AmerenUE
Callaway Plant

PO Box 620
Fulton, MO 65251

April 23, 2007

U. S. Nuclear Regulatory Commission
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CALLAWAY PLANT UNIT 1
UNION ELECTRIC CO.
FACILITY OPERATING LICENSE NPF-30
2006 ANNUAL RADIOLOGICAL
ENVIRONMENTAL OPERATING REPORT

Please find enclosed the 2006 Annual Radiological Environmental Operating Report for the Callaway Plant. This report is submitted in accordance with Section 5.6.2 of the Technical Specification and Appendix B to the Callaway Plant Operating License.

Very truly yours,



David T. Fitzgerald
Manager, Regulatory Affairs

DJW/tdp

Enclosure: Annual Radiological Environmental Operating Report

IE25

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AMEREN UE, CALLAWAY PLANT
FULTON, MISSOURI

DOCKET NO. 50-483

ANNUAL REPORT
to the

UNITED STATES NUCLEAR REGULATORY COMMISSION

Radiation Environmental Operating Report

January 1 to December 31, 2006

Prepared by

ENVIRONMENTAL, Inc.
Midwest Laboratory

Submitted by

UNION ELECTRIC CO.
dba AmerenUE Corp.

Project No. 8036

Approved : _____

Bronia Grob, M.S.
Laboratory Manager

PREFACE

This Annual Radiological Environmental Operating Report describes the AmerenUE Corp., Callaway Plant Radiological Environmental Monitoring Program (REMP), and the program results for the calendar year 2006. It is submitted in accordance with section 5.6.2 of the Callaway Plant Technical Specifications.

Staff members of the Environmental, Inc., Midwest Laboratory were responsible for the acquisition of data presented in this report. Environmental samples were collected by AmerenUE personnel or contractors to AmerenUE and shipped to Environmental, Inc. – Midwest Laboratory and Framatone for analysis.

The report was prepared by Environmental, Inc., Midwest Laboratory for the AmerenUE, Callaway Plant.

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1.0 INTRODUCTION

This report presents an analysis of the results of the Radiological Environmental Monitoring Program (REMP) conducted during 2006 for the AmerenUE Corp., Callaway Plant.

The objectives of the REMP are to monitor potential critical pathways of radioactive effluent to man and determine the radiological impact on the environment caused by operation of Callaway Plant. The radiological environmental monitoring program was initiated in April 1982.

Callaway Plant consists of one 3565 MWt pressurized water reactor, which achieved initial criticality on October 2, 1984. The plant is located on a plateau approximately ten miles southeast of the City of Fulton in Callaway County, Missouri and approximately eighty miles west of the St. Louis metropolitan area. The Missouri River flows by the site in an easterly direction approximately five miles south of the site at its closest point.

Tabulation of the individual analyses for the year 2006 is included in Part II of this report.

2.0 SUMMARY

The Radiological Environmental Monitoring Program, as required by the U.S. Nuclear Regulatory Commission (NRC) Technical Specifications for the Callaway Plant is herein described. Results for the year 2006 are summarized and discussed.

For the year, the Callaway Plant was operated in compliance with Off Site Dose Calculation Manual (ODCM) requirements. Comparison of results for 2006 show no significant differences to historical data. Results from the REMP indicate the Callaway Plant has had no significant radiological impact on the health and safety of the public or on the environment.

3.0 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

3.1 Program Design and Data Interpretation

The purpose of the Radiological Environmental Monitoring Program at the Callaway Plant is to assess the impact of the plant on its environment. For this purpose, samples are collected from waterborne, airborne, ingestion, and terrestrial pathways and analyzed for radioactive content. Ambient gamma radiation levels are monitored by thermoluminescent dosimeters (TLDs).

Sources of environmental radiation can include the following:

(1) Natural background radiation arising from cosmic rays and primordial radionuclides;
(2) Fallout from atmospheric nuclear detonations;
(3) Releases from nuclear power plants; and
(4) Industrial and medical radioactive waste.

In interpreting the data, effects due to operation of the Callaway Plant must be distinguished from those due to other sources.

A major interpretive aid in assessment of these effects is the design of the monitoring program at the Callaway Plant, based on the indicator-control concept. Most types of samples are collected at indicator locations (nearby, downwind, or downstream) and at control locations (distant, upwind, or upstream). A station effect would be indicated if the radiation level at an indicator location was significantly larger than that at the control location. The difference would have to be greater than could be accounted for by typical fluctuations in radiation levels arising from other sources.

An additional interpretive technique involves analyses for specific radionuclides present in the environmental samples collected from the Callaway site. The monitoring program includes analyses for iodine-131, a fission product, and tritium, which is produced by cosmic rays, atmospheric nuclear detonations, and also by nuclear power plants. Most samples are analyzed for gamma-emitting isotopes, with results for the following groups quantified: zirconium-95, cesium-137, and cerium-144. These three gamma-emitting isotopes are selected as radiological impact indicators because of the different characteristic proportions in which they appear in the fission product mix produced by a nuclear reactor and that produced by a nuclear detonation. Each of the three isotopes is produced in roughly equivalent amounts by a reactor: each constitutes about 10% of the total activity of fission products ten days after reactor shutdown. On the other hand, ten days after a nuclear explosion, the contributions of zirconium-95, cerium-144, and cesium-137 to the activity of the resulting debris are in the approximate ratio 4:1:0.03 (Eisenbud,1963).

The other group quantified consists of niobium-95, ruthenium-103 and -106, cesium-134, barium-lanthanum-140, and cerium-141. These isotopes are released in small quantities by nuclear power plants, but to date their major source of injection into the general environment has been atmospheric nuclear testing. Nuclides of the next group, manganese-54, cobalt-58 and-60, and zinc-65, are activation products and arise from activation of corrosion products. They are typical components of nuclear power plant effluents, but are not produced in significant quantities by nuclear detonation.

3.1 Program Design and Data Interpretation (continued)

Nuclides of the final group, beryllium-7, which is of cosmogenic origin, and potassium-40, a naturally-occurring isotope, were chosen as calibration monitors and should not be considered radiological impact indicators.

Other means of distinguishing sources of environmental radiation can be employed in interpreting the data. Current radiation levels can be compared with previous levels, including pre-operational data. Results of the monitoring program can be related to those obtained in other parts of the world. Finally, results can be related to events known to cause elevated levels of radiation in the environment, e.g., a nuclear accident.

3.2 Program Description

The sampling and analysis schedules for the environmental radiological monitoring program at the Callaway Plant are summarized in Tables 5.1 and 5.2 and briefly reviewed below. Table 5.1 identifies sampling locations and specifies as to type (indicator or control) and its distance, direction, and sector relative to the reactor site. The types of samples collected at each location and the frequency of collections are presented in Table 5.2.

To monitor the air environment, airborne particulates and airborne iodine samples are collected by continuous pumping, at five locations. Airborne particulates are collected on glass fiber filters, and analyzed for gross beta activity. Gamma isotopic analysis is performed on any filter exceeding a baseline action limit of 0.037 pCi/m^3. Airborne iodine is collected through an activated charcoal filter cartridge and analyzed weekly for iodine-131. Filters are changed and counted weekly. Quarterly composites of airborne particulates are analyzed for gamma emitting isotopes.

The ingestion pathway is monitored by sampling of milk (if available), fish and green leafy vegetation.

Milk samples are collected semimonthly during the grazing season (typically April through September) and monthly during the winter. The samples are analyzed for iodine-131 and gamma-emitting isotopes.

Monthly during the growing season, edible green leafy vegetation is collected from both indicator and control locations. Vegetation samples typically consist of mustard greens, turnip greens, cabbage, lettuce, collards, radish greens, Swiss chard, broccoli and poke. Other edible broad leaf vegetation is collected if primary varieties are not available. The samples are analyzed for iodine-131 and other gamma-emitting isotopes.

This pathway is also monitored by upstream and downstream semiannual collections of fish. The five most abundant recreational or commercial fish species are collected. Samples are analyzed for gamma-emitting isotopes.

The waterborne pathway is monitored by sampling surface water, ground water and drinking water, and bottom and shoreline sediments.

Monthly composite samples of surface water from the Missouri River are collected from one indicator location (SO2) and from one control location (SO1). The samples are analyzed for gross alpha, gross beta, tritium and gamma-emitting isotopes.

3.2 Program Description (continued)

Ground water is collected quarterly from two deep aquifer sampling wells (F05 and F15) and one drinking water well (D01). The samples are analyzed for gross beta, tritium, iodine-131 and gamma emitting isotopes.

Additional drinking water and ground water sampling has been added to the REMP, as described in Part II, Appendix C.

River bottom sediment is collected semiannually at the plant's intake (A) and discharge (C) . The samples are taken from water at least 2 meters deep to prevent influence of bank erosion. Shoreline sediments are collected semiannually in the same area as bottom sediment. These samples are collected within two feet of the edge of the water. The samples are analyzed for gamma-emitting isotopes.

Another pathway considered is direct ambient gamma radiation. This exposure is monitored by thermoluminescent dosimeters (TLDs), at forty-three locations in and around the Callaway site. The TLDs are placed in 16 sectors around the plant as specified in the ODCM-RECS. Three locations are designated as controls (IDM-26, IDM-27 and IDM-60).The TLDs are placed at each location and are exchanged and analyzed quarterly.

To monitor the terrestrial environment, soil is collected annually from four indicator locations (F2, PR3, F6, and PR7) and one control location (V3). The samples are analyzed for gross alpha, gross beta and gamma-emitting isotopes.

Additional testing of soil and sediment samples are included in Part II, App. C.

3.3 Program Execution

The program was executed as described in the preceding section with the following exceptions.

(1) Air Particulates / Air Iodine:

A reduced volume (283 m^3) was reported for the week ending 05-11-06 at air sampling station A-1. The sampling pump failed and was replaced with a spare.

(2) Milk:

Milk was not available from location M-13 for 2006. The cow was sold. The station has been removed from the program.

No milk was received from location M-8 for July through September, 2006. The cow was with calf. Sampling resumed in October.

(3) Direct Radiation:

The TLD for location D-3 was missing for the second quarter, 2006. Both TLD and holder were missing from the assigned location. The TLD was replaced for the third quarter.

3.4 Laboratory Procedures

The iodine-131 analyses in milk were made using a sensitive radiochemical procedure involving separation of the iodine using an ion-exchange method, solvent extraction and subsequent beta counting.

Gamma-spectroscopic analyses were performed with HPGe detectors. Levels of iodine-131 in vegetation and concentrations of airborne iodine-131 in charcoal samples were also determined by gamma spectroscopy.

Tritium was measured by liquid scintillation.

Analytical Procedures used by Environmental, Inc. are on file and are available for inspection. Procedures are based on those prescribed by the Health and Safety Laboratory of the U.S. Dep't of Energy, Edition 28, 1997, U.S. Environmental Protection Agency for Measurement of Radioactivity in Drinking Water, 1980, and the U.S. Environmental Protection Agency, EERF, Radiochemical Procedures Manual, 1984.

Environmental, Inc., Midwest Laboratory has a comprehensive quality control/quality assurance program designed to assure the reliability of data obtained. Details of the QA Program are presented elsewhere (Environmental, Inc., Midwest Laboratory, 2003). The QA Program includes participation in Interlaboratory Comparison (crosscheck) Programs. Results obtained through Quality control samples and crosscheck program results are presented in Appendix A.

Environmental TLDs are processed by Framatome. The laboratory meets the requirements of Reg. Guide 4.13 and is accredited by NVLAP for photon, beta and photon/beta mixture categories, in accordance with ANSI N 13.11.

3.5 Program Modifications

Milk was dropped from the program, due to a lack of dairy animals., Milk samples will continue to be collected as available. Vegetation is collected in lieu of the milk sampling.

In response to the nationwide Groundwater Protection Initiative, drinking well water samples from neighboring land owners and groundwater wells, both onsite and at locations along the discharge pipeline, were added to the permanent program.

A large number of supplemental samples were taken in response to the nationwide Groundwater Protection Initiative. These samples are not considered part of the permanent program.

3.6 Detection and Reporting Limits

Table 5.3 gives the minimum required detection limits for radiological environmental sample analysis. For each sample type, the table lists the detection level for each isotope. The lower limit of detection (LLD) used in this report is described in NRC Regulatory Guide 4.1 Rev. 1, "Program for Monitoring Radioactivity in the Environs of Nuclear Power Plants" and the NRC Radiological Assessment Branch Technical Position, Rev. 1, November 1979, "An Acceptable Radiological Environmental Monitoring Program".

3.7 Land Use Census

The Land Use Census is performed annually during the growing season within a five-mile radius of the Callaway Plant. The location of the nearest resident, milking animal, and garden greater than 50 square meters is identified by contacting residents by phone and/or in field surveys for each of the sixteen meteorological sectors using the midpoint of the two units.

The results of the 2006 Land Use Census are presented in Table 5.4. The table includes radial direction and distance from the Callaway Plant for each location. These parameters were determined using a combination of map position, aerial photography, and Global Positioning System (GPS) receiver.

Missouri river water intake, within 10 river miles downstream of the plant, is checked, and new construction identified. No new water intake was developed in 2006.

4.0 RESULTS AND DISCUSSION

All collections and analyses were made as scheduled, except for the listing in Table 5.5.

Results are summarized in Table 5.6 as recommended by the Nuclear Regulatory Commission. For each type of analysis and sample medium, the table lists the mean and range of all indicator and control locations, as well as that location with the highest mean and range.

The tabulated results of all measurements are not included in this section, although references to these results will be made in the discussion. A complete tabulation of results for 2006 is contained in Part II of the Annual Report on the Radiological Environmental Monitoring Program for the Callaway Plant.

4.1 Atmospheric Nuclear Detonations and Nuclear Accidents

There were no reported nuclear accidents or atmospheric nuclear testing done in 2006. A half-kiloton device was apparently detonated in an underground test by the Republic of North Korea, October 9, 2006.

4.2 Program Findings

Results obtained show background levels of radioactivity in the environmental samples collected in 2006.

Airborne Particulates

All five air particulate sampling locations are considered indicators. One station is located at the community with the highest D/Q, another on the outskirts of Fulton, Missouri.

The average annual gross beta concentrations in airborne particulates averaged (0.023 pCi/m^3) and ranged from 0.010 to 0.039 pCi/m^3, similar to levels observed from 1998 through 2005. Results are tabulated below.

Year	Average (pCi/m^3)	Minimum	Maximum
1998	0.023	0.006	0.058
1999	0.025	0.008	0.048
2000	0.030	0.012	0.085
2001	0.023	0.006	0.054
2002	0.024	0.010	0.043
2003	0.023	0.009	0.041
2004	0.021	0.010	0.049
2005	0.024	0.005	0.052
2006	0.023	0.010	0.039

Average annual gross beta concentrations in airborne particulates.

4.2 Program Findings (continued)

Airborne Particulates

During 2006, there were three weekly samples with gross beta activities above the base line action level of 0.037 pCi/m^3. Gamma spectral analysis was performed on these filters and no gamma emitting isotopes of plant origin were detected.

Gamma spectroscopic analysis of quarterly composites of air particulate filters yielded similar results for indicator and control locations. Beryllium-7, which is produced continuously in the upper atmosphere by cosmic radiation, was detected in all samples, with an average activity of 0.074 pCi/m^3. All other gamma-emitting isotopes were below their respective LLD limits.

Airborne Iodine

Weekly levels of airborne iodine-131 were below the lower limit of detection (LLD) of 0.07 pCi/m^3 in all samples.

Direct Radiation (TLDs)

Forty-three TLDs were placed in 16 sectors around the Callaway site. Measurements from the forty indicator locations averaged 16.3 mR/quarter. The three control locations averaged 15.3 mR/quarter. The readings ranged from 11.3 to 18.6 mR/quarter, with the highest readings from location CA-IDM-11A, with an average of 17.9 mR/quarter. The differences are statistically insignificant.

The TLD readings are consistent with previously accumulated data and no effects from plant operation were identified.

Milk

Iodine-131 results were below the detection limit of 0.5 pCi/L in all samples.

No gamma-emitting isotopes, except naturally occurring potassium-40, were detected in any milk samples. This is consistent with the finding of the National Center for Radiological Health that most radiocontaminants in feed do not find their way into milk due to the selective metabolism of the cow. The common exceptions are radioisotopes of potassium, cesium, strontium, barium, and iodine (National Center for Radiological Health, 1968).

In summary, milk data for 2006 show no radiological effects of plant operation.

4.2 Program Findings (continued)

Vegetation

Iodine-131 concentrations in broadleaf vegetation were below the LLD level of 58.2 pCi/kg wet weight in all samples.

Except for potassium-40, which was observed in all vegetation samples, all other gamma-emitting isotopes were below detection limits. No effect from plant operation is indicated.

Fish

All gamma-emitting isotopes, except naturally-occurring potassium-40, in edible portions were below detection limits. The potassium-40 levels were similar at both indicator and control locations (3,274 and 3,310 pCi/kg wet, respectively).

No plant effect on the fish population is indicated.

Soil

Cesium-137 activity was detected at both indicator and control locations, at average concentrations of 478 and 145 pCi/kg dry, respectively. The cesium-137 activity is similar to or less than levels observed from 1998 through 2005, these levels are generally attributable to deposition of fallout from previous decades.

Naturally-occurring potassium-40 averaged 11,610 pCi/kg dry weight.

Analysis results for soil samples in 2006 were consistent with previously accumulated data and no plant operational effects were identified

Surface Water

Tritium was the only radionuclide detected in surface water samples collected during 2006. Three of twelve surface water samples, collected at indicator location S02, contained measurable levels of tritium with a mean concentration of 295 pCi/L. The results are less than 1.5% of the reporting limit in surface water and well within regulatory requirements. Tritium results for location S02 are being trended along with monthly liquid H-3 releases and Missouri river flow. The 2006 results are consistent with previous operational levels and there was no significant radiological impact on the health and safety of the public or the environment.

Gamma spectroscopic analysis for surface water samples were consistent with previously accumulated data and no plant operational effects were identified.

Ground and Drinking Water

The annual mean for gross beta activity measured 5.8 pCi/L, ranging from 2.3 to 9.3 pCi/L and similar to levels observed from 1998 through 2005.

Tritium activity measured below the LLD of 185 pCi/L in all samples.

No gamma-emitting isotopes were detected above respective LLDs.

Data for ground water samples were consistent with previously accumulated data and no plant operational effects were identified.

River Sediments

Bottom sediments were collected in April and November, 2006, and analyzed for gamma-emitting isotopes. Slight Cs-137 activity was detected in the control samples (CA-AQS-A) at an average concentration of 59.5 pCi/kg dry weight. Potassium-40 activity ranged from 13,647 – 15,307 pCi/kg dry weight and averaged 14,811 pCi/kg dry weight.

All other gamma-emitting isotopes were below detection limits.

Shoreline sediments were collected in April and November, 2006, and analyzed for gamma-emitting isotopes. Potassium-40 activity ranged from 12,627 – 15,429 pCi/kg dry weight and averaged 14,341 pCi/kg dry weight.

All other gamma-emitting isotopes were below detection limits. No effect from the plant operation is indicated.

Low levels of cobalt and cesium were detected in one supplemental sample taken at the point of the Plant discharge, (CA-AQS-Y). Results are listed in Part II, App. C.

In January, 2007, the discharge point was relocated ~450' downstream and fitted with a jet to increase exit velocity and improve mixing. Sampling at station CA-AQS-Y will continue, in order to monitor the discharge effect.

5.0 TABLES AND FIGURES

Table 5.1. Sampling Locations, continued.

Location Code	Distance / Direction [1]	Description	Sample Types [2]
1a	10.8 mi. NW	City of Fulton on Hwy Z, 0.65 mi. East of Business 54, West of Campus Apartments.	IDM
3	1.2 mi. NW	0.1 mi. West of Hwy CC on Gravel Rd., 0.8 mi. South Hwy O, Utility Pole No. 18559.	IDM
5	1.3 mi. ENE	Primary Meteorological Tower.	IDM
6	2.0 mi. W	Cty Rd. 428, 1.2 mi. West of Hwy CC, Utility Pole No. 18609.	IDM
7	1.4 mi. S	Cty Rd. 459, 2.6 mi. North of Hwy 94, Utility Pole No. 35097.	IDM
9	3.8 mi. S	NW Side of the Cty Rd. 459 and Hwy 94 Junction, Utility Pole No. 06754.	IDM
10	3.9 mi. SSE	Hwy 94, 1.8 mi. East of Cty Rd. 459, Utility Pole No. 12182.	IDM
11a	4.7 mi. SE	City of Portland, Utility Pole No. 12110.	IDM
14	4.9 mi. ESE	SE Side of Intersection D and 94, Utility Pole No. 11940.	IDM
17	3.8 mi. E	Cty Rd. 4053, 0.3 mi. East of Hwy 94, Kingdom Telephone Company, Pole No. 3X12.	IDM
18a	3.7 mi. ENE	East side of Hwy D, 0.5 mi. South of O, Utility Pole No. 38579.	IDM
20	4.7 mi. NE	City of Readsville, Utility Pole No. 12830.	IDM
21	3.8 mi. NNE	Cty Rd. 155, 1.9 mi. North of Hwy O, Utility Pole No. 19100.	IDM
22a	1.9 mi. NNE	North side of Hwy O, 100 feet East of Cty Rd. 150, Utility Pole No. 31094.	IDM
23	6.6 mi. NNE	City of Yucatan, Utility Pole No. 12670.	IDM
26 [3]	11.7 mi. E	Town of Americus, Utility Pole No. 11159.	IDM
27 [3]	9.3 mi. ESE	Town of Bluffton, Utility Pole No. 11496.	IDM
30a	4.4 mi. SSW	City of Steedman, N side of Belgian Dr., 150 feet East of Hwy CC, Pole No. 06557.	IDM
31a	7.8 mi. SW	City of Mokane, Hwy C and Cty Rd. 400, 0.9 mi. North of Hwy 94, Utility Pole.	IDM
32	5.4 mi. WSW	Hwy VV, 0.6 mi.West of Cty Rd. 447, Utility Pole No. 27031.	IDM
32a	5.0 mi. WSW	Cty Rd. 447, Utility Pole No. 06354.	IDM
33	7.4 mi. W	City of Hams Prairie, SE of Hwy C and AD Junction.	IDM
34	9.5 mi. WNW	NE Side of Hwy C and Cty Rd. 408 Junction.	IDM
35	5.8 mi. NNW	City of Toledo, Utility Pole No. 17684.	IDM

Table 5.1. Sampling Locations, continued.

Location Code	Distance / Direction [1]	Description	Sample Types [2]
36	4.9 mi. N	Cty Rd. 155, 0.8 mi. South of Cty Rd. 132, Utility Pole No. 19137	IDM
37	0.5 mi. SSW	Cty Rd. 459, 0.9 mi. South of Hwy CC, Utility Pole No. 35077.	IDM
38	4.6 mi. NNW	Cty Rd. 133, 1.5 mi. South of Hwy UU, Utility Pole No. 34708.	IDM
39	5.4 mi. NW	Cty Rd. 111, Utility Pole No. 17516.	IDM
39a	5.0 mi. NW	Cty Rd. 111, Utility Pole No. 17526.	IDM
40	4.2 mi. WNW	NE Side of Cty Rd. 112 and Hwy O, Utility Pole No. 18145.	IDM
41	4.9 mi. W	Hwy AD, 2.8 mi. East of Hwy C, Utility Pole No. 18239.	IDM
42	4.4 mi. SW	Cty Rd. 447, 2.6 mi. North of Cty Rd. 463, Utility Pole No. 06326.	IDM
43	0.5 mi. SW	Cty Rd. 459, 0.7 mi. South of Hwy CC, Utility Pole No. 35073.	IDM
44	1.6 mi. WSW	Hwy CC, 1.0 mi. South of Cty Rd. 459, Utility Pole No. 18769.	IDM
45	1.0 mi. WNW	Cty Rd. 428, 0.1 mi. West of Hwy CC, Utility Pole No. 18580.	IDM
46	1.5 mi. NNW	NE Side of Hwy CC and Cty Rd. 466 Intersection, Utility Pole No. 28242.	IDM
47	1.0 mi. N	Cty Rd. 448, 0.9 mi. South of Hwy O, Utility Pole No. 28151.	IDM
48	0.4 mi. NE	Cty Rd. 448, 1.5 mi. South of Hwy O, Plant Security Sign Post.	IDM
49	1.6 mi. E	Cty Rd. 448, Utility Pole No. 06959, Reform Wildlife Mgmt. Parking Area.	IDM
50	0.9 mi. SSE	Cty Rd. 459, 3.3 mi. North of Hwy 94, Utility Pole No. 35086	IDM
51a	0.3 mi. SE	Owner Control Fence, SE of the Water Treatment Plant.	IDM
52	0.4 mi. ESE	Light Pole Near the East Plant Security Fence.	IDM
60 [3]	13.5 mi. SW	Utility Pole No. 43744 just past Tebbetts City sign.	IDM
A1	1.3 mi. ENE	Primary Meteorological Tower.	APT, AIO
A7	9.5 mi. NW	C. Bartley Farm, Fulton, MO.	APT, AIO
A8	0.9 mi. NNE	Cty Rd. 448, 0.9 miles South of Hwy 0.	APT, AIO
A9	1.9 mi. NNW	Community of Reform.	APT, AIO
B3	1.8 mi. NNW	0.3 mi. East of the O and CC Junction, Utility Pole No. 50422.	APT, AIO
D01	5.0 mi. SE	Holzhouser Grocery Store/Tavern (Portland, MO).	WWA
F05	0.9 mi. SSE	Offsite Groundwater Monitoring well.	WWA
F15	0.4 mi. NNE	Onsite Groundwater Monitoring well.	WWA
PW1 [5]	Onsite	Callaway Cafeteria.	WWA

Table 5.1. Sampling Locations, continued.

Location Code	Distance / Direction [1]	Description	Sample Types [2]
M6	2.6 mi. NW	Pierce Farm	MLK
M8[3]	18.7 mi. WSW	Kissock Farm, South of New Bloomfield, MO	MLK
V3[3]	15.0 mi. SW	Beazley Farm, West of Tebbetts, MO.	SOL
V9	2.0 mi. WNW	Meehan Farm.	FPL
V10	3.4 mi. SSW	Brandt Farm.	FPL
V11	3.2 mi. NW	Hickman Farm.	FPL
V12 [3]	18.7 mi. WSW	Kissock Farm, South of New Bloomfield, MO	FPL
V13 [5]	2.02 mi. W	Buchholz Farm, Cty Rd. 428, 1.2 mi. West of Hwy CC.	FPL
A [3,4]	4.9 mi. SSE	0.6 River Miles Upstream of Discharge North Bank.	AQS, AQF
C[4]	4.9 mi. SE	1.0 River Miles Downstream of Discharge North Bank.	AQS, AQF
S01 [3]	4.7 mi. SSE	105 feet Upstream of Discharge North Bank.	SWA
S02	4.9 mi. SE	1.1 River Miles Downstream of Discharge North Bank.	SWA
F2	1.64 mi. SW	Callaway Plant Forest Ecology Plot F2.	SOL
F6	1.72 mi. NE	Callaway Plant Forest Ecology Plot F6.	SOL
PR3	1.02 mi. ESE	Callaway Plant Forest Ecology Plot PR3.	SOL
PR7	0.45 mi. NNW	Callaway Plant Forest Ecology Plot PR7.	SOL
W4[5]	0.68 mi. SSE	Callaway Plant Wetlands, SW Bank.	SOL
W2[5]	0.60 mi. SSE	Callaway Plant Wetlands, Inlet Area.	SOL
W1[3, 5]	0.61 mi. SE	Callaway Plant Wetlands, High Ground.	SOL
W3[5]	0.72 mi. SSE	Callaway Plant Wetlands, Discharge Area.	SOL
GWS[5]	Onsite	Ground Water Sump, Plant East of containment and Spent Fuel Pool Bldg.	WWA
936 [5]	Onsite	Diesel Fuel Remediation Well, Plant SE of Spent Fuel Pool Bldg.	WWA
937C[5]	Onsite	Monitoring Well, Plant East of Radwaste Building Drum Storage.	WWA
937D[5]	Onsite	Monitoring Well, Plant South of Discharge Monitor Tanks.	WWA

[1] Distances are measured from the midpoint of the two reactors as described in Final Safety Analysis Report (FSAR) Sec. 2.1.1.1.
[2] AIO = Air Iodine, APT = Air Particulate, AQF = Fish, AQS = Sediment, FPL = Leafy Green Vegetables, IDM = TLD, MLK = Milk, SOL = Soil, SWA = Surface Water, WWA = Ground Water.
[3] Control Location.
[4] The fish collection area for location "A" is between 0.6 and 3.0 river miles upstream of the plant discharge on the north bank. Location "C" is sampled between the discharge area and 1.5 miles downstream of the discharge,on the north bank.The expanded collection areas guarantee sufficient habitat to collect the required number of species.
[5] Additional sampling, not part of REMP program.

