is demonstrated through a "fraction of limit" as discussed in Section 4.2.1 of this report. Due to the low concentrations of Cs-137 present in the samples, a "fraction of limit" calculation was not performed for the unaffected area sample results.

Statistical analyses were performed on the sample data in accordance with Section 6.4.3 of DD-97-02, Rev. 0. The statistical analysis utilizes the guidance in Section 8.5 of NUREG/CR-5849 which utilizes the comparison of the μ_a value (EPA 1989) to relate to a given limit value (C_G) at a desired confidence level (i.e., 95 percent) for demonstrating release. The calculation of the Cs-137 comparison value was less than the modified cleanup criteria of 7.3 pCi/g for each area. The comparison value calculation for each area is presented as **Tables 9 through 14**.

The following is a summary table of the results of soil sampling for Cs-137 for the six unaffected areas:

Location	Number of Samples	Average (pCi/g)	Standard Deviation (pCi/g)	Range (pCi/g)	Comparison Value (pCi/g)	Modified Screening Criteria (pCi/g)
SR 142 Access Road	40	0.0593	0.08	-0.0142 to 0.291	0.08	7.3
SW of JN-10	16	0.121	0.08	0.0335 to 0.245	0.16	7.3
O/S WJN Perimeter Fence	83	0.147	0.15	0.00564 to 1.01	0.17	7.3
FB Access Rd	27	0.043	0.06	0.012 to 0.030	0.06	7.3
North O/S FB Fence	19	0.186	0.08	0.0989 to 0.367	0.22	7.3
South O/S FB Fence	24	0.144	0.06	0.011 to 0.269	0.17	7.3

6.3 Measurements

Scanning measurements were performed with a two inch by two inch sodium iodide detector in accordance with in accordance with NUREG/CR-5849. Section 4.2.3. DD-97-02 (Battelle, 2000), Section 6.4.2 as well as SC-OP-004, Rev. 0, Section 5.5. Measurements collected covered a minimum of 10 percent of the outside ground areas.

The decision level value (DLV) for the scanning of open grounds and trenches is set at 18,374 cpm for final status surveys at the CCP. The DLV is the mean background plus the MDA of the scanning instruments. Scanning surveys of an area that exceed the DLV require additional radiological measurements. DD-97-02 requires that soil samples be collected at each location where the DLV is exceeded (Battelle, 2000).

Scanning measurements of the six unaffected areas were less than the DLV of 18,374 cpm for open ground surfaces. **Tables 3 through 8** present the scanning surveys performed of the six unaffected areas.

7.0 Conclusions

Reported analytical results for media samples obtained from the grounds are below the residual radioactivity concentrations for soil and solid volumes as presented in **Table 1**. The final status survey results demonstrate that the radiological endpoint criteria objectives of the NRC-approved Decommissioning Plan have been met for the six unaffected areas addressed by this report.

8.0 References

Battelle, 2003a. "Decommissioning Plan for the Battelle Memorial Institute Columbus Operations," DD-93-19.

Battelle, 2003b. Waste Characterization, Classification, and Shipping Support Technical Basis Document, Rev. 5 for BCLDP West Jefferson Facility, November 2003. Isotopic mixture for Pu-241 is calculated using the values obtained from the ORIGEN2.1-derived data values presented in the technical basis document.

Battelle, 2000. "Radiological Characterization and Final Status Survey Plan for Battelle Columbus Laboratory Decommissioning Project West Jefferson Site," DD-97-02.

Battelle, 1993. "Volumetric Release Criteria Technical Basis Document for Battelle Columbus Laboratories Decommissioning Project," DD-93-03.

U.S. Department of Energy (DOE), 1990. Finding of No Significant Impact. Decontamination and Decommissioning of the Battelle Columbus Laboratories in Columbus and West Jefferson, Ohio.

U.S. Department of Energy (DOE), 1986. May 29, 1986 memorandum, Voight to Vaughan, approved by Vaughan, June 10, 1986.

U.S. Nuclear Regulatory Commission (NRC), 1998. "Minimum Detectable Concentrations With Typical Radiation Survey Instruments for Various Contaminants and Field Conditions" NUREG-1507.

Oak Ridge Associated Universities (ORAU), 1992. "Manual for Conducting Radiological Surveys in Support of License Termination, Draft Report for Comment" NUREG/CR-5849, ORAU-92/C57, prepared for the Nuclear Regulatory Commission by the Environmental Survey and Assessment Program, Energy/Environmental Systems Division, ORAU, 1992