Figure 5.1 Radiological Environmental Monitoring Program Sampling, Near Site Locations

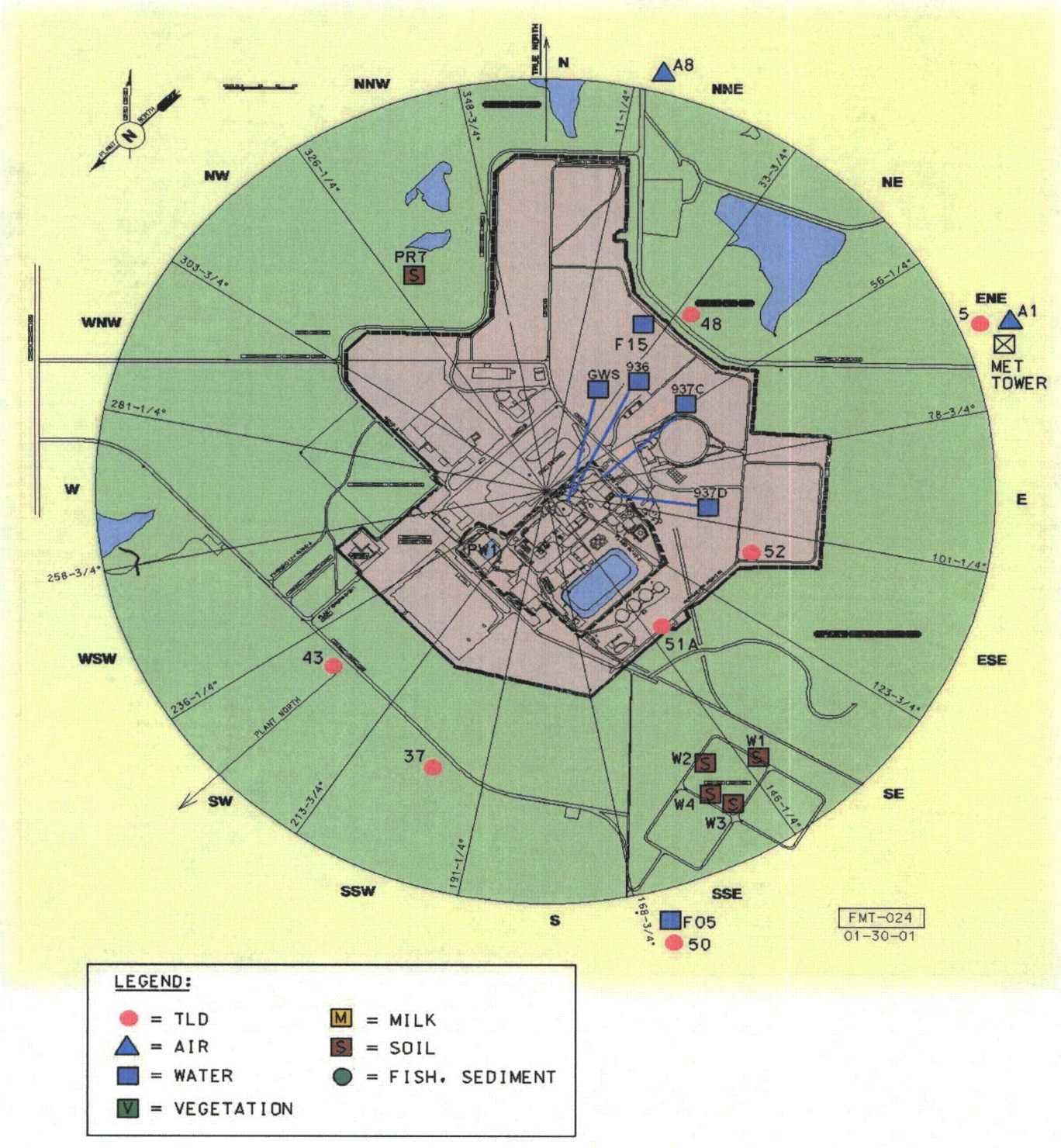


Figure 5.2 Radiological Environmental Monitoring Program Sampling, Distant Site Locations

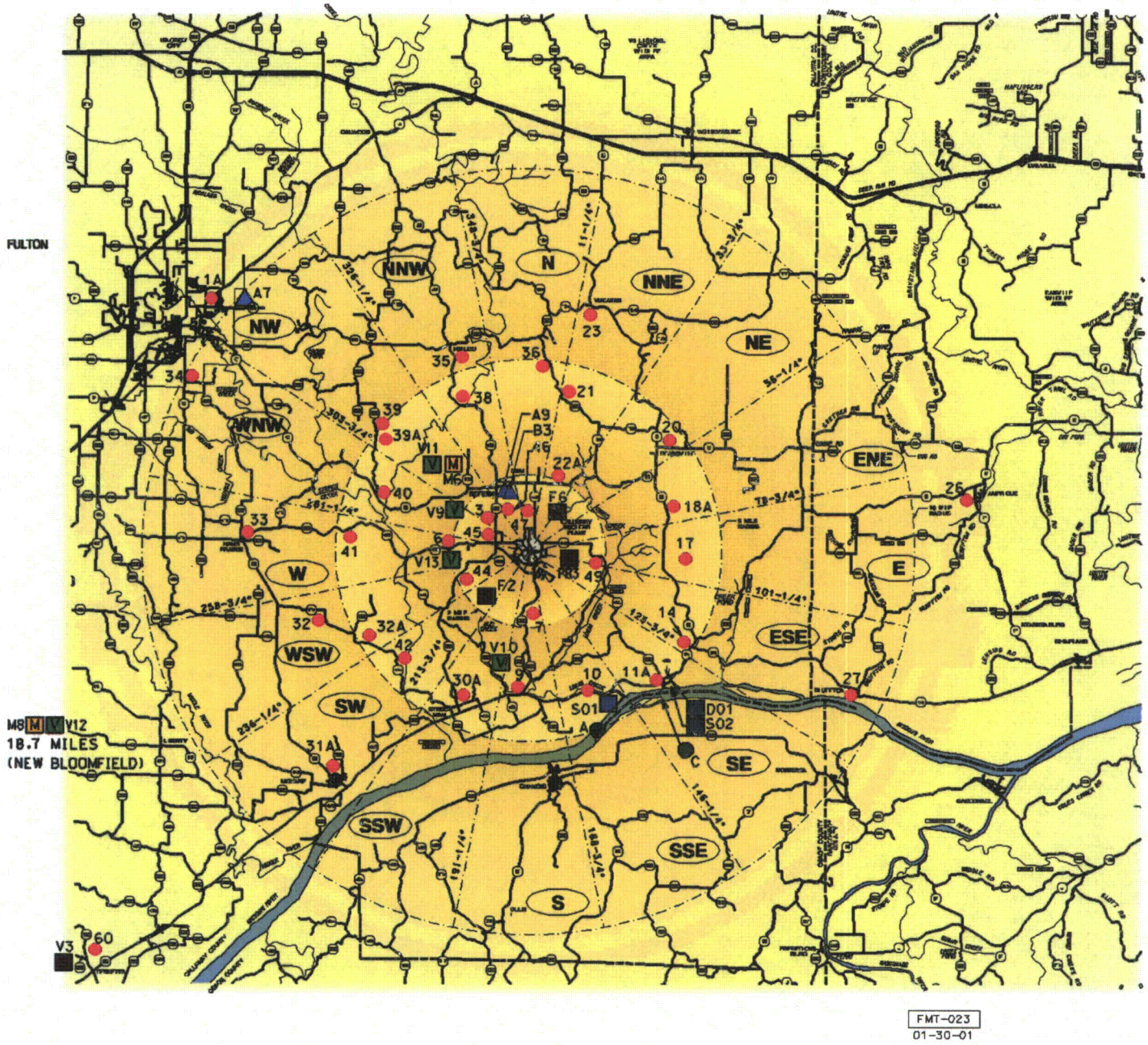


Table 5.2. Collection Frequencies and Required Analyses [1]

Sample Type	Sample Code	Collection Frequency	Required Analysis
Airborne Iodine	AIO	Weekly	I -131
Air Particulate	APT	Weekly	Gr. Beta weekly [2]; Gamma Isotopic of quarterly filter composite.
Fish	AQF	Semiannually (April 1st and Oct 1st)	Gamma Isotopic (Bottom sample NPDES requirement)
Sediment (Shoreline and Bottom)	AQS	Semiannually (April 1st and Oct 1st)	Gamma Isotopic
Leafy Green Vegetables	FPL	Monthly during the growing season (2nd Tues. of month)[3]	Gr. Alpha, Gr. Beta, I -131 and Gamma Isotopic
TLD	IDM	Quarterly (1st day of quarter)	Gamma Dose
Milk	MLK	Semimonthly, when animals on pasture; monthly otherwise	I -131, and Gamma Isotopic
Soil	SOL	Annually (November 1st)	Gr. Alpha, Gr. Beta and Gamma Isotopic (Continuation of preoperational program)
Surface Water	SWA	Monthly composite (2nd Tues. of month)	H-3 and Gamma Isotopic
Drinking / Ground Water	WWA	Quarterly Grab (1st day of each quarter)	H-3 and Gamma Isotopic

[1] Samples required by ODCM and NPDES permit.
Additional sampling is performed as a continuation of the preoperational monitoring program.

[2] If gross beta activity is greater than the established base line activity level, gamma isotopic analysis is performed on the individual sample.

[3] The growing season is defined as the months of May through November; however, the growing season will vary from year to year due to weather conditions.

Table 5.3. Minimum Required Detection Capabilities for REMP Sample Analysis[1]

Analysis	Water (pCi/L)	Airborne (pCi/m^3)	Fish (pCi/kg wet)	Milk (pCi/L)	Food Products (pCi/kg wet)	Soil and Sediment (pCi/kg dry)
Gross beta	4	0.01				
H-3	3000/2000 [3]					
Mn-54	15		130			
Fe-59	30		260			
Co-58/60	15		130			
Zn-65	30		260			
Zr-Nb-95 [2]	15					
I-131	1000/1 [3]	0.07		1	60	
Cs-134	15	0.05	130	15	60	150
Cs-137	18	0.06	150	18	80	180
Ba-La-140 [2]	15			15		

[1] This list does not mean only these nuclides will be detected and reported. Other peaks which are measurable and identifiable will be reported.

[2] Total activity, parent plus daughter activity.

[3] LLDs for Surface and Drinking / Ground water are the same, with the exception of H-3 and I-131. The Drinking / Ground water LLDs for H-3 and I-131 are 2000 and 1 pCi/liter respectively.

Table 5.4 2006 Land Use Census Results

Closest Receptor in Miles

Sector	Residence	Garden [1]	Milk [1]
N(A)	2.2	NI	NI
NNE(B)	2.2	3.0	NI
NE(C)	2.3	4	NI
ENE(D)	1.7	2.9	NI
E(E)	3.5	NI	NI
ESE(F)	2.1	4.4	NI
SE(G)	2.2	2.2	NI
SSE(H)	2.5	2.5	NI
S(J)	2.7	NI	NI
SSW(K)	2.4	2.8	NI
SW(L)	2.6	3.1	NI
WSW(M)	1.2	3.2	NI
W(N)	1.6	2	4
WNW(P)	1.9	1.9	NI
NW(Q)	2.1	3.2	2.6
NNW(R)	1.8	3.5	NI

[1] NI = None Identified

Table 5.5. Missed collections and analyses, Callaway Plant.

Sample Type	Analysis	Location(s)	Collection Date or Period	Comments
APT / AIO	I-131, Gamma	A-1	05-11-06	Sampler pump failure. Pump replaced with spare.
TLD	Ambient Gamma	CA-IDM-11A	2nd Qtr., 2006	Missing, replaced for third quarter.
MI	I-131, Gamma	M-13	2006	No sample; no milk available for 2006. Cow was sold. Station was removed from the program.
MI	I-131, Gamma	M-8	07-25-06 to 09-26-06	No milk available; cow was with calf.

Table 5.6 Radiological Environmental Monitoring Program Summary

Sample Type (Units)	Type and Number of Analyses [a]	LLD [b]	Indicator Locations Mean (F) [c] Range [c]	Location with Highest Annual Mean Location [d]	Location with Highest Annual Mean Mean (F) [c] Range [c]	Control Locations Mean (F) [c] Range [c]	Number Non-Routine Results [e]
Waterborne Pathway							
Surface Water (pCi/L)	GA 24	2.0	3.0 (11/12) (1.8-4.2)	SW-02 4.9 mi. SE	3.0 (11/12) (1.8-4.2)	2.8 (12/12) (1.5-4.5)	0
	GB (TR) 24	1.0	6.9 (12/12) (4.4-10.0)	SW-02 4.9 mi. SE	6.9 (12/12) (4.4-10.0)	6.3 (12/12) (3.9-9.0)	0
	H-3 24	191	295 (3/12) (221-431)	SW-02 4.9 mi. SE	295 (3/12) (221-431)	< LLD	0
	GS 24						
	Mn-54	15	< LLD	-	-	< LLD	0
	Fe-59	30	< LLD	-	-	< LLD	0
	Co-58	15	< LLD	-	-	< LLD	0
	Co-60	15	< LLD	-	-	< LLD	0
	Zn-65	30	< LLD	-	-	< LLD	0
	Zr-Nb-95	15	< LLD	-	-	< LLD	0
	I-131	1000	< LLD	-	-	< LLD	0
	Cs-134	15	< LLD	-	-	< LLD	0
	Cs-137	18	< LLD	-	-	< LLD	0
	Ba-La-140	15	< LLD	-	-	< LLD	0
Ground Water (pCi/L)	GB 16	1.0	5.81 (16/16) (2.3-9.3)	F15, Onsite 0.4 mi. NNE	8.0 (4/4) (7.3-9.3)	None -	0
	H-3 16	185	< LLD	-	-	None	0
	I-131 16	0.5	< LLD	-	-	None	0
	GS 16						
	Mn-54	15	< LLD	-	-	None	0
	Fe-59	30	< LLD	-	-	None	0
	Co-58	15	< LLD	-	-	None	0
	Co-60	15	< LLD	-	-	None	0
	Zn-65	30	< LLD	-	-	None	0
	Zr-Nb-95	15	< LLD	-	-	None	0
	Cs-134	15	< LLD	-	-	None	0
	Cs-137	18	< LLD	-	-	None	0
	Ba-La-140	15	< LLD	-	-	None	0

Table 5.6 Radiological Environmental Monitoring Program Summary

Sample Type (Units)	Type and Number of Analyses [a]	LLD [b]	Indicator Locations Mean (F) [c] Range [c]	Location with Highest Annual Mean Location [d]	Location with Highest Annual Mean Mean (F) [c] Range [c]	Control Locations Mean (F) [c] Range [c]	Number Non-Routine Results [e]
Waterborne Pathway (continued)							
Sediments (pCi/kgdry)	GS 8						
	K-40	50.0	14007 (4/4) (12627-15035)	CA-AQS-A 4.9 mi. SSE	15145 (4/4) (14587-15429)	15145 (4/4) (14587-15429)	0
	Mn-54	41.1	< LLD	-	-	< LLD	0
	Fe-59	111.4	< LLD	-	-	< LLD	0
	Co-58	43.5	< LLD	-	-	< LLD	0
	Co-60	39.6	< LLD	-	-	< LLD	0
	Zr-Nb-95	83.4	< LLD	-	-	< LLD	0
	Cs-134	51.0	< LLD	-	-	< LLD	0
	Cs-137	38.6	< LLD -	CA-AQS-A 4.9 mi. SSE	59.5 (2/4) (52.7-66.2)	59.5 (2/4) (52.7-66.2)	0
	Ba-La-140	148.0	< LLD	-	-	< LLD	0
Direct Radiation							
(Quarterly TLDs) (mR/91days)	Gamma 171	3.0	16.3 (159/159) (11.3-18.6)	CA-IDM-11A 4.7 mi. SE	17.9 (4/4) (17.1-18.6)	15.3 (12/12) (10.9-18.8)	0
Airborne Pathway							
Airborne Particulates (pCi/m^3)	GB 260	0.002	0.023 (86/104) (0.008-0.039)	A-8, Cty. Rd. 448 0.9 mi. NNE	0.024 (52/52) (0.012-0.035)	None	0
	GS 20						
	Be-7	0.020	0.074 (20/20) (0.051-0.126)	A-7, Farm 9.5 mi. NW	0.077 (4/4) (0.052-0.126)	None	0
	Co-58	0.0009	< LLD	-	-	None	0
	Co-60	0.0009	< LLD	-	-	None	0
	Zr-Nb-95	0.0013	< LLD	-	-	None	0
	Cs-134	0.0006	< LLD	-	-	None	0
	Cs-137	0.0008	< LLD	-	-	None	0
	Ba-La-140	0.0050	< LLD	-	-	None	0
	Ce-144	0.0036	< LLD	-	-	None	0
Airborne Iodine (pCi/m3)	I-131 260	0.07	< LLD	-	-	< LLD	0

Table 5.6 Radiological Environmental Monitoring Program Summary

Sample Type (Units)	Type and Number of Analyses [a]	LLD [b]	Indicator Locations Mean (F) [c] Range [c]	Location with Highest Annual Mean Location [d]	Location with Highest Annual Mean Mean (F) [c] Range [c]	Control Locations Mean (F) [c] Range [c]	Number Non-Routine Results [e]
Ingestion Pathway							
Vegetation (pCi/kg wet)	GA 64	99	216 (46/58) (103-505)	V-13, 2.02 mi. W	288 (11/12) (143-458)	167 (3/6) (144-196)	0
	GB 64	50	6074 (58/58) (2652-11637)	V-9, 2.0 mi. WNW	7350 (10/10) (3792-10111)	5086 (6/6) (3477-6229)	0
	GS 64						
	K-40	100	5473 (58/58) (2733-10657)	V-9, 2.0 mi. WNW	6046 (10/10) (2733-10034)	4233 (6/6) (3249-6229)	0
	Mn-54	33.4	< LLD	-	-	< LLD	0
	Co-58	32.5	< LLD	-	-	< LLD	0
	Co-60	38.7	< LLD	-	-	< LLD	0
	I-131	58.2	< LLD	-	-	< LLD	0
	Cs-134	27.7	< LLD	-	-	< LLD	0
	Cs-137	41.1	< LLD	-	-	< LLD	0
Fish (Flesh) (pCi/kg wet)	GS 20						
	K-40	100 -	3274 (10/10) (2863-4124)	CA-AQF-A 4.9 mi. SSE	3310 (10/10) (2745-3952)	3310 (10/10) (2745-3952)	0
	Mn-54	47.4	< LLD	-	-		0
	Fe-59	174.1	< LLD	-	-		0
	Co-58	41.9	< LLD	-	-		0
	Co-60	51.5	< LLD	-	-		0
	Zn-65	93.1	< LLD	-	-		0
	Cs-134	58.9	< LLD	-	-		0
	Cs-137	42.3	< LLD	-	-		0
Milk (pCi/L)	I-131 31	1.0	< LLD	-	-	< LLD	0
	GS 31						
	K-40	100	1086 (18/18) (870-1312)	M-6, 2.6 mi. NW	1086 (18/18) (870-1312)	964 (13/13) (627-1262)	0
	Cs-134	15	< LLD	-	-	< LLD	0
	Cs-137	18	< LLD	-	-	< LLD	0
	Ba-140	60	< LLD	-	-	< LLD	0
	La-140	15	< LLD	-	-	< LLD	0

Table 5.6 Radiological Environmental Monitoring Program Summary

Sample Type (Units)	Type and Number of Analyses [a]	LLD [b]	Indicator Locations Mean (F) [c] Range [c]	Location with Highest Annual Mean Location [d]	Location with Highest Annual Mean Mean (F) [c] Range [c]	Control Locations Mean (F) [c] Range [c]	Number Non-Routine Results [e]
Soil							
Soil (pCi/kg dry)	GA 10	1.0	12784 (8/8) (6425-18647)	PR-003 1.02 mi. ESE	15951 (2/2) (13254-18647)	7925 (2/2) (7925-11001)	0
	GB 10	2.0	25109 (10/10) (19887-28274)	F-006 1.72 mi. NE	27882 (2/2) (27490-28274)	24564 (2/2) (24564-24564)	0
	GS 10						
	K-40	50.0	11532 (8/8) (10352-12567)	V-003 0.12 mi. N	15122 (2/2) (14884-15359)	15122 (2/2) (14884-15359)	0
	Mn-54	52.0	< LLD	-	-	< LLD	0
	Fe-59	121.7	< LLD	-	-	< LLD	0
	Co-58	44.4	< LLD		-	< LLD	0
	Co-60	37.9	< LLD	-	-	< LLD	0
	Zr-Nb-95	86.3	< LLD	-	-	< LLD	
	Cs-134	61.3	< LLD	-	-	< LLD	0
	Cs-137	55.2	478 (8/8) (312-917)	F-006 1.72 mi. NE	851 (2/2) (785-917)	218 (2/2) (212-223)	0
	Ba-La-140	153.9	< LLD	-	-	< LLD	0

[a] GA = gross alpha, GB = gross beta, GS = gamma spectroscopy, SS = suspended solids, DS = dissolved solids, TR = total residue.

[b] LLD = nominal lower limit of detection based on a 4.66 sigma counting error for background sample.

[c] Mean and range are based on detectable measurements only (i.e., >LLD) Fraction of detectable measurements at specified locations is indicated in parentheses (F).

[d] Locations are specified by station code (Table 5.2) and distance (miles) and direction relative to reactor site.

[e] Non-routine results are those which exceed ten times the control station value. If no control station value is available, the result is considered non-routine if it exceeds ten times the preoperational value for the location.

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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, 2006 through December, 2006

Appendix A

Interlaboratory Comparison Program Results

Environmental, Inc., Midwest Laboratory has participated in interlaboratory comparison (crosscheck) programs since the formulation of it's quality control program in December 1971. These programs are operated by agencies which supply environmental type samples 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 list results for thermoluminescent dosimeters (TLDs), via International Intercomparison of Environmental Dosimeters, when available, and internal laboratory testing.

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.

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.

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	± 1σ = (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	Acceptance
STW-1078	01/16/06	Sr-89	49.9 ± 3.5	50.2	41.5 - 58.9	Pass
STW-1078	01/16/06	Sr-90	31.5 ± 1.5	30.7	22.0 - 39.4	Pass
STW-1079	01/16/06	Ba-133	86.5 ± 4.1	95.0	78.6 - 111.0	Pass
STW-1079	01/16/06	Co-60	96.3 ± 4.1	95.3	86.6 - 104.0	Pass
STW-1079	01/16/06	Cs-134	22.6 ± 3.0	23.1	14.4 - 31.8	Pass
STW-1079	01/16/06	Cs-137	109.0 ± 5.9	111.0	101.0 - 121.0	Pass
STW-1079	01/16/06	Zn-65	198.0 ± 11.2	192.0	159.0 - 225.0	Pass
STW-1080	01/16/06	Gr. Alpha	10.8 ± 1.4	9.6	1.0 - 18.3	Pass
STW-1080	01/16/06	Gr. Beta	56.9 ± 1.9	61.9	44.6 - 79.2	Pass
STW-1081	01/16/06	Ra-226	4.3 ± 0.4	4.6	3.4 - 5.8	Pass
STW-1081	01/16/06	Ra-228	7.1 ± 1.8	6.6	3.7 - 9.5	Pass
STW-1081	01/16/06	Uranium	20.7 ± 0.5	22.1	16.9 - 27.3	Pass
STW-1088	04/10/06	Sr-89	29.0 ± 1.8	32.4	23.7 - 41.1	Pass
STW-1088	04/10/06	Sr-90	8.7 ± 1.0	9.0	0.3 - 17.7	Pass
STW-1089	04/10/06	Ba-133	10.3 ± 0.4	10.0	1.3 - 18.7	Pass
STW-1089	04/10/06	Co-60	114.0 ± 2.8	113.0	103.0 - 123.0	Pass
STW-1089	04/10/06	Cs-134	41.9 ± 1.4	43.4	34.7 - 52.1	Pass
STW-1089	04/10/06	Cs-137	208.0 ± 1.1	214.0	195.0 - 233.0	Pass
STW-1089	04/10/06	Zn-65	154.0 ± 0.8	152.0	126.0 - 178.0	Pass
STW-1090	04/10/06	Gr. Alpha	13.4 ± 1.1	21.3	12.1 - 30.5	Pass
STW-1090	04/10/06	Gr. Beta	27.7 ± 2.1	23.0	14.3 - 31.7	Pass
STW-1091	04/10/06	I-131	22.0 ± 0.3	19.1	13.9 - 24.3	Pass
STW-1092	04/10/06	H-3	7960.0 ± 57.0	8130.0	6720.0 - 9540.0	Pass
STW-1092	04/10/06	Ra-226	2.9 ± 0.4	3.0	2.2 - 3.8	Pass
STW-1092	04/10/06	Ra-228	20.9 ± 1.2	19.1	10.8 - 27.4	Pass
STW-1092	04/10/06	Uranium	68.6 ± 3.4	69.1	57.1 - 81.1	Pass
STW-1094	07/10/06	Sr-89	15.9 ± 0.7	19.7	11.0 - 28.4	Pass
STW-1094	07/10/06	Sr-90	24.3 ± 0.4	25.9	17.2 - 34.6	Pass
STW-1095	07/10/06	Ba-133	94.9 ± 8.9	88.1	72.9 - 103.0	Pass
STW-1095	07/10/06	Co-60	104.0 ± 1.8	99.7	91.0 - 108.0	Pass
STW-1095	07/10/06	Cs-134	48.7 ± 1.3	54.1	45.4 - 62.8	Pass
STW-1095	07/10/06	Cs-137	236.0 ± 3.0	238.0	217.0 - 259.0	Pass
STW-1095	07/10/06	Zn-65	126.0 ± 8.0	121.0	100.0 - 142.0	Pass
STW-1096	07/10/06	Gr. Alpha	10.9 ± 1.0	10.0	1.3 - 18.6	Pass
STW-1096	07/10/06	Gr. Beta	9.7 ± 0.4	8.9	0.2 - 17.5	Pass
STW-1097	07/10/06	Ra-226	11.0 ± 0.5	10.7	7.9 - 13.5	Pass
STW-1097	07/10/06	Ra-228	12.2 ± 0.8	10.7	6.1 - 15.3	Pass
STW-1097	07/10/06	Uranium	43.4 ± 0.1	40.3	33.3 - 47.3	Pass

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

Lab Code	Date	Concentration (pCi/L)				
		Analysis	Laboratory Result[b]	ERA Result[c]	Control Limits	Acceptance
STW-1104	10/06/06	Sr-89	38.4 ± 1.3	39.9	31.2 - 45.7	Pass
STW-1104	10/06/06	Sr-90	15.5 ± 0.5	16.0	7.3 - 24.7	Pass
STW-1105	10/06/06	Ba-133	64.9 ± 2.8	70.2	58.1 - 82.3	Pass
STW-1105	10/06/06	Co-60	61.6 ± 1.0	62.3	53.6 - 71.0	Pass
STW-1105	10/06/06	Cs-134	29.0 ± 0.9	29.9	21.2 - 38.6	Pass
STW-1105	10/06/06	Cs-137	77.8 ± 2.4	78.2	69.5 - 86.9	Pass
STW-1105	10/06/06	Zn-65	293.0 ± 2.4	277.0	229.0 - 325.0	Pass
STW-1106	10/06/06	Gr. Alpha	23.9 ± 2.5	28.7	16.3 - 41.1	Pass
STW-1106	10/06/06	Gr. Beta	23.7 ± 1.4	20.9	12.2 - 29.6	Pass
STW-1107 [d]	10/06/06	I-131	28.4 ± 1.2	22.1	16.9 - 27.3	Fail
STW-1108	10/06/06	Ra-226	14.5 ± 0.5	14.4	10.7 - 18.1	Pass
STW-1108	10/06/06	Ra-228	6.6 ± 0.4	5.9	3.3 - 8.4	Pass
STW-1108	10/06/06	Uranium	2.9 ± 0.1	3.2	0.0 - 8.4	Pass
STW-1109	10/06/06	H-3	3000.0 ± 142.0	3050.0	2430.0 - 3670.0	Pass

[a] Results obtained by Environmental, Inc., Midwest Laboratory as a participant in the crosscheck program for proficiency testing in drinking water conducted 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] The reported result was an average of three analyses, results ranged from 25.36 to 29.23 pCi/L. A fourth analysis was performed, result of analysis, 24.89 pCi/L.

TABLE A-2. Crosscheck program results; Thermoluminescent Dosimetry, (TLD, CaSO4: Dy Cards).

Lab Code	Date	Description	mR Known Value	mR Lab Result ± 2 sigma	Control Limits	Acceptance
Environmental, Inc.						
2006-1	6/5/2006	30 cm	54.81	70.73 ± 0.69	38.37 - 71.25	Pass
2006-1	6/5/2006	60 cm	13.70	16.71 ± 1.89	9.59 - 17.81	Pass
2006-1	6/5/2006	60 cm	13.70	16.69 ± 0.94	9.59 - 17.81	Pass
2006-1	6/5/2006	90 cm	6.09	6.57 ± 0.82	4.26 - 7.92	Pass
2006-1	6/5/2006	120 cm	3.43	3.65 ± 0.22	2.40 - 4.46	Pass
2006-1	6/5/2006	120 cm	3.43	3.09 ± 0.33	2.40 - 4.46	Pass
2006-1	6/5/2006	150 cm	2.19	2.35 ± 0.38	1.53 - 2.85	Pass
2006-1	6/5/2006	150 cm	2.19	1.98 ± 0.10	1.53 - 2.85	Pass
2006-1	6/5/2006	180 cm	1.52	1.56 ± 0.26	1.06 - 1.98	Pass
Environmental, Inc.						
2006-2	11/6/2006	30 cm.	55.61	60.79 ± 1.32	38.93 - 72.29	Pass
2006-2	11/6/2006	40 cm.	31.28	35.93 ± 3.70	21.90 - 40.66	Pass
2006-2	11/6/2006	50 cm.	20.02	21.55 ± 1.20	14.01 - 26.03	Pass
2006-2	11/6/2006	60 cm.	13.90	14.90 ± 1.42	9.73 - 18.07	Pass
2006-2	11/6/2006	75 cm.	8.90	8.03 ± 0.51	6.23 - 11.57	Pass
2006-2	11/6/2006	90 cm.	6.18	6.88 ± 0.68	4.33 - 8.03	Pass
2006-2	11/6/2006	120 cm.	3.48	2.90 ± 0.20	2.44 - 4.52	Pass
2006-2	11/6/2006	150 cm.	2.22	1.99 ± 0.07	1.55 - 2.89	Pass
2006-2	11/6/2006	180 cm.	1.54	1.79 ± 0.94	1.08 - 2.00	Pass

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

Lab Code [b]	Date	Concentration (pCi/L)[a] Analysis	Laboratory results 2s, n=1 [c]	Known Activity	Control Limits [d]	Acceptance
SPW-301	1/20/2006	Fe-55	2700.10 ± 70.00	2502.50	2002.00 - 3003.00	Pass
SPAP-1224	3/7/2006	Cs-134	37.13 ± 3.70	39.52	29.52 - 49.52	Pass
SPAP-1224	3/7/2006	Cs-137	118.25 ± 8.97	119.30	107.37 - 131.23	Pass
SPAP-1224	3/7/2006	Gr. Beta	520.32 ± 7.42	455.00	364.00 - 637.00	Pass
SPW-1228	3/7/2006	H-3	70891.00 ± 719.00	75394.00	60315.20 - 90472.80	Pass
SPW-1230	3/7/2006	Cs-134	38.58 ± 2.10	39.51	29.51 - 49.51	Pass
SPW-1230	3/7/2006	Cs-137	59.44 ± 4.51	59.65	49.65 - 69.65	Pass
SPMI-1232	3/7/2006	Cs-134	41.20 ± 1.33	39.51	29.51 - 49.51	Pass
SPMI-1232	3/7/2006	Cs-137	57.82 ± 3.96	59.65	49.65 - 69.65	Pass
W-30906	3/9/2006	Gr. Alpha	24.24 ± 0.47	20.08	10.04 - 30.12	Pass
W-30906	3/9/2006	Gr. Beta	63.79 ± 0.48	65.73	55.73 - 75.73	Pass
SPW-2750	4/27/2006	Ni-63	116.00 ± 2.49	100.00	60.00 - 140.00	Pass
SPW-2869	5/1/2006	Fe-55	19473.00 ± 188.00	23332.00	18665.60 - 27998.40	Pass
SPAP-2871	5/1/2006	Cs-134	33.97 ± 1.10	37.50	27.50 - 47.50	Pass
SPAP-2871	5/1/2006	Cs-137	114.44 ± 2.81	118.90	107.01 - 130.79	Pass
SPW-2875	5/1/2006	H-3	71057.00 ± 730.20	75394.00	60315.20 - 90472.80	Pass
STSO-3155	5/1/2006	Co-60	7950.80 ± 67.29	7750.00	6975.00 - 8525.00	Pass
STSO-3155	5/1/2006	Cs-134	12.49 ± 0.13	11.59	1.59 - 21.59	Pass
STSO-3155	5/1/2006	Cs-137	14.10 ± 0.12	11.63	1.63 - 21.63	Pass
SPAP-2873	5/2/2006	Gr. Beta	1724.80 ± 4.51	1744.00	1395.20 - 2441.60	Pass
SPF-3183	5/10/2006	Cs-137	2.47 ± 0.03	2.38	1.43 - 3.33	Pass
SPF-3183	5/10/2006	Cs-134	0.73 ± 0.01	0.74	0.44 - 1.04	Pass
SPW-3460	5/26/2006	C-14	4009.60 ± 14.43	4741.00	2844.60 - 6637.40	Pass
W-60606	6/6/2006	Gr. Alpha	21.94 ± 0.46	20.08	10.04 - 30.12	Pass
W-60606	6/6/2006	Gr. Beta	58.17 ± 0.49	65.73	55.73 - 75.73	Pass
SPW-3988	6/16/2006	Cs-134	35.56 ± 1.40	36.00	26.00 - 46.00	Pass
SPW-3988	6/16/2006	Cs-137	60.23 ± 2.72	59.27	49.27 - 69.27	Pass
SPW-3988	6/16/2006	I-131(G)	94.01 ± 4.38	99.30	89.30 - 109.30	Pass
SPW-3988	6/16/2006	Sr-89	52.40 ± 4.23	58.16	46.53 - 69.79	Pass
SPW-3988	6/16/2006	Sr-90	45.35 ± 1.95	41.21	32.97 - 49.45	Pass
SPMI-3990	6/16/2006	Cs-134	35.52 ± 5.05	36.00	26.00 - 46.00	Pass
SPMI-3990	6/16/2006	Cs-137	56.78 ± 3.86	59.27	49.27 - 69.27	Pass
SPMI-3990	6/16/2006	I-131(G)	95.04 ± 5.05	99.30	89.30 - 109.30	Pass
SPMI-3991	6/16/2006	I-131	96.55 ± 0.87	99.30	79.44 - 119.16	Pass
SPW-4356	7/5/2006	I-131	80.88 ± 1.09	77.23	61.78 - 92.68	Pass
W-90506	9/5/2006	Gr. Alpha	23.11 ± 0.45	20.08	10.04 - 30.12	Pass
W-90506	9/5/2006	Gr. Beta	65.01 ± 0.51	65.73	55.73 - 75.73	Pass
SPAP-6950	9/30/2006	Cs-134	28.93 ± 1.56	32.65	22.65 - 42.65	Pass
SPAP-6950	9/30/2006	Cs-137	116.62 ± 2.97	117.75	105.98 - 129.53	Pass
SPAP-6952	9/30/2006	Gr. Beta	52.96 ± 0.14	53.50	42.80 - 74.90	Pass

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

Lab Code	Date	Concentration (pCi/L) Analysis	Laboratory results 2s, n=1[b]	Known Activity	Control Limits[c]	Acceptance
SPW-6954	9/30/2006	Cs-134	63.29 ± 8.24	65.30	55.30 - 75.30	Pass
SPW-6954	9/30/2006	Cs-137	60.41 ± 7.53	58.87	48.87 - 68.87	Pass
SPMI-6956	9/30/2006	Cs-134	69.26 ± 4.85	65.31	55.31 - 75.31	Pass
SPMI-6956	9/30/2006	Cs-137	61.35 ± 7.62	58.87	48.87 - 68.87	Pass
W-120106	12/1/2006	Gr. Alpha	22.40 ± 1.03	20.08	10.04 - 30.12	Pass
W-120106	12/1/2006	Gr. Beta	63.70 ± 1.14	65.73	55.73 - 75.73	Pass
SPAP-9476	12/29/2006	Gr. Beta	57.51 ± 0.14	53.16	42.53 - 74.42	Pass
SPAP-9478	12/29/2006	Cs-134	26.84 ± 1.23	30.06	20.06 - 40.06	Pass
SPAP-9478	12/29/2006	Cs-137	110.54 ± 3.12	117.10	105.39 - 128.81	Pass
SPW-9480	12/29/2006	H-3	68972.20 ± 748.00	72051.60	57641.28 - 86461.92	Pass
SPW-9483	12/29/2006	Tc-99	29.43 ± 0.84	32.98	20.98 - 44.98	Pass
SPW-9488	12/29/2006	Cs-134	61.35 ± 1.65	60.10	50.10 - 70.10	Pass
SPW-9488	12/29/2006	Cs-137	60.30 ± 2.76	56.80	46.80 - 66.80	Pass
SPMI-9490	12/29/2006	Cs-134	58.99 ± 5.43	60.10	50.10 - 70.10	Pass
SPMI-9490	12/29/2006	Cs-137	54.16 ± 7.85	56.80	46.80 - 66.80	Pass
SPF-9492	12/29/2006	Cs-134	0.64 ± 0.01	0.60	0.36 - 0.84	Pass
SPF-9492	12/29/2006	Cs-137	2.61 ± 0.03	2.34	1.40 - 3.28	Pass

[a] Liquid sample results are reported in pCi/Liter, air filters(pCi/filter), charcoal (pCi/m^3), and solid samples (pCi/g).