Figures

Figure 1
Site Map

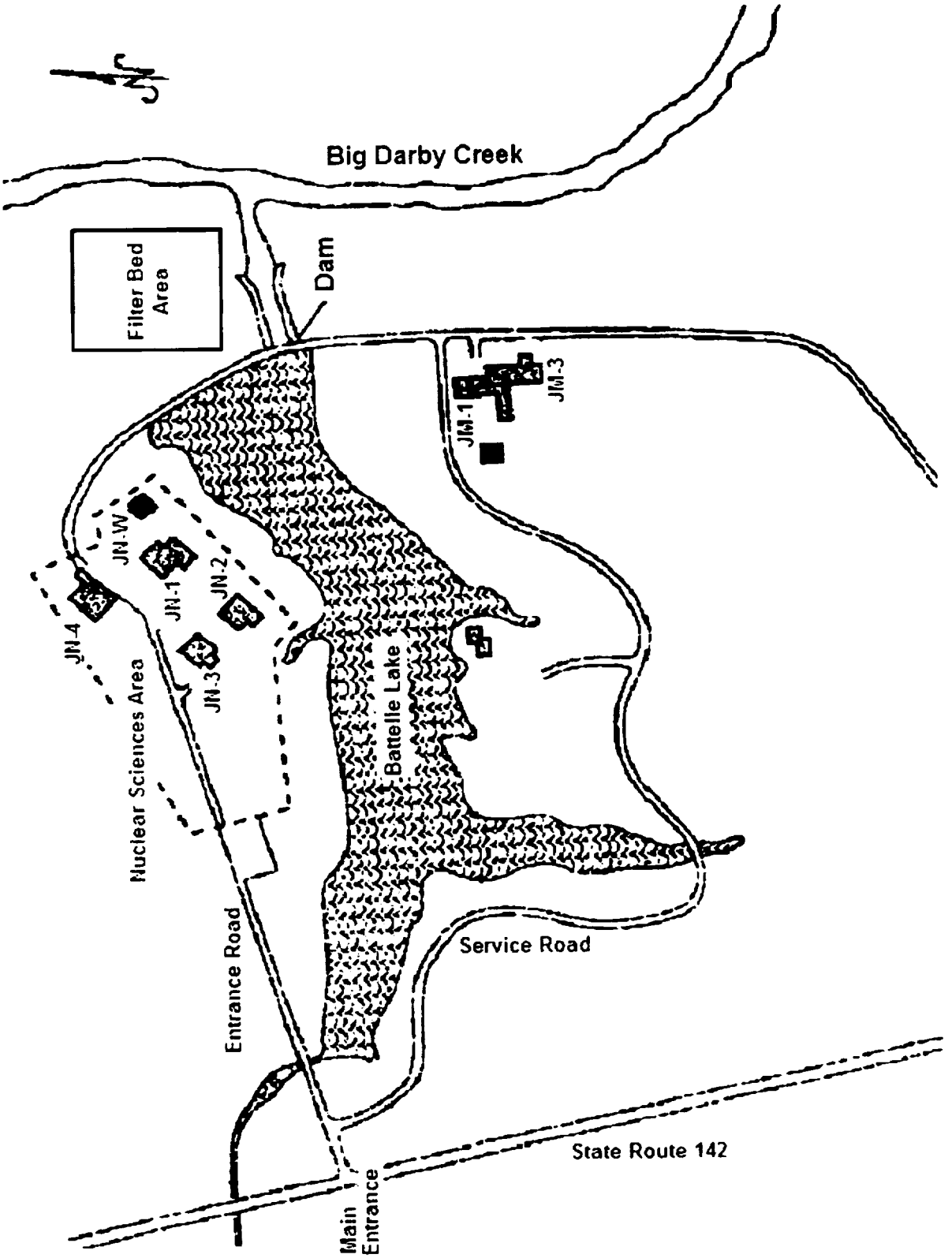

Figure 2
Area Designations

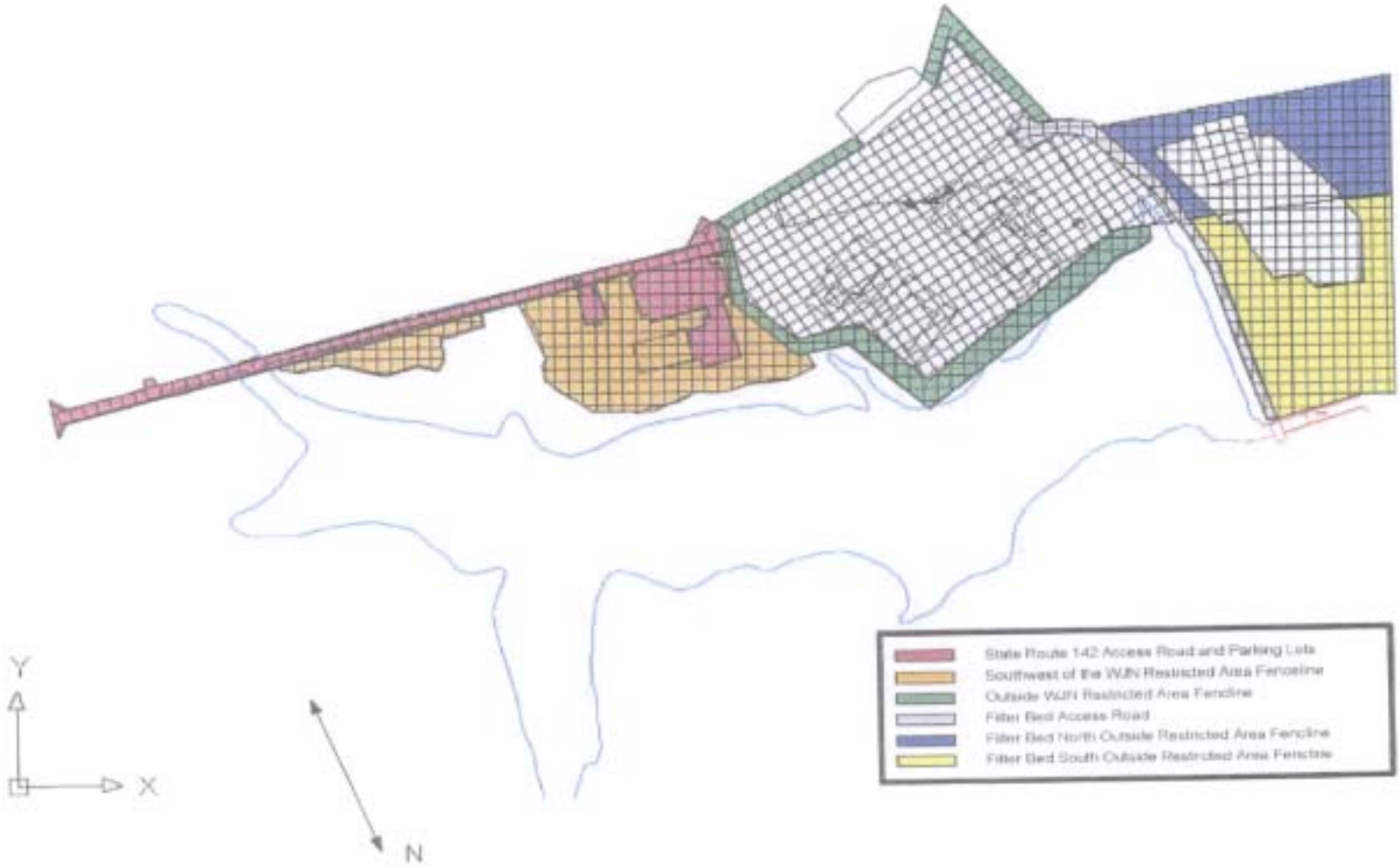

Figure 3

State Route 142 Access Road and Parking Lots

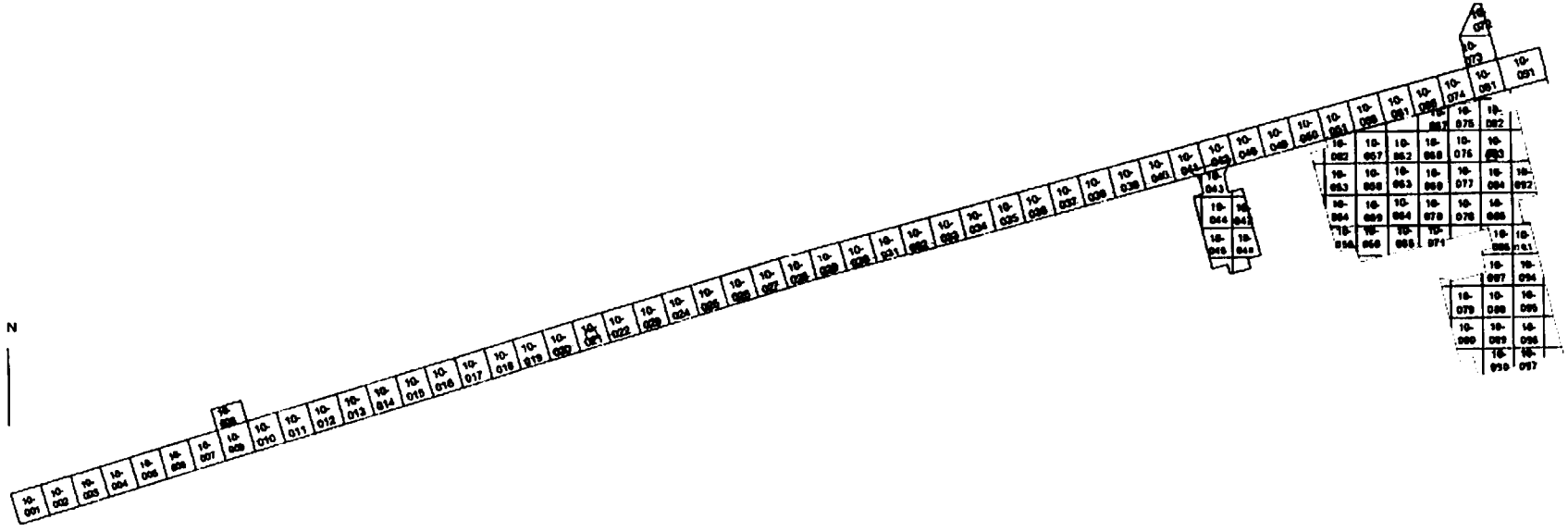

Figure 4

Southwest of the West Jefferson North Restricted Area Fence Line

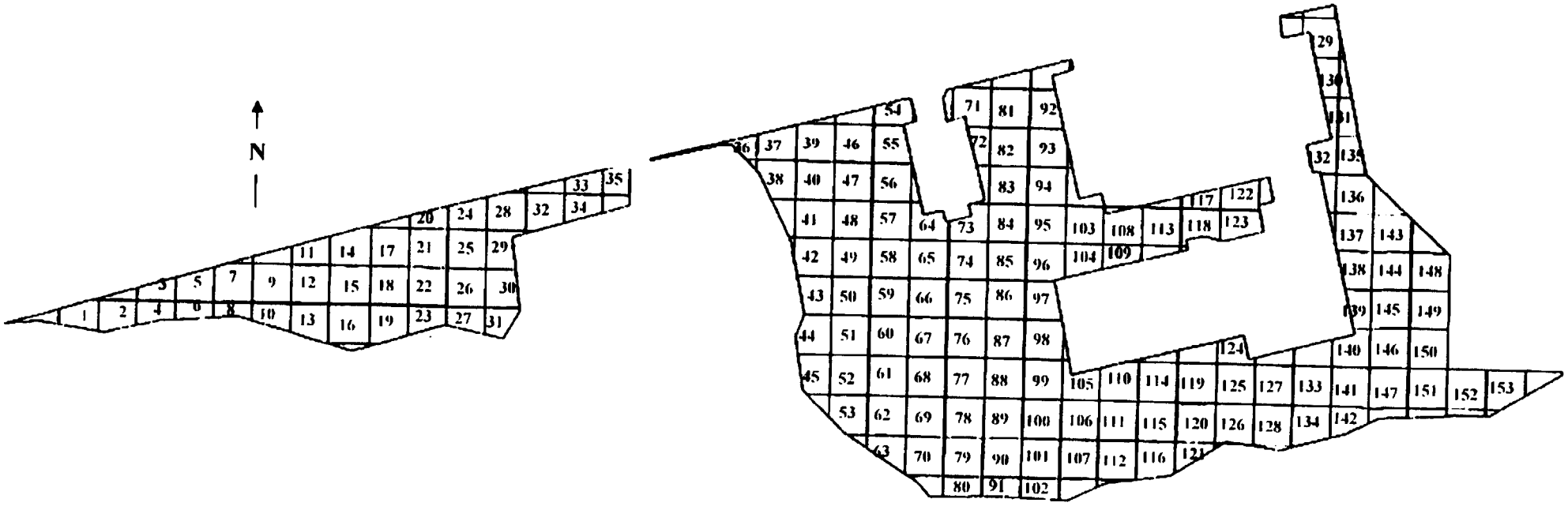

Figure 5

Southwest of the West Jefferson North Perimeter Fence Line

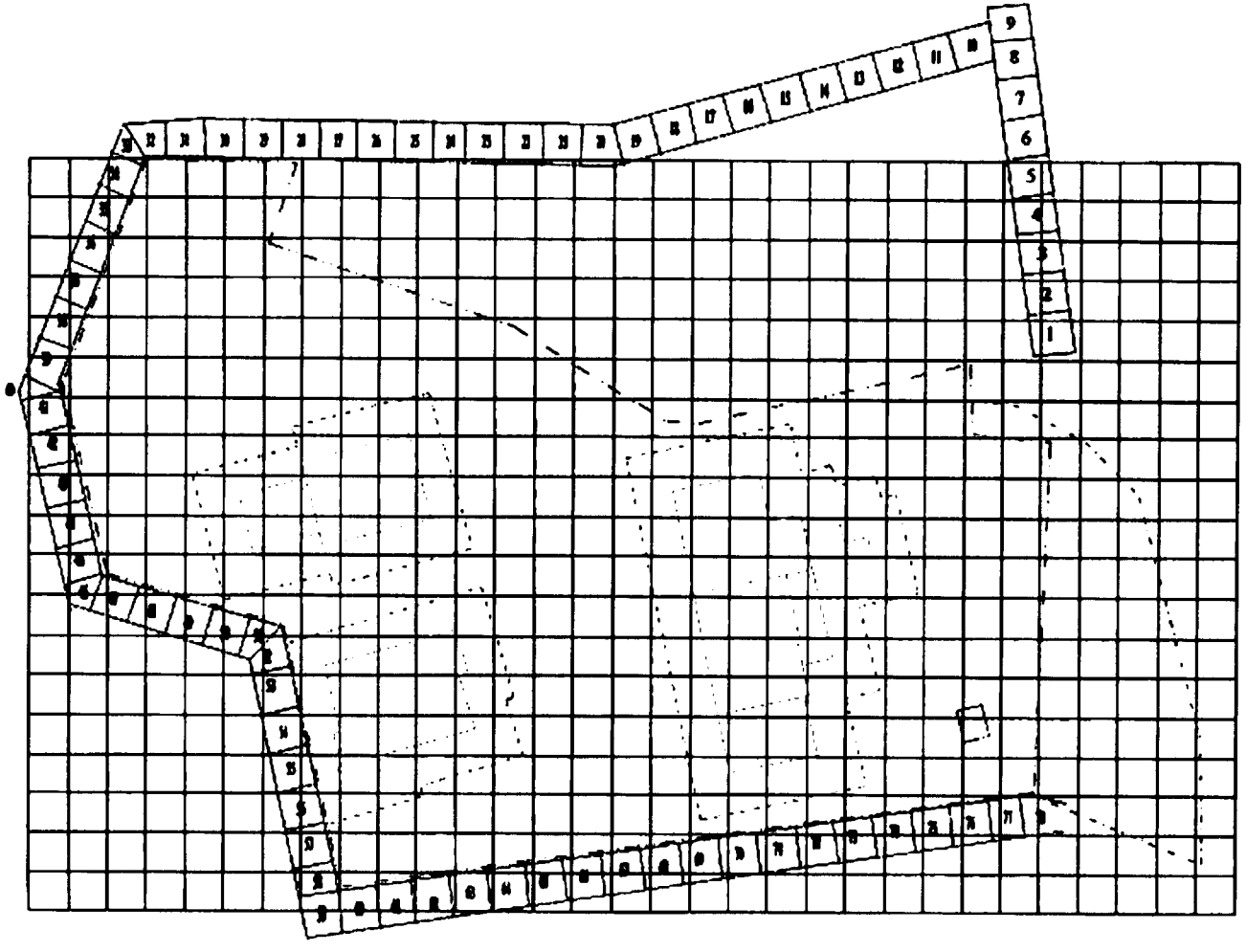

Figure 6

Filter Bed Access Road

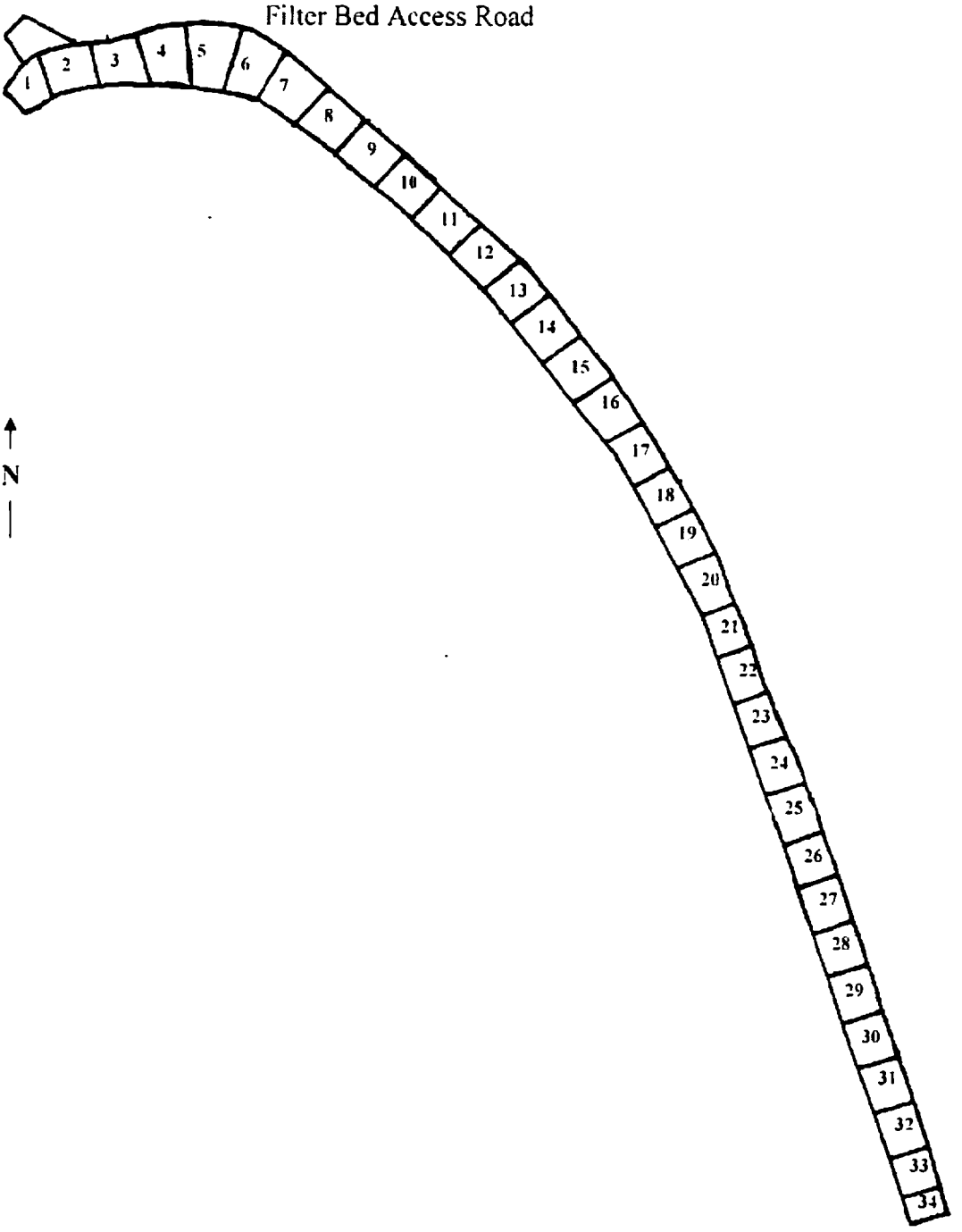

Figure 7

Filter Bed North Outside the Restricted Area Fence Line

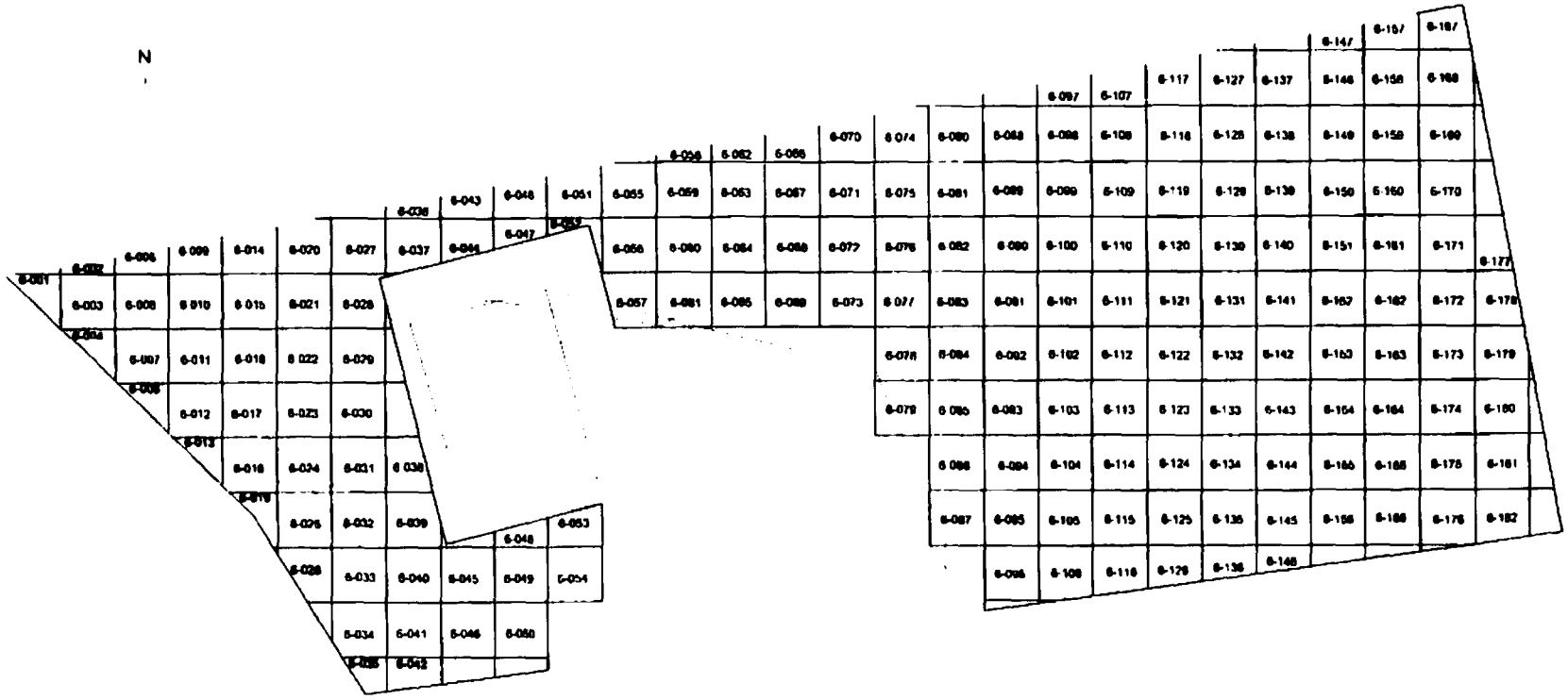

Figure 8

Filter Bed South Outside the Restricted Area Fence Line

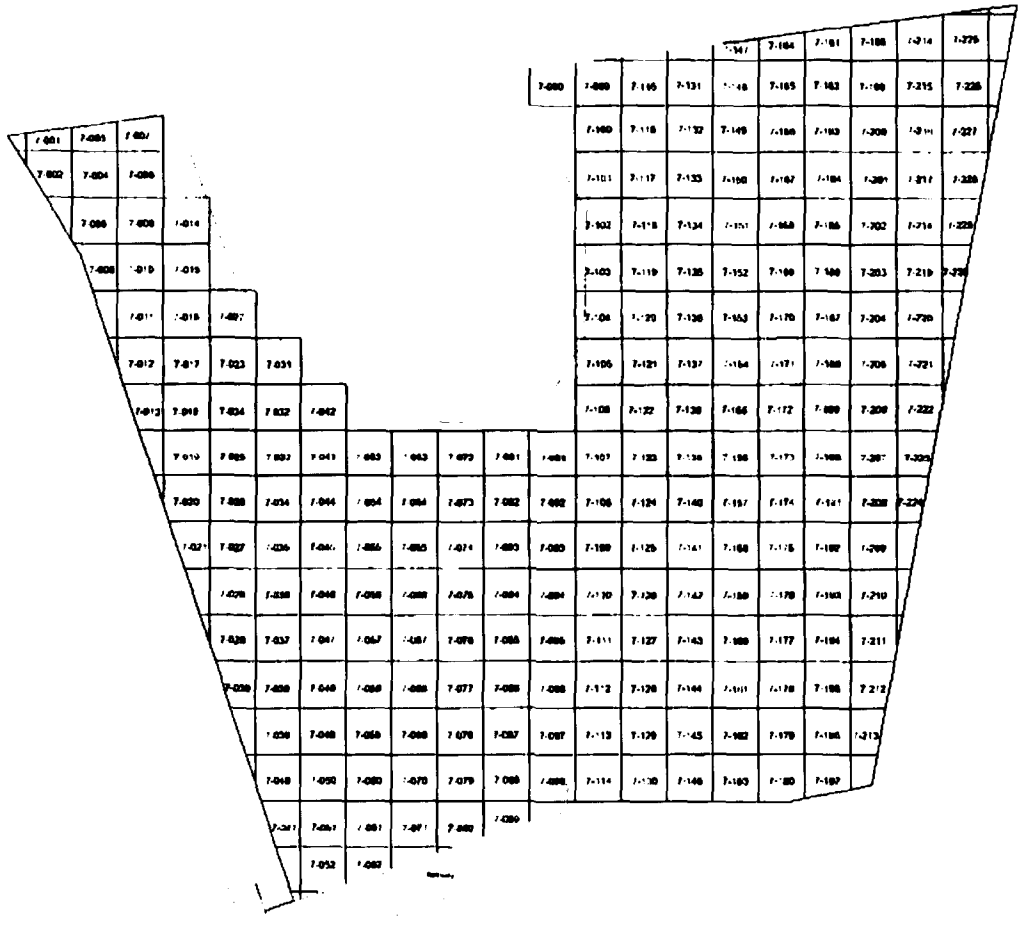

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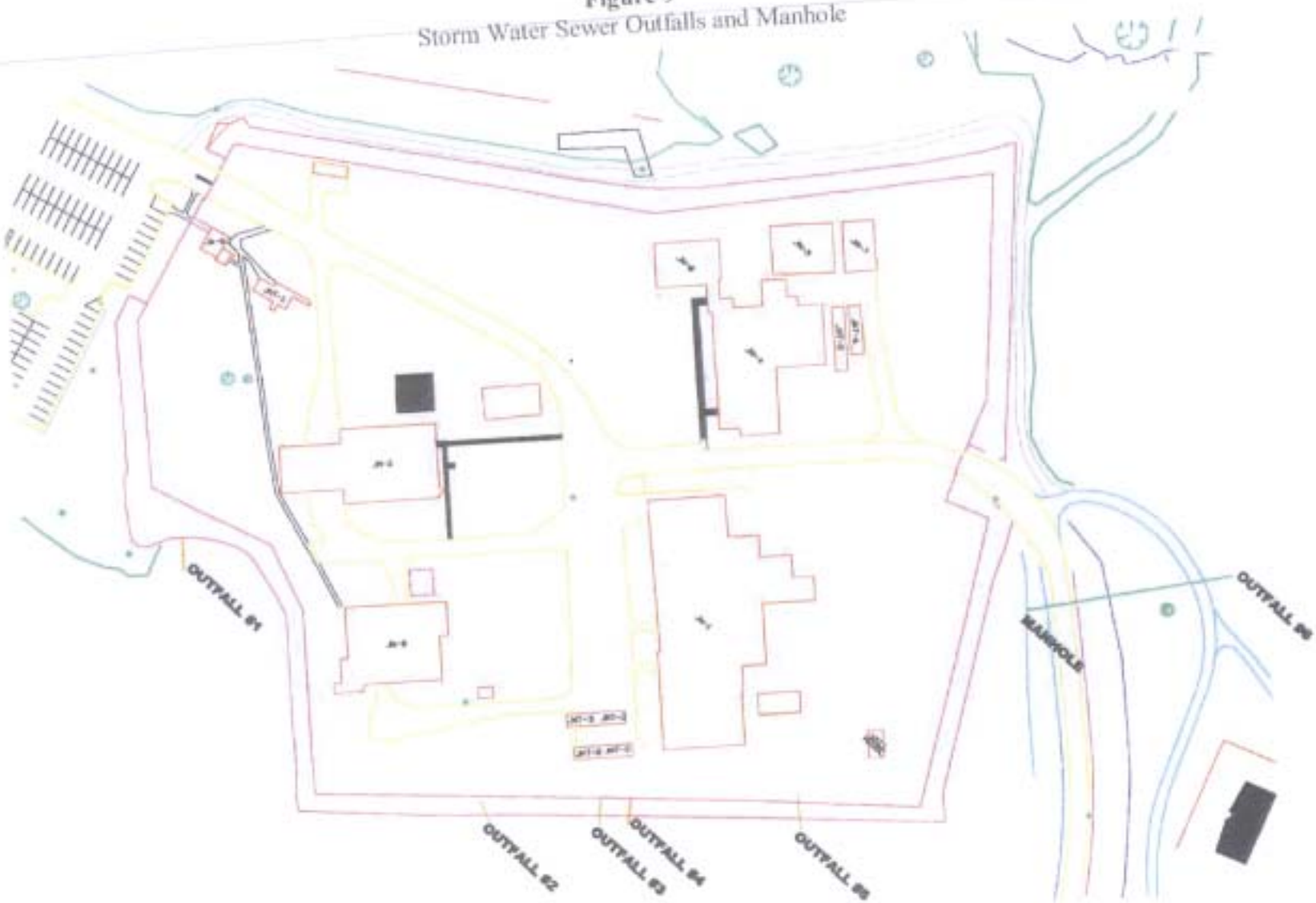
Figure 9
Storm Water Sewer Outfalls and Manhole



Tables

Table 1

BCLDP Guidelines for Residual Radioactivity Concentrations for Soil and Solid Volumes

Radionuclide[a]	King Avenue Concentration (pCi/g)[b]	West Jefferson Concentration (pCi/g)[b]
Natural Uranium	10[1]	na[c]
Enriched Uranium	30[1]	30[1]
Depleted Uranium	35[1]	35[1]
Ac-227	19	19
Am-241	Na[c]	30
Am-243	na	30
Ce-144	na	2,100
Cm-243	na	0.79
Cm-244	na	1.0
Co-60	8[2]	8[2]
Cs-134	na	33
Cs-137	15[2]	15[2]
C-14	940	940
Eu-152	na	36
Eu-154	na	32
Eu-155	na	1,800
Fe-55	na	
H-3[d]	41,000	38,000
I-129	na	13
Mn-54	na	61
Ni-59	na	1.3E+07
Ni-63	na	4.9E+06
Np-237	na	0.58
Pa-231	18	18
Pb-210	140	na
Pu-238	na	25
Pu-239	na	25
Pu-240	na	25
Pu-241	na	25
Pu-242	na	25
Ra-226 (0-15 cm of soil)	5[2,3]	na
Ra-226 (>15 cm of soil)	15[2,3]	na

Radionuclide[a]	King Avenue Concentration (pCi/g)[b]	West Jefferson Concentration (pCi/g)[b]
Ra-228	5[2,3]	na
Ru-106	na	180
Sb-125	na	118
Sm-151	na	6.700
Sr-90	5[2]	5[2]
Th-228	29	na
Th-230	5[3]	na
Th-232	5[3]	na

Table 1 Notes and References

Notes:

a. Activity concentrations above natural background concentrations. Where more than one radionuclide is present, the sum of the ratios of the individual radionuclide concentrations to their respective concentration limits shall not exceed 1.

b. Concentrations for which no specific reference is cited have been derived from RESRAD calculations and are the more restrictive values calculated for soil deposition at a depth of 5 meters.

c. Indicates that this radionuclide is not expected to be found at the indicated site.

d. Difference in tritium activity concentrations are due to the difference in depths of the water tables at two sites. The water table depth at King Avenue is deeper than that at West Jefferson.

References:

1. Options 1 and 2 of the Branch Technical Position, "Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations" (46 FR 52061, October 23, 1981).

2. NRC Memorandum, "Acceptable Cleanup Criteria and Practices for Decontamination and Decommissioning (License No. SNM-7)" dated April 17, 1992, to Harley L. Toy, License Coordinator and Manager, Nuclear Sciences, Battelle Memorial Institute from J.W.N. Hickey, Chief, Fuel Cycle Safety Branch, Division of Industrial and Medical Nuclear Safety, Office of Nuclear Material Safety and Safeguards.