[b] Laboratory codes as follows: W (water), MI (milk), AP (air filter), SO (soil), VE (vegetation), CH (charcoal canister), F (fish).

[c] Results are based on single determinations.

[d] 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[b]	Concentration (pCi/L)[a]		
				Laboratory results (4.66σ)		Acceptance
				LLD	Activity[c]	Criteria (4.66 σ)
SPW-302	water	1/20/2006	Fe-55	21.21	-1.82 ± 12.75	1000
SPAP-1225	Air Filter	3/7/2006	Gr. Beta	1.16	-0.512 ± 51.20	3.2
SPW-1231	water	3/7/2006	Cs-134	2.71		10
SPW-1231	water	3/7/2006	Cs-137	2.05		10
W-30906	water	3/9/2006	Gr. Alpha	0.037	0.005 ± 0.026	1
W-30906	water	3/9/2006	Gr. Beta	0.076	-0.016 ± 0.052	3.2
SPW-2751	water	4/27/2006	Ni-63	1.48	0.37 ± 0.91	20
SPW-2868	water	5/1/2006	Fe-55	18.07	4.33 ± 11.27	1000
SPW-2874	water	5/1/2006	H-3	166.00	-8.3 ± 86.9	200
SPAP-2872	Air Filter	5/2/2006	Gr. Beta	1.18	-3.65 ± 0.64	3.2
SPF-3154	Fish	5/10/2006	Cs-134	16.4		100
SPF-3154	Fish	5/10/2006	Cs-137	13.7		100
SPW-3461	water	5/26/2006	C-14	10.20	-7.9 ± 5.20	200
W-60606	water	6/6/2006	Gr. Alpha	0.05	0.013 ± 0.037	1
W-60606	water	6/6/2006	Gr. Beta	0.16	-0.044 ± 0.11	3.2
SPW-3989	water	6/16/2006	Cs-134	3.00		10
SPW-3989	water	6/16/2006	Cs-137	3.65		10
SPW-3989	water	6/16/2006	I-131	0.21	0.045 ± 0.14	0.5
SPW-3989	water	6/16/2006	I-131(G)	8.34		20
SPW-3989	water	6/16/2006	Sr-89	0.54	0.005 ± 0.45	5
SPW-3989	water	6/16/2006	Sr-90	0.58	-0.079 ± 0.26	1
SPMI-3991	Milk	6/16/2006	Cs-134	4.42		10
SPMI-3991	Milk	6/16/2006	Cs-137	3.88		10
SPMI-3991	Milk	6/16/2006	I-131	0.28	-0.22 ± 0.19	0.5
SPMI-3991	Milk	6/16/2006	I-131(G)	3.76		20
SPMI-3991	Milk	6/16/2006	Sr-89	0.61	-0.25 ± 0.76	5
SPMI-3991 [d]	Milk	6/16/2006	Sr-90	0.52	0.88 ± 0.34	1
W-90506	water	9/5/2006	Gr. Alpha	0.06	0.00 ± 0.04	1
W-90506	water	9/5/2006	Gr. Beta	0.16	0.05 ± 0.11	3.2
SPMI-6383	Milk	9/14/2006	Sr-89	0.97	-0.18 ± 0.92	5
SPMI-6383 [d]	Milk	9/14/2006	Sr-90	0.57	0.65 ± 0.33	1
SPAP-6949	Air Filter	9/30/2006	Cs-134	0.89		100
SPAP-6949	Air Filter	9/30/2006	Cs-137	0.91		100
SPAP-6951	Air Filter	9/30/2006	Gr. Beta	1.12	-0.54 ± 0.64	3.2
SPW-6953	water	9/30/2006	Cs-134	3.91		10
SPW-6953	water	9/30/2006	Cs-137	5.61		10
SPW-6953	water	9/30/2006	Sr-89	0.79	-0.14 ± 0.64	5
SPW-6953	water	9/30/2006	Sr-90	0.60	0.11 ± 0.29	1

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

Lab Code	Sample Type	Date	Analysis[b]	Concentration (pCi/L)[a]		
				Laboratory results (4.66σ)		Acceptance
				LLD	Activity[c]	Criteria (4.66 σ)
SPMI-6955	Milk	9/30/2006	Cs-134	2.86		10
SPMI-6955	Milk	9/30/2006	Cs-137	2.39		10
SPMI-6955	Milk	9/30/2006	I-131(G)	9.98		0.5
W-120106	water	12/1/2006	Gr. Alpha	0.11	0.066 ± 0.072	1
W-120106	water	12/1/2006	Gr. Beta	0.30	0.093 ± 0.16	3.2
SPAP-9477	Air Filter	12/29/2006	Gr. Beta	1.13	-0.37 ± 0.66	3.2
SPAP-9479	Air Filter	12/29/2006	Cs-137	0.87		100
SPW-9481	water	12/29/2006	H-3	146.2	63.2 ± 80.1	200
SPW-9483	water	12/29/2006	Tc-99	0.95	-1.20 ± 0.56	10
SPW-9489	water	12/29/2006	Cs-134	2.30		10
SPMI-9491	Milk	12/29/2006	Cs-134	3.10		10
SPMI-9491	Milk	12/29/2006	Cs-137	2.90		10
SPMI-9491	Milk	12/29/2006	I-131(G)	8.00		20
SPF-9493	Fish	12/29/2006	Cs-134	7.6		100
SPF-9493	Fish	12/29/2006	Cs-137	7.9		100

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

[b] I-131(G); iodine-131 as analyzed by gamma spectroscopy.

[c] Activity reported is a net activity result. For gamma spectroscopic analysis, activity detected below the LLD value is not reported

[d] 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] First Result	Second Result	Averaged Result	Acceptance
AP-7466, 7467	1/3/2006	Be-7	0.053 ± 0.015	0.057 ± 0.011	0.055 ± 0.009	Pass
AP-7513, 7514	1/3/2006	Be-7	0.033 ± 0.008	0.036 ± 0.008	0.035 ± 0.006	Pass
AP-7555, 7556	1/3/2006	Be-7	0.053 ± 0.007	0.054 ± 0.008	0.053 ± 0.005	Pass
MI-154, 155	1/10/2006	K-40	1254.20 ± 87.75	1369.60 ± 102.80	1311.90 ± 67.58	Pass
MI-217, 218	1/11/2006	K-40	1258.00 ± 118.00	1313.00 ± 98.00	1285.50 ± 76.69	Pass
MI-217, 218	1/11/2006	Sr-90	1.27 ± 0.37	0.92 ± 0.33	1.10 ± 0.25	Pass
MI-287, 288	1/17/2006	K-40	1383.10 ± 110.90	1457.80 ± 119.10	1420.45 ± 81.37	Pass
MI-287, 288	1/17/2006	Sr-90	0.74 ± 0.38	0.94 ± 0.37	0.84 ± 0.27	Pass
WW-314, 315	1/19/2006	Gr. Beta	9.21 ± 1.72	11.52 ± 1.93	10.37 ± 1.29	Pass
WW-314, 315	1/19/2006	H-3	168.64 ± 94.94	210.12 ± 96.51	189.38 ± 67.69	Pass
SWT-577, 578	1/31/2006	Gr. Beta	3.06 ± 0.66	3.68 ± 0.64	3.37 ± 0.46	Pass
SWU-598, 599	1/31/2006	Gr. Beta	2.03 ± 0.39	1.97 ± 0.40	2.00 ± 0.28	Pass
SWU-598, 599	1/31/2006	H-3	260.10 ± 98.20	134.10 ± 93.50	197.10 ± 67.80	Pass
F-3311, 3312 [b]	2/9/2006	Gr. Beta	4.12 ± 0.14	3.82 ± 0.13	3.97 ± 0.10	Fail
F-3311, 3312	2/9/2006	K-40	2.68 ± 0.37	2.76 ± 0.39	2.72 ± 0.27	Pass
SW-780, 781	2/14/2006	Gr. Alpha	4.09 ± 1.52	3.22 ± 1.37	3.66 ± 1.03	Pass
SW-780, 781	2/14/2006	Gr. Beta	5.91 ± 0.90	5.89 ± 0.92	5.90 ± 0.64	Pass
DW-934, 935	2/17/2006	I-131	0.35 ± 0.22	0.31 ± 0.25	0.33 ± 0.16	Pass
DW-1024, 1025	2/24/2006	I-131	0.24 ± 0.26	0.53 ± 0.24	0.39 ± 0.18	Pass
MI-1078, 1079	3/1/2006	Sr-90	1.42 ± 0.39	1.30 ± 0.62	1.36 ± 0.37	Pass
F-1357, 1358	3/10/2006	Gr. Beta	3.77 ± 0.07	3.71 ± 0.07	3.74 ± 0.05	Pass
F-1357, 1358	3/10/2006	K-40	2.46 ± 0.32	2.32 ± 0.44	2.39 ± 0.27	Pass
MI-1469, 1470	3/14/2006	K-40	1396.30 ± 120.80	1335.60 ± 113.80	1365.95 ± 82.98	Pass
CF-1538, 1539	3/21/2006	K-40	13.66 ± 0.81	13.97 ± 0.68	13.81 ± 0.53	Pass
WW-1583, 1584	3/22/2006	Gr. Beta	7.66 ± 0.73	8.87 ± 0.75	8.26 ± 0.52	Pass
DW-1955, 1956	3/27/2006	Gr. Beta	2.25 ± 0.60	3.15 ± 0.59	2.70 ± 0.42	Pass
MI-1760, 1761	3/29/2006	K-40	1271.00 ± 89.00	1378.00 ± 113.00	1324.50 ± 71.92	Pass
AP-2603, 2604	3/29/2006	Be-7	0.067 ± 0.015	0.056 ± 0.010	0.062 ± 0.009	Pass
E-1997, 1998	4/3/2006	Gr. Beta	1.82 ± 0.07	1.87 ± 0.07	1.85 ± 0.05	Pass
E-1997, 1998	4/3/2006	K-40	1.28 ± 0.15	1.24 ± 0.21	1.26 ± 0.13	Pass
AP-2818, 2819	4/3/2006	Be-7	0.06 ± 0.01	0.06 ± 0.01	0.06 ± 0.01	Pass
SWU-2863, 2864	4/3/2006	Gr. Beta	3.20 ± 1.26	4.77 ± 1.30	3.99 ± 0.91	Pass
SS-2389, 2390	4/11/2006	Gr. Beta	10.53 ± 0.96	9.38 ± 0.84	9.96 ± 0.64	Pass
SS-2389, 2390	4/11/2006	K-40	5.51 ± 0.42	5.79 ± 0.40	5.65 ± 0.29	Pass
DW-2773, 2774	4/21/2006	I-131	0.74 ± 0.23	0.53 ± 0.40	0.63 ± 0.23	Pass
SL-2932, 2933	5/1/2006	Be-7	1.28 ± 0.19	1.27 ± 0.17	1.28 ± 0.13	Pass
SL-2932, 2933	5/1/2006	Gr. Beta	6.09 ± 0.33	5.65 ± 0.31	5.87 ± 0.23	Pass
SL-2932, 2933	5/1/2006	K-40	3.13 ± 0.41	3.09 ± 0.36	3.11 ± 0.27	Pass
BS-3103, 3104	5/1/2006	Gr. Beta	8.27 ± 1.46	9.03 ± 1.59	8.65 ± 1.08	Pass
BS-3103, 3104	5/1/2006	K-40	6288.20 ± 585.20	5643.70 ± 599.80	5965.95 ± 418.99	Pass
MI-3037, 3038	5/2/2006	K-40	1238.90 ± 98.59	1301.00 ± 103.90	1269.95 ± 71.62	Pass
MI-3037, 3038	5/2/2006	Sr-90	1.76 ± 0.42	1.48 ± 0.42	1.62 ± 0.29	Pass

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

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
MI-3124, 3125	5/9/2006	K-40	1032.30 ± 91.12	1103.60 ± 120.50	1067.95 ± 75.54	Pass
SW-3145, 3146	5/9/2006	Gr. Alpha	4.85 ± 1.68	4.12 ± 1.62	4.48 ± 1.17	Pass
SW-3145, 3146	5/9/2006	Gr. Beta	8.94 ± 1.46	9.14 ± 1.36	9.04 ± 1.00	Pass
MI-3236, 3237	5/10/2006	K-40	1412.40 ± 119.10	1427.90 ± 127.70	1420.15 ± 87.31	Pass
F-3422, 3423	5/19/2006	H-3	8175.00 ± 252.00	8268.00 ± 253.00	8221.50 ± 178.54	Pass
G-3491, 3492	5/24/2006	Gr. Beta	8.89 ± 0.18	9.03 ± 0.19	8.96 ± 0.13	Pass
G-3491, 3492	5/24/2006	K-40	5.60 ± 0.71	6.30 ± 0.78	5.95 ± 0.53	Pass
SO-3539, 3540	5/24/2006	Gr. Beta	19.57 ± 1.99	18.98 ± 1.91	19.27 ± 1.38	Pass
SO-3539, 3540	5/24/2006	K-40	12.55 ± 0.89	11.49 ± 0.59	12.02 ± 0.53	Pass
WW-3751, 3752	5/25/2006	Gr. Beta	9.85 ± 0.79	8.96 ± 0.74	9.41 ± 0.54	Pass
F-3617, 3618	5/30/2006	K-40	2.42 ± 0.38	2.53 ± 0.37	2.47 ± 0.27	Pass
SL-3641, 3642	6/1/2006	Be-7	1.41 ± 0.19	1.31 ± 0.27	1.36 ± 0.17	Pass
SL-3641, 3642	6/1/2006	Gr. Beta	5.03 ± 0.18	5.30 ± 0.19	5.17 ± 0.13	Pass
SL-3641, 3642	6/1/2006	K-40	2.21 ± 0.26	2.14 ± 0.37	2.18 ± 0.23	Pass
MI-3886, 3887	6/12/2006	K-40	1424.20 ± 118.20	1318.80 ± 110.50	1371.50 ± 80.90	Pass
VE-3949, 3950	6/13/2006	Gr. Alpha	0.13 ± 0.06	0.16 ± 0.07	0.15 ± 0.05	Pass
VE-3949, 3950	6/13/2006	Gr. Beta	4.53 ± 0.19	4.47 ± 0.18	4.50 ± 0.13	Pass
VE-3949, 3950	6/13/2006	K-40	6.02 ± 0.66	5.33 ± 0.66	5.67 ± 0.47	Pass
BS-4016, 4017	6/13/2006	Co-60	0.18 ± 0.03	0.15 ± 0.03	0.16 ± 0.02	Pass
BS-4016, 4017	6/13/2006	Cs-137	1.97 ± 0.09	2.01 ± 0.09	1.99 ± 0.06	Pass
BS-4016, 4017	6/13/2006	K-40	11.03 ± 0.76	10.45 ± 0.78	10.74 ± 0.54	Pass
MI-3992, 3993	6/14/2006	K-40	1358.50 ± 166.40	1395.80 ± 122.70	1377.15 ± 103.37	Pass
LW-4175, 4176	6/16/2006	H-3	482.11 ± 90.25	397.50 ± 86.88	439.81 ± 62.63	Pass
W-4130, 4131	6/21/2006	H-3	401.50 ± 87.85	236.28 ± 80.89	318.89 ± 59.71	Pass
AV-4330, 4331	6/26/2006	K-40	1717.10 ± 244.30	1893.10 ± 223.30	1805.10 ± 165.49	Pass
SWU-4489, 4490	6/27/2006	Gr. Beta	1.70 ± 0.38	1.93 ± 0.38	1.82 ± 0.27	Pass
AP-4909, 4910	6/29/2006	Be-7	0.11 ± 0.01	0.11 ± 0.02	0.11 ± 0.01	Pass
AP-4952, 4953	6/29/2006	Be-7	0.08 ± 0.02	0.10 ± 0.02	0.09 ± 0.01	Pass
AP-4930, 4931	7/3/2006	Be-7	0.08 ± 0.02	0.07 ± 0.01	0.08 ± 0.01	Pass
E-4399, 4400	7/5/2006	Gr. Beta	1.85 ± 0.05	1.85 ± 0.05	1.85 ± 0.04	Pass
E-4399, 4400	7/5/2006	K-40	1.25 ± 0.19	1.24 ± 0.18	1.25 ± 0.13	Pass
G-4420, 4421	7/5/2006	Be-7	0.82 ± 0.20	0.61 ± 0.14	0.72 ± 0.12	Pass
G-4420, 4421	7/5/2006	Gr. Beta	13.20 ± 0.40	14.00 ± 0.40	13.60 ± 0.28	Pass
G-4420, 4421	7/5/2006	K-40	9.96 ± 0.44	10.06 ± 0.82	10.01 ± 0.47	Pass
DW-60432, 60433	7/6/2006	Gr. Alpha	3.24 ± 1.35	2.49 ± 1.33	2.87 ± 0.95	Pass
DW-60514, 60515	7/10/2006	Gr. Alpha	3.70 ± 1.12	3.09 ± 1.16	3.40 ± 0.81	Pass
DW-60449, 60450	7/11/2006	Gr. Alpha	6.87 ± 1.26	4.77 ± 1.09	5.82 ± 0.83	Pass
MI-4599, 4600	7/12/2006	K-40	1403.50 ± 118.80	1330.40 ± 116.50	1366.95 ± 83.20	Pass
MI-4599, 4600	7/12/2006	Sr-90	0.59 ± 0.34	0.70 ± 0.35	0.65 ± 0.24	Pass
MI-4667, 4668	7/12/2006	K-40	1286.60 ± 92.62	1358.60 ± 158.40	1322.60 ± 91.75	Pass
LW-4823, 4824	7/14/2006	Gr. Beta	1.75 ± 0.60	2.51 ± 0.59	2.13 ± 0.42	Pass

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

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
DW-60502, 60503	7/19/2006	Gr. Alpha	16.27 ± 2.49	21.41 ± 3.21	18.84 ± 2.03	Pass
DW-60526, 60527	7/21/2006	Gr. Alpha	14.06 ± 1.82	15.57 ± 1.77	14.82 ± 1.27	Pass
DW-60539, 60540	7/21/2006	Gr. Alpha	5.09 ± 0.95	6.23 ± 1.05	5.66 ± 0.71	Pass
MI-5125, 5126	7/25/2006	K-40	1480.60 ± 118.30	1402.60 ± 120.80	1441.60 ± 84.54	Pass
DW-60609, 60610	7/26/2006	Gr. Alpha	1.00 ± 1.10	2.70 ± 1.30	1.85 ± 0.85	Pass
DW-60621, 60622	7/31/2006	Gr. Alpha	3.70 ± 1.00	1.90 ± 0.80	2.80 ± 0.64	Pass
SL-5265, 5266	8/1/2006	Be-7	1.10 ± 0.46	1.38 ± 0.52	1.24 ± 0.35	Pass
SL-5265, 5266	8/1/2006	Sr-90	0.10 ± 0.03	0.16 ± 0.03	0.13 ± 0.02	Pass
SL-5265, 5266	8/1/2006	Gr. Beta	4.41 ± 0.41	3.46 ± 0.57	3.94 ± 0.35	Pass
SL-5265, 5266	8/1/2006	K-40	1.19 ± 0.52	0.87 ± 0.52	1.03 ± 0.37	Pass
VE-5286, 5287	8/1/2006	Be-7	1.21 ± 0.30	1.32 ± 0.20	1.27 ± 0.18	Pass
VE-5286, 5287	8/1/2006	Gr. Beta	9.67 ± 0.35	9.37 ± 0.35	9.52 ± 0.25	Pass
VE-5286, 5287	8/1/2006	K-40	6.25 ± 0.81	6.50 ± 0.48	6.38 ± 0.47	Pass
SW-5383, 5384	8/8/2006	Gr. Alpha	3.24 ± 1.35	2.94 ± 1.35	3.09 ± 0.96	Pass
SW-5383, 5384	8/8/2006	Gr. Beta	4.86 ± 0.86	5.46 ± 0.87	5.16 ± 0.61	Pass
SW-5971, 5972	8/8/2006	H-3	119.90 ± 78.14	144.41 ± 79.23	132.15 ± 55.64	Pass
VE-5404, 5405	8/10/2006	Be-7	0.77 ± 0.24	1.01 ± 0.26	0.89 ± 0.18	Pass
VE-5404, 5405	8/10/2006	K-40	4.71 ± 0.63	4.01 ± 0.58	4.36 ± 0.43	Pass
DW-5480, 5481	8/11/2006	H-3	169.08 ± 85.52	133.65 ± 83.96	151.36 ± 59.92	Pass
DW-60645, 60646	8/15/2006	Gr. Alpha	10.41 ± 1.78	10.97 ± 1.85	10.69 ± 1.28	Pass
W-5602, 5603	8/16/2006	H-3	2118.79 ± 151.55	2181.82 ± 153.09	2150.30 ± 107.71	Pass
DW-60634, 60635	8/18/2006	Gr. Alpha	12.99 ± 1.84	9.67 ± 1.61	11.33 ± 1.22	Pass
DW-60634, 60635	8/18/2006	Gr. Beta	10.51 ± 1.33	8.61 ± 1.18	9.56 ± 0.89	Pass
MI-5793, 5794	8/22/2006	K-40	1264.00 ± 115.00	1377.00 ± 121.00	1320.50 ± 83.47	Pass
SWU-6150, 6151	8/29/2006	Gr. Beta	1.84 ± 0.28	1.81 ± 0.28	1.82 ± 0.20	Pass
DW-60657, 60658	8/29/2006	Gr. Alpha	2.33 ± 0.80	2.90 ± 0.78	2.62 ± 0.56	Pass
CF-7450, 7451	9/5/2006	Be-7	0.78 ± 0.45	0.78 ± 0.27	0.78 ± 0.26	Pass
SL-6085, 6086	9/5/2006	Co-60	0.22 ± 0.03	0.21 ± 0.02	0.22 ± 0.02	Pass
SL-6085, 6086	9/5/2006	Gr. Beta	5.47 ± 0.69	4.63 ± 0.58	5.05 ± 0.45	Pass
SL-6085, 6086	9/5/2006	K-40	1.91 ± 0.28	2.06 ± 0.41	1.99 ± 0.25	Pass
DW-60695, 60696	9/11/2006	Gr. Alpha	3.93 ± 1.17	4.62 ± 1.12	4.28 ± 0.81	Pass
LW-6266, 6267	9/13/2006	Gr. Beta	3.09 ± 0.48	2.98 ± 0.48	3.03 ± 0.34	Pass
MI-6424, 6425	9/19/2006	Sr-90	0.78 ± 0.38	1.11 ± 0.37	0.95 ± 0.27	Pass
DW-60715, 60716	9/19/2006	Gr. Alpha	1.30 ± 1.00	2.23 ± 1.01	1.77 ± 0.71	Pass
SO-6597, 6598	9/22/2006	Cs-137	0.18 ± 0.04	0.18 ± 0.04	0.18 ± 0.03	Pass
SO-6597, 6598	9/22/2006	K-40	10.25 ± 0.66	10.11 ± 0.64	10.18 ± 0.46	Pass
SWU-6718, 6719	9/26/2006	Gr. Beta	3.45 ± 1.21	2.78 ± 1.19	3.12 ± 0.85	Pass
SO-6668, 6669	9/27/2006	Cs-137	0.13 ± 0.04	0.13 ± 0.02	0.13 ± 0.02	Pass
SO-6668, 6669	9/27/2006	K-40	13.04 ± 0.90	12.41 ± 0.54	12.72 ± 0.53	Pass

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

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
MI-6760, 6761	10/2/2006	K-40	1413.10 ± 113.20	1187.30 ± 155.20	1300.20 ± 96.05	Pass
G-6797, 6798	10/2/2006	Be-7	4.70 ± 0.31	4.56 ± 0.41	4.63 ± 0.26	Pass
G-6797, 6798	10/2/2006	Gr. Beta	6.89 ± 0.26	7.04 ± 0.24	6.97 ± 0.18	Pass
G-6797, 6798 [b]	10/2/2006	K-40	5.39 ± 0.35	4.36 ± 0.47	4.88 ± 0.29	Fail
AP-7531, 7532	10/3/2006	Be-7	0.07 ± 0.01	0.08 ± 0.01	0.08 ± 0.01	Pass
AP-7552, 7553	10/3/2006	Be-7	0.08 ± 0.02	0.08 ± 0.01	0.08 ± 0.01	Pass
AP-7573, 7574	10/3/2006	Be-7	0.08 ± 0.02	0.08 ± 0.01	0.08 ± 0.01	Pass
SO-7103, 7104	10/4/2006	Cs-137	0.25 ± 0.05	0.27 ± 0.06	0.26 ± 0.04	Pass
SO-7103, 7104	10/4/2006	K-40	12.95 ± 1.12	12.22 ± 1.07	12.58 ± 0.77	Pass
DW-60759, 60760	10/5/2006	Gr. Alpha	4.93 ± 0.97	5.04 ± 1.03	4.99 ± 0.71	Pass
MI-7037, 7038	10/10/2006	K-40	1326.10 ± 115.20	1251.40 ± 115.70	1288.75 ± 81.64	Pass
VE-7058, 7059	10/10/2006	Gr. Alpha	0.18 ± 0.11	0.32 ± 0.14	0.25 ± 0.09	Pass
VE-7058, 7059	10/10/2006	Gr. Beta	9.21 ± 0.34	8.83 ± 0.36	9.02 ± 0.25	Pass
VE-7058, 7059	10/10/2006	K-40	10.90 ± 0.65	10.42 ± 0.80	10.66 ± 0.52	Pass
SS-7079, 7080	10/10/2006	Cs-137	0.04 ± 0.01	0.04 ± 0.02	0.04 ± 0.01	Pass
SS-7079, 7080	10/10/2006	Gr. Beta	12.23 ± 2.46	11.76 ± 2.23	11.99 ± 1.66	Pass
SS-7079, 7080	10/10/2006	K-40	7.23 ± 0.36	7.37 ± 0.40	7.30 ± 0.27	Pass
MI-7208, 7209	10/11/2006	K-40	1295.20 ± 116.90	1386.90 ± 119.10	1341.05 ± 83.44	Pass
CF-7450, 7451	10/18/2006	K-40	20.40 ± 0.84	19.54 ± 0.99	19.97 ± 0.65	Pass
LW-7945, 7946	10/26/2006	Gr. Beta	1.30 ± 0.37	1.44 ± 0.36	1.37 ± 0.26	Pass
F-7971, 7972	10/29/2006	K-40	3.63 ± 0.54	3.33 ± 0.43	3.48 ± 0.34	Pass
SWU-8194, 8195	10/31/2006	Gr. Beta	1.84 ± 0.28	1.43 ± 0.28	1.64 ± 0.20	Pass
BS-8017, 8018	11/1/2006	Gr. Beta	10.54 ± 1.72	10.17 ± 1.73	10.36 ± 1.22	Pass
BS-8017, 8018	11/1/2006	K-40	10.00 ± 0.53	9.60 ± 0.69	9.80 ± 0.44	Pass
LW-8215, 8216	11/1/2006	Gr. Beta	2.23 ± 0.61	1.64 ± 0.37	1.93 ± 0.35	Pass
F-8345, 8346	11/2/2006	K-40	2.84 ± 0.42	2.89 ± 0.40	2.86 ± 0.29	Pass
BS-8366, 8367	11/2/2006	K-40	13.69 ± 0.66	13.61 ± 0.78	13.65 ± 0.51	Pass
MI-8083, 8084	11/6/2006	K-40	1295.00 ± 121.20	1374.80 ± 162.80	1334.90 ± 101.48	Pass
WW-8259, 8260	11/7/2006	H-3	337.00 ± 95.00	295.00 ± 93.00	316.00 ± 66.47	Pass
MI-8484, 8485	11/22/2006	K-40	1405.80 ± 87.06	1390.70 ± 103.60	1398.25 ± 67.66	Pass
SO-8619, 8620	11/27/2006	Cs-137	0.74 ± 0.08	0.69 ± 0.06	0.71 ± 0.05	Pass
SO-8619, 8620	11/27/2006	Gr. Alpha	16.54 ± 5.65	12.24 ± 4.90	14.39 ± 3.74	Pass
SO-8619, 8620	11/27/2006	Gr. Beta	24.99 ± 3.88	28.66 ± 3.95	26.82 ± 2.77	Pass
SO-8619, 8620	11/27/2006	K-40	12.21 ± 1.11	12.92 ± 0.83	12.57 ± 0.69	Pass
SWT-8641, 8642	11/29/2006	Gr. Beta	2.83 ± 0.47	2.89 ± 0.45	2.86 ± 0.33	Pass
SWT-9436, 9437	12/26/2006	Gr. Beta	2.39 ± 0.64	2.25 ± 0.60	2.32 ± 0.44	Pass

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).

[b] 200 minute count time or longer, resulting in lower error.