3. DOE Order 5400.5, "Radiation Protection of the Public and the Environment".

Table 2

Cesium-137 Surrogate Analysis Data and Modified Cs-137 Screening Criteria

Sample #	pCi/g Cs-137	Fraction Cs-137 Lim	pCi/g Co-60	Fraction Co-60 Lim	pCi/g Eu-152	Fraction Eu-152 Lim	pCi/g Eu-154	Fraction Eu-154 Lim	pCi/g Am-241	Fraction Am-241 Lim	pCi/g Sr-90	Fraction Sr-90 Lim	pCi/g Pu-238	Fraction Pu-238 Lim	pCi/g Pu-239	Fraction Pu-239 Lim
RL05-2744	10.50	0.70	0.20	0.03	0.07	0.00	0.06	0.00	0.27	0.01	2.29	0.46	0.10	0.00	0.05	0.00
RL05-2745	16.30	1.09	0.46	0.06	0.07	0.00	0.09	0.00	-0.20	-0.01	1.97	0.39	0.20	0.01	0.17	0.01
RL05-2746	5.52	0.37	0.19	0.02	0.05	0.00	0.03	0.00	0.30	0.01	0.83	0.17	0.12	0.00	0.05	0.00
RL05-2747	6.43	0.43	0.20	0.03	0.10	0.00	0.03	0.00	-0.08	0.00	1.11	0.22	0.05	0.00	0.01	0.00
RL05-2748	18.30	1.22	0.56	0.07	0.14	0.00	0.07	0.00	0.36	0.01	1.34	0.27	0.14	0.01	0.08	0.00
RL05-2750	18.40	1.23	1.30	0.16	0.11	0.00	0.10	0.00	0.09	0.00	10.90	2.18	0.80	0.03	0.38	0.02
RL05-2751	12.90	0.86	0.40	0.05	0.07	0.00	0.03	0.00	-0.10	0.00	1.73	0.35	0.14	0.01	0.09	0.00
RL05-3012	16.10	1.07	0.19	0.02	0.15	0.00	0.09	0.00	-0.04	0.00	9.13	1.83	1.06	0.04	0.32	0.01
RL05-3014	4.40	0.29	0.01	0.00	0.05	0.00	0.04	0.00	-0.19	-0.01	0.91	0.18	0.05	0.00	0.01	0.00
RL05-3015	25.60	1.71	0.70	0.09	0.22	0.01	0.17	0.01	0.42	0.01	13.30	2.66	0.77	0.03	0.32	0.01
RL05-3017	15.70	1.05	0.38	0.05	0.04	0.00	0.02	0.00	-0.33	-0.01	8.15	1.63	0.62	0.02	0.33	0.01
RL05-3294	15.80	1.05	0.45	0.06	0.02	0.00	0.04	0.00	0.28	0.01	2.34	0.47	0.05	0.00	0.08	0.00
RL05-3296	8.10	0.54	0.27	0.03	-0.04	0.00	0.01	0.00	-0.28	-0.01	2.81	0.56	0.03	0.00	0.10	0.00
RL05-3297	43.20	2.88	0.75	0.09	-0.01	0.00	0.09	0.00	0.05	0.00	3.10	0.62	0.08	0.00	0.12	0.00
RL05-3300	19.50	1.30	0.49	0.06	0.03	0.00	0.04	0.00	-0.06	0.00	2.87	0.57	0.07	0.00	0.24	0.01
RL05-4049	19.50	1.30	0.26	0.03	0.11	0.00	0.11	0.00	0.36	0.01	1.22	0.24	0.98	0.04	0.31	0.01
RL05-4084	13.90	0.93	0.58	0.07	0.08	0.00	0.09	0.00	0.28	0.01	2.79	0.56	0.17	0.01	0.13	0.01
RL05-4085	19.90	1.33	0.30	0.04	0.09	0.00	0.11	0.00	0.47	0.02	5.37	1.07	0.36	0.01	0.12	0.00
RL05-4100	7.47	0.50	0.15	0.02	0.05	0.00	0.10	0.00	0.38	0.01	1.44	0.29	0.22	0.01	0.52	0.02
RL05-4101	7.05	0.47	0.04	0.00	-0.10	0.00	0.04	0.00	-0.01	0.00	0.56	0.11	0.54	0.02	0.93	0.04
RL05-4153	7.15	0.48	0.09	0.01	-0.02	0.00	-0.04	0.00	-0.03	0.00	2.24	0.45	0.13	0.01	0.53	0.02
RL05-4158	12.80	0.85	0.45	0.06	0.08	0.00	0.02	0.00	0.17	0.01	10.50	2.10	0.55	0.02	0.28	0.01
RL05-4159	7.56	0.50	0.24	0.03	0.02	0.00	-0.02	0.00	0.19	0.01	10.30	2.06	0.80	0.03	0.23	0.01
RL05-4161	11.00	0.73	0.25	0.03	0.08	0.00	0.08	0.00	0.07	0.00	9.45	1.89	0.77	0.03	0.24	0.01
RL05-4162	19.50	1.30	0.25	0.03	0.10	0.00	0.05	0.00	0.18	0.01	5.28	1.06	0.31	0.01	0.15	0.01
Average	14.50	0.97	0.37	0.05	0.06	0.00	0.06	0.00	0.10	0.00	4.48	0.90	0.36	0.01	0.23	0.01

Limits		X_L Cs-137 Ratios	
Cs-137	15 pCi/g		
Co-60	8 pCi/g	Cs/Co-60	35.7
Eu-152	36 pCi/g	Cs/Eu-152	76.1
Eu-154	32 pCi/g	Cs/Eu-154	225.1
Am-241	30 pCi/g	CsAm-241	78.9
Sr-90	5 pCi/g	Cs/Sr-90	4.1
Pu-238	25 pCi/g	Cs/Pu-238	57.5
Pu-239	25 pCi/g	Cs/Pu-239	83.1
Pu-241	25 pCi/g	*Cs/Pu-241	2.8

	Activity (pCi/g) = Cs-137/Ratio	Limits (pCi/g)	Fraction
Cs-137	7.30	15	0.487
Co-60	0.20	8	0.026
Eu-152	0.10	36	0.003
Eu-154	0.03	32	0.001
Am-241	0.09	30	0.003
Sr-90	1.78	5	0.356
Pu-238	0.13	25	0.005
Pu-239	0.09	25	0.004
Pu-241	2.61	25	0.104
		Sum	0.99

Table 3

State Route 142 Access Road and Parking Lots Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (Results in cpm)	Dose Rates (Results in µR/hr)	Cs-137 Content (Results in pCi/g)
10-005	RL05-3969-3815	11/5/2005	12700	4	4.793E-02
*10-005 S	RL05-3989-3835	11/5/2005	12700	4	1.640E-01
10-011	RL05-3970-3816	11/5/2005	12500	5	4.205E-03
*10-011 S	RL05-3990-3836	11/5/2005	12500	5	2.550E-01
10-016	RL05-3971-3817	11/5/2005	11300	4	6.512E-03
*10-016 S	RL05-3991-3837	11/5/2005	11300	4	2.290E-02
10-026	RL05-3973-3819	11/5/2005	12300	6	1.437E-03
*10-026 S	RL05-3993-3839	11/5/2005	12300	6	1.800E-01
10-031	RL05-3974-3820	11/5/2005	12600	6	1.086E-02
*10-031 S	RL05-3994-3840	11/5/2005	12600	6	2.160E-01
10-036	RL05-3975-3821	11/5/2005	14200	5	7.335E-03
*10-036 S	RL05-3995-3841	11/5/2005	14200	5	1.300E-01
10-041	RL05-3976-3822	11/5/2005	11900	6	2.450E-01
*10-041 N	RL05-3996-3842	11/5/2005	11900	6	3.034E-03
10-044	RL05-3987-3833	11/5/2005	9000	5	1.355E-02
*10-045 W	RL05-3999-3845	11/5/2005	10300	7	1.750E-01
10-045	RL05-3988-3834	11/5/2005	7850	5	1.948E-03
*10-047 E	RL05-4000-3846	11/5/2005	10100	7	2.910E-01
*10-049 S	RL05-4001-3847	11/5/2005	10900	7	1.350E-01
10-051	RL05-3977-3823	11/5/2005	8140	5	8.807E-03
*10-051 N	RL05-3997-3843	11/5/2005	8140	5	1.270E-01
*10-055 W	RL05-4002-3848	11/5/2005	11200	6	1.140E-01
10-057	RL05-3981-3827	11/5/2005	7400	4	6.949E-03
10-059	RL05-3986-3832	11/5/2005	7900	5	1.019E-02
10-063	RL05-3982-3828	11/5/2005	9000	5	5.131E-03
*10-065 S	RL05-4003-3849	11/5/2005	11200	6	2.140E-03
10-068	RL05-3980-3826	11/5/2005	7530	5	5.296E-03
10-070	RL05-3985-3831	11/5/2005	7800	5	1.148E-02
*10-073 N	RL05-3998-3844	11/5/2005	8180	4	5.099E-02
10-077	RL05-3983-3829	11/5/2005	7380	4	7.893E-03
*10-079 N	RL05-4004-3850	11/5/2005	9050	6	2.458E-02
10-081	RL05-3978-3824	11/5/2005	8180	4	1.173E-03

Table 3

State Route 142 Access Road and Parking Lots Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (Results in cpm)	Dose Rates (Results in μR/hr)	Cs-137 Content (Results in pCi/g)
10-083	RL05-3979-3825	11/5/2005	7740	4	2.089E-02
*10-083 E	RL05-4007-3853	11/5/2005	10500	6	2.447E-02
10-085	RL05-3984-3830	11/5/2005	7940	4	3.634E-03
*10-085 E	RL05-4005-3851	11/5/2005	10700	6	5.050E-02
10-088	RL05-4293-4004	11/21/2005	6120	7	-1.330E-02
*10-091 S	RL05-4008-3854	11/5/2005	11400	7	1.137E-02
*10-092 E	RL05-4006-3852	11/5/2005	11500	7	1.640E-03
10-096	RL05-4294-4005	11/21/2005	5880	7	-1.420E-02

Table 4

Southwest of the West Jefferson North Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Contents (pCi/g)
4-001	N/A	7/28/2005	N/A	11	N/A
4-002	N/A	7/28/2005	N/A	12	N/A
4-003	N/A	7/28/2005	N/A	12	N/A
4-004	N/A	7/28/2005	N/A	12	N/A
4-005	N/A	7/28/2005	N/A	13	N/A
4-006	N/A	7/28/2005	N/A	12	N/A
4-007	RL05-2564-2821	7/13/2005	13500	13	1.03E-01
4-008	N/A	7/28/2005	N/A	13	N/A
4-009	N/A	7/28/2005	N/A	13	N/A
4-010	N/A	7/28/2005	N/A	13	N/A
4-011	N/A	7/28/2005	N/A	13	N/A
4-012	N/A	7/28/2005	N/A	13	N/A
4-013	N/A	7/28/2005	N/A	13	N/A
4-014	N/A	7/28/2005	N/A	13	N/A
4-015	N/A	7/28/2005	N/A	13	N/A
4-016	N/A	7/28/2005	N/A	13	N/A
4-017	N/A	7/28/2005	N/A	12	N/A
4-018	N/A	7/28/2005	N/A	10	N/A
4-019	N/A	7/28/2005	N/A	10	N/A
4-020	N/A	7/28/2005	N/A	9	N/A
4-021	N/A	7/28/2005	N/A	10	N/A
4-022	N/A	7/28/2005	N/A	11	N/A
4-023	N/A	7/28/2005	N/A	12	N/A
4-024	N/A	7/28/2005	N/A	12	N/A
4-025	N/A	7/28/2005	N/A	12	N/A
4-026	RL05-2565-2822	7/13/2005	15000	11	1.86E-01
4-027	N/A	7/28/2005	N/A	11	N/A
4-028	N/A	7/28/2005	N/A	11	N/A
4-029	N/A	7/28/2005	N/A	12	N/A
4-030	N/A	7/28/2005	N/A	11	N/A
4-031	N/A	7/28/2005	N/A	11	N/A
4-032	N/A	7/28/2005	N/A	12	N/A

Table 4

Southwest of the West Jefferson North Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (μR/hr)	Cs-137 Contents (pCi/g)
4-033	N/A	7/28/2005	N/A	11	N/A
4-034	N/A	7/28/2005	N/A	12	N/A
4-035	N/A	7/28/2005	N/A	11	N/A
4-036	N/A	7/28/2005	N/A	11	N/A
4-037	N/A	7/28/2005	N/A	11	N/A
4-038	N/A	7/28/2005	N/A	12	N/A
4-039	N/A	7/28/2005	N/A	11	N/A
4-040	RL05-2566-2823	7/13/2005	16000	11	1.93E-01
4-041	N/A	7/28/2005	N/A	12	N/A
4-042	N/A	7/28/2005	N/A	11	N/A
4-043	N/A	7/28/2005	N/A	11	N/A
4-044	RL05-2567-2824	7/13/2005	14900	11	2.36E-01
4-045	N/A	7/28/2005	N/A	10	N/A
4-046	N/A	7/28/2005	N/A	11	N/A
4-047	N/A	7/28/2005	N/A	12	N/A
4-048	N/A	7/28/2005	N/A	12	N/A
4-049	N/A	7/28/2005	N/A	12	N/A
4-050	N/A	7/28/2005	N/A	11	N/A
4-051	N/A	7/28/2005	N/A	10	N/A
4-052	N/A	7/28/2005	N/A	10	N/A
4-053	N/A	7/28/2005	N/A	9	N/A
4-054	N/A	7/28/2005	N/A	11	N/A
4-055	N/A	7/28/2005	N/A	11	N/A
4-056	N/A	7/28/2005	N/A	11	N/A
4-057	N/A	7/28/2005	N/A	11	N/A
4-058	N/A	7/28/2005	N/A	11	N/A
4-059	N/A	7/28/2005	N/A	9	N/A
4-060	N/A	7/28/2005	N/A	10	N/A
4-061	N/A	7/28/2005	N/A	9	N/A
4-062	N/A	7/28/2005	N/A	9	N/A
4-063	N/A	7/28/2005	N/A	8	N/A
4-064	N/A	7/28/2005	N/A	10	N/A

Table 4

Southwest of the West Jefferson North Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Contents (pCi/g)
4-065	N/A	7/28/2005	N/A	10	N/A
4-066	N/A	7/28/2005	N/A	10	N/A
4-067	N/A	7/28/2005	N/A	10	N/A
4-068	N/A	7/28/2005	N/A	10	N/A
4-069	N/A	7/28/2005	N/A	9	N/A
4-070	RL05-2568-2825	7/13/2005	13000	9	1.68E-01
4-071	N/A	7/28/2005	N/A	10	N/A
4-072	N/A	7/28/2005	N/A	10	N/A
4-073	N/A	7/28/2005	N/A	10	N/A
4-074	N/A	7/28/2005	N/A	10	N/A
4-075	N/A	7/28/2005	N/A	10	N/A
4-076	N/A	7/28/2005	N/A	10	N/A
4-077	N/A	7/28/2005	N/A	10	N/A
4-078	N/A	7/28/2005	N/A	10	N/A
4-079	N/A	7/28/2005	N/A	10	N/A
4-080	N/A	7/28/2005	N/A	10	N/A
4-081	RL05-2569-2826	7/13/2005	14200	10	2.45E-01
4-082	N/A	7/28/2005	N/A	10	N/A
4-083	N/A	7/28/2005	N/A	8	N/A
4-084	N/A	7/28/2005	N/A	9	N/A
4-085	N/A	7/28/2005	N/A	11	N/A
4-086	RL05-2570-2827	7/13/2005	15600	10	5.92E-02
4-087	N/A	7/28/2005	N/A	10	N/A
4-088	N/A	7/28/2005	N/A	10	N/A
4-089	N/A	7/28/2005	N/A	11	N/A
4-090	N/A	7/28/2005	N/A	11	N/A
4-091	N/A	7/28/2005	N/A	10	N/A
4-092	N/A	7/28/2005	N/A	8	N/A
4-093	N/A	7/28/2005	N/A	7	N/A
4-094	N/A	7/28/2005	N/A	8	N/A
4-095	N/A	7/28/2005	N/A	8	N/A
4-096	N/A	7/28/2005	N/A	8	N/A