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

Lab Code[c]	Date	Concentration [b] Analysis	Laboratory result	Known Activity	Control Limits [d]	Acceptance
STVE-1082	01/01/06	Am-241	0.16 ± 0.06	0.16	0.11 - 0.20	Pass
STVE-1082	01/01/06	Co-57	10.40 ± 0.20	8.58	6.00 - 11.15	Pass
STVE-1082	01/01/06	Co-60	5.00 ± 0.20	4.52	3.16 - 5.88	Pass
STVE-1082 [e]	01/01/06	Cs-134	< 0.20	0.00		Pass
STVE-1082	01/01/06	Cs-137	3.40 ± 0.20	3.07	2.15 - 4.00	Pass
STVE-1082	01/01/06	Mn-54	6.90 ± 0.20	6.25	4.37 - 8.12	Pass
STVE-1082 [f]	01/01/06	Pu-238	0.08 ± 0.03	0.14	0.10 - 0.18	Fail
STVE-1082	01/01/06	Pu-239/40	0.17 ± 0.03	0.16	0.11 - 0.21	Pass
STVE-1082	01/01/06	Sr-90	1.40 ± 0.20	1.56	1.09 - 2.03	Pass
STVE-1082	01/01/06	U-233/4	0.24 ± 0.05	0.21	0.15 - 0.27	Pass
STVE-1082	01/01/06	U-238	0.19 ± 0.04	0.22	0.15 - 0.28	Pass
STVE-1082	01/01/06	Zn-65	11.10 ± 0.50	9.80	6.86 - 12.74	Pass
STSO-1083	01/01/06	Am-241	54.60 ± 5.50	57.08	39.96 - 74.20	Pass
STSO-1083	01/01/06	Co-57	762.90 ± 12.70	656.29	459.40 - 853.18	Pass
STSO-1083	01/01/06	Co-60	504.90 ± 3.10	447.10	312.97 - 581.23	Pass
STSO-1083 [e]	01/01/06	Cs-134	< 1.70	0.00		Pass
STSO-1083	01/01/06	Cs-137	406.50 ± 3.70	339.69	237.78 - 441.60	Pass
STSO-1083	01/01/06	K-40	719.20 ± 18.40	604.00	422.80 - 785.20	Pass
STSO-1083	01/01/06	Mn-54	415.60 ± 4.80	346.77	242.74 - 450.80	Pass
STSO-1083	01/01/06	Ni-63	261.40 ± 14.70	323.51	226.46 - 420.56	Pass
STSO-1083 [f]	01/01/06	Pu-238	14.60 ± 2.90	61.15	42.81 - 79.50	Fail
STSO-1083	01/01/06	Pu-239/40	14.60 ± 2.40	45.85	32.09 - 59.61	Fail
STSO-1083	01/01/06	U-233/4	13.50 ± 1.70	37.00	25.90 - 48.10	Fail
STSO-1083	01/01/06	U-238	15.40 ± 1.80	38.85	27.20 - 50.50	Fail
STSO-1083	01/01/06	Zn-65	783.40 ± 7.00	657.36	460.15 - 854.57	Pass
STAP-1084	01/01/06	Gr. Alpha	0.26 ± 0.02	0.36	0.00 - 0.72	Pass
STAP-1084	01/01/06	Gr. Beta	0.51 ± 0.03	0.48	0.24 - 0.72	Pass
STAP-1085	01/01/06	Am-241	0.12 ± 0.02	0.09	0.07 - 0.12	Pass
STAP-1085	01/01/06	Co-57	4.32 ± 0.10	4.10	2.87 - 5.32	Pass
STAP-1085	01/01/06	Co-60	2.24 ± 0.16	2.19	1.53 - 2.84	Pass
STAP-1085	01/01/06	Cs-134	2.96 ± 0.19	2.93	2.05 - 3.81	Pass
STAP-1085	01/01/06	Cs-137	2.64 ± 0.20	2.53	1.77 - 3.29	Pass
STAP-1085 [f]	01/01/06	Pu-238	0.03 ± 0.01	0.07	0.05 - 0.09	Fail
STAP-1085 [e]	01/01/06	Pu-239/40	< 0.01	0.00		Pass
STAP-1085	01/01/06	Sr-90	0.77 ± 0.21	0.79	0.55 - 1.03	Pass
STAP-1085	01/01/06	U-233/4	0.03 ± 0.01	0.02	0.01 - 0.03	Pass
STAP-1085	01/01/06	U-238	0.02 ± 0.01	0.02	0.01 - 0.03	Pass
STAP-1085	01/01/06	Zn-65	3.94 ± 0.44	3.42	2.40 - 4.45	Pass

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

Lab Code[c]	Date	Concentration [b] Analysis	Laboratory result	Known Activity	Control Limits [d]	Acceptance
STW-1086	01/01/06	Am-241	1.29 ± 0.05	1.30	0.91 - 1.69	Pass
STW-1086	01/01/06	Co-57	177.10 ± 1.00	166.12	116.28 - 215.96	Pass
STW-1086	01/01/06	Co-60	158.30 ± 1.00	153.50	107.45 - 199.55	Pass
STW-1086	01/01/06	Cs-134	96.40 ± 1.50	95.10	66.57 - 123.63	Pass
STW-1086 [e]	01/01/06	Cs-137	< 0.80	0.00		Pass
STW-1086	01/01/06	Fe-55	102.50 ± 18.10	129.60	90.72 - 168.48	Pass
STW-1086	01/01/06	H-3	956.60 ± 16.50	952.01	666.41 - 1238.00	Pass
STW-1086	01/01/06	Mn-54	335.30 ± 2.20	315.00	220.50 - 409.50	Pass
STW-1086	01/01/06	Ni-63	62.90 ± 3.60	60.34	42.24 - 78.44	Pass
STW-1086	01/01/06	Pu-238	0.96 ± 0.07	0.91	0.70 - 1.30	Pass
STW-1086 [e]	01/01/06	Pu-239/40	< 0.20	0.00		Pass
STW-1086	01/01/06	Sr-90	12.80 ± 1.60	13.16	9.21 - 17.11	Pass
STW-1086	01/01/06	Tc-99	22.30 ± 1.20	23.38	16.37 - 30.39	Pass
STW-1086	01/01/06	U-233/4	2.02 ± 0.12	2.09	1.46 - 2.72	Pass
STW-1086	01/01/06	U-238	2.03 ± 0.12	2.17	1.52 - 2.82	Pass
STW-1086	01/01/06	Zn-65	249.50 ± 3.40	228.16	159.71 - 296.61	Pass
STW-1087	01/01/06	Gr. Alpha	0.59 ± 0.10	0.58	0.00 - 1.16	Pass
STW-1087	01/01/06	Gr. Beta	1.69 ± 0.07	1.13	0.56 - 1.70	Pass
STVE-1098 [e]	07/01/06	Co-57	< 0.14	0.00		Pass
STVE-1098 [g]	07/01/06	Co-60	6.89 ± 0.17	5.81	4.06 - 7.55	Pass
STVE-1098	07/01/06	Cs-134	8.46 ± 0.16	7.49	5.24 - 9.73	Pass
STVE-1098	07/01/06	Cs-137	6.87 ± 0.29	5.50	3.85 - 7.14	Pass
STVE-1098	07/01/06	Mn-54	10.36 ± 0.29	8.35	5.85 - 10.86	Pass
STVE-1098	07/01/06	Zn-65	7.46 ± 0.50	5.98	4.19 - 7.78	Pass
STSO-1099	07/01/06	Am-241	130.00 ± 11.60	105.47	73.83 - 137.11	Pass
STSO-1099	07/01/06	Co-57	784.90 ± 3.80	676.33	473.43 - 879.23	Pass
STSO-1099	07/01/06	Co-60	2.10 ± 0.90	1.98	0.00 - 5.00	Pass
STSO-1099	07/01/06	Cs-134	500.70 ± 7.40	452.13	316.49 - 587.77	Pass
STSO-1099	07/01/06	Cs-137	624.20 ± 4.90	525.73	368.01 - 683.45	Pass
STSO-1099	07/01/06	K-40	701.30 ± 3.40	604.00	423.00 - 785.00	Pass
STSO-1099	07/01/06	Mn-54	699.20 ± 5.20	594.25	415.98 - 772.52	Pass
STSO-1099	07/01/06	Ni-63	614.40 ± 17.10	672.30	470.60 - 874.00	Pass
STSO-1099	07/01/06	Pu-238	79.90 ± 5.80	82.00	57.00 - 107.00	Pass
STSO-1099 [e]	07/01/06	Pu-239/40	< 0.70	0.00		Pass
STSO-1099	07/01/06	U-233/4	150.50 ± 5.90	152.44	106.71 - 198.17	Pass
STSO-1099	07/01/06	U-238	151.60 ± 6.00	158.73	111.11 - 206.35	Pass
STSO-1099	07/01/06	Zn-65	1021.90 ± 9.20	903.61	632.53 - 1175.00	Pass
STAP-1100	07/01/06	Am-241	0.16 ± 0.03	0.14	0.10 - 0.19	Pass
STAP-1100	07/01/06	Co-57	2.17 ± 0.06	2.58	1.81 - 3.36	Pass
STAP-1100	07/01/06	Co-60	1.38 ± 0.07	1.58	1.10 - 2.05	Pass
STAP-1100	07/01/06	Cs-134	2.52 ± 0.13	3.15	2.20 - 4.09	Pass

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

		Concentration [b]				
Lab Code[c]	Date	Analysis	Laboratory result	Known Activity	Control Limits [d]	Acceptance
STAP-1100	07/01/06	Cs-137	1.64 ± 0.08	1.81	1.26 - 2.35	Pass
STAP-1100	07/01/06	Mn-54	1.76 ± 0.18	1.92	1.34 - 2.50	Pass
STAP-1100	07/01/06	Pu-238	0.09 ± 0.02	0.12	0.08 - 0.15	Pass
STAP-1100	07/01/06	Sr-90	0.66 ± 0.21	0.62	0.43 - 0.81	Pass
STAP-1100	07/01/06	U-233/4	0.15 ± 0.02	0.13	0.09 - 0.17	Pass
STAP-1100	07/01/06	U-238	0.13 ± 0.02	0.14	0.10 - 0.18	Pass
STAP-1100 [e]	07/01/06	Zn-65	< 0.07	0.00		Pass
STAP-1101	07/01/06	Gr. Alpha	0.08 ± 0.03	0.29	0.00 - 0.58	Pass
STAP-1101	07/01/06	Gr. Beta	0.41 ± 0.05	0.36	0.18 - 0.54	Pass
STW-1102	07/01/06	Gr. Alpha	0.76 ± 0.07	1.03	0.00 - 2.07	Pass
STW-1102	07/01/06	Gr. Beta	1.23 ± 0.06	1.03	0.52 - 1.54	Pass
STW-1103	07/01/06	Am-241	1.86 ± 0.09	2.31	1.62 - 3.00	Pass
STW-1103	07/01/06	Co-57	224.10 ± 1.20	213.08	149.16 - 277.00	Pass
STW-1103	07/01/06	Co-60	49.40 ± 0.50	47.50	33.20 - 61.80	Pass
STW-1103	07/01/06	Cs-134	112.70 ± 0.90	112.82	78.97 - 146.66	Pass
STW-1103	07/01/06	Cs-137	206.60 ± 1.40	196.14	137.30 - 254.98	Pass
STW-1103	07/01/06	Fe-55	138.40 ± 5.40	165.40	115.80 - 215.00	Pass
STW-1103	07/01/06	H-3	446.50 ± 11.80	428.85	300.20 - 557.50	Pass
STW-1103 [e]	07/01/06	Mn-54	< 0.30	0.00		Pass
STW-1103	07/01/06	Ni-63	116.70 ± 3.60	118.62	83.03 - 154.21	Pass
STW-1103	07/01/06	Pu-238	1.27 ± 0.07	1.39	0.97 - 1.81	Pass
STW-1103	07/01/06	Pu-239/40	1.67 ± 0.08	1.94	1.36 - 2.52	Pass
STW-1103	07/01/06	Sr-90	16.40 ± 1.90	15.69	10.98 - 20.40	Pass
STW-1103	07/01/06	Tc-99	29.40 ± 1.10	27.15	19.00 - 35.29	Pass
STW-1103	07/01/06	U-233/4	1.97 ± 0.08	2.15	1.50 - 2.80	Pass
STW-1103	07/01/06	U-238	1.97 ± 0.08	2.22	1.55 - 2.89	Pass
STW-1103	07/01/06	Zn-65	192.50 ± 2.40	176.37	123.46 - 229.28	Pass

[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] Results are reported in units of Bq/kg (soil), Bq/L (water) or Bq/total sample (filters, vegetation).

[c] Laboratory codes as follows: STW (water), STAP (air filter), STSO (soil), STVE (vegetation).

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

[e] Included in the MAPEP as a false positive.

[f] Difficulties with the analyses for transuranics isotopes in solid samples (Filters, Soil and vegetation), were attributed to incomplete dissolution of the samples. Soil samples were repeated, results of reanalyses: Pu-238, 53.1 ± 5.3 bq/kg. Pu-239/240, 42.4 ± 4.7 bq/kg. U-233/4, 33.3 ± 3.5 bq/kg. U-238, 35.5 ± 3.6 bq/kg.

[g] The July vegetation sample was provided in two separate geometries, (100 ml. and 500 ml.). Results reported here used the 500 ml. standard size geometry. Results for the 100 ml. geometry showed approximately a 15% higher bias.

APPENDIX B

DATA REPORTING CONVENTIONS

Data Reporting Conventions

1.0. All activities, except gross alpha and gross beta, are decay corrected to collection time or the end of the collection period.

2.0. Single Measurements

Each single measurement is reported as follows: $x \pm s$

where: x = value of the measurement;

$s = 2\sigma$ counting uncertainty (corresponding to the 95% confidence level).

In cases where the activity is less than the lower limit of detection L, it is reported as: $< L$,

where L = the lower limit of detection based on 4.66σ uncertainty for a background sample.

3.0. Duplicate analyses

3.1 Individual results: For two analysis results; $x_1 \pm s_1$ and $x_2 \pm s_2$

Reported result: $x \pm s$; where $x = (1/2)(x_1 + x_2)$ and $s = (1/2)\sqrt{s_1^2 + s_2^2}$

3.2. Individual results: $< L_1$, $< L_2$ Reported result: $< L$, where L = lower of L_1 and L_2

3.3. Individual results: $x \pm s$, $< L$ Reported result: $x \pm s$ if $x \geq L$; $<L$ otherwise.

4.0. Computation of Averages and Standard Deviations

4.1 Averages and standard deviations listed in the tables are computed from all of the individual measurements over the period averaged; for example, an annual standard deviation would not be the average of quarterly standard deviations. The average $\bar{x}$ and standard deviation s of a set of n numbers $x_1, x_2 \ldots x_n$ are defined as follows:

$$\bar{x} = \frac{1}{n} \sum x \qquad s = \sqrt{\frac{\sum (x - \bar{x})^2}{n-1}}$$

4.2 Values below the highest lower limit of detection are not included in the average.

4.3 If all values in the averaging group are less than the highest LLD, the highest LLD is reported.

4.4 If all but one of the values are less than the highest LLD, the single value x and associated two sigma error is reported.

4.5 In rounding off, the following rules are followed:

4.5.1. If the number following those to be retained is less than 5, the number is dropped, and the retained number s are kept unchanged. As an example, 11.443 is rounded off to 11.44.

4.5.2. If the number following those to be retained is equal to or greater than 5, the number is dropped and the last retained number is raised by 1. As an example, 11.445 is rounded off to 11.45.

APPENDIX C

Maximum Permissible Concentrations

of Radioactivity in Air and Water

Above Background in Unrestricted Areas

Table C-1. Maximum permissible concentrations of radioactivity in air and water above natural background in unrestricted areas[a].

	Air (pCi/m^3)		Water (pCi/L)
Gross alpha	1×10^{-3}	Strontium-89	8,000
Gross beta	1	Strontium-90	500
Iodine-131[b]	2.8×10^{-1}	Cesium-137	1,000
		Barium-140	8,000
		Iodine-131	1,000
		Potassium-40[c]	4,000
		Gross alpha	2
		Gross beta	10
		Tritium	1×10^6

[a] Taken from Table 2 of Appendix B to Code of Federal Regulations Title 10, Part 20, and appropriate footnotes. Concentrations may be averaged over a period not greater than one year.

[b] Value adjusted by a factor of 700 to reduce the dose resulting from the air-grass-cow-milk-child pathway.

[c] A natural radionuclide.

Appendix D. NON-RADIOLOGICAL MONITORING PROGRAM

1.0. Introduction

Union Electric Company, d.b.a. AmerenUE, in accordance with federal regulations and a desire to maintain the quality of the local environment around Callaway Plant has implemented an Environmental Protection Plan, (EPP) contained in Appendix B of the Callaway Plant Operating License.

The objective of the EPP is to provide for protection of non-radiological environmental values during operation of the Callaway Plant.

This report describes the conduct of the EPP for the Callaway Plant during 2006.

Appendix D. Non-radiological Monitoring Program

2.0. Unusual or Important Events

No unusual or important events reportable under the EPP Section 4.1 were identified during 2006.

3.0. EPP Noncompliances

During 2006 there were no noncompliances with the EPP.

4.0. Nonroutine Reports

There were no nonroutine reports submitted in accordance with the EPP, Section 5.4.2 in 2006.

5.0. Plant Design and Operation Environmental Evaluations.

This section lists all changes in the plant design, operation, tests or experiments installed during 2006, which could have involved a potentially significant unreviewed environmental question in accordance with section 3.1 of Appendix B.

During 2006, there was one activity and one plant design that could have involved a potentially significant unreviewed environmental question. The interpretations and conclusions regarding these plant changes along with a description of the change and activity are presented below.

Callaway Geotechnical Investigation for Additional Unit

Description of Activity:

The geotechnical investigation involves core boring samples for the Callaway Unit 2 siting study to determine the stability of subsurface materials and foundations. Approximately 65 boreholes will be drilled ranging from 30 feet to a depth of near 400 feet and with a diameter of approximately 2.5 inches. Twelve of these borings will be kept open as monitoring wells for at least one year and potentially for up to 12 years during the construction phase. Soil boreholes will be made using wash rotary equipment with a side discharge (wash boring method) as allowed by ASTM D 1586-99. Drilling mud will consist of a mixture of clean water and powdered bentonite. Drilling mud and soil cuttings will be dispersed on the ground surface at each borehole location. No additives or hydrocarbons will be used in the process that could result in environmental contamination. Upon completion of the drilling and testing, each of the boreholes (except those used for monitoring wells) will be abandoned in accordance with the State of Missouri requirements. Abandoned drill holes will be sealed with cement bentonite grout applied from the bottom of the borehole to the ground surface.

Evaluation of Activity:

The Callaway Environmental Report (ER) and Final Environmental Statement Operating (FES-OL) were reviewed for any previously evaluated adverse environmental impacts. The borings necessary to complete this study for the proposed Unit 2 were not identified in these documents; however, this review identified no adverse environmental impact or potential for any adverse environmental impact not previously evaluated.

This project involves drilling of approximately 65 holes. The sample locations have been reviewed and compared with the Callaway Plant Phase I Cultural Resource Survey and Assessment of Residual Lands and the Cultural Resources Management Plan. The location of each of the borings is within the Operation and Maintenance Zone identified in the Callaway Plant Cultural Resources Management Plan. This entire area is owned by AmerenUE and has been previously surveyed. Environmental Services has also reviewed these locations and have confirmed that no cultural resources or archeological sites are located near the area where these boring samples will be collected.

Collection of these bore samples will require some land to be disturbed at each of the approximately 65 locations. These boreholes will be located north of the existing Unit 1 and the protected zone. The boreholes will be approximately 2.5 inches in diameter with several locations up to 400 feet deep. However, the land being disturbed is well less than one acre and will not require a land disturbance permit. The waste water resulting from this work will be applied to the ground as allowed by the State of Missouri regulations. These geotechnical sites are considered to be exempt per the regulations however, silt fences or dams will be installed at the boring sites to help ensure water quality requirements are maintained. Some waste water will be released via the permitted Callaway Plant stormwater outfalls. Borings not used for monitoring wells will be filled and sealed. Well drillers are permitted and they will submit well drillers log to the State of Missouri on completion of drilling.

This activity will not significantly affect the concentrations, frequencies or types of effluent being discharged from the plant, and does not affect the current plant power level. Therefore, this geotechnical investigation does not constitute an unreviewed environmental question per Section 3.1 of Appendix B to the Callaway Plant Operating License.

Callaway Modification MP 06-0061, Relocation of Plant Discharge Line

Description of Modification:

This modification relocates a portion of the existing Callaway Plant discharge piping to provide a new discharge point located approximately 450 feet downstream of the existing plant discharge to the Missouri River. This relocation was completed to address the recirculation of tritium back into the plant intake. Approximately 300 feet of existing 24 inch pipe was abandoned in place with both pipe ends sealed and about 620 feet of new 36 inch HDPE DR17 pipe was installed from the nearest upstream manhole to a point farther downstream on the river (about 450 feet from the existing point of discharge). The new discharge pipe end located at river mile 115.1, will be equipped with a check valve to prevent sediment deposition from river backflow and have an effective diameter of 22 inches with one unit operation. The pipe will intersect the river at a 50 degree angle to provide improved mixing. The new discharge point will be located at an invert elevation of 492 feet, the same elevation as the original discharge pipe.

Approximately 300 feet of the existing discharge pipe will be sealed and abandoned in place as mentioned above. At this time the industry is awaiting a NRC position on how to address this abandoned pipe section (whether it should fall under 10CFR 50.75 or 10CFR 20.2002). Appropriate actions will be taken after the NRC position is determined.

The discharge piping relocation involves the construction of a notch in the existing dike built by the US Army Corps of Engineers (USACE) (Federal Dike No. 121.58 in Section 5, Township 45 North, Range 7 West, Callaway County, Missouri). This notch was suggested by USACE to improve the aquatic habitat in the area and the excavated rock will be used to fill over the new pipe. The area will be approximately 60 feet long and extend down to an elevation of 503. Callaway has applied for and received USACE Permits to complete this modification. An approval letter was received from the USACE on July 11, 2006. In addition a Letter of Consent was received from the Department of the Army Kansas City District on August 7, 2006.

This modification also required Callaway Plant to obtain a construction permit from the Missouri Department of Natural Resources (DNR). The application for a NPDES construction permit was submitted to the Missouri DNR on 9/8/06. This information was also provided to the NRC (ULNRC-05332). A Land Disturbance Permit Application was submitted to the Missouri DNR along with a Storm Water Pollution Prevention Plan with appropriate Best Management Practices.

Evaluation of Change:

As part of the evaluation for Modification Package 06-0061, both the Callaway Plant ER and FES-OL were reviewed for any previously evaluated adverse environmental impacts and any adverse environmental impacts not previously evaluated. No adverse environmental effects were identified. The modification to move a section of the discharge piping downstream of the existing discharge point does not change the amount or concentration of any plant liquid effluents. Although the estimated velocity may be somewhat reduced for the somewhat larger diameter pipe section to be installed with one unit operation, it will not significantly impact the mixing of plant effluents. The new pipe section can accommodate additional units. The new design to move this pipe section has been reviewed and approved by the USACE and the Missouri DNR. No issues were identified during the review.

Callaway Modification MP 06-0061, Relocation of Plant Discharge Line

Evaluation of Change: (cont.)

The section of discharge piping being replaced is located from the last manhole near the Missouri River to the point of discharge approximately 450 feet downstream of the existing point of discharge to the river. The Callaway Plant Phase I Cultural Resource Survey and Assessment on Residual Lands and the Cultural Resources Management Plan were reviewed. This land to be disturbed is located between the Missouri River and Highway 94 near the Callaway intake structure near the river. This area has been previously surveyed. Preliminary drawings showing the location of the new pipe section have been reviewed by Environmental Services and the Missouri DNR-Historic Preservation Program Office to confirm that no cultural resources or archeological sites are located near the area where the new pipe will be installed. No recorded sites will be impacted by this construction as the nearest site 23CY214 is located adjacent to Highway 94 and west of the heavy haul road.

The installation of the new section of discharge piping will require excavation activities to be performed. Although it is estimated that less than one acre of land will be disturbed to complete the piping installation (620 feet of 36 inch pipe), a land disturbance permit application was submitted for the project.

Construction/installation of the new section of discharge piping will not produce any pollutant discharges not authorized by the NPDES Permit or more frequently than or at a level in excess of that authorized by the Permit. Modification 06-0061, replacing a section of the Callaway discharge pipe is not a facility expansion, production increase, or process modification which will result in a new, different or increased discharge of pollutants. This modification will only move the final point of discharge for liquid effluents to the Missouri River approximately 450 feet downstream of the existing location.

This modification will not affect the concentrations, frequencies or types of effluent being discharged from the plant, and does not affect the current plant power level. Therefore, this change does not constitute an unreviewed environmental question per Section 3.1 of Appendix B to the Callaway Plant Operating License.

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AMEREN UE, CALLAWAY PLANT
FULTON, MISSOURI
DOCKET NO. 50-483

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM (REMP)

ANNUAL REPORT - PART II
DATA TABULATIONS AND ANALYSES

January 1 to December 31, 2006

Prepared by

ENVIRONMENTAL, Inc.
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Submitted by

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Project No. 8036

Approved : _____

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1.0 INTRODUCTION

The following constitutes a supplement to the Annual Report for the Radiological Environmental Monitoring Program conducted at the AmerenUE, Callaway Plant, Fulton, Missouri in 2006. Results of completed analyses are presented in the attached tables.

For information regarding sampling locations, type and frequency of collection, and sample codes, please refer to Part I, Tables 5.1 - 5.2 and Figures 5.1 and 5.2.

2.0 DATA TABLES

Table 1. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].
Location: A-1
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010	Required LLD		0.010
01-05-06	431	0.027 ± 0.003	07-06-06	428	0.027 ± 0.003
01-12-06	428	0.029 ± 0.003	07-13-06	428	0.022 ± 0.003
01-20-06	487	0.023 ± 0.003	07-20-06	431	0.033 ± 0.003
01-26-06	370	0.016 ± 0.003	07-27-06	428	0.029 ± 0.003
02-02-06	431	0.019 ± 0.003	08-03-06	428	0.016 ± 0.003
02-09-06	426	0.025 ± 0.003	08-10-06	431	0.022 ± 0.003
02-16-06	431	0.022 ± 0.003	08-17-06	426	0.029 ± 0.003
02-24-06	484	0.026 ± 0.003	08-24-06	571	0.026 ± 0.003
03-02-06	370	0.029 ± 0.004	08-31-06	431	0.027 ± 0.003
03-09-06	426	0.022 ± 0.003	09-07-06	423	0.027 ± 0.003
03-16-06	428	0.021 ± 0.003	09-14-06	428	0.033 ± 0.003
03-23-06	428	0.017 ± 0.003	09-21-06	431	0.025 ± 0.003
03-30-06	428	0.012 ± 0.003	09-28-06	428	0.022 ± 0.003
1st Quarter Mean ± s.d.		0.022 ± 0.005	3rd Quarter Mean ± s.d.		0.026 ± 0.005
04-06-06	428	0.017 ± 0.003	10-05-06	428	0.030 ± 0.003
04-13-06	426	0.023 ± 0.003	10-12-06	428	0.024 ± 0.003
04-20-06	431	0.018 ± 0.003	10-19-06	428	0.022 ± 0.003
04-27-06	426	0.019 ± 0.003	10-26-06	428	0.024 ± 0.003
05-03-06	370	0.023 ± 0.003	11-02-06	431	0.026 ± 0.003
05-11-06	283	0.014 ± 0.004 [b]	11-09-06	426	0.039 ± 0.004
05-18-06	428	0.010 ± 0.003	11-16-06	428	0.015 ± 0.003
05-25-06	423	0.025 ± 0.003	11-24-06	551	0.033 ± 0.003
06-01-06	433	0.020 ± 0.003	11-30-06	370	0.022 ± 0.004
06-08-06	426	0.023 ± 0.003	12-07-06	436	0.033 ± 0.003
06-15-06	428	0.024 ± 0.003	12-14-06	418	0.032 ± 0.004
06-22-06	428	0.030 ± 0.003	12-21-06	431	0.033 ± 0.004
06-29-06	428	0.023 ± 0.003	12-28-06	428	0.025 ± 0.003
2nd Quarter Mean ± s.d.		0.021 ± 0.005	3rd Quarter Mean ± s.d.		0.028 ± 0.006
			Cumulative Average		0.024
			Previous Annual Average		0.023

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

[b] Low volume due to pump malfunction; pump replaced.