Table 4

Southwest of the West Jefferson North Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Contents (pCi/g)
4-097	N/A	7/28/2005	N/A	9	N/A
4-098	N/A	7/28/2005	N/A	9	N/A
4-099	N/A	7/28/2005	N/A	8	N/A
4-100	N/A	7/28/2005	N/A	8	N/A
4-101	N/A	7/28/2005	N/A	8	N/A
4-102	N/A	7/28/2005	N/A	8	N/A
4-103	N/A	7/28/2005	N/A	7	N/A
4-104	RL05-3571-3505	10/18/2005	N/A	7	3.35E-02
4-105	RL05-3572-3506	10/18/2005	N/A	8	5.49E-02
4-106	N/A	7/28/2005	N/A	8	N/A
4-107	N/A	7/28/2005	N/A	8	N/A
4-108	N/A	7/28/2005	N/A	5	N/A
4-109	N/A	7/28/2005	N/A	4	N/A
4-110	RL05-2571-2828	7/13/2005	14100	8	6.24E-02
4-111	N/A	7/28/2005	N/A	9	N/A
4-112	N/A	7/28/2005	N/A	8	N/A
4-113	N/A	7/28/2005	N/A	4	N/A
4-114	N/A	7/28/2005	N/A	8	N/A
4-115	N/A	7/28/2005	N/A	8	N/A
4-116	N/A	7/28/2005	N/A	8	N/A
4-117	N/A	7/28/2005	N/A	6	N/A
4-118	RL05-3570-3504	10/18/2005	N/A	8	3.35E-02
4-119	N/A	7/28/2005	N/A	8	N/A
4-120	N/A	7/28/2005	N/A	9	N/A
4-121	N/A	7/28/2005	N/A	9	N/A
4-122	N/A	7/28/2005	N/A	7	N/A
4-123	RL05-2572-2829	7/13/2005	14200	7	9.70E-02
4-124	RL05-3573-3507	10/18/2005	N/A	8	1.03E-01
4-125	N/A	7/28/2005	N/A	9	N/A
4-126	N/A	7/28/2005	N/A	9	N/A
4-127	N/A	7/28/2005	N/A	8	N/A
4-128	RL05-2573-2830	7/13/2005	15200	10	9.70E-02

Table 4

Southwest of the West Jefferson North Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Contents (pCi/g)
4-129	N/A	7/28/2005	N/A	8	N/A
4-130	N/A	7/28/2005	N/A	7	N/A
4-131	N/A	7/28/2005	N/A	7	N/A
4-132	N/A	7/28/2005	N/A	4	N/A
4-133	N/A	7/28/2005	N/A	9	N/A
4-134	N/A	7/28/2005	N/A	9	N/A
4-135	N/A	7/28/2005	N/A	7	N/A
4-136	RL05-2574-2831	7/13/2005	11200	4	3.40E-02
4-137	N/A	7/28/2005	N/A	4	N/A
4-138	N/A	7/28/2005	N/A	4	N/A
4-139	N/A	7/28/2005	N/A	11	N/A
4-140	N/A	7/28/2005	N/A	8	N/A
4-141	N/A	7/28/2005	N/A	9	N/A
4-142	N/A	7/28/2005	N/A	9	N/A
4-143	N/A	7/28/2005	N/A	5	N/A
4-144	N/A	7/28/2005	N/A	5	N/A
4-145	N/A	7/28/2005	N/A	7	N/A
4-146	N/A	7/28/2005	N/A	9	N/A
4-147	N/A	7/28/2005	N/A	9	N/A
4-148	N/A	7/28/2005	N/A	6	N/A
4-149	N/A	7/28/2005	N/A	6	N/A
4-150	N/A	7/28/2005	N/A	9	N/A
4-151	N/A	7/28/2005	N/A	9	N/A
4-152	RL05-2575-2832	7/13/2005	12200	9	2.36E-01
4-153	N/A	7/28/2005	N/A	9	N/A

Table 5

Outside West Jefferson North Perimeter Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (μR/hr)	Cs-137 Content (pCi/g)
13-001	RL05-3348-3332	10/10/2005	11900	8	8.11E-02
13-002	RL05-3349-3333	10/10/2005	10800	8	6.16E-02
13-003	RL05-3350-3334	10/10/2005	11000	9	9.75E-03
13-004	RL05-3351-3335	10/10/2005	11000	10	1.74E-01
13-005	RL05-3352-3336	10/10/2005	9760	9	1.68E-01
13-006	RL05-3353-3337	10/10/2005	11000	7	2.58E-01
13-007	RL05-3354-3338	10/10/2005	12000	9	6.24E-02
13-008	RL05-3355-3339	10/10/2005	13100	10	1.30E-01
13-009	RL05-3356-3340	10/10/2005	13200	11	2.01E-01
13-010	RL05-3357-3341	10/10/2005	12800	12	7.86E-02
13-011	RL05-3358-3342	10/10/2005	12800	9	6.71E-02
13-012	RL05-3359-3343	10/10/2005	11400	10	1.50E-01
13-013	RL05-3360-3344	10/10/2005	11600	7	3.98E-02
13-014	RL05-3361-3345	10/10/2005	11500	9	6.65E-02
13-015	RL05-3362-3346	10/10/2005	10300	8	8.69E-02
13-020	RL05-3363-3347	10/10/2005	17500	13	1.11E-01
13-021	RL05-3364-3348	10/10/2005	12900	8	1.28E-01
13-022	RL05-3365-3349	10/10/2005	13900	9	1.02E-01
13-023	RL05-3366-3350	10/10/2005	11700	9	4.87E-02
13-024	RL05-3367-3351	10/10/2005	15600	12	8.86E-02
13-025	RL05-3368-3352	10/10/2005	14700	12	1.40E-01
13-026	RL05-3369-3353	10/10/2005	14500	11	8.52E-02
13-027	RL05-3370-3354	10/10/2005	14300	10	1.49E-01
13-028	RL05-3371-3355	10/10/2005	14600	11	4.51E-02
13-029	RL05-3372-3356	10/10/2005	14500	12	1.18E-01
13-030	RL05-3373-3357	10/10/2005	13700	10	1.39E-01
13-031	RL05-3374-3358	10/10/2005	13800	9	1.53E-01
13-032	RL05-3375-3359	10/10/2005	13300	9	1.76E-01
13-033	RL05-3376-3360	10/10/2005	13200	10	4.90E-02
13-034	RL05-3377-3361	10/10/2005	12800	8	1.16E-01
13-035	RL05-3446-3425	10/11/2005	13100	8	1.48E-01
13-036	RL05-3378-3362	10/10/2005	13000	7	4.17E-02

Table 5

Outside West Jefferson North Perimeter Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Content (pCi/g)
13-037	RL05-3379-3363	10/10/2005	12800	8	6.41E-02
13-038	RL05-3380-3364	10/10/2005	13600	10	1.90E-02
13-039	RL05-3381-3365	10/10/2005	11400	8	6.41E-02
13-040	RL05-3382-3366	10/10/2005	7600	6	3.65E-02
13-041	RL05-3383-3367	10/10/2005	8100	6	3.31E-02
13-042	RL05-3384-3368	10/10/2005	9200	7	2.82E-02
13-043	RL05-3385-3369	10/10/2005	9100	8	1.07E-02
13-044	RL05-3386-3370	10/10/2005	9400	7	1.08E-01
13-045	RL05-3387-3381	10/10/2005	10800	9	3.95E-02
13-046	RL05-3388-3382	10/10/2005	13700	10	4.57E-02
13-047	RL05-3389-3383	10/10/2005	8300	8	1.14E-02
13-048	RL05-3390-3384	10/10/2005	9400	7	2.18E-02
13-049	RL05-3391-3385	10/10/2005	8800	7	2.14E-02
13-050	RL05-3392-3386	10/10/2005	9700	9	4.23E-02
13-051	RL05-3393-3387	10/10/2005	7600	7	3.78E-01
13-052	RL05-3394-3388	10/10/2005	9200	8	2.27E-01
13-053	RL05-3395-3389	10/10/2005	9700	10	2.60E-01
13-054	RL05-3396-3390	10/10/2005	13500	12	2.64E-01
13-055	RL05-3397-3391	10/10/2005	8150	7	4.54E-01
13-056	RL05-3398-3392	10/10/2005	7210	6	6.66E-01
13-057	RL05-3399-3393	10/10/2005	11400	12	1.34E-01
13-058	RL05-3400-3394	10/10/2005	9600	10	2.08E-01
13-059	RL05-3416-3395	10/11/2005	7800	8	7.18E-02
13-060	RL05-3417-3396	10/11/2005	10200	9	1.54E-01
13-061	RL05-3418-3397	10/11/2005	9800	8	6.85E-03
13-062	RL05-3419-3398	10/11/2005	8600	8	1.98E-02
13-063	RL05-3420-3399	10/11/2005	8600	8	1.08E-01
13-064	RL05-3421-3400	10/11/2005	9300	6	9.69E-02
13-065	RL05-3422-3401	10/11/2005	8900	7	8.36E-02
13-066	RL05-3423-3402	10/11/2005	9800	8	5.64E-03
13-067	RL05-3424-3403	10/11/2005	9300	9	1.31E-01
13-068	RL05-3425-3404	10/11/2005	8900	7	1.64E-01

Table 5

Outside West Jefferson North Perimeter Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Content (pCi/g)
13-069	RL05-3426-3405	10/11/2005	9900	8	2.20E-01
13-070	RL05-3427-3406	10/11/2005	9800	9	1.48E-01
13-071	RL05-3428-3407	10/11/2005	11600	10	1.91E-01
13-072	RL05-3429-3408	10/11/2005	10100	8	1.03E-01
13-073	RL05-3430-3409	10/11/2005	10000	8	4.91E-01
13-074	RL05-3431-3410	10/11/2005	11200	9	2.57E-01
13-075	RL05-3432-3411	10/11/2005	12400	10	8.25E-02
13-076	RL05-3433-3412	10/11/2005	12600	11	2.65E-01
13-077	RL05-3434-3413	10/11/2005	12700	10	9.84E-02
13-078	RL05-3435-3414	10/11/2005	12400	9	7.96E-02

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Content (pCi/g)
Outfall 1	RL05-2379-2639	7/9/2005	12100	N/A	2.01E-01
Outfall 2	RL05-2380-2640	7/9/2005	11300	N/A	2.05E-01
Outfall 3	RL05-2381-2641	7/9/2005	13500	N/A	3.98E-01
Outfall 4	RL05-2382-2642	7/9/2005	14300	N/A	3.49E-01
Outfall 5	RL05-2383-2643	7/9/2005	13400	N/A	1.01E+00
Outfall 6	RL06-2806-1276	12/12/2005	9870	N/A	9.21E-02
Manhole	RL06-2806-1276	12/12/2005	8520	N/A	2.78E-01

*Grids 13-016 through 13-019 are located in the JN-4 North FSSR

** Grids 13-079 through 13-088 are located in the JN-1 Bog Area FSSR

Table 6

Filter Bed Access Road Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan 10% (Results in cpm)	Exposure Rates (Results in µR/hr)	Cs-137 Content (Results in pCi/g)
9-001	RL05-2764-2949	7/26/2005	8700	7	1.89E-02
9-002	N/A	N/A	8100	7	N/A
9-003	RL05-2765-2950	7/26/2005	7600	6	1.55E-02
9-004	N/A	N/A	17200	7	N/A
9-005	RL05-2766-2951	7/26/2005	16900	6	1.55E-02
9-006	N/A	N/A	7930	6	N/A
9-007	RL05-2767-2952	7/26/2005	17100	6	1.23E-02
9-008	N/A	N/A	16600	6	N/A
9-009	RL05-2768-2953	7/26/2005	16000	12	1.48E-02
9-010	N/A	N/A	14000	12	N/A
9-011	RL05-2769-2954	7/26/2005	14000	12	1.61E-02
9-012	N/A	N/A	15000	12	N/A
9-013	RL05-2770-2955	7/26/2005	13000	12	1.45E-02
9-014	N/A	N/A	13000	11	N/A
9-015	RL05-2771-2956	7/26/2005	12000	12	1.47E-02
9-016	N/A	N/A	11000	12	N/A
9-017	RL05-2772-2957	7/26/2005	12000	11	1.43E-02
9-018	N/A	N/A	11000	11	N/A
9-019	RL05-2773-2958	7/26/2005	11000	10	1.59E-02
9-020	N/A	N/A	11000	10	N/A
9-021	RL05-2774-2959	7/26/2005	11000	11	1.69E-02
9-022	N/A	N/A	11000	10	N/A
9-023	RL05-2775-2960	7/26/2005	10000	10	1.56E-02
9-024	N/A	N/A	9000	11	N/A
9-025	RL05-2776-2961	7/26/2005	10000	12	2.50E-02
9-026	N/A	N/A	10000	9	N/A
9-027	RL05-2777-2962	7/26/2005	10000	9	2.80E-02
9-028	N/A	N/A	9000	10	N/A
9-029	RL05-2778-2963	7/26/2005	9000	11	2.72E-02
9-030	N/A	N/A	9000	10	N/A
9-031	RL05-2779-2964	7/26/2005	9000	10	2.88E-02
9-032	N/A	N/A	9000	9	N/A
9-033	RL05-2780-2965	7/26/2005	10000	10	3.22E-02
9-034	N/A	N/A	9000	9	N/A

Table 6

Filter Bed Access Road Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan 10% (Results in cpm)	Exposure Rates (Results in µR/hr)	Cs-137 Content (Results in pCi/g)
9-003E	RL05-2781-2966	7/26/2005	17500	8	3.02E-01
9-006W	RL05-2782-2967	7/26/2005	17200	7	3.26E-02
9-009E	RL05-2783-2968	7/26/2005	15400	11	4.04E-02
9-012W	RL05-2784-2969	7/26/2005	15700	13	2.93E-02
9-015E	RL05-2785-2970	7/26/2005	11600	11	5.60E-02
9-018W	RL05-2786-2971	7/26/2005	12600	12	5.95E-02
9-021E	RL05-2787-2972	7/26/2005	10800	11	2.70E-02
9-024W	RL05-2788-2973	7/26/2005	10400	11	1.44E-01
9-027E	RL05-2789-2974	7/26/2005	9000	9	5.75E-02
9-030W	RL05-2790-2975	7/26/2005	9000	8	8.43E-02

Table 7

Filter Bed North and Outside the Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Content (pCi/g)
6-001	N/A	N/A	N/A	8	N/A
6-002	N/A	N/A	N/A	6	N/A
6-003	N/A	N/A	N/A	6	N/A
6-004	N/A	N/A	N/A	7	N/A
6-005	N/A	N/A	N/A	6	N/A
6-006	N/A	N/A	N/A	6	N/A
6-007	WJUA05-2331-2589	7/8/2005	15900	7	1.26E-01
6-008	N/A	N/A	N/A	7	N/A
6-009	N/A	N/A	N/A	8	N/A
6-010	N/A	N/A	N/A	8	N/A
6-011	N/A	N/A	N/A	8	N/A
6-012	N/A	N/A	N/A	7	N/A
6-013	N/A	N/A	N/A	7	N/A
6-014	N/A	N/A	N/A	8	N/A
6-015	N/A	N/A	N/A	8	N/A
6-016	N/A	N/A	N/A	8	N/A
6-017	N/A	N/A	N/A	9	N/A
6-018	N/A	N/A	N/A	8	N/A
6-019	N/A	N/A	N/A	8	N/A
6-020	N/A	N/A	N/A	6	N/A
6-021	N/A	N/A	N/A	8	N/A
6-022	N/A	N/A	N/A	8	N/A
6-023	N/A	N/A	N/A	7	N/A
6-024	N/A	N/A	N/A	8	N/A
6-025	WJUA05-2333-2591	7/8/2005	13000	7	9.89E-02
6-026	N/A	N/A	N/A	7	N/A
6-027	N/A	N/A	N/A	6	N/A
6-028	N/A	N/A	N/A	7	N/A
6-029	N/A	N/A	N/A	8	N/A
6-030	N/A	N/A	N/A	8	N/A
6-031	N/A	N/A	N/A	8	N/A
6-032	N/A	N/A	N/A	8	N/A

Table 7

Filter Bed North and Outside the Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Content (pCi/g)
6-033	N/A	N/A	N/A	8	N/A
6-034	N/A	N/A	N/A	7	N/A
6-035	N/A	N/A	N/A	7	N/A
6-036	N/A	N/A	N/A	7	N/A
6-037	WJUA05-2334-2592	7/8/2005	10700	7	1.72E-02(ND)
6-038	N/A	N/A	N/A	8	N/A
6-039	N/A	N/A	N/A	8	N/A
6-040	N/A	N/A	N/A	7	N/A
6-041	N/A	N/A	N/A	8	N/A
6-042	N/A	N/A	N/A	7	N/A
6-043	N/A	N/A	N/A	7	N/A
6-044	N/A	N/A	N/A	6	N/A
6-045	N/A	N/A	N/A	8	N/A
6-046	N/A	N/A	N/A	8	N/A
6-046	N/A	N/A	N/A	6	N/A
6-047	N/A	N/A	N/A	7	N/A
6-048	N/A	N/A	N/A	8	N/A
6-049	N/A	N/A	N/A	8	N/A
6-050	N/A	N/A	N/A	9	N/A
6-051	WJUA05-2335-2593	7/8/2005	17600	7	1.79E-01
6-052	N/A	N/A	N/A	7	N/A
6-053	N/A	N/A	N/A	8	N/A
6-054	N/A	N/A	N/A	8	N/A
6-055	N/A	N/A	N/A	6	N/A
6-056	N/A	N/A	N/A	5	N/A
6-057	N/A	N/A	N/A	7	N/A
6-058	N/A	N/A	N/A	8	N/A
6-059	N/A	N/A	N/A	8	N/A
6-060	N/A	N/A	N/A	10	N/A
6-061	N/A	N/A	N/A	8	N/A
6-062	N/A	N/A	N/A	10	N/A
6-063	N/A	N/A	N/A	10	N/A

Table 7

Filter Bed North and Outside the Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Content (pCi/g)
6-064	WJUA05-2336-2594	7/8/2005	17000	10	2.60E-01
6-065	N/A	N/A	N/A	8	N/A
6-066	N/A	N/A	N/A	10	N/A
6-067	WJUA05-2337-2595	7/8/2005	16400	10	1.17E-01
6-068	N/A	N/A	N/A	8	N/A
6-069	N/A	N/A	N/A	10	N/A
6-070	N/A	N/A	N/A	9	N/A
6-071	N/A	N/A	N/A	9	N/A
6-072	N/A	N/A	N/A	9	N/A
6-073	WJUA05-2338-2596	7/8/2005	16300	9	1.23E-01
6-074	WJUA05-2339-2597	7/8/2005	16200	9	2.11E-01
6-075	N/A	N/A	N/A	9	N/A
6-076	N/A	N/A	N/A	9	N/A
6-077	N/A	N/A	N/A	9	N/A
6-078	N/A	N/A	N/A	10	N/A
6-079	N/A	N/A	N/A	10	N/A
6-080	N/A	N/A	N/A	10	N/A
6-081	N/A	N/A	N/A	10	N/A
6-082	N/A	N/A	N/A	10	N/A
6-083	N/A	N/A	N/A	10	N/A
6-084	N/A	N/A	N/A	10	N/A
6-085	WJUA05-2352-2598	7/8/2005	16100	10	1.17E-01
6-086	N/A	N/A	N/A	9	N/A
6-087	N/A	N/A	N/A	9	N/A
6-088	N/A	N/A	N/A	10	N/A
6-089	N/A	N/A	N/A	8	N/A
6-090	WJUA05-2353-2599	7/8/2005	14600	10	1.50E-01
6-091	N/A	N/A	N/A	10	N/A
6-092	N/A	N/A	N/A	10	N/A
6-093	N/A	N/A	N/A	10	N/A
6-094	N/A	N/A	N/A	10	N/A
6-095	N/A	N/A	N/A	10	N/A

Table 7

Filter Bed North and Outside the Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Content (pCi/g)
6-096	WJUA05-2354-2600	7/8/2005	14900	9	2.05E-01
6-097	N/A	N/A	N/A	10	N/A
6-098	N/A	N/A	N/A	10	N/A
6-099	N/A	N/A	N/A	9	N/A
6-100	N/A	N/A	N/A	10	N/A
6-101	N/A	N/A	N/A	9	N/A
6-102	N/A	N/A	N/A	10	N/A
6-103	N/A	N/A	N/A	10	N/A
6-104	WJUA05-2355-2601	7/8/2005	16300	10	1.82E-01
6-105	N/A	N/A	N/A	9	N/A
6-106	N/A	N/A	N/A	10	N/A
6-107	N/A	N/A	N/A	10	N/A
6-108	WJUA05-2356-2602	7/8/2005	15200	10	2.21E-01
6-109	N/A	N/A	N/A	9	N/A
6-110	N/A	N/A	N/A	9	N/A
6-111	N/A	N/A	N/A	9	N/A
6-112	N/A	N/A	N/A	10	N/A
6-113	N/A	N/A	N/A	9	N/A
6-114	N/A	N/A	N/A	9	N/A
6-115	N/A	N/A	N/A	9	N/A
6-116	N/A	N/A	N/A	10	N/A
6-117	N/A	N/A	N/A	9	N/A
6-118	N/A	N/A	N/A	9	N/A
6-119	N/A	N/A	N/A	9	N/A
6-120	N/A	N/A	N/A	9	N/A
6-121	N/A	N/A	N/A	9	N/A
6-122	WJUA05-2357-2603	7/8/2005	13900	10	2.63E-01
6-123	N/A	N/A	N/A	9	N/A
6-124	N/A	N/A	N/A	9	N/A
6-125	N/A	N/A	N/A	9	N/A
6-126	N/A	N/A	N/A	9	N/A
6-127	N/A	N/A	N/A	9	N/A

Table 7

Filter Bed North and Outside the Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Content (pCi/g)
6-128	N/A	N/A	N/A	9	N/A
6-129	N/A	N/A	N/A	9	N/A
6-130	N/A	N/A	N/A	9	N/A
6-131	N/A	N/A	N/A	9	N/A
6-132	N/A	N/A	N/A	9	N/A
6-133	N/A	N/A	N/A	9	N/A
6-134	N/A	N/A	N/A	9	N/A
6-135	N/A	N/A	N/A	9	N/A
6-136	N/A	N/A	N/A	10	N/A
6-137	N/A	N/A	N/A	8	N/A
6-138	N/A	N/A	N/A	8	N/A
6-139	N/A	N/A	N/A	9	N/A
6-140	WJUA05-2358-2604	7/8/2005	12500	9	3.67E-01
6-141	N/A	N/A	N/A	9	N/A
6-142	N/A	N/A	N/A	10	N/A
6-143	N/A	N/A	N/A	9	N/A
6-144	N/A	N/A	N/A	9	N/A
6-145	N/A	N/A	N/A	9	N/A
6-146	N/A	N/A	N/A	9	N/A
6-147	N/A	N/A	N/A	8	N/A
6-148	N/A	N/A	N/A	8	N/A
6-149	N/A	N/A	N/A	9	N/A
6-150	N/A	N/A	N/A	8	N/A
6-151	N/A	N/A	N/A	9	N/A
6-152	N/A	N/A	N/A	9	N/A
6-153	N/A	N/A	N/A	9	N/A
6-154	N/A	N/A	N/A	9	N/A
6-155	N/A	N/A	N/A	9	N/A
6-156	WJUA05-2359-2605	7/8/2005	13800	8	3.27E-01
6-157	N/A	N/A	N/A	8	N/A
6-158	WJUA05-2360-2606	7/8/2005	12100	11	1.19E-01
6-159	N/A	N/A	N/A	9	N/A

Table 7

Filter Bed North and Outside the Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Content (pCi/g)
6-160	N/A	N/A	N/A	9	N/A
6-161	N/A	N/A	N/A	9	N/A
6-162	N/A	N/A	N/A	9	N/A
6-163	N/A	N/A	N/A	9	N/A
6-164	N/A	N/A	N/A	9	N/A
6-165	N/A	N/A	N/A	8	N/A
6-166	N/A	N/A	N/A	8	N/A
6-167	N/A	N/A	N/A	9	N/A
6-168	N/A	N/A	N/A	8	N/A
6-169	N/A	N/A	N/A	9	N/A
6-170	WJUA05-2361-2607	7/8/2005	12200	11	1.27E-01
6-171	N/A	N/A	N/A	9	N/A
6-172	N/A	N/A	N/A	8	N/A
6-173	N/A	N/A	N/A	11	N/A
6-174	N/A	N/A	N/A	11	N/A
6-175	N/A	N/A	N/A	10	N/A
6-176	N/A	N/A	N/A	10	N/A
6-177	N/A	N/A	N/A	11	N/A
6-178	N/A	N/A	N/A	11	N/A
6-179	N/A	N/A	N/A	8	N/A
6-180	WJUA05-2362-2608	7/8/2005	12400	9	1.51E-01
6-181	N/A	N/A	N/A	9	N/A
6-182	N/A	N/A	N/A	9	N/A

Table 8

Filter Bed South and Outside the Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Content (pCi/g)
7-001	N/A	N/A	N/A	7	N/A
7-002	N/A	N/A	N/A	6	N/A
7-003	N/A	N/A	N/A	8	N/A
7-004	RL05-2577-2833	7/14/2005	7960	9	9.84E-02
7-005	N/A	N/A	N/A	7	N/A
7-006	N/A	N/A	N/A	6	N/A
7-007	N/A	N/A	N/A	8	N/A
7-008	N/A	N/A	N/A	7	N/A
7-009	N/A	N/A	N/A	7	N/A
7-010	RL05-2578-2834	7/14/2005	7900	8	1.94E-01
7-011	N/A	N/A	N/A	7	N/A
7-012	N/A	N/A	N/A	6	N/A
7-013	N/A	N/A	N/A	8	N/A
7-014	N/A	N/A	N/A	7	N/A
7-015	N/A	N/A	N/A	8	N/A
7-016	N/A	N/A	N/A	6	N/A
7-017	N/A	N/A	N/A	6	N/A
7-018	RL05-2579-2835	7/14/2005	7480	6	1.58E-01
7-019	N/A	N/A	N/A	7	N/A
7-020	N/A	N/A	N/A	6	N/A
7-021	N/A	N/A	N/A	8	N/A
7-022	N/A	N/A	N/A	7	N/A
7-023	N/A	N/A	N/A	8	N/A
7-024	N/A	N/A	N/A	7	N/A
7-025	N/A	N/A	N/A	7	N/A
7-026	N/A	N/A	N/A	7	N/A
7-027	N/A	N/A	N/A	7	N/A
7-028	N/A	N/A	N/A	7	N/A
7-029	RL05-2580-2836	7/14/2005	7510	7	1.85E-01
7-030	N/A	N/A	N/A	7	N/A
7-031	N/A	N/A	N/A	7	N/A
7-032	N/A	N/A	N/A	7	N/A