Table 2. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].
Location: B-3
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010	Required LLD		0.010
01-05-06	426	0.035 ± 0.004	07-06-06	428	0.027 ± 0.003
01-12-06	431	0.032 ± 0.004	07-13-06	428	0.020 ± 0.003
01-20-06	487	0.030 ± 0.003	07-20-06	431	0.029 ± 0.003
01-26-06	370	0.020 ± 0.003	07-27-06	426	0.026 ± 0.003
02-02-06	428	0.023 ± 0.003	08-03-06	431	0.016 ± 0.003
02-09-06	423	0.025 ± 0.003	08-10-06	426	0.027 ± 0.003
02-16-06	431	0.023 ± 0.003	08-17-06	431	0.026 ± 0.003
02-24-06	487	0.029 ± 0.003	08-24-06	574	0.027 ± 0.003
03-02-06	367	0.027 ± 0.004	08-31-06	428	0.025 ± 0.003
03-09-06	428	0.018 ± 0.003	09-07-06	421	0.026 ± 0.003
03-16-06	426	0.021 ± 0.003	09-14-06	428	0.035 ± 0.004
03-23-06	431	0.017 ± 0.003	09-21-06	431	0.022 ± 0.003
03-30-06	426	0.011 ± 0.003	09-28-06	426	0.027 ± 0.003
1st Quarter Mean ± s.d.		0.024 ± 0.007	3rd Quarter Mean ± s.d.		0.026 ± 0.005
04-06-06	423	0.016 ± 0.003	10-05-06	428	0.030 ± 0.003
04-13-06	428	0.023 ± 0.003	10-12-06	428	0.024 ± 0.003
04-20-06	431	0.016 ± 0.003	10-19-06	428	0.022 ± 0.003
04-27-06	428	0.018 ± 0.003	10-26-06	428	0.024 ± 0.003
05-03-06	367	0.020 ± 0.003	11-02-06	431	0.026 ± 0.003
05-11-06	492	0.013 ± 0.002	11-09-06	426	0.039 ± 0.004
05-18-06	426	0.011 ± 0.003	11-16-06	428	0.015 ± 0.003
05-25-06	423	0.020 ± 0.003	11-24-06	551	0.033 ± 0.003
06-01-06	436	0.018 ± 0.003	11-30-06	370	0.022 ± 0.004
06-08-06	423	0.023 ± 0.003	12-07-06	436	0.033 ± 0.003
06-15-06	431	0.022 ± 0.003	12-14-06	418	0.032 ± 0.004
06-22-06	428	0.024 ± 0.003	12-21-06	431	0.033 ± 0.004
06-29-06	428	0.021 ± 0.003	12-28-06	428	0.025 ± 0.003
2nd Quarter Mean ± s.d.		0.019 ± 0.004	3rd Quarter Mean ± s.d.		0.028 ± 0.006
			Cumulative Average		0.024
			Previous Annual Average		0.026

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

Table 1. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].
Location: A-7
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010	Required LLD		0.010
01-05-06	431	0.026 ± 0.003	07-06-06	428	0.022 ± 0.003
01-12-06	426	0.024 ± 0.003	07-13-06	428	0.022 ± 0.003
01-20-06	487	0.022 ± 0.003	07-20-06	431	0.029 ± 0.003
01-26-06	370	0.015 ± 0.003	07-27-06	428	0.023 ± 0.003
02-02-06	433	0.018 ± 0.003	08-03-06	428	0.013 ± 0.003
02-09-06	426	0.022 ± 0.003	08-10-06	431	0.021 ± 0.003
02-16-06	431	0.020 ± 0.003	08-17-06	426	0.026 ± 0.003
02-24-06	487	0.030 ± 0.003	08-24-06	568	0.025 ± 0.003
03-02-06	364	0.025 ± 0.003	08-31-06	433	0.022 ± 0.003
03-09-06	426	0.017 ± 0.003	09-07-06	449	0.023 ± 0.003
03-16-06	431	0.020 ± 0.003	09-14-06	426	0.027 ± 0.003
03-23-06	431	0.015 ± 0.003	09-21-06	431	0.017 ± 0.003
03-30-06	426	0.010 ± 0.003	09-28-06	426	0.024 ± 0.003
1st Quarter Mean ± s.d.		0.020 ± 0.005	3rd Quarter Mean ± s.d.		0.023 ± 0.004
04-06-06	428	0.015 ± 0.003	10-05-06	431	0.025 ± 0.003
04-13-06	426	0.021 ± 0.003	10-12-06	428	0.018 ± 0.003
04-20-06	431	0.017 ± 0.003	10-19-06	431	0.017 ± 0.003
04-27-06	428	0.022 ± 0.003	10-26-06	426	0.018 ± 0.003
05-03-06	370	0.020 ± 0.003	11-02-06	433	0.016 ± 0.003
05-11-06	487	0.013 ± 0.002	11-09-06	426	0.030 ± 0.003
05-18-06	431	0.012 ± 0.003	11-16-06	426	0.028 ± 0.003
05-25-06	426	0.020 ± 0.003	11-24-06	465	0.015 ± 0.003
06-01-06	431	0.018 ± 0.003	11-30-06	359	0.015 ± 0.003
06-08-06	428	0.019 ± 0.003	12-07-06	436	0.025 ± 0.003
06-15-06	421	0.020 ± 0.003	12-14-06	426	0.030 ± 0.003
06-22-06	433	0.024 ± 0.003	12-21-06	433	0.022 ± 0.003
06-29-06	428	0.016 ± 0.003	12-28-06	426	0.020 ± 0.003
2nd Quarter Mean ± s.d.		0.018 ± 0.004	3rd Quarter Mean ± s.d.		0.021 ± 0.006
			Cumulative Average		0.021
			Previous Annual Average		0.022

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

Table 1. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].
Location: A-8
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010	Required LLD		0.010
01-05-06	428	0.031 ± 0.003	07-06-06	426	0.028 ± 0.003
01-12-06	428	0.028 ± 0.003	07-13-06	431	0.023 ± 0.003
01-20-06	487	0.026 ± 0.003	07-20-06	431	0.032 ± 0.003
01-26-06	370	0.018 ± 0.003	07-27-06	428	0.027 ± 0.003
02-02-06	433	0.018 ± 0.003	08-03-06	428	0.015 ± 0.003
02-09-06	424	0.023 ± 0.003	08-10-06	431	0.023 ± 0.003
02-16-06	431	0.026 ± 0.003	08-17-06	426	0.030 ± 0.003
02-24-06	485	0.028 ± 0.003	08-24-06	574	0.026 ± 0.003
03-02-06	370	0.030 ± 0.004	08-31-06	428	0.026 ± 0.003
03-09-06	426	0.018 ± 0.003	09-07-06	423	0.025 ± 0.003
03-16-06	426	0.023 ± 0.003	09-14-06	426	0.033 ± 0.004
03-23-06	431	0.020 ± 0.003	09-21-06	431	0.024 ± 0.003
03-30-06	428	0.012 ± 0.003	09-28-06	428	0.022 ± 0.003
1st Quarter Mean ± s.d.		0.023 ± 0.006	3rd Quarter Mean ± s.d.		0.026 ± 0.005
04-06-06	426	0.018 ± 0.003	10-05-06	428	0.031 ± 0.003
04-13-06	428	0.025 ± 0.003	10-12-06	428	0.021 ± 0.003
04-20-06	431	0.020 ± 0.003	10-19-06	428	0.019 ± 0.003
04-27-06	426	0.021 ± 0.003	10-26-06	431	0.026 ± 0.003
05-03-06	370	0.022 ± 0.003	11-02-06	428	0.024 ± 0.003
05-11-06	489	0.013 ± 0.002	11-09-06	428	0.035 ± 0.004
05-18-06	428	0.013 ± 0.003	11-16-06	428	0.033 ± 0.004
05-25-06	423	0.019 ± 0.003	11-24-06	490	0.032 ± 0.003
06-01-06	433	0.020 ± 0.003	11-30-06	370	0.020 ± 0.003
06-08-06	426	0.020 ± 0.003	12-07-06	431	0.030 ± 0.003
06-15-06	428	0.024 ± 0.003	12-14-06	423	0.034 ± 0.004
06-22-06	428	0.026 ± 0.003	12-21-06	433	0.027 ± 0.003
06-29-06	428	0.022 ± 0.003	12-28-06	423	0.030 ± 0.004
2nd Quarter Mean ± s.d.		0.020 ± 0.004	3rd Quarter Mean ± s.d.		0.028 ± 0.005
			Cumulative Average		0.024
			Previous Annual Average		0.023

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

Table 1. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].
Location: A-9
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010	Required LLD		0.010
01-05-06	423	0.029 ± 0.003	07-06-06	426	0.028 ± 0.003
01-12-06	431	0.026 ± 0.003	07-13-06	431	0.023 ± 0.003
01-20-06	487	0.028 ± 0.003	07-20-06	431	0.028 ± 0.003
01-26-06	370	0.017 ± 0.003	07-27-06	426	0.026 ± 0.003
02-02-06	428	0.026 ± 0.003	08-03-06	431	0.017 ± 0.003
02-09-06	410	0.025 ± 0.003	08-10-06	431	0.021 ± 0.003
02-16-06	433	0.024 ± 0.003	08-17-06	426	0.025 ± 0.003
02-24-06	484	0.028 ± 0.003	08-24-06	574	0.025 ± 0.003
03-02-06	370	0.031 ± 0.004	08-31-06	428	0.023 ± 0.003
03-09-06	428	0.019 ± 0.003	09-07-06	421	0.026 ± 0.003
03-16-06	426	0.024 ± 0.003	09-14-06	428	0.030 ± 0.003
03-23-06	433	0.016 ± 0.003	09-21-06	431	0.024 ± 0.003
03-30-06	426	0.014 ± 0.003	09-28-06	426	0.023 ± 0.003
1st Quarter Mean ± s.d.		0.024 ± 0.005	3rd Quarter Mean ± s.d.		0.025 ± 0.003
04-06-06	423	0.017 ± 0.003	10-05-06	431	0.030 ± 0.003
04-13-06	428	0.028 ± 0.003	10-12-06	428	0.024 ± 0.003
04-20-06	431	0.020 ± 0.003	10-19-06	426	0.020 ± 0.003
04-27-06	428	0.022 ± 0.003	10-26-06	431	0.023 ± 0.003
05-03-06	370	0.020 ± 0.003	11-02-06	428	0.021 ± 0.003
05-11-06	489	0.012 ± 0.002	11-09-06	428	0.035 ± 0.004
05-18-06	426	0.014 ± 0.003	11-16-06	431	0.028 ± 0.003
05-25-06	433	0.022 ± 0.003	11-24-06	490	0.032 ± 0.003
06-01-06	428	0.019 ± 0.003	11-30-06	370	0.023 ± 0.004
06-08-06	423	0.020 ± 0.003	12-07-06	431	0.039 ± 0.004
06-15-06	431	0.021 ± 0.003	12-14-06	421	0.029 ± 0.003
06-22-06	428	0.025 ± 0.003	12-21-06	438	0.028 ± 0.003
06-29-06	428	0.019 ± 0.003	12-28-06	423	0.026 ± 0.003
2nd Quarter Mean ± s.d.		0.020 ± 0.004	3rd Quarter Mean ± s.d.		0.028 ± 0.006
			Cumulative Average		0.024
			Previous Annual Average		0.025

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

Table 2. Airborne particulates, analyses for gamma-emitting isotopes.
Collection : Quarterly composites of weekly collections.
Units: pCi/m^3

		1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Location		A-1			
Lab Code	Req. LLD	CAAP-2799	CAAP-4909,10	CAAP-7560	CAAP-9536
Volume	-	5568	5358	5712	5631
Be-7	-	0.051 ± 0.010	0.110 ± 0.011	0.072 ± 0.011	0.062 ± 0.010
Co-58	-	< 0.0007	< 0.0004	< 0.0003	< 0.0004
Co-60	-	< 0.0004	< 0.0004	< 0.0006	< 0.0007
Zr-Nb-95	-	< 0.0010	< 0.0008	< 0.0010	< 0.0006
Cs-134	0.050	< 0.0005	< 0.0004	< 0.0004	< 0.0004
Cs-137	0.060	< 0.0006	< 0.0004	< 0.0004	< 0.0003
Ba-La-140	-	< 0.0019	< 0.0023	< 0.0011	< 0.0009
Ce-144	-	< 0.0019	< 0.0021	< 0.0029	< 0.0026
Location		A-7			
Lab Code	Req. LLD	CAAP-2800	CAAP-4911	CAAP-7561	CAAP-9537,8
Volume	-	5569	5568	5733	5546
Be-7	-	0.052 ± 0.012	0.126 ± 0.015	0.061 ± 0.009	0.067 ± 0.008
Co-58	-	< 0.0007	< 0.0005	< 0.0004	< 0.0002
Co-60	-	< 0.0005	< 0.0004	< 0.0003	< 0.0004
Zr-Nb-95	-	< 0.0005	< 0.0005	< 0.0008	< 0.0005
Cs-134	0.050	< 0.0004	< 0.0005	< 0.0004	< 0.0004
Cs-137	0.060	< 0.0003	< 0.0006	< 0.0002	< 0.0005
Ba-La-140	-	< 0.0038	< 0.0025	< 0.0011	< 0.0015
Ce-144	-	< 0.0029	< 0.0022	< 0.0020	< 0.0031
Location		A-8			
Lab Code	Req. LLD	CAAP-2801	CAAP-4912	CAAP-7562	CAAP-9539
Volume	-	5567	5564	5711	5569
Be-7	-	0.070 ± 0.012	0.081 ± 0.008	0.079 ± 0.014	0.061 ± 0.011
Co-58	-	< 0.0006	< 0.0003	< 0.0009	< 0.0004
Co-60	-	< 0.0009	< 0.0002	< 0.0007	< 0.0007
Zr-Nb-95	-	< 0.0011	< 0.0005	< 0.0012	< 0.0005
Cs-134	0.050	< 0.0002	< 0.0004	< 0.0005	< 0.0003
Cs-137	0.060	< 0.0005	< 0.0002	< 0.0004	< 0.0005
Ba-La-140	-	< 0.0046	< 0.0014	< 0.0023	< 0.0009
Ce-144	-	< 0.0027	< 0.0014	< 0.0036	< 0.0030

Table 2. Airborne particulates, analyses for gamma-emitting isotopes.
Collection : Quarterly composites of weekly collections.
Units: pCi/m^3

		1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
			A-9		
Lab Code	Req. LLD	CAAP-2802	CAAP-4913	CAAP-7563	CAAP-9540
Volume	-	5549	5566	5710	5576
Be-7	-	0.058 ± 0.013	0.079 ± 0.011	0.080 ± 0.015	0.061 ± 0.012
Co-58	-	< 0.0005	< 0.0004	< 0.0003	< 0.0004
Co-60	-	< 0.0005	< 0.0004	< 0.0004	< 0.0005
Zr-Nb-95	-	< 0.0013	< 0.0009	< 0.0008	< 0.0009
Cs-134	0.050	< 0.0003	< 0.0004	< 0.0004	< 0.0003
Cs-137	0.060	< 0.0003	< 0.0005	< 0.0007	< 0.0004
Ba-La-140	-	< 0.0031	< 0.0020	< 0.0027	< 0.0016
Ce-144	-	< 0.0028	< 0.0031	< 0.0020	< 0.0026
			B-3		
Lab Code	Req. LLD	CAAP-2803	CAAP-4914	CAAP-7564	CAAP-9541
Volume	-	5561	5564	5709	5575
Be-7	-	0.069 ± 0.010	0.077 ± 0.010	0.074 ± 0.012	0.079 ± 0.013
Co-58	-	< 0.0005	< 0.0007	< 0.0005	< 0.0003
Co-60	-	< 0.0005	< 0.0003	< 0.0005	< 0.0007
Zr-Nb-95	-	< 0.0010	< 0.0004	< 0.0007	< 0.0005
Cs-134	0.050	< 0.0006	< 0.0005	< 0.0006	< 0.0004
Cs-137	0.060	< 0.0004	< 0.0006	< 0.0008	< 0.0004
Ba-La-140	-	< 0.0050	< 0.0020	< 0.0016	< 0.0009
Ce-144	-	< 0.0035	< 0.0029	< 0.0032	< 0.0032

Table 2. 1 Airborne particulates, analyses for gamma-emitting isotopes [a].
Collection: Weekly Collections
Units: pCi/m3

Location		A-1	B-3	A-9
Date Collected		11-09-06	11-16-06	12-07-06
Lab Code	Required	CAAP-8482	CAAP-9383	CAAP-9652
Volume (m^3)	LLD	426	428	431
Be-7	-	0.18 ± 0.04	0.19 ± 0.11	0.14 ± 0.08
Co-58	-	< 0.003	< 0.005	< 0.004
Co-60	-	< 0.003	< 0.005	< 0.006
Zr-95	-	< 0.006	< 0.008	< 0.015
Cs-134	0.050	< 0.002	< 0.008	< 0.003
Cs-137	0.060	< 0.002	< 0.007	< 0.005
Ba-La-140	-	< 0.016	< 0.048	< 0.017
Ce-144	-	< 0.015	< 0.019	< 0.024

[a] Gamma spectroscopic analysis is performed on air filters exceeding a gross beta activity of 0.037 pCi/m^3.

Table 3. Milk, analyses for iodine-131 and gamma-emitting isotopes.
Collection: Semimonthly during grazing season, monthly otherwise.
Units: pCi/L

Location		CA-MLK-M6					
Date	Lab	Concentration (pCi/L)					
Collected	Code	I-131	K-40	Zn-65	Cs-134	Cs-137	Ba-La-140
Required LLDs		1	-	-	15	18	15
01-10-06	CAMI -157	< 0.3	894 ± 145	< 6.1	< 5.6	< 5.7	< 2.5
02-14-06	CAMI -782	< 0.4	1312 ± 162	< 12.6	< 4.7	< 4.9	< 3.2
03-14-06	CAMI -1441	< 0.3	1075 ± 111	< 7.0	< 2.5	< 3.6	< 1.5
04-11-06	CAMI -2364	< 0.5	973 ± 72	< 4.6	< 2.4	< 2.9	< 3.6
04-25-06	CAMI -2780	< 0.3	1206 ± 109	< 8.1	< 3.1	< 4.5	< 2.0
05-09-06	CAMI -3143	< 0.4	1102 ± 106	< 6.9	< 3.1	< 4.0	< 4.3
05-23-06	CAMI -3428	< 0.3	1214 ± 97	< 2.3	< 2.7	< 3.3	< 1.9
06-13-06	CAMI -3938	< 0.4	1105 ± 115	< 8.9	< 3.1	< 3.5	< 2.5
06-27-06	CAMI -4258	< 0.2	1041 ± 160	< 12.1	< 4.9	< 6.6	< 2.9
07-11-06	CAMI -4597	< 0.4	1032 ± 103	< 7.4	< 2.7	< 3.1	< 2.5
07-25-06	CAMI -5066	< 0.4	1097 ± 100	< 7.3	< 3.3	< 3.6	< 2.5
08-08-06	CAMI -5386	< 0.2	1105 ± 103	< 5.3	< 2.8	< 2.9	< 2.3
08-22-06	CAMI -5707	< 0.4	976 ± 91	< 5.7	< 2.5	< 3.3	< 1.9
09-12-06	CAMI -6243	< 0.4	1041 ± 122	< 10.7	< 5.3	< 6.6	< 2.1
09-26-06	CAMI -6602	< 0.2	1188 ± 109	< 7.7	< 3.6	< 3.4	< 1.7
10-09-06	CAMI -7051	< 0.4	1094 ± 115	< 5.0	< 4.5	< 5.2	< 2.0
11-14-06	CAMI -8349	< 0.4	1221 ± 115	< 6.0	< 4.0	< 4.3	< 2.7
12-12-06	CAMI -8919	< 0.3	870 ± 143	< 9.0	< 4.9	< 5.7	< 7.1

Location		CA-MLK-M8					
Date	Lab	Concentration (pCi/L)					
Collected	Code	I-131	K-40	Zn-65	Cs-134	Cs-137	Ba-La-140
Required LLDs		1	-	-	15	18	15
01-10-06	CAMI -158	< 0.3	1202 ± 111	< 7.9	< 4.5	< 5.2	< 2.0
02-14-06	CAMI -783	< 0.4	1262 ± 154	< 14.3	< 5.5	< 7.0	< 5.9
03-13-06	CAMI -1442	< 0.3	1234 ± 108	< 8.3	< 3.0	< 4.7	< 2.9
04-10-06	CAMI -2365	< 0.4	1154 ± 69	< 5.8	< 3.1	< 3.1	< 1.7
04-24-06	CAMI -2781	< 0.4	713 ± 87	< 5.1	< 3.6	< 3.6	< 1.8
05-09-06	CAMI -3144	< 0.3	933 ± 103	< 6.3	< 3.1	< 4.0	< 3.0
05-23-06	CAMI -3429	< 0.2	824 ± 102	< 7.9	< 3.8	< 3.1	< 3.0
06-12-06	CAMI -3939	< 0.4	909 ± 117	< 3.8	< 5.1	< 5.4	< 4.8
06-27-06	CAMI -4259	< 0.2	640 ± 94	< 7.9	< 4.4	< 4.3	< 3.4
07-10-06	CAMI -4598	< 0.5	627 ± 116	< 14.2	< 2.8	< 7.3	< 8.7
07-25-06	NS[a]	-	-	-	-	-	-
08-08-06	NS[a]	-	-	-	-	-	-
08-22-06	NS[a]	-	-	-	-	-	-
09-12-06	NS[a]	-	-	-	-	-	-
09-26-06	NS[a]	-	-	-	-	-	-
10-09-06	CAMI -7052	< 0.4	1079 ± 118	< 6.4	< 3.1	< 3.9	< 2.3
11-14-06	CAMI -8350	< 0.4	971 ± 111	< 11.7	< 3.3	< 4.3	< 4.2
12-12-06	CAMI -8920	< 0.3	988 ± 145	< 8.9	< 3.2	< 7.1	< 3.3

[a] "NS" = No sample; see Table 2.0, Listing of Missed Samples.

Table 3. Milk, analyses for iodine-131 and gamma-emitting isotopes.
Collection: Semimonthly during grazing season, monthly otherwise.
Units: pCi/L

Location		CA-MLK-M13					
Date	Lab	Concentration (pCi/L)					
Collected	Code	I-131	K-40	Zn-65	Cs-134	Cs-137	Ba-La-140
Required LLDs		1	-	-	15	18	15
01-10-06	NS[a]	-	-	-	-	-	-
02-14-06	NS	-	-	-	-	-	-
03-14-06	NS	-	-	-	-	-	-
04-10-06	NS	-	-	-	-	-	-
04-25-06	NS	-	-	-	-	-	-
05-09-06	NS	-	-	-	-	-	-
05-23-06	NS	-	-	-	-	-	-
06-13-06	NS	-	-	-	-	-	-
06-27-06	NS	-	-	-	-	-	-
07-11-06	NS	-	-	-	-	-	-
07-25-06	NS	-	-	-	-	-	-
08-08-06	NS	-	-	-	-	-	-
08-22-06	NS	-	-	-	-	-	-
09-12-06	NS	-	-	-	-	-	-
09-26-06	NS	-	-	-	-	-	-
10-09-06	NS	-	-	-	-	-	-
11-14-06	NS	-	-	-	-	-	-
12-12-06	NS	-	-	-	-	-	-

[a] "NS" = No sample; see Table 2.0, Listing of Missed Samples.

CALLAWAY

Table 4. Vegetation, analyses for gross alpha, gross beta, iodine-131 and gamma-emitting isotopes.
Collection: Monthly, during growing season
Units: pCi/kg wet

Location		CA-FPL-V9			
Lab Code	Req. LLD	CAVE-3148	CAVE-3946	CAVE-3947	CAVE-4617
Date Collected	-	5/9/2006	6/12/2006	6/12/2006	7/10/2006
Sample Type	-	Lambsquarter	Turnips	Lettuce	Lettuce
Gross Alpha	-	235 ± 85	94 ± 44	103 ± 42	295 ± 91
Gross Beta	-	9303 ± 229	5511 ± 137	7973 ± 150	10111 ± 252
K-40	-	10034 ± 564	2733 ± 437	6843 ± 510	7687 ± 532
Mn-54	-	< 17.5	< 15.8	< 17.7	< 15.4
Co-58	-	< 13.7	< 16.4	< 10.4	< 9.7
Co-60	-	< 9.2	< 20.7	< 13.6	< 14.6
I-131	60	< 27.7	< 35.0	< 23.4	< 21.3
Cs-134	60	< 14.2	< 10.4	< 11.1	< 11.8
Cs-137	80	< 17.0	< 19.4	< 17.1	< 15.5

Lab Code	Req. LLD	CAVE-4618	CAVE-5387	CAVE-6246	CAVE-7056
Date Collected	-	7/10/2006	8/7/2006	9/11/2006	10/9/2006
Sample Type	-	Cabbage	Cabbage	Cabbage	Collards
Gross Alpha	-	73 ± 54	117 ± 81	113 ± 68	132 ± 99
Gross Beta	-	8002 ± 223	9129 ± 283	4039 ± 190	8726 ± 339
K-40	-	5141 ± 423	6697 ± 369	3610 ± 394	6349 ± 536
Mn-54	-	< 15.2	< 7.1	< 11.7	< 10.1
Co-58	-	< 7.9	< 7.9	< 9.1	< 9.8
Co-60	-	< 8.9	< 9.1	< 9.1	< 15.3
I-131	60	< 32.2	< 27.1	< 21.3	< 27.8
Cs-134	60	< 13.9	< 7.5	< 14.8	< 12.1
Cs-137	80	< 9.9	< 9.7	< 12.2	< 17.6

Lab Code	Req. LLD	CAVE-7057	CAVE-8353
Date Collected	-	10/9/2006	11/13/2006
Sample Type	-	Turnips	Mustard greens
Gross Alpha	-	183 ± 101	98 ± 52
Gross Beta	-	6911 ± 273	3792 ± 137
K-40	-	6216 ± 310	5153 ± 330
Mn-54	-	< 6.8	< 10.9
Co-58	-	< 6.5	< 6.5
Co-60	-	< 8.4	< 6.0
I-131	60	< 16.4	< 18.3
Cs-134	60	< 5.8	< 8.2
Cs-137	80	< 8.2	< 9.8

CALLAWAY

Table 4. Vegetation, analyses for gross alpha, gross beta, iodine-131 and gamma-emitting isotopes.
Collection: Monthly, during growing season
Units: pCi/kg wet

Location		CA-FPL-V10			
Lab Code	Req. LLD	CAVE-3430	CAVE-3431	CAVE-3432	CAVE-3948
Date Collected	-	5/23/2006	5/23/2006	5/23/2006	6/13/2006
Sample Type	-	Turnip Greens	Mustard Greens	Lettuce	Turnip Greens
Gross Alpha	-	< 71	97 ± 49	69 ± 33	124 ± 80
Gross Beta	-	3904 ± 153	5301 ± 151	3944 ± 104	6968 ± 246
K-40	-	3588 ± 437	5632 ± 804	4623 ± 353	4853 ± 499
Mn-54	-	< 11.7	< 18.2	< 13.9	< 15.0
Co-58	-	< 11.9	< 14.6	< 17.7	< 10.9
Co-60	-	< 11.4	< 12.1	< 18.5	< 12.5
I-131	60	< 15.7	< 32.2	< 23.8	< 26.9
Cs-134	60	< 12.5	< 25.3	< 16.2	< 15.7
Cs-137	80	< 15.6	< 26.9	< 15.1	< 18.0
Lab Code	Req. LLD	CAVE-3949,50	CAVE-3951	CAVE-4619	CAVE-4620
Date Collected	-	6/13/2006	6/13/2006	7/11/2006	7/11/2006
Sample Type	-	Mustard Greens	Lettuce	Lettuce	Cabbage
Gross Alpha	-	145 ± 47	49 ± 26	61 ± 24	< 61
Gross Beta	-	4499 ± 128	3267 ± 91	2652 ± 72	4513 ± 137
K-40	-	5673 ± 469	3435 ± 399	4198 ± 556	2953 ± 387
Mn-54	-	< 23.8	< 15.4	< 12.3	< 12.1
Co-58	-	< 21.5	< 8.5	< 19.3	< 13.4
Co-60	-	< 22.1	< 10.6	< 17.9	< 7.3
I-131	60	< 33.2	< 31.6	< 53.1	< 35.5
Cs-134	60	< 21.3	< 9.3	< 19.4	< 10.1
Cs-137	80	< 23.9	< 17.9	< 18.1	< 10.9
Lab Code	Req. LLD	CAVE-4622	CAVE-4623	CAVE-6603	CAVE-6604
Date Collected	-	7/11/2006	7/11/2006	9/26/2006	9/26/2006
Sample Type	-	Turnip Greens	Mustard Greens	Turnip Greens	Mustard Greens
Gross Alpha	-	90 ± 45	110 ± 43	116 ± 59	180 ± 67
Gross Beta	-	4428 ± 130	4119 ± 122	5460 ± 168	7163 ± 176
K-40	-	4828 ± 693	5773 ± 909	5218 ± 394	6827 ± 646
Mn-54	-	< 24.4	< 19.3	< 6.5	< 20.7
Co-58	-	< 21.4	< 30.7	< 8.5	< 14.3
Co-60	-	< 27.7	< 29.5	< 10.1	< 8.8
I-131	60	< 47.6	< 48.5	< 15.8	< 22.6
Cs-134	60	< 18.7	< 27.7	< 9.1	< 16.8
Cs-137	80	< 25.5	< 41.1	< 12.4	< 19.8

CALLAWAY

Table 4. Vegetation, analyses for gross alpha, gross beta, iodine-131 and gamma-emitting isotopes.
Collection: Monthly, during growing season
Units: pCi/kg wet

Location		CA-FPL-V10			
Lab Code	Req. LLD	CAVE-7058,9	CAVE-7060	CAVE-8354	CAVE-8355
Date Collected	-	10/10/2006	10/10/2006	11/14/2006	11/14/2006
Sample Type	-	Mustard Greens	Turnip Greens	Mustard Greens	Turnip Greens
Gross Alpha	-	252 ± 90	206 ± 121	174 ± 75	96 ± 70
Gross Beta	-	9020 ± 246	7149 ± 320	5055 ± 183	4098 ± 189
K-40	-	10657 ± 516	7114 ± 529	5245 ± 423	3977 ± 355
Mn-54	-	< 19.3	< 11.5	< 13.0	< 6.8
Co-58	-	< 12.0	< 17.1	< 15.0	< 4.5
Co-60	-	< 14.4	< 16.0	< 9.2	< 6.3
I-131	60	< 40.2	< 18.4	< 12.0	< 13.6
Cs-134	60	< 15.4	< 20.8	< 9.7	< 10.8
Cs-137	80	< 10.9	< 20.5	< 9.4	< 11.2

CALLAWAY

Table 4. Vegetation, analyses for gross alpha, gross beta, iodine-131 and gamma-emitting isotopes.
Collection: Monthly, during growing season
Units: pCi/kg wet

Location		CA-FPL-V11			
Lab Code	Req. LLD	CAVE-3149	CAVE-3150	CAVE-3151	CAVE-3952
Date Collected	-	5/8/2006	5/8/2006	5/8/2006	6/12/2006
Sample Type	-	Swiss Chard	Lettuce	Spinach	Kale
Gross Alpha	-	370 ± 105	360 ± 124	282 ± 102	297 ± 106
Gross Beta	-	4362 ± 164	5255 ± 224	7483 ± 238	5105 ± 207
K-40	-	4628 ± 394	4441 ± 446	9072 ± 671	4005 ± 440
Mn-54	-	< 12.2	< 13.5	< 18.1	< 9.1
Co-58	-	< 12.2	< 15.8	< 11.6	< 18.3
Co-60	-	< 6.5	< 13.3	< 16.3	< 13.3
I-131	60	< 16.7	< 28.5	< 37.4	< 29.4
Cs-134	60	< 13.7	< 17.0	< 17.4	< 13.8
Cs-137	80	< 11.8	< 12.9	< 14.4	< 11.9

Lab Code	Req. LLD	CAVE-3953	CAVE-3954	CAVE-4624	CAVE-4625
Date Collected	-	6/12/2006	6/12/2006	7/10/2006	7/10/2006
Sample Type	-	Lettuce	Spinach	Lettuce	Kale
Gross Alpha	-	434 ± 135	505 ± 148	234 ± 66	98 ± 51
Gross Beta	-	6185 ± 249	11637 ± 307	6427 ± 164	4401 ± 139
K-40	-	4990 ± 602	6908 ± 528	6017 ± 658	5932 ± 602
Mn-54	-	< 15.0	< 15.8	< 16.8	< 24.5
Co-58	-	< 19.0	< 16.6	< 20.4	< 18.7
Co-60	-	< 21.7	< 10.1	< 17.2	< 23.1
I-131	60	< 43.4	< 19.1	< 52.5	< 58.2
Cs-134	60	< 19.2	< 11.2	< 16.3	< 19.0
Cs-137	80	< 19.8	< 18.5	< 22.0	< 22.6

Lab Code	Req. LLD	CAVE-4626	CAVE-5388	CAVE-5389	CAVE-5390
Date Collected	-	7/10/2006	8/7/2006	8/7/2006	8/7/2006
Sample Type	-	Swiss Chard	Broccoli	Swiss Chard	Lettuce
Gross Alpha	-	129 ± 77	< 74	183 ± 64	165 ± 78
Gross Beta	-	4536 ± 182	5476 ± 164	5327 ± 156	6542 ± 215
K-40	-	4496 ± 638	5172 ± 278	5002 ± 469	5117 ± 457
Mn-54	-	< 20.2	< 7.6	< 9.9	< 15.7
Co-58	-	< 19.5	< 5.2	< 8.6	< 13.8
Co-60	-	< 12.2	< 7.7	< 6.2	< 10.5
I-131	60	< 52.4	< 29.8	< 48.1	< 33.5
Cs-134	60	< 18.7	< 7.0	< 8.3	< 13.1
Cs-137	80	< 29.3	< 4.6	< 13.4	< 18.8

CALLAWAY

Table 4. Vegetation, analyses for gross alpha, gross beta, iodine-131 and gamma-emitting isotopes.
Collection: Monthly, during growing season
Units: pCi/kg wet

Location		CA-FPL-V11			
Lab Code	Req. LLD	CAVE-6247	CAVE-6248	CAVE-6249	CAVE-7061
Date Collected	-	9/11/2006	9/11/2006	9/11/2006	10/9/2006
Sample Type	-	Cabbage	Broccoli	Kale	Cabbage
Gross Alpha	-	216 ± 79	111 ± 60	225 ± 81	305 ± 144
Gross Beta	-	4513 ± 170	5603 ± 164	4453 ± 173	10666 ± 380
K-40	-	3884 ± 417	3847 ± 290	3556 ± 424	8274 ± 423
Mn-54	-	< 14.4	< 10.1	< 16.5	< 8.3
Co-58	-	< 10.7	< 4.9	< 17.8	< 6.4
Co-60	-	< 12.0	< 9.0	< 9.2	< 10.8
I-131	60	< 27.2	< 14.5	< 29.7	< 14.3
Cs-134	60	< 11.8	< 10.4	< 11.0	< 7.1
Cs-137	80	< 8.5	< 7.7	< 8.9	< 10.2

Lab Code	Req. LLD	CAVE-7062	CAVE-7063	CAVE-8356	CAVE-8357
Date Collected	-	10/9/2006	10/9/2006	11/13/2006	11/13/2006
Sample Type	-	Broccoli	Swiss Chard	Broccoli	Turnip Greens
Gross Alpha	-	128 ± 70	191 ± 80	< 99	236 ± 160
Gross Beta	-	5743 ± 186	6733 ± 209	7933 ± 272	4286 ± 280
K-40	-	3234 ± 402	5226 ± 445	5095 ± 363	2805 ± 359
Mn-54	-	< 13.8	< 9.9	< 8.2	< 11.6
Co-58	-	< 8.6	< 9.2	< 12.8	< 12.5
Co-60	-	< 15.2	< 17.1	< 9.5	< 12.1
I-131	60	< 13.1	< 23.3	< 15.8	< 11.1
Cs-134	60	< 9.7	< 8.8	< 9.6	< 8.0
Cs-137	80	< 16.9	< 12.9	< 11.7	< 16.1

CALLAWAY

Table 4. Vegetation, analyses for gross alpha, gross beta, iodine-131 and gamma-emitting isotopes.
Collection: Monthly, during growing season
Units: pCi/kg wet