Table 8

Filter Bed South and Outside the Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Content (pCi/g)
7-033	N/A	N/A	N/A	7	N/A
7-034	N/A	N/A	N/A	7	N/A
7-035	N/A	N/A	N/A	7	N/A
7-036	N/A	N/A	N/A	8	N/A
7-037	N/A	N/A	N/A	7	N/A
7-038	N/A	N/A	N/A	7	N/A
7-039	N/A	N/A	N/A	7	N/A
7-040	N/A	N/A	N/A	7	N/A
7-041	N/A	N/A	N/A	8	N/A
7-042	N/A	N/A	N/A	7	N/A
7-043	RL05-2581-2837	7/14/2005	13700	6	9.26E-02
7-044	N/A	N/A	N/A	7	N/A
7-045	RL05-2582-2838	7/14/2005	15700	7	7.30E-02
7-046	N/A	N/A	N/A	8	N/A
7-047	N/A	N/A	N/A	7	N/A
7-048	N/A	N/A	N/A	6	N/A
7-049	N/A	N/A	N/A	7	N/A
7-050	N/A	N/A	N/A	8	N/A
7-051	N/A	N/A	N/A	7	N/A
7-052	RL05-2583-2839	7/14/2005	8000	7	2.13E-01
7-053	N/A	N/A	N/A	7	N/A
7-054	N/A	N/A	N/A	7	N/A
7-055	N/A	N/A	N/A	6	N/A
7-056	N/A	N/A	N/A	7	N/A
7-057	N/A	N/A	N/A	7	N/A
7-058	N/A	N/A	N/A	7	N/A
7-059	N/A	N/A	N/A	6	N/A
7-060	RL05-2584-2840	7/14/2005	17000	7	4.34E-02(ND)
7-061	N/A	N/A	N/A	7	N/A
7-062	N/A	N/A	N/A	7	N/A
7-063	N/A	N/A	N/A	7	N/A
7-064	N/A	N/A	N/A	8	N/A

Table 8

Filter Bed South and Outside the Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Content (pCi/g)
7-065	N/A	N/A	N/A	8	N/A
7-066	N/A	N/A	N/A	7	N/A
7-067	N/A	N/A	N/A	7	N/A
7-068	RL05-2585-2841	7/14/2005	14300	7	1.44E-01
7-069	N/A	N/A	N/A	7	N/A
7-070	N/A	N/A	N/A	7	N/A
7-071	N/A	N/A	N/A	8	N/A
7-072	N/A	N/A	N/A	7	N/A
7-073	N/A	N/A	N/A	7	N/A
7-074	N/A	N/A	N/A	7	N/A
7-075	N/A	N/A	N/A	7	N/A
7-076	N/A	N/A	N/A	7	N/A
7-077	N/A	N/A	N/A	7	N/A
7-078	N/A	N/A	N/A	7	N/A
7-079	N/A	N/A	N/A	7	N/A
7-080	N/A	N/A	N/A	6	N/A
7-081	N/A	N/A	N/A	7	N/A
7-082	N/A	N/A	N/A	7	N/A
7-083	N/A	N/A	N/A	7	N/A
7-084	N/A	N/A	N/A	8	N/A
7-085	N/A	N/A	N/A	8	N/A
7-086	N/A	N/A	N/A	7	N/A
7-087	N/A	N/A	N/A	7	N/A
7-088	N/A	N/A	N/A	7	N/A
7-089	N/A	N/A	N/A	9	N/A
7-090	N/A	N/A	N/A	5	N/A
7-091	RL05-2587-2843	7/14/2005	7120	7	1.69E-01
7-092	N/A	N/A	N/A	7	N/A
7-093	N/A	N/A	N/A	7	N/A
7-094	RL05-2586-2842	7/14/2005	8360	8	2.69E-01
7-095	N/A	N/A	N/A	8	N/A
7-096	N/A	N/A	N/A	7	N/A

Table 8

Filter Bed South and Outside the Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Content (pCi/g)
7-097	RL05-2588-2844	7/14/2005	13700	6	1.68E-01
7-098	N/A	N/A	N/A	8	N/A
7-099	N/A	N/A	N/A	9	N/A
7-100	N/A	N/A	N/A	8	N/A
7-101	N/A	N/A	N/A	7	N/A
7-102	N/A	N/A	N/A	8	N/A
7-103	N/A	N/A	N/A	8	N/A
7-104	N/A	N/A	N/A	7	N/A
7-105	N/A	N/A	N/A	7	N/A
7-106	N/A	N/A	N/A	5	N/A
7-107	N/A	N/A	N/A	7	N/A
7-108	N/A	N/A	N/A	8	N/A
7-109	N/A	N/A	N/A	7	N/A
7-110	N/A	N/A	N/A	6	N/A
7-111	N/A	N/A	N/A	8	N/A
7-112	N/A	N/A	N/A	7	N/A
7-113	N/A	N/A	N/A	7	N/A
7-114	N/A	N/A	N/A	9	N/A
7-115	N/A	N/A	N/A	8	N/A
7-116	RL05-2589-2845	7/14/2005	14600	7	1.08E-02(ND)
7-117	N/A	N/A	N/A	8	N/A
7-118	N/A	N/A	N/A	7	N/A
7-119	RL05-2590-2846	7/14/2005	12600	8	1.39E-01
7-120	N/A	N/A	N/A	7	N/A
7-121	N/A	N/A	N/A	7	N/A
7-122	N/A	N/A	N/A	7	N/A
7-123	N/A	N/A	N/A	7	N/A
7-124	N/A	N/A	N/A	8	N/A
7-125	N/A	N/A	N/A	7	N/A
7-126	N/A	N/A	N/A	8	N/A
7-127	N/A	N/A	N/A	8	N/A
7-128	N/A	N/A	N/A	7	N/A

Table 8

Filter Bed South and Outside the Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Content (pCi/g)
7-129	N/A	N/A	N/A	7	N/A
7-130	RL05-2591-2847	7/14/2005	12600	9	1.42E-01
7-131	N/A	N/A	N/A	8	N/A
7-132	N/A	N/A	N/A	8	N/A
7-133	N/A	N/A	N/A	8	N/A
7-134	N/A	N/A	N/A	7	N/A
7-135	N/A	N/A	N/A	7	N/A
7-136	N/A	N/A	N/A	8	N/A
7-137	N/A	N/A	N/A	6	N/A
7-138	N/A	N/A	N/A	8	N/A
7-139	N/A	N/A	N/A	7	N/A
7-140	RL05-2592-2848	7/14/2005	11500	7	7.24E-02
7-141	N/A	N/A	N/A	8	N/A
7-142	N/A	N/A	N/A	8	N/A
7-143	N/A	N/A	N/A	7	N/A
7-144	N/A	N/A	N/A	7	N/A
7-145	N/A	N/A	N/A	6	N/A
7-146	N/A	N/A	N/A	10	N/A
7-147	N/A	N/A	N/A	9	N/A
7-148	N/A	N/A	N/A	7	N/A
7-149	N/A	N/A	N/A	7	N/A
7-150	N/A	N/A	N/A	7	N/A
7-151	N/A	N/A	N/A	8	N/A
7-152	N/A	N/A	N/A	7	N/A
7-153	N/A	N/A	N/A	6	N/A
7-154	N/A	N/A	N/A	7	N/A
7-155	N/A	N/A	N/A	7	N/A
7-156	N/A	N/A	N/A	7	N/A
7-157	N/A	N/A	N/A	8	N/A
7-158	N/A	N/A	N/A	8	N/A
7-159	N/A	N/A	N/A	7	N/A
7-160	N/A	N/A	N/A	8	N/A

Table 8

Filter Bed South and Outside the Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Content (pCi/g)
7-161	RL05-2594-2850	7/14/2005	12000	7	1.35E-01
7-162	N/A	N/A	N/A	9	N/A
7-163	N/A	N/A	N/A	9	N/A
7-164	N/A	N/A	N/A	9	N/A
7-165	RL05-2593-2849	7/14/2005	14000	7	1.69E-01
7-166	N/A	N/A	N/A	8	N/A
7-167	N/A	N/A	N/A	9	N/A
7-168	N/A	N/A	N/A	8	N/A
7-169	N/A	N/A	N/A	8	N/A
7-170	RL05-2595-2851	7/14/2005	13000	6	1.18E-01
7-171	N/A	N/A	N/A	7	N/A
7-172	N/A	N/A	N/A	7	N/A
7-173	N/A	N/A	N/A	7	N/A
7-174	N/A	N/A	N/A	7	N/A
7-175	N/A	N/A	N/A	8	N/A
7-176	N/A	N/A	N/A	8	N/A
7-177	N/A	N/A	N/A	8	N/A
7-178	N/A	N/A	N/A	8	N/A
7-179	N/A	N/A	N/A	8	N/A
7-180	N/A	N/A	N/A	8	N/A
7-181	N/A	N/A	N/A	8	N/A
7-182	N/A	N/A	N/A	9	N/A
7-183	N/A	N/A	N/A	8	N/A
7-184	N/A	N/A	N/A	8	N/A
7-185	N/A	N/A	N/A	7	N/A
7-186	N/A	N/A	N/A	9	N/A
7-187	N/A	N/A	N/A	7	N/A
7-188	N/A	N/A	N/A	7	N/A
7-189	N/A	N/A	N/A	7	N/A
7-190	RL05-2596-2852	7/14/2005	13100	8	1.06E-01
7-191	N/A	N/A	N/A	6	N/A
7-192	N/A	N/A	N/A	8	N/A

Table 8

Filter Bed South and Outside the Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Content (pCi/g)
7-193	N/A	N/A	N/A	8	N/A
7-194	N/A	N/A	N/A	8	N/A
7-195	N/A	N/A	N/A	7	N/A
7-196	N/A	N/A	N/A	10	N/A
7-197	N/A	N/A	N/A	8	N/A
7-198	N/A	N/A	N/A	8	N/A
7-199	N/A	N/A	N/A	9	N/A
7-200	N/A	N/A	N/A	7	N/A
7-201	RL05-2597-2853	7/14/2005	13500	7	2.64E-01
7-202	N/A	N/A	N/A	8	N/A
7-203	N/A	N/A	N/A	9	N/A
7-204	N/A	N/A	N/A	8	N/A
7-205	N/A	N/A	N/A	8	N/A
7-206	N/A	N/A	N/A	7	N/A
7-207	N/A	N/A	N/A	7	N/A
7-208	N/A	N/A	N/A	8	N/A
7-209	N/A	N/A	N/A	7	N/A
7-210	N/A	N/A	N/A	8	N/A
7-211	RL05-2598-2854	7/14/2005	12100	8	1.60E-01
7-212	N/A	N/A	N/A	9	N/A
7-213	N/A	N/A	N/A	7	N/A
7-214	N/A	N/A	N/A	8	N/A
7-215	N/A	N/A	N/A	8	N/A
7-216	N/A	N/A	N/A	8	N/A
7-217	N/A	N/A	N/A	8	N/A
7-218	N/A	N/A	N/A	9	N/A
7-219	N/A	N/A	N/A	8	N/A
7-220	N/A	N/A	N/A	8	N/A
7-221	RL05-2599-2855	7/14/2005	13100	8	2.25E-01
7-222	N/A	N/A	N/A	7	N/A
7-223	N/A	N/A	N/A	9	N/A
7-224	N/A	N/A	N/A	6	N/A

Table 8

Filter Bed South and Outside the Restricted Area Fence Line Survey and Sampling Results

Grid Location	Sample ID	Collection Date	Walkover Scan (cpm)	Exposure Rates (µR/hr)	Cs-137 Content (pCi/g)
7-225	RL05-2600-2856	7/14/2005	12700	6	1.08E-01
7-226	N/A	N/A	N/A	8	N/A
7-227	N/A	N/A	N/A	6	N/A
7-228	N/A	N/A	N/A	8	N/A
7-229	N/A	N/A	N/A	8	N/A

Table 9

State Route 142 Access Road and Parking Lots Comparison Value Calculation

Area/Volume ID	WJN Unaffected Areas	Number of Data Points	t95% (n-1) Value from Table B-1 of NUREG/CR-5849
Access Road to SR 142 & Parking Lots		40	1.6853

Grid Number	Sample Number	Cs-137 Result (pCi/g)
10-005	RL05-3969-3815	4.793E-02
*10-005 S	RL05-3989-3835	1.640E-01
10-011	RL05-3970-3816	4.205E-03
*10-011 S	RL05-3990-3836	2.550E-01
10-016	RL05-3971-3817	6.512E-03
*10-016 S	RL05-3991-3837	2.290E-02
10-026	RL05-3973-3819	1.437E-03
*10-026 S	RL05-3993-3839	1.800E-01
10-031	RL05-3974-3820	1.086E-02
*10-031 S	RL05-3994-3840	2.160E-01
10-036	RL05-3975-3821	7.335E-03
*10-036 S	RL05-3995-3841	1.300E-01
10-041	RL05-3976-3822	2.450E-01
*10-041 N	RL05-3996-3842	3.034E-03
10-044	RL05-3987-3833	1.355E-02
*10-045 W	RL05-3999-3845	1.750E-01
10-045	RL05-3988-3834	1.948E-03
*10-047 E	RL05-4000-3846	2.910E-01
*10-049 S	RL05-4001-3847	1.350E-01
10-051	RL05-3977-3823	8.807E-03
*10-051 N	RL05-3997-3843	1.270E-01
*10-055 W	RL05-4002-3848	1.140E-01
10-057	RL05-3981-3827	6.949E-03
10-059	RL05-3986-3832	1.019E-02
10-063	RL05-3982-3828	5.131E-03
*10-065 S	RL05-4003-3849	2.140E-03
10-068	RL05-3980-3826	5.296E-03
10-070	RL05-3985-3831	1.148E-02
*10-073 N	RL05-3998-3844	5.099E-02
10-077	RL05-3983-3829	7.893E-03
*10-079 N	RL05-4004-3850	2.458E-02
10-081	RL05-3978-3824	1.173E-03
10-083	RL05-3979-3825	2.089E-02
*10-083 E	RL05-4007-3853	2.447E-02
10-085	RL05-3984-3830	3.634E-03
*10-085 E	RL05-4005-3851	5.050E-02
10-088	RL05-4293-4004	-1.330E-02
*10-091 S	RL05-4008-3854	1.137E-02
*10-092 E	RL05-4006-3852	1.640E-03