Location		CA-FPL-V12			
Lab Code	Req. LLD	CAVE-3152	CAVE-3955	CAVE-4627	CAVE-5391
Date Collected	-	5/8/2006	6/13/2006	7/10/2006	8/7/2006
Sample Type	-	Pokeweed	Lettuce	Lettuce	Cabbage
Gross Alpha	-	196 ± 68	47 ± 25	161 ± 66	93 ± 59
Gross Beta	-	7323 ± 193	3477 ± 92	7194 ± 188	4248 ± 155
K-40	-	5367 ± 853	3322 ± 318	6229 ± 641	3683 ± 358
Mn-54	-	< 24.3	< 8.1	< 23.8	< 6.9
Co-58	-	< 24.3	< 8.4	< 15.6	< 9.4
Co-60	-	< 34.0	< 10.4	< 16.4	< 5.7
I-131	60	< 40.3	< 19.4	< 56.4	< 38.5
Cs-134	60	< 22.9	< 9.1	< 16.0	< 9.2
Cs-137	80	< 28.8	< 9.6	< 19.2	< 10.4

Lab Code	Req. LLD	CAVE-6250	CAVE-7064
Date Collected	-	9/12/2006	10/10/2006
Sample Type	-	Cabbage	Cabbage
Gross Alpha	-	92 ± 62	144 ± 65
Gross Beta	-	4504 ± 177	3770 ± 157
K-40	-	3545 ± 289	3249 ± 295
Mn-54	-	< 8.4	< 6.6
Co-58	-	< 8.7	< 9.0
Co-60	-	< 7.8	< 8.5
I-131	60	< 15.2	< 12.9
Cs-134	60	< 7.7	< 7.8
Cs-137	80	< 9.3	< 10.6

CALLAWAY

Table 4. Vegetation, analyses for gross alpha, gross beta, iodine-131 and gamma-emitting isotopes.
Collection: Monthly, during growing season
Units: pCi/kg wet

Location		CA-FPL-V13			
Lab Code	Req. LLD	CAVE-3433	CAVE-3956	CAVE-3957	CAVE-3958
Date Collected	-	5/23/2006	6/13/2006	6/13/2006	6/13/2006
Sample Type	-	Spinach/Mustard	Turnip Greens-1	Turnip Greens-2	Turnip Greens-3
Gross Alpha	-	74 ± 47	343 ± 119	319 ± 114	189 ± 105
Gross Beta	-	5268 ± 153	6146 ± 240	5098 ± 217	6455 ± 266
K-40	-	6425 ± 921	6327 ± 703	4197 ± 779	4146 ± 740
Mn-54	-	< 33.4	< 18.8	< 17.9	< 25.4
Co-58	-	< 13.3	< 26.3	< 28.6	< 21.9
Co-60	-	< 38.7	< 25.8	< 26.7	< 34.4
I-131	60	< 37.5	< 26.7	< 43.7	< 35.0
Cs-134	60	< 23.3	< 23.2	< 16.2	< 18.0
Cs-137	80	< 23.6	< 22.2	< 12.5	< 32.0

Lab Code	Req. LLD	CAVE-3959	CAVE-3960	CAVE-5067	CAVE-5068
Date Collected	-	6/13/2006	6/13/2006	7/23/2006	7/23/2006
Sample Type	-	Turnip Greens-4	Lettuce	Cabbage	Turnip Greens A
Gross Alpha	-	275 ± 120	302 ± 86	250 ± 76	242 ± 64
Gross Beta	-	5164 ± 222	4106 ± 157	5205 ± 159	5635 ± 138
K-40	-	5618 ± 547	4587 ± 667	4926 ± 343	5657 ± 601
Mn-54	-	< 11.2	< 18.8	< 9.4	< 13.5
Co-58	-	< 18.9	< 32.5	< 7.3	< 18.1
Co-60	-	< 12.9	< 28.8	< 10.5	< 14.6
I-131	60	< 29.1	< 31.1	< 17.4	< 23.0
Cs-134	60	< 14.2	< 23.6	< 7.8	< 14.0
Cs-137	80	< 21.5	< 25.2	< 8.4	< 17.8

Lab Code	Req. LLD	CAVE-5072	CAVE-5069	CAVE-5070	CAVE-5071
Date Collected	-	7/23/2006	7/23/2006	7/23/2006	7/23/2006
Sample Type	-	Turnip Greens B	Lettuce	Spinach/Mustard	Beet Greens
Gross Alpha	-	371 ± 89	143 ± 45	276 ± 69	458 ± 101
Gross Beta	-	5341 ± 149	6163 ± 123	5239 ± 136	8792 ± 196
K-40	-	4943 ± 508	5741 ± 405	4781 ± 484	8334 ± 684
Mn-54	-	< 20.1	< 12.9	< 11.9	< 18.5
Co-58	-	< 14.1	< 12.3	< 12.9	< 12.0
Co-60	-	< 10.0	< 18.1	< 9.4	< 18.4
I-131	60	< 39.0	< 34.2	< 27.4	< 40.5
Cs-134	60	< 19.2	< 12.7	< 7.3	< 15.3
Cs-137	80	< 11.5	< 16.2	< 8.6	< 23.7

CALLAWAY

Table 5. Soil, analyses for gross alpha, gross beta and gamma-emitting isotopes.
Collection: Annually
Units: pCi/kg dry

Location		SOL-F-002-#1	SOL-F-002-#2	SOL-F-006-#1	SOL-F-006-#2
Lab Code	Req. LLD	CASO-8618	CASO-8619,20	CASO-8621	CASO-8622
Date Collected	-	11/27/2006	11/27/2006	11/27/2006	11/27/2006
Gross Alpha	-	14160 ± 5362	14391 ± 3738	17653 ± 5801	10723 ± 5075
Gross Beta	-	24363 ± 4069	26822 ± 2767	28274 ± 4052	27490 ± 4182
K-40	-	12513 ± 1096	12567 ± 1127	11791 ± 1254	11398 ± 787
Mn-54	-	< 48.6	< 26.8	< 52.0	< 28.3
Fe-59	-	< 121.7	< 45.9	< 73.0	< 63.9
Co-58	-	< 43.6	< 25.5	< 32.6	< 25.4
Co-60	-	< 28.7	< 18.2	< 25.4	< 30.2
Zr-Nb-95	-	< 71.7	< 52.1	< 86.3	< 53.3
Cs-134	150	< 61.3	< 18.3	< 60.0	< 41.7
Cs-137	180	409 ± 63.9	712 ± 50.0	917 ± 104.5	785 ± 59.0
Ba-La-140	-	< 116.1	< 42.1	< 153.9	< 103.0

Location		SOL-PR-003-#1	SOL-PR-003-#2	SOL-PR-007-#1	SOL-PR-007-#2
Lab Code	Req. LLD	CASO-8623	CASO-8624	CASO-8625	CASO-8626
Date Collected	-	11/27/2006	11/27/2006	11/28/2006	11/28/2006
Gross Alpha	-	18647 ± 6078	13254 ± 4973	6425 ± 4066	7021 ± 4019
Gross Beta	-	26589 ± 4265	25100 ± 3628	22346 ± 4053	19887 ± 3570
K-40	-	10352 ± 1010	11165 ± 804	11377 ± 733	11096 ± 833
Mn-54	-	< 46.8	< 33.2	< 20.4	< 32.2
Fe-59	-	< 101.2	< 59.3	< 24.0	< 46.4
Co-58	-	< 33.3	< 29.5	< 23.9	< 34.0
Co-60	-	< 29.1	< 26.8	< 16.3	< 21.4
Zr-Nb-95	-	< 48.1	< 43.9	< 29.9	< 34.7
Cs-134	150	< 53.6	< 45.5	< 17.8	< 48.3
Cs-137	180	358 ± 58.1	361 ± 47.8	338 ± 44.9	312 ± 47.5
Ba-La-140	-	< 136.2	< 64.5	< 32.5	< 35.8

Location		SOL-V-003-#1	SOL-V-003-#2	SOL-W-001-#1	SOL-W-001-#2
Lab Code	Req. LLD	CASO-8627	CASO-8628	CASO-8629	CASO-8630
Date Collected	-	11/28/2006	11/28/2006	11/28/2006	11/28/2006
Gross Alpha	-	7925 ± 4490	11001 ± 4055	4741 ± 3495	13272 ± 5938
Gross Beta	-	24564 ± 3889	24564 ± 3889	23609 ± 3819	25943 ± 4655
K-40	-	14884 ± 830	15359 ± 881	13288 ± 744	14267 ± 760
Mn-54	-	< 27.5	< 32.2	< 24.4	< 28.3
Fe-59	-	< 43.4	< 54.1	< 48.5	< 55.0
Co-58	-	< 20.4	< 29.3	< 20.1	< 24.8
Co-60	-	< 15.8	< 30.8	< 19.8	< 10.0
Zr-Nb-95	-	< 49.5	< 53.8	< 30.1	< 43.8
Cs-134	150	< 47.1	< 44.5	< 17.8	< 16.9
Cs-137	180	212 ± 32.7	223 ± 39.8	< 22.6	73 ± 22.3
Ba-La-140	-	< 47.6	< 85.5	< 16.8	< 17.4

CALLAWAY

Table 5. Soil, analyses for gross alpha, gross beta and gamma-emitting isotopes.
Collection: Annually
Units: pCi/kg dry

Location		SOL-W-002-#1	SOL-W-002-#2	SOL-W-003-#1	SOL-W-003-#2
Lab Code	Req. LLD	CASO-8631	CASO-8632	CASO-8633	CASO-8634
Date Collected	-	11/28/2006	11/28/2006	11/28/2006	11/28/2006
Gross Alpha	-	9119 ± 3493	14878 ± 5998	10306 ± 4644	11250 ± 5006
Gross Beta	-	19018 ± 2896	19652 ± 4195	21282 ± 3687	20127 ± 3958
K-40	-	8788 ± 633	9346 ± 710	11138 ± 1091	11169 ± 1129
Mn-54	-	< 25.7	< 21.3	< 39.3	< 51.9
Fe-59	-	< 40.1	< 43.5	< 59.7	< 64.3
Co-58	-	< 19.4	< 22.5	< 44.4	< 30.7
Co-60	-	< 15.7	< 10.2	< 37.9	< 30.1
Zr-Nb-95	-	< 22.8	< 25.2	< 73.1	< 29.9
Cs-134	150	< 19.1	< 33.3	< 55.7	< 56.8
Cs-137	180	< 22.8	< 21.0	108 ± 38.7	< 55.2
Ba-La-140	-	< 23.7	< 46.9	< 57.8	< 68.8

Location		SOL-W-004-#1	SOL-W-004-#2
Lab Code	Req. LLD	CASO-8635	CASO-8636
Date Collected	-	11/28/2006	11/28/2006
Gross Alpha	-	11915 ± 4919	12190 ± 5141
Gross Beta	-	21102 ± 3666	18840 ± 3478
K-40	-	8816 ± 622	9673 ± 690
Mn-54	-	< 26.2	< 25.9
Fe-59	-	< 54.4	< 26.3
Co-58	-	< 19.2	< 18.4
Co-60	-	< 18.1	< 12.0
Zr-Nb-95	-	< 24.1	< 41.6
Cs-134	150	< 16.1	< 21.4
Cs-137	180	< 17.5	< 12.9
Ba-La-140	-	< 25.3	< 19.2

CALLAWAY

Table 6. Surface water, analyses for gross alpha, gross beta, tritium and gamma-emitting isotopes.

Collection: Monthly

Location: CA-SWA-S01 Units: pCi/L

Lab Code Date Collected	Required LLD	CASW-246 1/12/2006	CASW-779 2/14/2006	CASW-1443 3/14/2006	CASW-2366 4/11/2006
Gross alpha	-	2.2 ± 1.4	2.1 ± 1.3	3.1 ± 0.7	2.0 ± 1.2
Gross beta	4	8.3 ± 1.4	5.1 ± 0.9	5.5 ± 0.5	8.4 ± 1.4
H-3	3000	< 182	< 182	< 157	< 164
Mn-54	15	< 4.2	< 5.0	< 2.0	< 3.1
Fe-59	30	< 12.5	< 7.2	< 4.1	< 7.3
Co-58	15	< 3.8	< 4.7	< 1.6	< 1.3
Co-60	15	< 7.1	< 2.9	< 2.3	< 3.0
Zn-65	30	< 7.0	< 5.4	< 2.0	< 2.5
Zr-Nb-95	15	< 4.5	< 6.1	< 2.6	< 3.9
I-131	1000	< 7.8	< 10.1	< 3.7	< 6.7
Cs-134	15	< 6.9	< 4.2	< 2.1	< 3.9
Cs-137	18	< 7.0	< 4.2	< 1.5	< 3.5
Ba-La-140	15	< 7.8	< 2.6	< 3.1	< 3.3

Lab Code Date Collected	Required LLD	CASW-3145,6 5/9/2006	CASW-3940 6/13/2006	CASW-4603 7/11/2006	CASW-5383,4 8/8/2006
Gross alpha	-	4.5 ± 1.2	3.4 ± 1.3	2.9 ± 0.6	3.1 ± 1.0
Gross beta	4	9.0 ± 1.0	5.4 ± 0.9	6.5 ± 0.7	5.2 ± 0.6
H-3	3000	< 135	< 129	< 138	< 157
Mn-54	15	< 3.9	< 3.9	< 4.7	< 2.0
Fe-59	30	< 5.2	< 4.5	< 7.6	< 2.7
Co-58	15	< 2.6	< 4.0	< 2.6	< 1.1
Co-60	15	< 2.9	< 3.5	< 4.4	< 2.5
Zn-65	30	< 5.0	< 9.5	< 8.9	< 1.4
Zr-Nb-95	15	< 2.8	< 4.8	< 3.0	< 2.3
I-131	1000	< 4.3	< 7.2	< 8.9	< 4.7
Cs-134	15	< 2.8	< 5.3	< 3.6	< 2.1
Cs-137	18	< 3.3	< 4.6	< 4.3	< 2.3
Ba-La-140	15	< 2.9	< 3.8	< 2.4	< 1.9

Lab Code Date Collected	Required LLD	CASW-6244 9/12/2006	CASW-7053 10/10/2006	CASW-8351 11/14/2006	CASW-8921 12/12/2006
Gross alpha	-	3.0 ± 1.3	3.1 ± 1.3	1.5 ± 0.6	2.4 ± 1.0
Gross beta	4	5.1 ± 0.9	5.2 ± 0.8	3.9 ± 0.8	7.7 ± 1.1
H-3	3000	< 188	< 180	< 191	< 184
Mn-54	15	< 4.1	< 3.3	< 4.7	< 1.9
Fe-59	30	< 6.5	< 5.5	< 8.0	< 7.8
Co-58	15	< 4.5	< 2.6	< 5.4	< 6.1
Co-60	15	< 4.6	< 5.5	< 6.0	< 4.9
Zn-65	30	< 4.9	< 11.4	< 6.6	< 8.9
Zr-Nb-95	15	< 4.5	< 3.1	< 2.2	< 4.7
I-131	1000	< 7.8	< 4.7	< 4.8	< 8.4
Cs-134	15	< 6.4	< 5.0	< 1.2	< 4.7
Cs-137	18	< 3.5	< 5.9	< 4.2	< 5.8
Ba-La-140	15	< 2.7	< 4.5	< 4.2	< 6.5

Table 6. Surface water, analyses for gross alpha, gross beta, tritium and gamma-emitting isotopes.
Collection: Monthly
Location: CA-SWA-S02 Units: pCi/L

Lab Code	Required	CASW-247	CASW-780,1	CASW-1444	CASW-2367
Date Collected	LLD	1/12/2006	2/14/2006	3/14/2006	4/11/2006
Gross alpha	-	4.0 ± 1.7	3.7 ± 1.0	2.6 ± 0.7	2.3 ± 1.2
Gross beta	4	8.1 ± 1.4	5.9 ± 0.6	5.5 ± 0.4	8.1 ± 1.3
H-3	3000	< 182	< 182	< 157	< 164
Mn-54	15	< 3.2	< 2.4	< 2.2	< 5.4
Fe-59	30	< 8.6	< 3.3	< 4.6	< 9.0
Co-58	15	< 4.7	< 1.9	< 1.4	< 3.3
Co-60	15	< 3.9	< 2.7	< 1.6	< 6.8
Zn-65	30	< 7.5	< 3.4	< 2.0	< 11.0
Zr-Nb-95	15	< 4.8	< 3.9	< 2.7	< 4.7
I-131	1000	< 11.8	< 5.9	< 3.8	< 8.5
Cs-134	15	< 4.0	< 3.1	< 2.0	< 5.9
Cs-137	18	< 4.7	< 2.7	< 1.9	< 4.7
Ba-La-140	15	< 9.0	< 2.1	< 2.3	< 5.4

Lab Code	Required	CASW-3147	CASW-3941	CASW-4604	CASW-5385
Date Collected	LLD	5/9/2006	6/13/2006	7/11/2006	8/8/2006
Gross alpha	-	4.2 ± 1.5	2.9 ± 1.2	3.4 ± 0.8	2.8 ± 1.3
Gross beta	4	10.0 ± 1.5	6.3 ± 0.9	7.4 ± 0.8	5.5 ± 0.9
H-3	3000	< 135	431 ± 87 [a]	232 ± 83	221 ± 88
Mn-54	15	< 2.7	< 3.5	< 4.9	< 2.6
Fe-59	30	< 8.2	< 8.1	< 7.9	< 4.7
Co-58	15	< 3.9	< 5.6	< 5.7	< 3.2
Co-60	15	< 1.7	< 4.9	< 1.9	< 1.9
Zn-65	30	< 3.2	< 11.1	< 6.7	< 5.4
Zr-Nb-95	15	< 3.7	< 2.6	< 3.4	< 5.4
I-131	1000	< 3.9	< 6.7	< 7.4	< 4.7
Cs-134	15	< 2.1	< 4.5	< 4.3	< 1.6
Cs-137	18	< 2.5	< 4.3	< 4.4	< 3.2
Ba-La-140	15	< 13.6	< 4.6	< 6.5	< 4.8

Lab Code	Required	CASW-6245	CASW-7054	CASW-8352	CASW-8922
Date Collected	LLD	9/12/2006	10/10/2006	11/14/2006	12/12/2006
Gross alpha	-	2.8 ± 1.2	2.4 ± 1.5	1.8 ± 0.8	< 1.3
Gross beta	4	4.4 ± 0.8	7.2 ± 1.5	7.7 ± 0.8	7.0 ± 1.0
H-3	3000	< 188	< 173	< 191	< 184
Mn-54	15	< 1.6	< 6.0	< 3.3	< 3.7
Fe-59	30	< 5.8	< 7.2	< 3.4	< 5.6
Co-58	15	< 1.9	< 4.4	< 3.4	< 3.1
Co-60	15	< 1.7	< 3.6	< 4.6	< 5.0
Zn-65	30	< 5.5	< 5.3	< 11.8	< 10.5
Zr-Nb-95	15	< 3.1	< 5.8	< 4.2	< 5.3
I-131	1000	< 5.1	< 6.8	< 7.2	< 7.6
Cs-134	15	< 3.4	< 4.9	< 5.0	< 4.5
Cs-137	18	< 2.0	< 3.3	< 5.9	< 5.6
Ba-La-140	15	< 2.5	< 2.5	< 5.4	< 5.5

[a] Analysis was repeated, result of reanalysis: 554±106 pCi/L.
A second sample was sent for analysis: result of second analysis: 601±109 pCi/L.

Table 7. Ground water, analyses for gross beta, tritium, iodine-131 and gamma-emitting isotopes.
Collection: Quarterly
Units: pCi/L

Location		CA-WWA-D01			
Quarter Lab Code	Required LLD	1st Quarter CAWW-1028	2nd Quarter CAWW-2114	3rd Quarter CAWW-4446	4th Quarter CAWW-7018
Gross Beta	4	2.3 ± 0.7	3.0 ± 0.8	3.0 ± 0.8	3.6 ± 1.3
H-3	2000	< 181	< 143	< 128	< 185
I-131	1	< 0.5	< 0.3	< 0.3	< 0.2
Mn-54	15	< 3.1	< 5.8	< 3.8	< 4.3
Fe-59	30	< 4.5	< 4.6	< 4.8	< 7.4
Co-58	15	< 2.4	< 5.1	< 2.0	< 3.2
Co-60	15	< 2.3	< 3.9	< 3.2	< 4.8
Zn-65	30	< 5.2	< 5.1	< 5.6	< 9.2
Zr-Nb-95	15	< 3.0	< 6.4	< 4.1	< 3.8
Cs-134	15	< 4.9	< 4.9	< 3.4	< 3.8
Cs-137	18	< 2.8	< 4.8	< 3.0	< 5.0
Ba-La-140	15	< 1.5	< 2.4	< 1.4	< 3.5

Location		CA-WWA-F05			
Quarter Lab Code	Required LLD	1st Quarter CAWW-1029	2nd Quarter CAWW-2115	3rd Quarter CAWW-4447	4th Quarter CAWW-7019
Gross Beta	4	7.0 ± 1.0	7.8 ± 1.0	6.4 ± 1.0	8.0 ± 1.3
H-3	2000	< 181	< 143	< 128	< 185
I-131	1	< 0.2	< 0.3	< 0.4	< 0.4
Mn-54	15	< 2.9	< 3.3	< 1.7	< 2.0
Fe-59	30	< 4.7	< 9.1	< 3.8	< 4.8
Co-58	15	< 1.9	< 3.8	< 2.4	< 2.1
Co-60	15	< 2.3	< 4.2	< 1.8	< 3.4
Zn-65	30	< 2.5	< 10.4	< 3.9	< 2.8
Zr-Nb-95	15	< 3.0	< 3.7	< 4.0	< 1.8
Cs-134	15	< 4.0	< 5.2	< 3.1	< 3.0
Cs-137	18	< 4.1	< 5.6	< 3.8	< 3.2
Ba-La-140	15	< 2.2	< 3.1	< 2.6	< 3.4

Table 7. Ground water, analyses for gross beta, tritium, iodine-131 and gamma-emitting isotopes.
Collection: Quarterly
Units: pCi/L

Location		CA-WWA-F015			
Quarter Lab Code	Required LLD	1st Quarter CAWW-1030	2nd Quarter CAWW-2116	3rd Quarter CAWW-4448	4th Quarter CAWW-7020
Gross Beta	4	7.7 ± 1.0	7.5 ± 1.0	7.3 ± 1.0	9.3 ± 1.4
H-3	2000	< 151	< 143	< 128	< 185
I-131	1	< 0.2	< 0.3	< 0.3	< 0.4
Mn-54	15	< 2.6	< 2.0	< 4.1	< 2.8
Fe-59	30	< 5.0	< 4.0	< 5.7	< 6.0
Co-58	15	< 2.2	< 2.7	< 3.5	< 2.9
Co-60	15	< 2.0	< 3.2	< 2.1	< 3.0
Zn-65	30	< 2.9	< 1.9	< 5.2	< 6.5
Zr-Nb-95	15	< 1.7	< 2.1	< 4.7	< 2.5
Cs-134	15	< 3.1	< 2.9	< 3.6	< 2.5
Cs-137	18	< 2.8	< 4.4	< 5.4	< 1.7
Ba-La-140	15	< 1.2	< 3.2	< 5.6	< 2.6

CALLAWAY

Table 8. Bottom sediments, analyses for gross alpha, gross beta and gamma-emitting isotopes.
Collection: Semiannually
Units: pCi/kg dry

Location		CA-AQS-A	
Lab Code	Req. LLD	CABS-2944	CABS-8365
Date Collected	-	4/20/2006	11/2/2006
Gross Alpha	-	NA[a]	NA[a]
Gross Beta	-	NA	NA
K-40	-	15307 ± 840	15256 ± 785
Mn-54	-	< 30.9	< 17.9
Fe-59	-	< 58.6	< 54.8
Co-58	-	< 24.8	< 28.7
Co-60	-	< 20.6	< 7.3
Zr-Nb-95	-	< 40.6	< 47.1
Cs-134	150	< 43.3	< 19.9
Cs-137	180	52.7 ± 25.8	66.2 ± 34.8
Ba-La-140	-	< 49.2	< 42.0

Location		CA-AQS-C	
Lab Code	Req. LLD	CABS-2946	CABS-8366,7
Date Collected	-	4/20/2006	11/2/2006
Gross Alpha	-	NA[a]	NA[a]
Gross Beta	-	NA	NA
K-40	-	15035 ± 722	13647 ± 510
Mn-54	-	< 14.7	< 13.5
Fe-59	-	< 36.3	< 49.1
Co-58	-	< 21.8	< 19.1
Co-60	-	< 15.5	< 12.4
Zr-Nb-95	-	< 43.5	< 31.0
Cs-134	150	< 27.5	< 17.8
Cs-137	180	< 31.5	< 15.9
Ba-La-140	-	< 34.0	< 28.8

[a] NA=Not Analyzed; analysis not requested.

Table 10. Fish, analyses for gross alpha, gross beta, and gamma-emitting isotopes.
Collection: Semiannually
Units: pCi/kg wet

Location		CA-AQF-A				
Lab Code	Req. LLD	CAF-2934	CAF-2935	CAF-2936	CAF-2937	CAF-2938
Date Collected		4/20/2006	4/20/2006	4/20/2006	4/20/2006	4/20/2006
Sample Type		Carp	Channel Catfish	River Carpsucker	Smallmouth Buffalo	Bigmouth Buffalo
Gross Alpha	-	NA[a]	NA	NA	NA	NA
Gross Beta	-	NA	NA	NA	NA	NA
K-40	-	3297 ± 571	3577 ± 472	2745 ± 522	3178 ± 520	3647 ± 576
Mn-54	130	< 26.4	< 12.5	< 23.5	< 12.3	< 26.0
Fe-59	260	< 43.7	< 44.9	< 80.5	< 33.6	< 74.3
Co-58	130	< 21.6	< 16.5	< 15.1	< 14.4	< 27.9
Co-60	130	< 20.7	< 14.9	< 21.1	< 20.3	< 19.0
Zn-65	260	< 22.9	< 36.0	< 35.2	< 59.7	< 53.3
Cs-134	130	< 18.8	< 14.4	< 29.1	< 25.9	< 14.1
Cs-137	150	< 13.7	< 11.6	< 26.8	< 13.9	< 15.2
Lab Code	Req. LLD	CAF-8337	CAF-8338	CAF-8339	CAF-8340	CAF-8341
Date Collected		11/2/2006	11/2/2006	11/2/2006	11/2/2006	11/2/2006
Sample Type		River Carpsucker	Freshwater Drum	Carp	Smallmouth Buffalo	Bigmouth Buffalo
Gross Alpha	-	NA[a]	NA	NA	NA	NA
Gross Beta	-	NA	NA	NA	NA	NA
K-40	-	3952 ± 497	3238 ± 555	3298 ± 535	3244 ± 400	2927 ± 571
Mn-54	130	< 17.7	< 23.5	< 14.4	< 18.1	< 27.7
Fe-59	260	< 69.8	< 92.2	< 58.5	< 57.9	< 100.4
Co-58	130	< 22.9	< 32.9	< 25.2	< 22.1	< 25.7
Co-60	130	< 14.7	< 14.8	< 9.4	< 12.5	< 21.0
Zn-65	260	< 34.4	< 37.4	< 31.2	< 43.7	< 39.8
Cs-134	130	< 18.1	< 20.8	< 11.8	< 16.8	< 22.0
Cs-137	150	< 18.2	< 15.6	< 21.7	< 10.1	< 24.4

[a] NA=Not Analyzed; analysis not requested.

Table 10. Fish, analyses for gross alpha, gross beta, and gamma-emitting isotopes.
Collection: Semiannually
Units: pCi/kg wet

Location		CA-AQF-C				
Lab Code	Req. LLD	CAF-2939	CAF-2940	CAF-2941	CAF-2942	CAF-2943
Date Collected		4/20/2006	4/20/2006	4/20/2006	4/20/2006	4/20/2006
Sample Type		Carp	Channel Catfish	River Carpsucker	Smallmouth Buffalo	Bigmouth Buffalo
Gross Alpha	-	NA[a]	NA	NA	NA	NA
Gross Beta	-	NA	NA	NA	NA	NA
K-40	-	3330 ± 716	3410 ± 495	3457 ± 731	3024 ± 454	4124 ± 1293
Mn-54	130	< 23.2	< 18.2	< 26.5	< 19.4	< 47.4
Fe-59	260	< 63.6	< 58.3	< 35.2	< 28.8	< 174.1
Co-58	130	< 26.2	< 14.5	< 31.0	< 19.4	< 41.9
Co-60	130	< 20.3	< 17.4	< 35.9	< 21.2	< 51.5
Zn-65	260	< 55.9	< 11.8	< 48.3	< 39.2	< 93.1
Cs-134	130	< 23.2	< 11.2	< 22.5	< 18.0	< 58.9
Cs-137	150	< 22.6	< 18.3	< 33.4	< 15.8	< 42.3
Lab Code	Req. LLD	CAF-8342	CAF-8343	CAF-8344	CAF-8345,6	CAF-8347
Date Collected		11/2/2006	11/2/2006	11/2/2006	11/2/2006	11/2/2006
Sample Type		Freshwater Drum	Carp	River Carpsucker	Smallmouth Buffalo	Bigmouth Buffalo
Gross Alpha	-	NA[a]	NA	NA	NA	NA
Gross Beta	-	NA	NA	NA	NA	NA
K-40	-	3159 ± 614	3425 ± 523	3022 ± 398	2863 ± 289	2929 ± 604
Mn-54	130	< 14.9	< 19.2	< 9.9	< 11.3	< 20.9
Fe-59	260	< 36.8	< 61.5	< 47.8	< 37.2	< 86.9
Co-58	130	< 27.0	< 16.7	< 19.0	< 16.9	< 23.4
Co-60	130	< 17.8	< 9.0	< 17.6	< 12.4	< 31.9
Zn-65	260	< 48.7	< 15.8	< 12.9	< 23.2	< 47.1
Cs-134	130	< 20.5	< 17.6	< 14.7	< 14.5	< 21.5
Cs-137	150	< 23.4	< 17.2	< 9.9	< 17.7	< 15.9

[a] NA=Not Analyzed; analysis not requested.

Table 11. Direct Radiation

Location	Gamma Dose (mrem)			
	QTR 1	QTR 2	QTR 3	QTR 4
CA-IDM-1A	15.80	17.00	17.19	15.93
CA-IDM-3	16.59	Missing [a]	15.55	17.45
CA-IDM-5	14.75	15.56	13.44	14.79
CA-IDM-6	16.71	17.72	16.04	16.53
CA-IDM-7	16.26	16.80	15.50	16.07
CA-IDM-9	15.24	16.99	16.00	16.15
CA-IDM-10	17.06	18.43	16.81	17.64
CA-IDM-11A	17.60	18.59	17.09	18.15
CA-IDM-14	15.96	17.09	15.73	16.60
CA-IDM-17	16.09	17.58	15.85	17.51
CA-IDM-18A	17.37	17.73	16.28	16.66
CA-IDM-20	17.67	17.92	16.24	17.56
CA-IDM-21	17.30	17.86	15.81	17.13
CA-IDM-22A	16.01	17.16	15.52	16.36
CA-IDM-23	17.27	17.22	15.39	17.17
CA-IDM-26 (C)	12.07	13.00	11.01	10.92
CA-IDM-27 (C)	18.49	18.77	17.05	17.00
CA-IDM-30A	16.41	16.60	15.71	15.92
CA-IDM-31A	18.20	18.12	16.39	17.30
CA-IDM-32	16.98	17.61	16.72	17.40
CA-IDM-32A	17.58	18.15	16.97	17.34
CA-IDM-33	17.22	16.50	15.34	15.57
CA-IDM-34	16.37	15.16	14.32	15.29
CA-IDM-35	16.44	15.14	14.57	14.85
CA-IDM-36	16.60	16.64	15.30	16.02
CA-IDM-37	16.71	16.25	16.02	16.74
CA-IDM-38	12.02	12.20	11.30	12.09
CA-IDM-39	17.06	16.32	15.52	16.28
CA-IDM-39A	17.04	16.83	16.16	15.90
CA-IDM-40	17.42	17.36	17.12	18.07
CA-IDM-41	16.61	16.72	15.30	15.67
CA-IDM-42	14.45	13.62	13.61	14.09
CA-IDM-43	16.74	16.74	15.59	15.67
CA-IDM-44	17.31	17.29	16.71	16.28
CA-IDM-45	15.14	15.70	14.45	15.38
CA-IDM-46	16.95	17.50	15.91	16.41
CA-IDM-47	16.61	16.80	15.22	16.13
CA-IDM-48	17.28	18.34	16.18	16.78
CA-IDM-49	16.36	15.17	14.89	15.45
CA-IDM-50	16.16	15.41	16.32	15.89
CA-IDM-51A	17.21	16.31	16.26	17.05
CA-IDM-52	16.82	17.00	16.08	17.18
CA-IDM-60	16.66	16.65	15.83	16.16

[a] TLD and holder missing from assigned location.

Appendix C

Supplemental Analyses

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Supplemental Samples

During 2006, a large number of supplemental samples were taken in response to the nationwide Nuclear Energy Institute (NEI) Groundwater Protection Initiative (GPI). Samples were taken from:

- Water from the cooling tower blowdown and water treatment plant
- Water from existing onsite groundwater wells
- Water from existing onsite deep water wells
- Water and sediment from ponds and ditches on Ameren property
- Water from nearby property owners who rely on well water for their drinking water supply
- Soil and water from core sampling performed at locations along the discharge pipeline
- Water, soil, and sediment samples from Logan Creek
- Water from onsite transformer pits and berms
- Sediment from the Missouri River in the area of the former discharge point.

Maps have been provided to show the approximate location of the supplemental samples. Sample locations corresponding to onsite plant equipment, such as transformers, are not shown on the maps due to security considerations.

Onsite wells and water from neighboring property owners have been added to the permanent monitoring program. The samples, collection frequency, and analyses performed are shown in Table 1 and Table 2.

Sampling Along the Discharge Pipeline

Many samples were taken along the discharge pipeline during 2006. In general, the sample locations were based on the location of manholes on the pipeline. The sample designations evolved somewhat as the sampling program matured, however, the sample designations are generally related to the manholes in some manner.

Many of the samples are related to the manhole locations through the plant pipeline grid system. The coordinates used to identify these boring locations relate to the Callaway Plant pipeline grid system; this grid system is specific to Callaway and does not relate to standard coordinate systems, such as state plane or GPS. The plant pipeline grid system is based on an arbitrary reference point for the pipeline grid system, which is approximately the end of the pipeline at the river, as it existed prior to relocation.

The coordinates of the manholes are provided on plant drawings:

Manhole Number	Station Number	Distance from Reference Point
2	74+07	7407'
3B	78+55	7855'
5	105+50	10550'
6	108+03	10803'
6A	109+60	10960'
6B	109+90	10990'
8	139+90	13990'
9B	142+47.5	14247.5'
11A	232+80	23280'

Some of the sampling locations utilize these station numbers. As an example, consider the boring location 109+90 R34 (B2) -8.5.

- The distance from the reference point to the boring location is [(109X100)+90] feet, i.e., 10,990 feet.
- R and L designate to the right or left of the discharge pipeline while facing upstream, i.e., looking toward the plant.
- The number next to the R or L is the distance, in feet, along the perpendicular from the pipeline to the boring location.
- The B1, B2, B3, B4 designation is the number of the boring for a particular manhole.
- The -8.5 value means that the top of the water in the boring was 8.5 feet below the top of the ground. Note that the water level is relative only to the particular manhole; it doesn't relate to the water level in borings at other manholes.

To determine the straight-line distance of the boring location from a manhole, use the Pythagorean Theorem ($a^2 + b^2 = c^2$).

As another example consider 108+00 L50 (B2) -10.5. The boring is located at 10800', which is 190' downstream from manhole 6B. It is 50' on the perpendicular, to the left of the pipeline (facing upstream, towards the plant). The water level in that boring is 10.5' below the ground. There were three soil samples taken from that boring: At 3'-5' in depth, the H-3 concentration in the groundwater was <163 pCi/L, at 8'-10', it was 215 pCi/L, and at 13'-15, it was 230 pCi/L.

These are discrete samples of 2' in length, taken with either a Shelby tube or a split spoon sampler, as appropriate for the soil type.

One water sample was taken from each boring at the completion of the boring, so that the water sample is a composite over the length of the boring.

In general , the boring depth was determined by the depth at which the driller hit saturated soil. Boring stopped when the driller his rock, saturated soil, or had drilled 25', whichever came first.

Maps have been provided which show the general location of the manholes and the sampling locations.

Table 1. REMP Wells and Ponds Collection and Analysis Schedule (non- drinking water)

Description	Collection Frequency	^{3}H	PGE	$^{89/90}Sr$	Boron
OW-1 UHS pond	Q	√			
OW-2 UHS pond	Q	√			
OW-3 UHS pond	Q	√			
OW-4 UHS pond	Q	√			
OW-5 UHS pond	Q	√			
MW-001 Outside OCA	Q	√			
MW-002 Outside OCA	Q	√			
MW-003 Outside OCA	Q	√			
MW-004 Dillon	M	√	√		
MW-005 Brownlee	M	√	√		
MW-006 Ward	M	√	√		
MW-007 Ward	M	√	√		
MW-008 Ward	M	√	√		
MW-012 Ward	M	√	√		
MW-010 Pipeline	Q	√			
MW-011 Pipeline	Q	√			
MW-009 Pipeline	Q	√			
MW-501 Landfill	Q	√			
MW-502 Landfill	Q	√			
936 Powerblock	Q	√	√	√	√
937A Powerblock	Q	√	√	√	√
937B Powerblock	Q	√	√	√	√
937C Powerblock	Q	√	√	√	√
937D Powerblock	Q	√	√	√	√
937F Powerblock	Q	√	√	√	√
M-2	Q	√			
M-7	Q	√			
Ground Water Sump	Q	√	√	√	√
UHS pond	Q	√			
Unit 2 pond	Q	√			
Cooling Tower Blowdown	W	√			

Table 2. Neighboring Property Owner Wells, Collection and Analysis Schedule (drinking water).

Description	Collection Frequency	^{3}H
CA-DWA-1	M	√
CA-DWA-2	M	√
CA-DWA-3	M	√
CA-DWA-4	M	√
CA-DWA-5	M	√
CA-DWA-6	M	√
CA-DWA-7	M	√
CA-DWA-8	M	√
CA-DWA-9	M	√
CA-DWA-10	M	√
CA-DWA-11	M	√
CA-DWA-12	M	√
CA-DWA-13	*	*
CA-DWA-14	M	√
CA-DWA-15	M	√
CA-DWA-16	M	√
CA-DWA-17	M	√
CA-DWA-18	M	√
CA-DWA-19	M	√
CA-DWA-20	M	√
CA-DWA-21	M	√

* Sample CA-DWA-13 was eliminated from the program at the property owner's request.

Figure 1. Sampling sites, Ponds (upper)

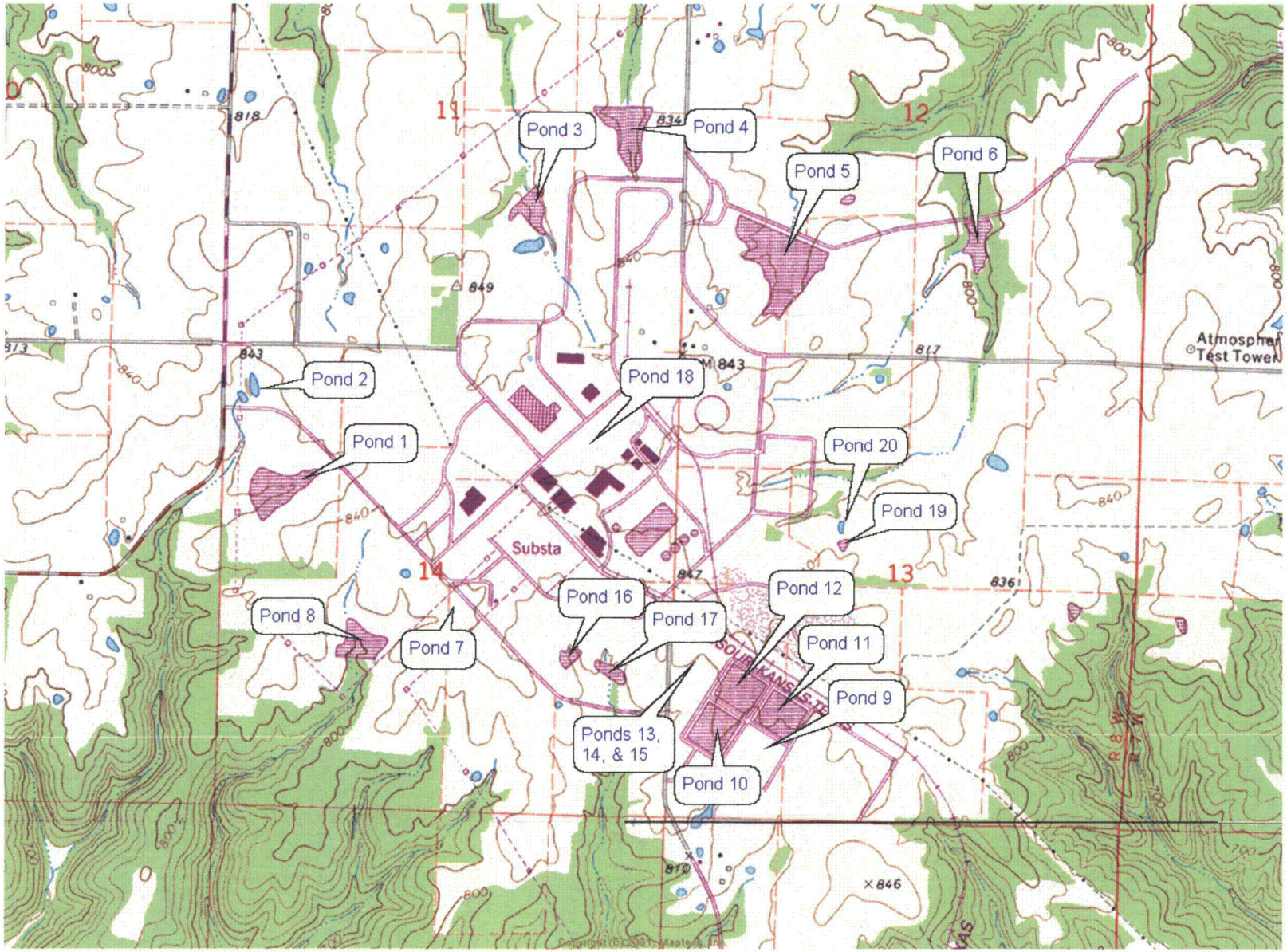


Figure 2. Sampling sites, Ponds (lower)

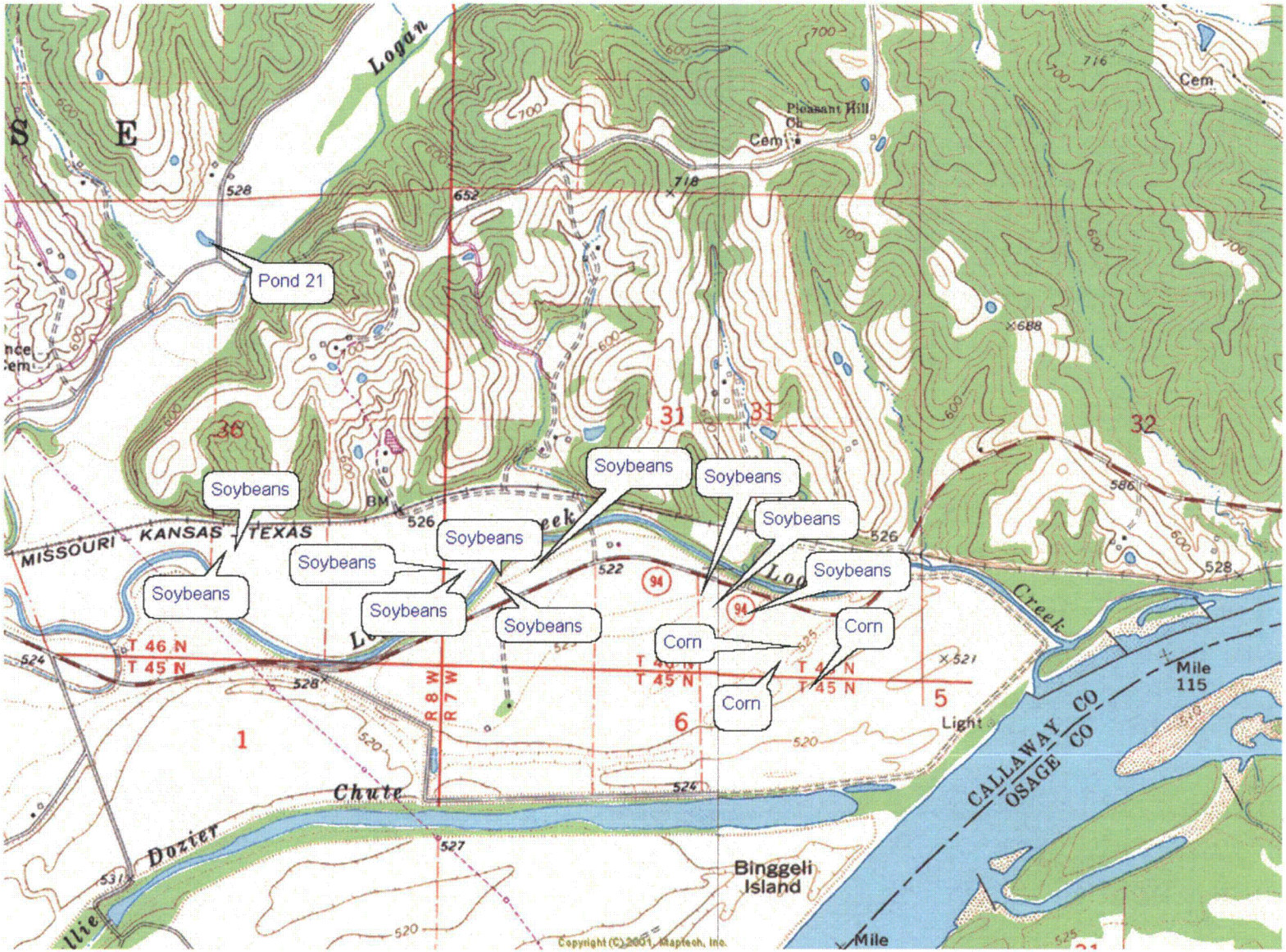


Figure 3. Sampling sites, Monitoring wells, bottomland.

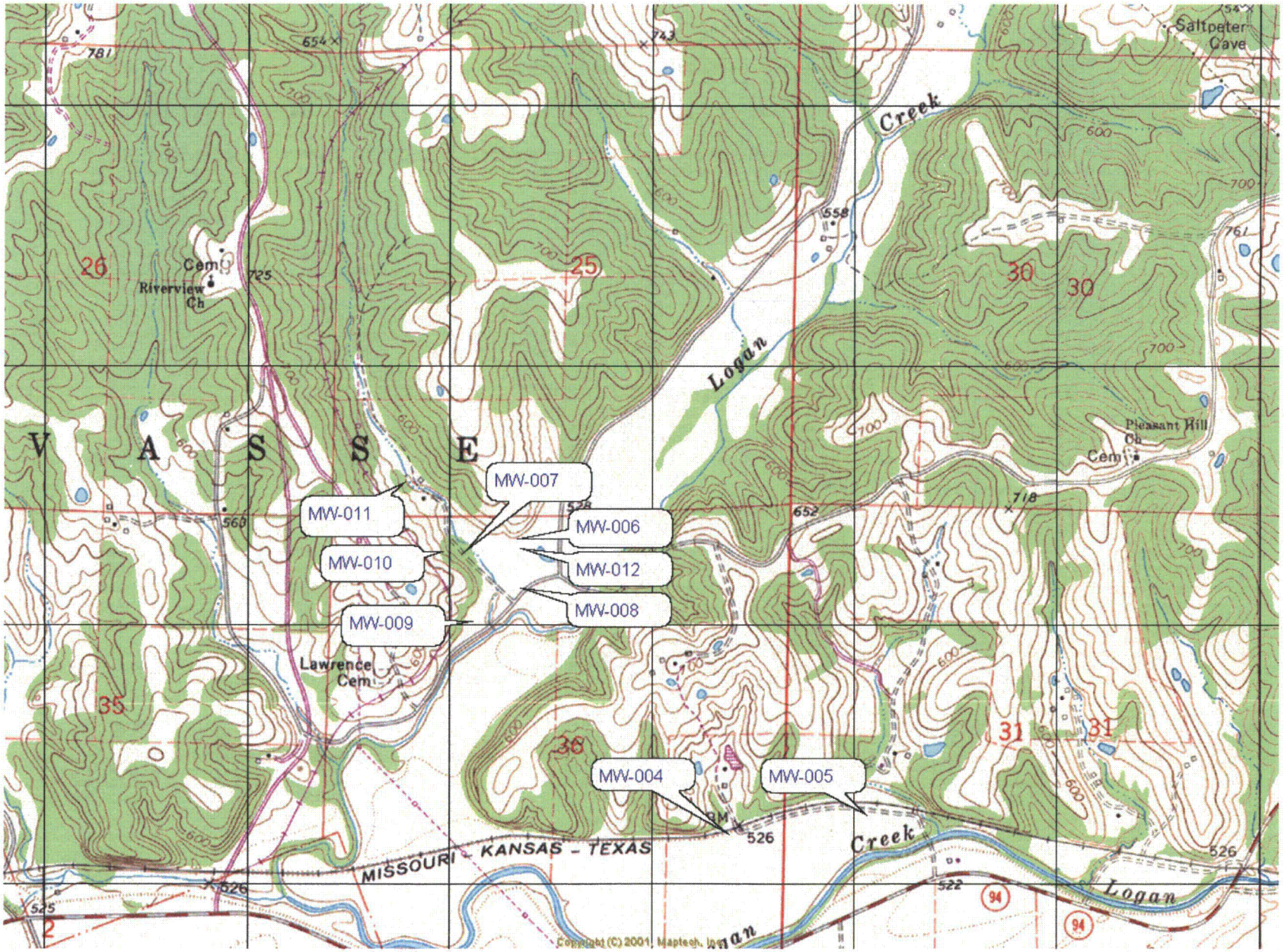


Figure 4. Sampling sites, ditch locations.

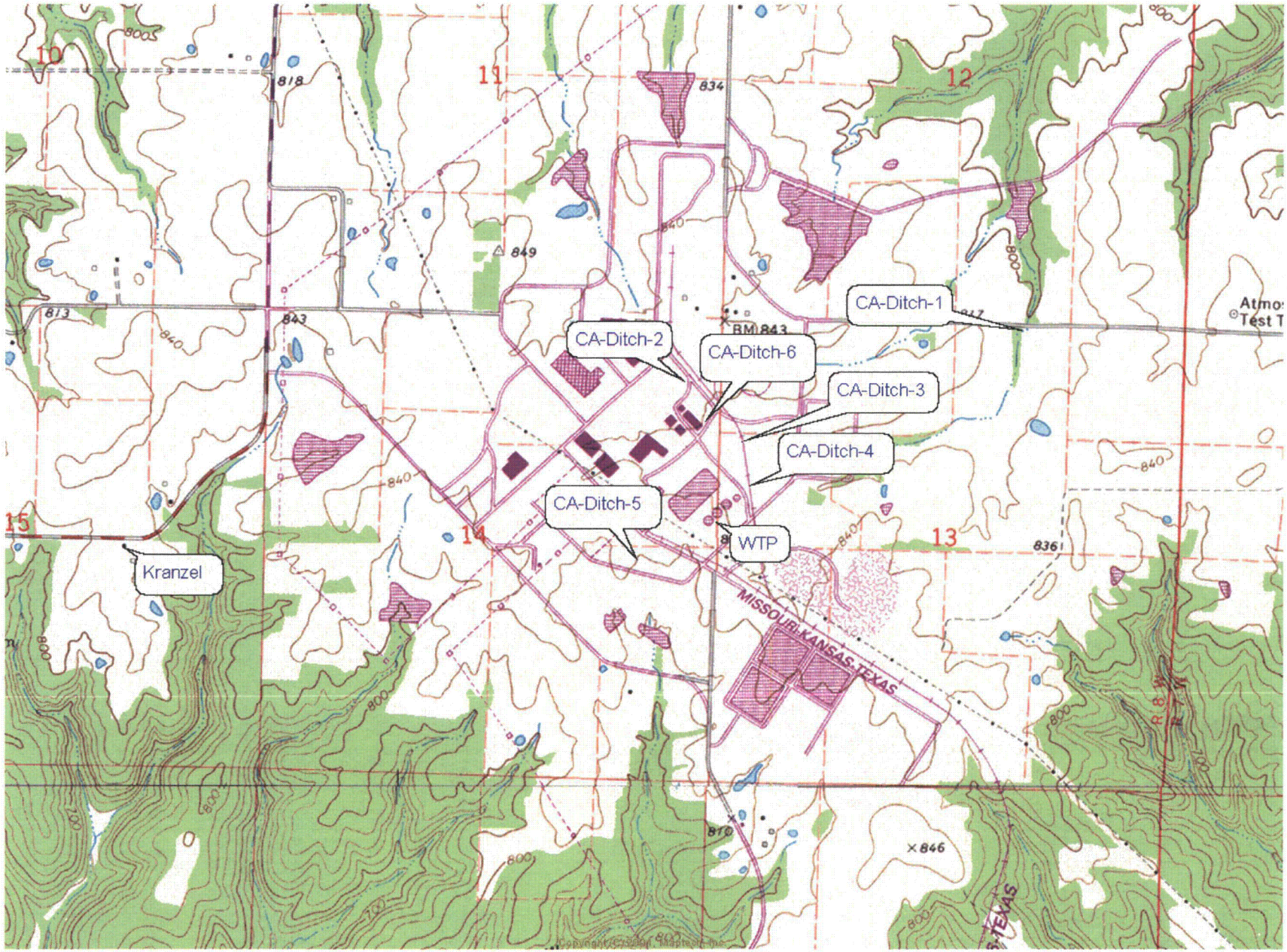


Figure 5. Sampling sites, Manholes (86 series)

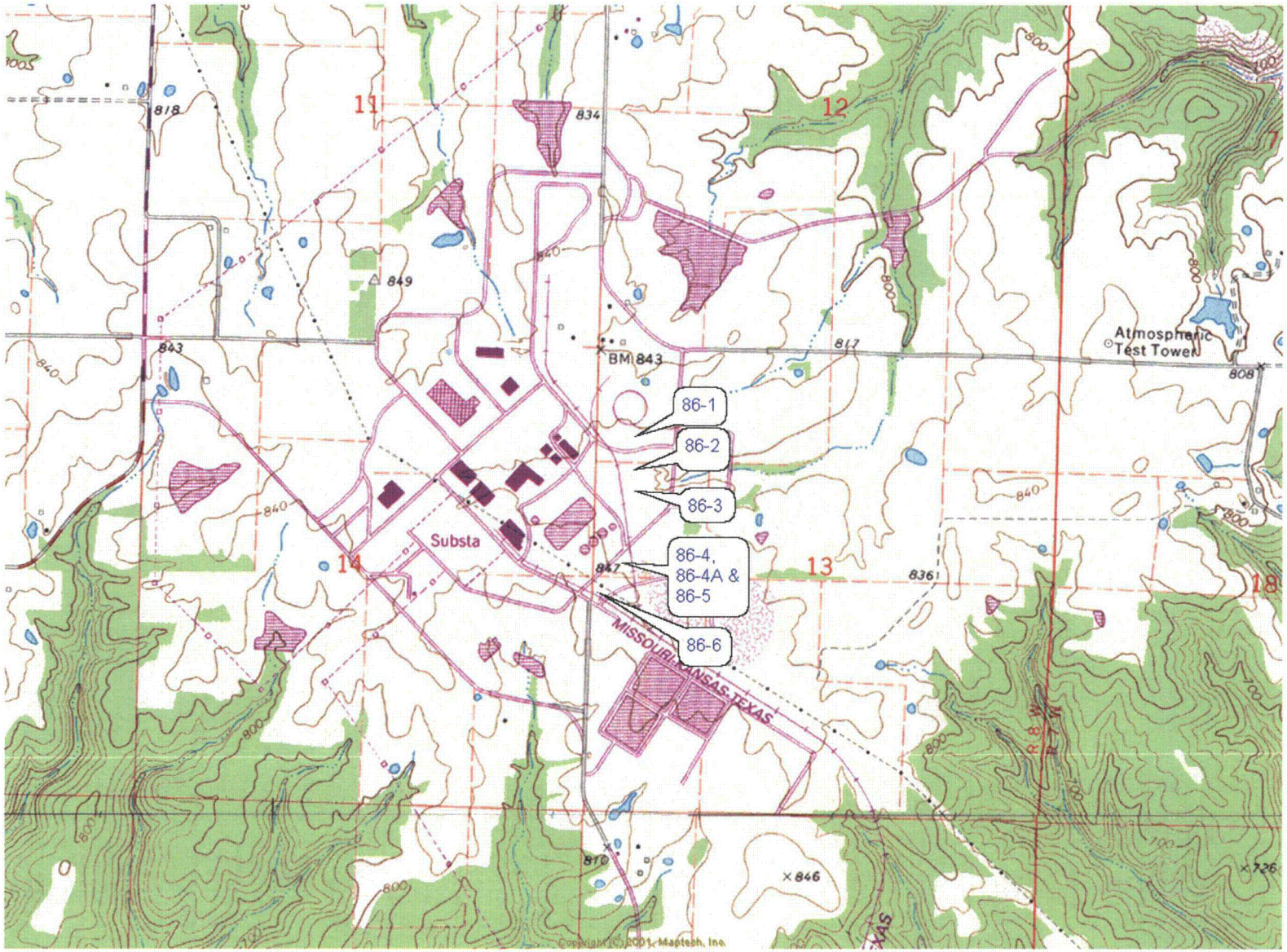


Figure 6. Sampling sites, Logan Creek (upper)

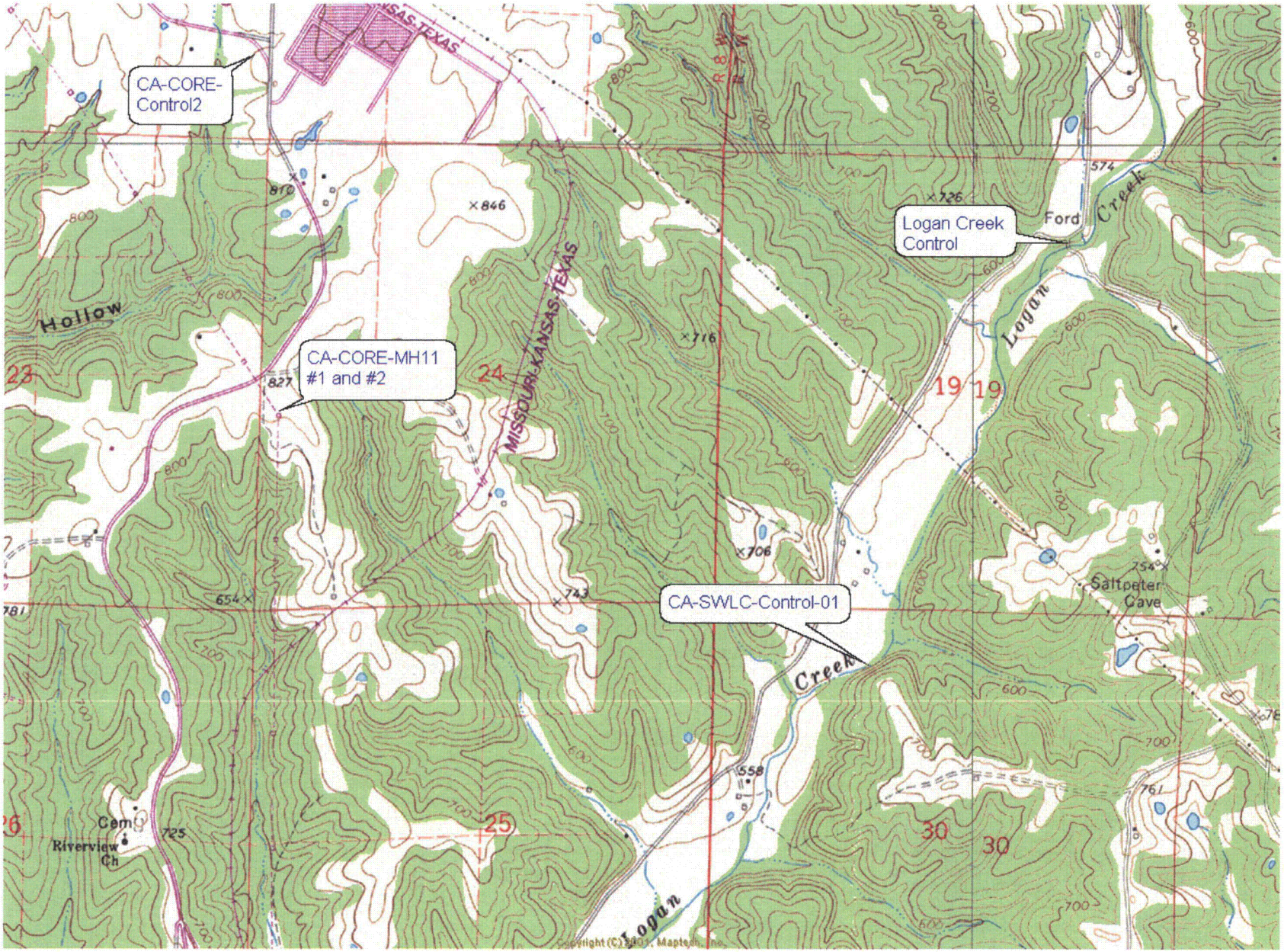


Figure 7. Sampling sites, Logan Creek (lower)