Table 9

State Route 142 Access Road and Parking Lots Comparison Value Calculation

10-096	RL05-4294-4005	-1.420E-02
	Max:	2.910E-01
	Min:	-1.420E-02

Average	Comparison Value
5.93E-02	0.08

Standard Deviation	Modified Cleanup Criteria
0.08	7.3

Comparison Value Calculation

$$\mu_u = \bar{x} + t_{1-\alpha,df} \frac{S_x}{\sqrt{n}}$$

Comparison < Criteria

Yes

Table 10

Southwest of the West Jefferson North Restricted Area Fence Line Comparison Value Calculation

Area/Volume ID	WJN Unaffected Areas	Number of Data Points	t95% (n-1) Value from Table B-1 of NUREG/CR-5849
S.W. Outside WJN Fence		16	1.753

Grid Number	Sample Number	Cs-137 Result (pCi/g)
4-007	RL05-2564-2821	1.03E-01
4-026	RL05-2565-2822	1.86E-01
4-040	RL05-2566-2823	1.93E-01
4-044	RL05-2567-2824	2.36E-01
4-070	RL05-2568-2825	1.68E-01
4-081	RL05-2569-2826	2.45E-01
4-086	RL05-2570-2827	5.92E-02
4-104	RL05-3571-3505	3.35E-02
4-105	RL05-3572-3506	5.49E-02
4-110	RL05-2571-2828	6.24E-02
4-118	RL05-3570-3504	3.35E-02
4-123	RL05-2572-2829	9.70E-02
4-124	RL05-3573-3507	1.03E-01
4-128	RL05-2573-2830	9.70E-02
4-136	RL05-2574-2831	3.40E-02
4-152	RL05-2575-2832	2.36E-01
	Max:	2.45E-01
	Min:	3.35E-02

Average	Comparison Value
1.21E-01	0.16

Standard Deviation	Modified Cleanup Criteria
0.08	7.3

Comparison < Criteria
Yes

Comparison Value Calculation

$$\mu_2 = \bar{x} + t_{1-\alpha,df} \frac{S_x}{\sqrt{n}}$$

Table 11

Outside West Jefferson North Perimeter Fence Line Comparison Value Calculation

Area/Volume ID	WJN Unaffected Areas	Number of Data Points	t95% (n-1) Value from Table B-1 of NUREG/CR-5849
S.W. Outside WJN Fence		79	1.6669

Grid Location	Sample ID	Cs-137 Content (pCi/g)
13-001	RL05-3348-3332	8.11E-02
13-002	RL05-3349-3333	6.16E-02
13-003	RL05-3350-3334	9.75E-03
13-004	RL05-3351-3335	1.74E-01
13-005	RL05-3352-3336	1.68E-01
13-006	RL05-3353-3337	2.58E-01
13-007	RL05-3354-3338	6.24E-02
13-008	RL05-3355-3339	1.30E-01
13-009	RL05-3356-3340	2.01E-01
13-010	RL05-3357-3341	7.86E-02
13-011	RL05-3358-3342	6.71E-02
13-012	RL05-3359-3343	1.50E-01
13-013	RL05-3360-3344	3.98E-02
13-014	RL05-3361-3345	6.65E-02
13-015	RL05-3362-3346	8.69E-02
13-020	RL05-3363-3347	1.11E-01
13-021	RL05-3364-3348	1.28E-01
13-022	RL05-3365-3349	1.02E-01
13-023	RL05-3366-3350	4.87E-02
13-024	RL05-3367-3351	8.86E-02
13-025	RL05-3368-3352	1.40E-01
13-026	RL05-3369-3353	8.52E-02
13-027	RL05-3370-3354	1.49E-01
13-028	RL05-3371-3355	4.51E-02
13-029	RL05-3372-3356	1.18E-01
13-030	RL05-3373-3357	1.39E-01
13-031	RL05-3374-3358	1.53E-01
13-032	RL05-3375-3359	1.76E-01
13-033	RL05-3376-3360	4.90E-02
13-034	RL05-3377-3361	1.16E-01
13-035	RL05-3446-3425	1.48E-01
13-036	RL05-3378-3362	4.17E-02
13-037	RL05-3379-3363	6.41E-02
13-038	RL05-3380-3364	1.90E-02
13-039	RL05-3381-3365	6.41E-02
13-040	RL05-3382-3366	3.65E-02
13-041	RL05-3383-3367	3.31E-02
13-042	RL05-3384-3368	2.82E-02
13-043	RL05-3385-3369	1.07E-02
13-044	RL05-3386-3370	1.08E-01

Table 11

Outside West Jefferson North Perimeter Fence Line Comparison Value Calculation

13-045	RL05-3387-3381	3.95E-02
13-046	RL05-3388-3382	4.57E-02
13-047	RL05-3389-3383	1.14E-02
13-048	RL05-3390-3384	2.18E-02
13-049	RL05-3391-3385	2.14E-02
13-050	RL05-3392-3386	4.23E-02
13-051	RL05-3393-3387	3.78E-01
13-052	RL05-3394-3388	2.27E-01
13-053	RL05-3395-3389	2.60E-01
13-054	RL05-3396-3390	2.64E-01
13-055	RL05-3397-3391	4.54E-01
13-056	RL05-3398-3392	6.66E-01
13-057	RL05-3399-3393	1.34E-01
13-058	RL05-3400-3394	2.08E-01
13-059	RL05-3416-3395	7.18E-02
13-060	RL05-3417-3396	1.54E-01
13-061	RL05-3418-3397	6.85E-03
13-062	RL05-3419-3398	1.98E-02
13-063	RL05-3420-3399	1.08E-01
13-064	RL05-3421-3400	9.69E-02
13-065	RL05-3422-3401	8.36E-02
13-066	RL05-3423-3402	5.64E-03
13-067	RL05-3424-3403	1.31E-01
13-068	RL05-3425-3404	1.64E-01
13-069	RL05-3426-3405	2.20E-01
13-070	RL05-3427-3406	1.48E-01
13-071	RL05-3428-3407	1.91E-01
13-072	RL05-3429-3408	1.03E-01
13-073	RL05-3430-3409	4.91E-01
13-074	RL05-3431-3410	2.57E-01
13-075	RL05-3432-3411	8.25E-02
13-076	RL05-3433-3412	2.65E-01
13-077	RL05-3434-3413	9.84E-02
13-078	RL05-3435-3414	7.96E-02
Outfall 1	RL05-2379-2639	2.01E-01
Outfall 2	RL05-2380-2640	2.05E-01
Outfall 3	RL05-2381-2641	3.98E-01
Outfall 4	RL05-2382-2642	3.49E-01
Outfall 5	RL05-2383-2643	1.01E+00
	Max:	1.01E+00
	Min:	5.64E-03

	Average	Comparison Value
	1.46E-01	0.17
Comparison Value Calculation	Standard Deviation	Modified Cleanup Criteria

Table 11

Outside West Jefferson North Perimeter Fence Line Comparison Value Calculation

$$\mu_{ucl} = \bar{x} + t_{1-n,\alpha} \frac{S_x}{\sqrt{n}}$$

0.15	7.3	Comparison < Criteria
		Yes

Table 12

Filter Bed Access Road Comparison Value Calculation

Area/Volume ID	WJN Unaffected Areas	Number of Data Points	t95% (n-1) Value from Table B-1 of NUREG/CR-5849
Filter Bed Service Road		27	1.706

Grid Number	Sample Number	Cs-137 Result (pCi/g)
9-001	RL05-2764-2949	1.89E-02
9-003	RL05-2765-2950	1.55E-02
9-005	RL05-2766-2951	1.55E-02
9-007	RL05-2767-2952	1.23E-02
9-009	RL05-2768-2953	1.48E-02
9-011	RL05-2769-2954	1.61E-02
9-013	RL05-2770-2955	1.45E-02
9-015	RL05-2771-2956	1.47E-02
9-017	RL05-2772-2957	1.43E-02
9-019	RL05-2773-2958	1.59E-02
9-021	RL05-2774-2959	1.69E-02
9-023	RL05-2775-2960	1.56E-02
9-025	RL05-2776-2961	2.50E-02
9-027	RL05-2777-2962	2.80E-02
9-029	RL05-2778-2963	2.72E-02
9-031	RL05-2779-2964	2.88E-02
9-033	RL05-2780-2965	3.22E-02
9-003E*	RL05-2781-2966	3.02E-01
9-006W*	RL05-2782-2967	3.26E-02
9-009E*	RL05-2783-2968	4.04E-02
9-012W*	RL05-2784-2969	2.93E-02
9-015E*	RL05-2785-2970	5.60E-02
9-018W*	RL05-2786-2971	5.95E-02
9-021E*	RL05-2787-2972	2.70E-02
9-024W*	RL05-2788-2973	1.44E-01
9-027E*	RL05-2789-2974	5.75E-02
9-030W*	RL05-2790-2975	8.43E-02

Max: 3.02E-01
Min: 1.23E-02

Average	Comparison Value
4.29E-02	0.06

Table 12

Filter Bed Access Road Comparison Value Calculation

Comparison Value Calculation	Standard Deviation	Modified Cleanup Criteria
	0.06	7.3
$\mu_{ucl} = \bar{x} + t_{1-\alpha,df} \frac{S_x}{\sqrt{n}}$		Comparison < Criteria
		Yes

Table 13

Filter Bed North and Outside the Restricted Area Fence Line Comparison Value Calculation

Area/Volume ID	WJN Unaffected Areas	Number of Data Points	t95% (n-1) Value from Table B-1 of NUREG/CR-5849
North Filter Beds O/S Fence		19	1.734

Grid Number	Sample Number	Cs-137 Result (pCi/g)
6-007	WJUA05-2331-2589	1.26E-01
6-025	WJUA05-2333-2591	9.89E-02
6-037	WJUA05-2334-2592	1.72E-02(ND)
6-051	WJUA05-2335-2593	1.79E-01
6-064	WJUA05-2336-2594	2.60E-01
6-067	WJUA05-2337-2595	1.17E-01
6-073	WJUA05-2338-2596	1.23E-01
6-074	WJUA05-2339-2597	2.11E-01
6-085	WJUA05-2352-2598	1.17E-01
6-090	WJUA05-2353-2599	1.50E-01
6-096	WJUA05-2354-2600	2.05E-01
6-104	WJUA05-2355-2601	1.82E-01
6-108	WJUA05-2356-2602	2.21E-01
6-122	WJUA05-2357-2603	2.63E-01
6-140	WJUA05-2358-2604	3.67E-01
6-156	WJUA05-2359-2605	3.27E-01
6-158	WJUA05-2360-2606	1.19E-01
6-170	WJUA05-2361-2607	1.27E-01
6-180	WJUA05-2362-2608	1.51E-01
	Max:	3.67E-01
	Min:	9.89E-02

Average	Comparison Value
1.86E-01	0.22

Comparison Value Calculation	Standard Deviation	Modified Cleanup Criteria
$\mu_u = \bar{x} + t_{1-\alpha,n} \frac{S_x}{\sqrt{n}}$	0.08	7.3

Comparison < Criteria

Yes

Table 14

Filter Bed South and Outside the Restricted Area Fence Line Comparison Value Calculation

Area/Volume ID	WJN Unaffected Areas	Number of Data Points	t95% (n-1) Value from Table B-1 of NUREG/CR-5849
South O/S Filter Beds Fence		24	1.714

Grid Number	Sample Number	Cs-137 Result (pCi/g)
7-004	RL05-2577-2833	9.84E-02
7-010	RL05-2578-2834	1.94E-01
7-018	RL05-2579-2835	1.58E-01
7-029	RL05-2580-2836	1.85E-01
7-043	RL05-2581-2837	9.26E-02
7-045	RL05-2582-2838	7.30E-02
7-052	RL05-2583-2839	2.13E-01
7-060	RL05-2584-2840	4.34E-02
7-068	RL05-2585-2841	1.44E-01
7-094	RL05-2586-2842	2.69E-01
7-091	RL05-2587-2843	1.69E-01
7-097	RL05-2588-2844	1.68E-01
7-116	RL05-2589-2845	1.08E-02
7-119	RL05-2590-2846	1.39E-01
7-130	RL05-2591-2847	1.42E-01
7-140	RL05-2592-2848	7.24E-02
7-165	RL05-2593-2849	1.69E-01
7-161	RL05-2594-2850	1.35E-01
7-170	RL05-2595-2851	1.18E-01
7-190	RL05-2596-2852	1.06E-01
7-201	RL05-2597-2853	2.64E-01
7-211	RL05-2598-2854	1.60E-01
7-221	RL05-2599-2855	2.25E-01
7-225	RL05-2600-2856	1.08E-01
		Max: 2.69E-01
		Min: 1.08E-02

Comparison Value Calculation	Average	Standard Deviation	Comparison Value	Modified Cleanup Criteria
	1.44E-01		0.17	

Table 14

Filter Bed South and Outside the Restricted Area Fence Line Comparison Value Calculation

0.06	7.3

$$\mu_a = \bar{x} + t_{1-\alpha,n-1} \frac{S_x}{\sqrt{n}}$$

Comparison <
Criteria
Yes