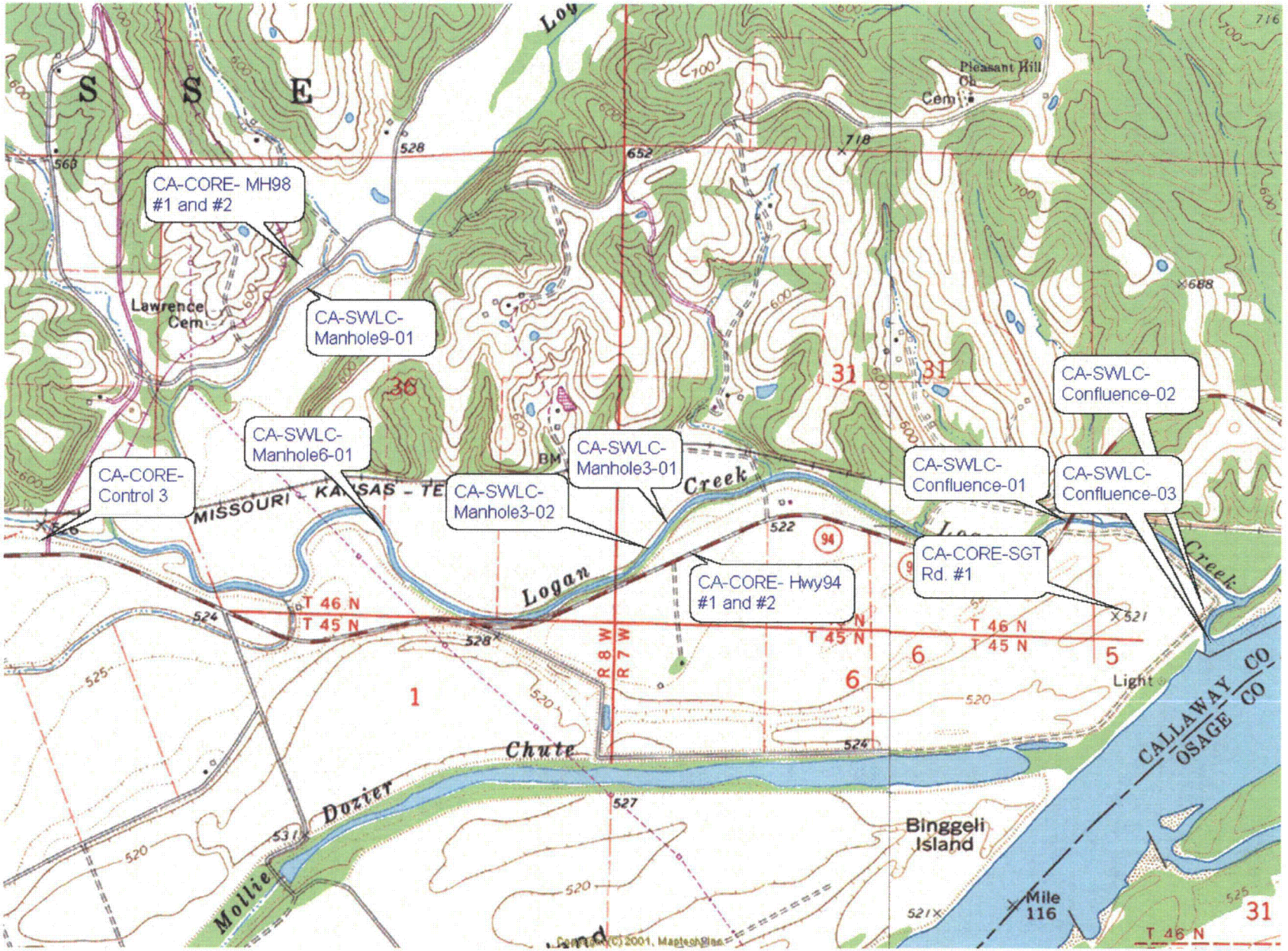


Figure 8. Additional sampling sites, Logan Creek

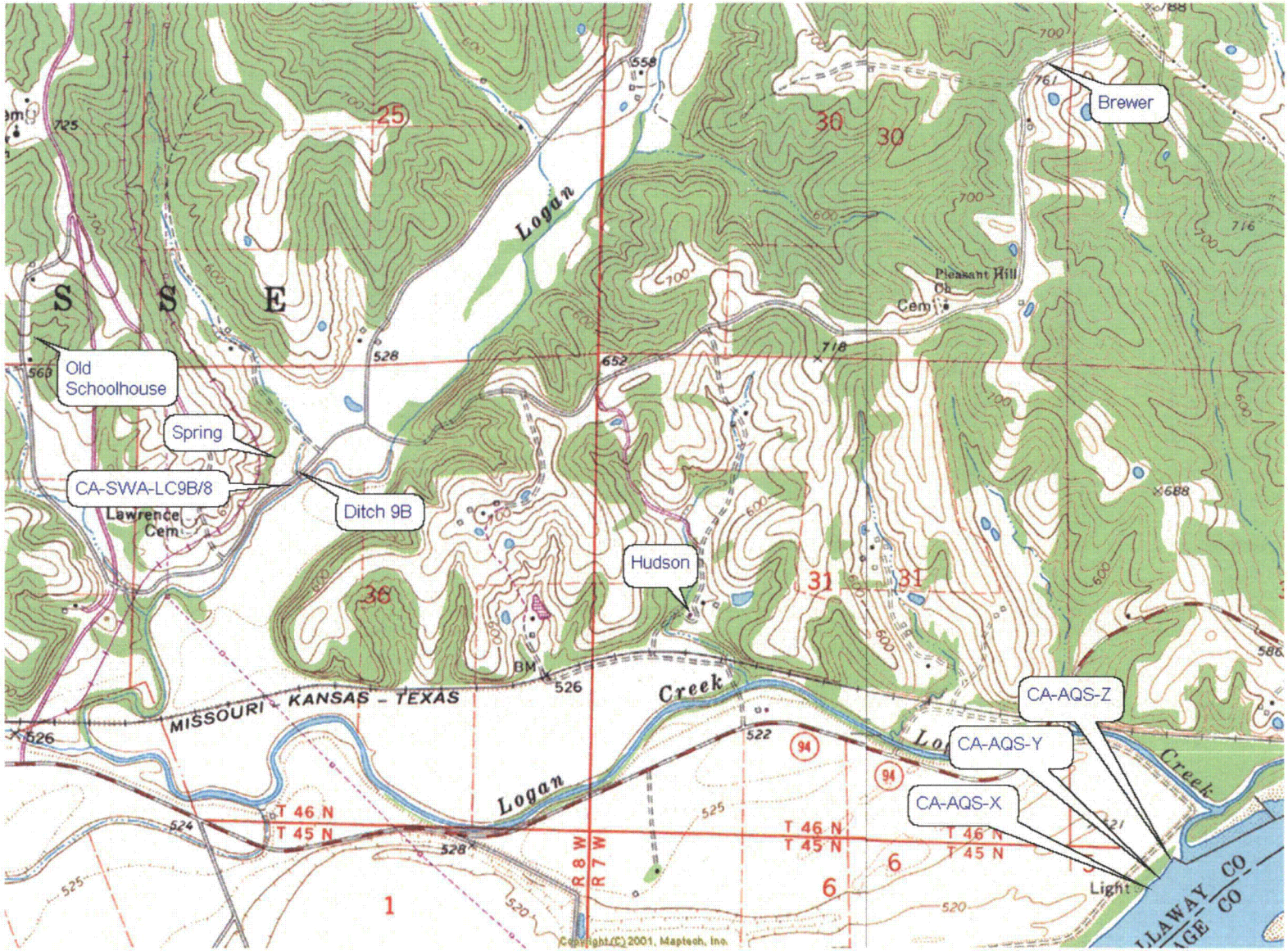


Figure 9. Sampling sites, Drinking Water (upper)

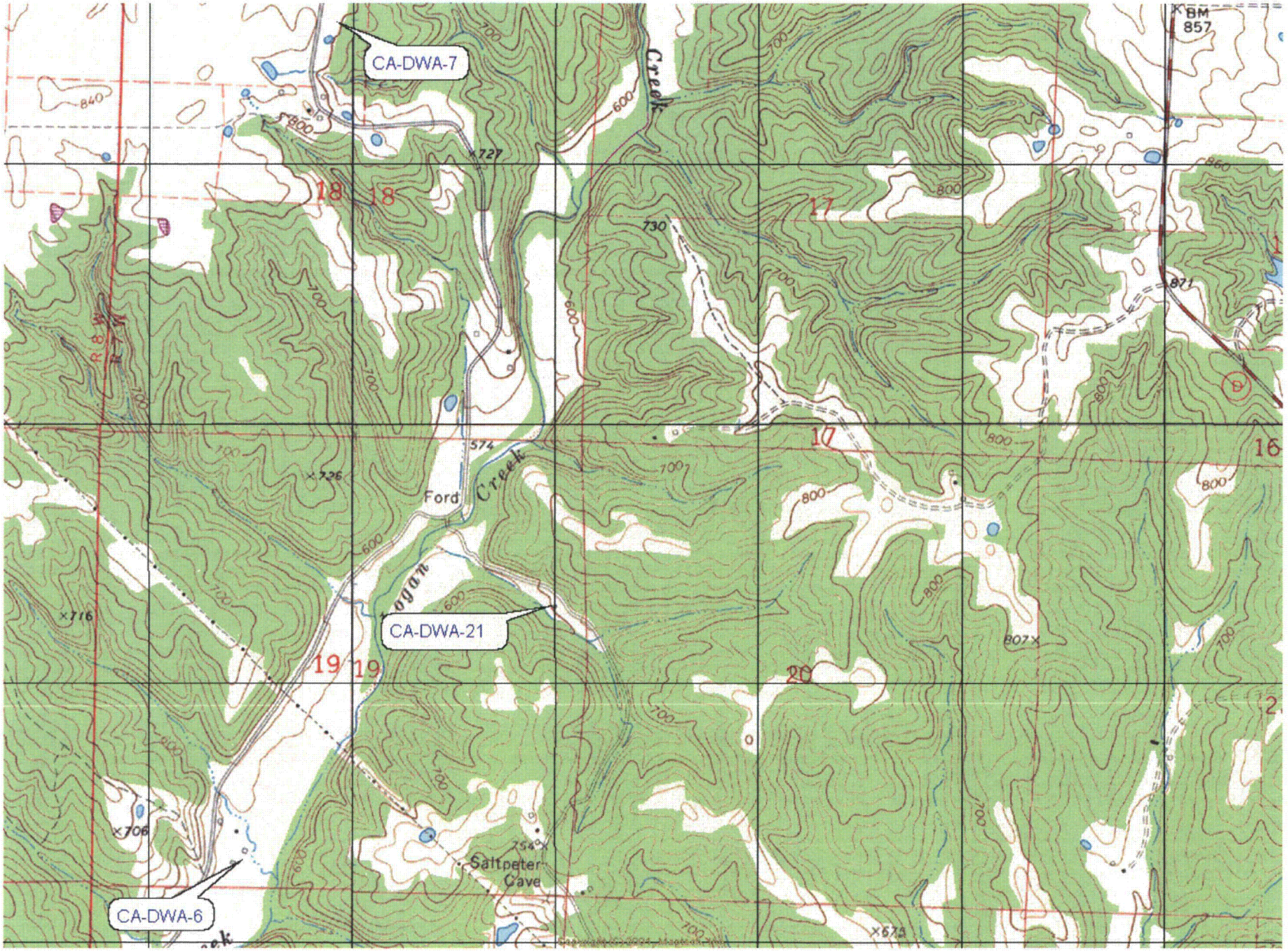


Figure 10. Sampling sites, Drinking Water (lower)

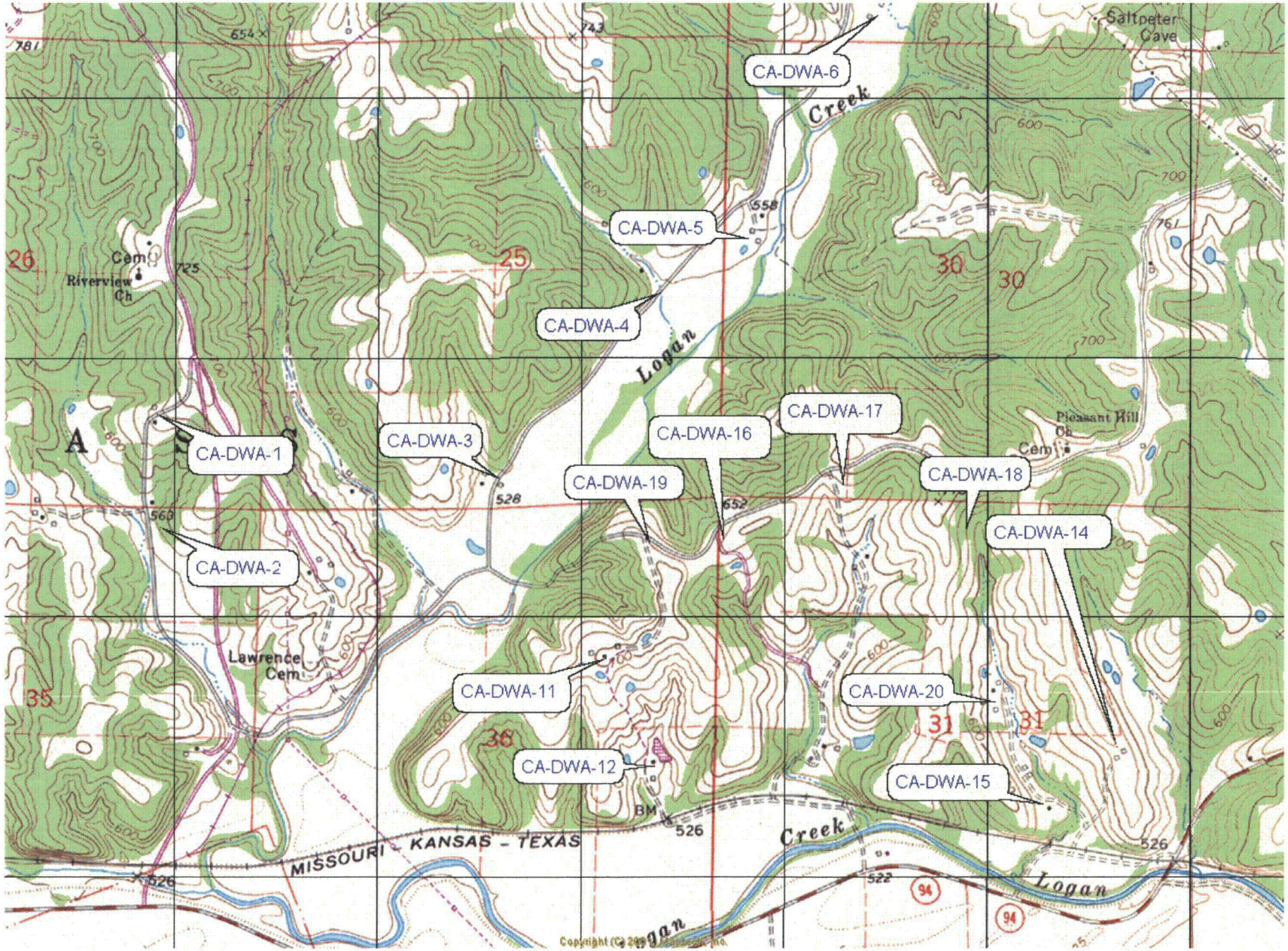


Figure 11. Sampling sites, Drinking water, Logan and Mud creeks

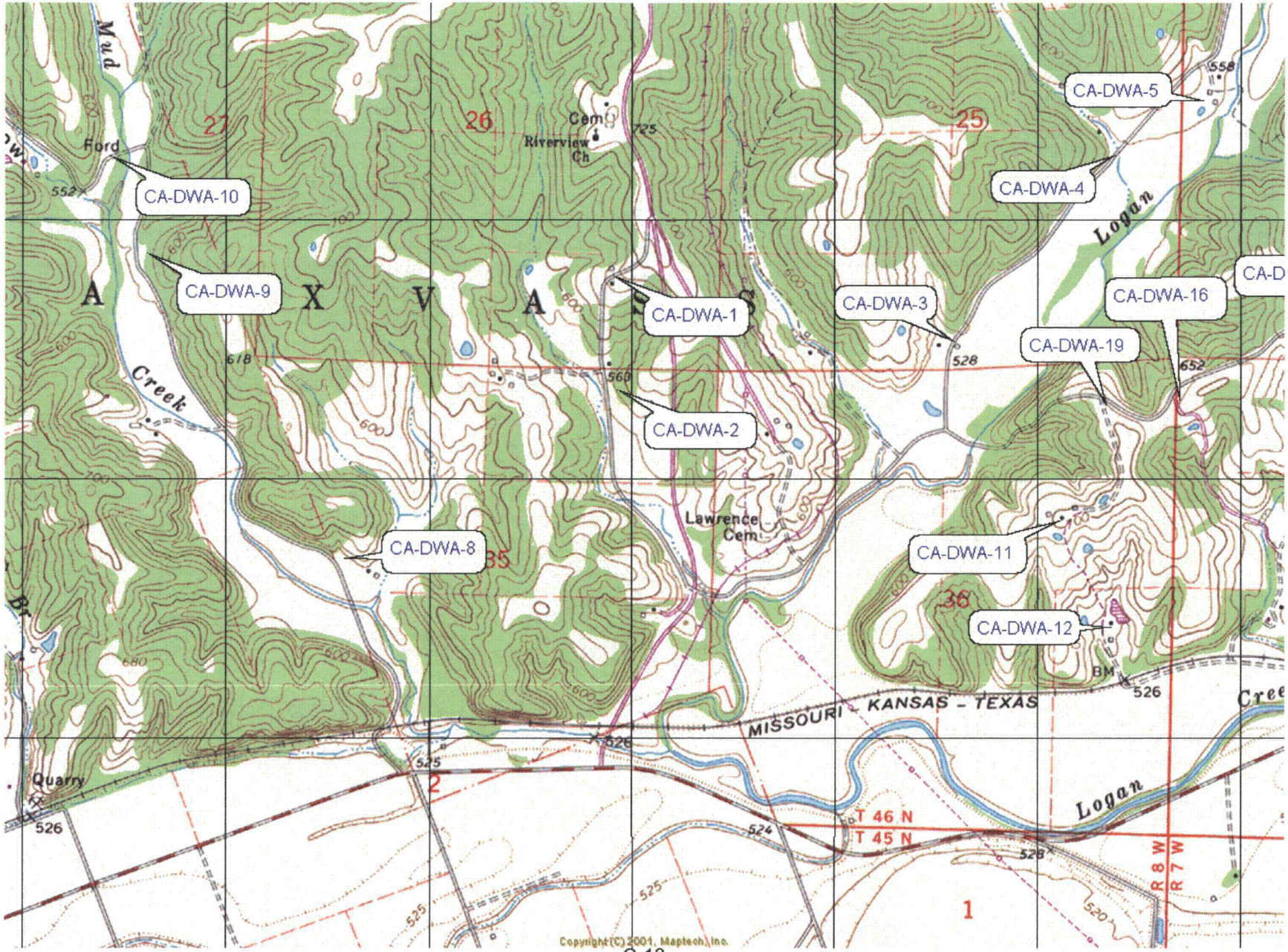


Figure 12. Sampling sites, Drinking water, private wells.



C-1. Cooling Tower Blow Down, results of analyses for tritium.

Collection Date	Lab Code	Tritium (pCi/L)	Collection Date	Lab Code	Tritium (pCi/L)
01/04/06	CAW-126	< 144	07/05/06	CAW-4429	< 128
01/11/06	CAW-241,2	< 183	07/12/06	CAW-4758	< 147
01/18/06	CAW-312	< 182	07/19/06	CAW-4835	< 147
01/25/06	CAW-413	< 181	07/26/06	CAW-5142	< 155
02/01/06	CAW-552	< 181	08/02/06	CAW-5599	< 162
02/07/06	CAW-695	< 168	08/09/06	CAW-5400	< 132
02/15/06	CAW-859	< 153	08/16/06	CAW-5602, 3	2150 ± 108
02/22/06	CAW-975	< 153	08/23/06	CAW-5811	774 ± 102
03/01/06	CAW-1107	< 186	08/30/06	CAW-5971, 2	< 138
03/08/06	CAW-1333, 4	< 159	09/06/06	CAW-6167	< 167
03/15/06	CAW-1493, 4	< 176	09/13/06	CAW-6333	< 169
03/22/06	CAW-1625	< 161	09/20/06	CAW-6445, 6	< 186
03/29/06	CAW-1769	< 169	09/27/06	CAW-6675	249 ± 92
04/05/06	CAW-2225	< 141	10/04/06	CAW-6965	1061 ± 119
04/12/06	CAW-2497, 8	< 141	10/11/06	CAW-7204	< 146
04/19/06	CAW-2647	< 164	10/18/06	CAW-7483	< 145
04/26/06	CAW-2846	< 173	10/25/06	CAW-7910	< 141
05/03/06	CAW-3077	< 138	11/01/06	CAW-8043	< 141
05/10/06	CAW-3194	< 96	11/08/06	CAW-8240	< 170
05/17/06	CAW-3374	< 167	11/15/06	CAW-8387, 8	< 145
	-		11/22/06	CAW-8507	< 169
	-		11/29/06	CAW-8728, 9	< 136
06/07/06	CAW-3855	173 ± 75	12/06/06	CAW-8835	< 176
06/14/06	CAW-3987	< 129	12/13/06	CAW-8962	< 184
06/21/06	CAW-4130, 1	319 ± 60	12/20/06	CAW-9264	< 170
06/28/06	CAW-4360	159 ± 75	12/27/06	CAW-9400	< 144

C-2. Drinking water, analyses for gross beta, tritium, iodine-131 and gamma-emitting is
Collection: Quarterly
Units: pCi/L

Location		CA-WWA-PW-001			
Quarter		1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	Req. LLD	CAWW-1031	CAWW-2117	CAWW-4449	CAWW-7021
Gross Beta	4	4.5 ± 0.8	4.8 ± 0.9	5.6 ± 0.9	5.1 ± 1.2
H-3	2000	< 151	< 141	< 128	< 185
I-131	1	< 0.2	< 0.3	< 0.2	< 0.4
Mn-54	15	< 3.9	< 5.0	< 4.9	< 3.8
Fe-59	30	< 7.0	< 4.2	< 9.3	< 4.0
Co-58	15	< 4.4	< 3.3	< 3.4	< 5.7
Co-60	15	< 3.9	< 5.4	< 3.2	< 3.7
Zn-65	30	< 6.8	< 8.1	< 5.0	< 5.9
Zr-Nb-95	15	< 3.0	< 5.4	< 3.5	< 3.8
Cs-134	15	< 5.7	< 4.7	< 5.9	< 5.6
Cs-137	18	< 4.9	< 4.5	< 7.4	< 4.2
Ba-La-140	15	< 4.5	< 5.2	< 5.3	< 4.3

C-3. Wetlands Soil, analyses for gross alpha, gross beta and gamma-emitting isotopes.
Collection: Annually
Units: pCi/kg dry

Location		SOL-W-001-#1	SOL-W-001-#2	SOL-W-002-#1	SOL-W-002-#2
Lab Code	Req. LLD	CASO-8629	CASO-8630	CASO-8631	CASO-8632
Date Collected	-	11/28/2006	11/28/2006	11/28/2006	11/28/2006
Gross Alpha	-	4741 ± 3495	13272 ± 5938	9119 ± 3493	14878 ± 5998
Gross Beta	-	23609 ± 3819	25943 ± 4655	19018 ± 2896	19652 ± 4195
K-40	-	13288 ± 744	14267 ± 760	8788 ± 633	9346 ± 710
Mn-54	-	< 24.4	< 28.3	< 25.7	< 21.3
Fe-59	-	< 48.5	< 55.0	< 40.1	< 43.5
Co-58	-	< 20.1	< 24.8	< 19.4	< 22.5
Co-60	-	< 19.8	< 10.0	< 15.7	< 10.2
Zr-Nb-95	-	< 30.1	< 43.8	< 22.8	< 25.2
Cs-134	150	< 17.8	< 16.9	< 19.1	< 33.3
Cs-137	180	< 22.6	73 ± 22.3	< 22.8	< 21.0
Ba-La-140	-	< 16.8	< 17.4	< 23.7	< 46.9

Location		SOL-W-003-#1	SOL-W-003-#2	SOL-W-004-#1	SOL-W-004-#2
Lab Code	Req. LLD	CASO-8633	CASO-8634	CASO-8635	CASO-8636
Date Collected	-	11/28/2006	11/28/2006	11/28/2006	11/28/2006
Gross Alpha	-	10306 ± 4644	11250 ± 5006	11915 ± 4919	12190 ± 5141
Gross Beta	-	21282 ± 3687	20127 ± 3958	21102 ± 3666	18840 ± 3478
K-40	-	11138 ± 1091	11169 ± 1129	8816 ± 622	9673 ± 690
Mn-54	-	< 39.3	< 51.9	< 26.2	< 25.9
Fe-59	-	< 59.7	< 64.3	< 54.4	< 26.3
Co-58	-	< 44.4	< 30.7	< 19.2	< 18.4
Co-60	-	< 37.9	< 30.1	< 18.1	< 12.0
Zr-Nb-95	-	< 73.1	< 29.9	< 24.1	< 41.6
Cs-134	150	< 55.7	< 56.8	< 16.1	< 21.4
Cs-137	180	108 ± 38.7	< 55.2	< 17.5	< 12.9
Ba-La-140	-	< 57.8	< 68.8	< 25.3	< 19.2

C-4, Drinking Water, Analysis for tritium and gamma-emitting isotopes.

Location	Collection Date	Concentration (pCi/L) H-3	Mn-54	Fe-59	Co-58	Co-60	Zr-Nb-95	Cs-134	Cs-137	Ba-La-140
CA-DWA-1	5/17/2006	< 164	< 3.2	< 5.4	< 2.2	< 2.2	< 2.7	< 2.7	< 2.6	< 1.9
CA-DWA-10	5/17/2006	< 140	< 4.2	< 4.9	< 5.6	< 6.3	< 5.7	< 5.0	< 6.1	< 5.7
CA-DWA-2	5/17/2006	< 164	< 1.4	< 4.1	< 1.1	< 2.1	< 1.9	< 1.7	< 2.0	< 3.6
CA-DWA-3	5/17/2006	< 140	< 3.6	< 3.7	< 3.9	< 6.0	< 2.9	< 2.8	< 2.9	< 7.5
CA-DWA-4	5/17/2006	< 164	< 2.1	< 3.4	< 1.5	< 1.3	< 1.5	< 2.0	< 1.4	< 2.2
CA-DWA-6	5/17/2006	< 140	< 3.3	< 4.8	< 2.0	< 2.1	< 4.0	< 3.1	< 2.2	< 2.2
CA-DWA-7	5/17/2006	< 164	< 3.5	< 3.0	< 2.8	< 4.7	< 2.1	< 2.8	< 1.7	< 3.6
CA-DWA-8	5/17/2006	< 164	< 2.7	< 5.5	< 2.0	< 1.9	< 2.7	< 2.5	< 1.6	< 2.4
CA-DWA-9	5/17/2006	< 140	< 2.9	< 5.9	< 3.2	< 4.1	< 2.2	< 3.9	< 1.8	< 3.1
CA-DWA-11	8/8/2006	< 158	< 3.4	< 7.7	< 3.2	< 3.6	< 3.5	< 3.1	< 4.3	< 6.0
CA-DWA-12	8/8/2006	< 132	< 4.4	< 6.1	< 2.6	< 2.6	< 4.3	< 4.3	< 3.5	< 2.2
Hudson	8/8/2006	< 132	< 2.4	< 4.0	< 3.0	< 2.2	< 4.1	< 2.5	< 1.9	< 3.1
CA-DWA-14	8/11/2006	< 157	< 3.8	< 6.7	< 4.9	< 4.3	< 3.5	< 5.9	< 5.9	< 4.0
CA-DWA-15	8/11/2006	< 157	< 4.8	< 5.3	< 4.1	< 2.5	< 4.3	< 4.6	< 3.6	< 4.6
CA-DWA-16	8/11/2006	< 157	< 3.0	< 7.2	< 2.2	< 2.0	< 2.9	< 3.5	< 3.3	< 4.7
CA-DWA-17	8/11/2006	< 157	< 4.1	< 9.3	< 5.4	< 4.7	< 4.8	< 6.2	< 3.5	< 3.2
CA-DWA-18	8/11/2006	< 157	< 4.4	< 10.3	< 5.6	< 3.0	< 3.9	< 5.4	< 5.1	< 6.3
CA-DWA-19	8/11/2006	< 157	< 5.7	< 7.2	< 3.5	< 4.2	< 3.9	< 4.4	< 6.1	< 4.4
CA-DWA-20	8/16/2006	< 159	< 4.0	< 4.7	< 2.4	< 3.1	< 3.2	< 4.0	< 2.5	< 2.9
Old Schoolhouse	8/16/2006	< 139	< 2.2	< 4.5	< 1.8	< 2.3	< 2.5	< 2.3	< 3.2	< 1.9
CA-DWA-21	9/29/2006	< 193	< 3.2	< 4.3	< 2.2	< 2.1	< 2.8	< 3.2	< 2.7	< 2.4
CA-DWA-01	11/21/2006	< 171	< 2.1	< 5.6	< 4.4	< 2.7	< 4.4	< 3.6	< 2.2	< 3.6
CA-DWA-02	11/21/2006	< 169	< 2.7	< 7.0	< 2.9	< 3.2	< 3.4	< 2.7	< 2.5	< 3.6
CA-DWA-03	11/21/2006	< 169	< 2.6	< 5.6	< 2.0	< 3.5	< 4.4	< 2.6	< 3.9	< 4.4
CA-DWA-04	11/21/2006	< 171	< 4.3	< 7.3	< 3.4	< 7.1	< 4.7	< 5.0	< 6.7	< 4.4
CA-DWA-05	11/21/2006	< 169	< 3.1	< 9.4	< 3.5	< 5.7	< 3.9	< 3.6	< 4.0	< 6.5
CA-DWA-06	11/21/2006	< 171	< 3.1	< 4.3	< 3.1	< 3.4	< 3.7	< 2.9	< 3.8	< 3.1
CA-DWA-07	11/21/2006	< 171	< 3.6	< 7.1	< 3.2	< 2.1	< 4.0	< 3.7	< 3.9	< 4.0
CA-DWA-08	11/21/2006	< 169	< 4.9	< 4.9	< 6.2	< 5.7	< 3.4	< 6.4	< 2.2	< 6.2
CA-DWA-09	11/21/2006	< 169	< 3.4	< 5.2	< 2.5	< 2.5	< 3.3	< 2.9	< 2.5	< 4.5
CA-DWA-10	11/21/2006	< 134	< 1.9	< 7.0	< 4.0	< 2.9	< 4.2	< 4.0	< 2.8	< 4.8
CA-DWA-10	11/21/2006	< 134	< 2.7	< 4.7	< 1.9	< 3.4	< 3.5	< 3.2	< 3.6	< 2.2
CA-DWA-11	11/21/2006	< 134	< 4.9	< 3.7	< 5.0	< 4.6	< 2.6	< 4.9	< 5.4	< 5.6
CA-DWA-12	11/21/2006	< 134	< 2.5	< 7.8	< 5.5	< 3.4	< 3.9	< 3.3	< 4.2	< 11.1

C-4, Drinking Water, Analysis for tritium and gamma-emitting isotopes.

Location	Collection Date	Concentration (pCi/L)								
		H-3	Mn-54	Fe-59	Co-58	Co-60	Zr-Nb-95	Cs-134	Cs-137	Ba-La-140
CA-DWA-14	11/21/2006	< 134	< 3.8	< 6.7	< 3.9	< 5.7	< 3.7	< 5.2	< 4.5	< 4.5
CA-DWA-15	11/21/2006	< 134	< 1.9	< 5.4	< 2.1	< 2.1	< 3.1	< 2.8	< 2.4	< 3.2
CA-DWA-16	11/21/2006	< 134	< 5.6	< 6.5	< 4.8	< 5.4	< 4.5	< 3.9	< 4.5	< 5.9
CA-DWA-17	11/21/2006	< 171	< 3.5	< 2.4	< 3.0	< 3.3	< 4.3	< 3.1	< 2.9	< 4.7
CA-DWA-18	11/21/2006	< 134	< 3.7	< 9.6	< 3.2	< 2.5	< 3.7	< 3.9	< 3.4	< 3.0
CA-DWA-19	11/21/2006	< 134	< 1.6	< 3.4	< 2.3	< 3.1	< 2.4	< 3.3	< 3.2	< 2.9
CA-DWA-20	11/21/2006	< 171	< 2.6	< 4.4	< 2.0	< 3.1	< 3.0	< 3.4	< 3.9	< 4.4
CA-DWA-21	11/21/2006	< 134	< 2.2	< 6.9	< 2.0	< 2.5	< 2.6	< 2.3	< 2.7	< 4.3

C-5, Drinking Water, Analysis for tritium.

Location	Collection Date	Concentration H-3 (pCi/L)
CA-DWA-05	5/17/2006	< 168
CA-DWA-11	8/8/2006	< 158
CA-DWA-12	8/8/2006	< 132
Hudson	8/8/2006	< 132
CA-DWA-01	8/23/2006	< 142
CA-DWA-02	8/23/2006	< 133
CA-DWA-03	8/23/2006	< 133
CA-DWA-05	8/23/2006	< 133
CA-DWA-06	8/23/2006	< 142
CA-DWA-07	8/23/2006	< 142
CA-DWA-08	8/23/2006	< 133
CA-DWA-09	8/23/2006	< 142
CA-DWA-10	8/23/2006	< 133
CA-DWA-11	8/23/2006	< 133
CA-DWA-12	8/23/2006	< 133
CA-DWA-13	8/23/2006	< 133
CA-DWA-04	8/28/2006	< 133
CA-DWA-01	9/19/2006	< 190
CA-DWA-02	9/19/2006	< 190
CA-DWA-03	9/19/2006	< 190
CA-DWA-05	9/19/2006	< 190
CA-DWA-06	9/19/2006	< 190
CA-DWA-07	9/19/2006	< 190
CA-DWA-08	9/19/2006	< 190
CA-DWA-09	9/19/2006	< 190
CA-DWA-10	9/19/2006	< 190
CA-DWA-12	9/19/2006	< 190
CA-DWA-14	9/19/2006	< 190
CA-DWA-15	9/19/2006	< 190
CA-DWA-16	9/19/2006	< 190
CA-DWA-17	9/19/2006	< 190
CA-DWA-18	9/19/2006	< 190
CA-DWA-19	9/19/2006	< 190
CA-DWA-20	9/19/2006	< 190
CA-DWA-04	9/22/2006	< 151
CA-DWA-11	9/22/2006	< 151
CA-DWA-01	10/20/2006	< 140
CA-DWA-02	10/20/2006	< 140
CA-DWA-03	10/20/2006	< 140
CA-DWA-04	10/20/2006	< 140
CA-DWA-05	10/20/2006	< 140
CA-DWA-06	10/20/2006	< 140
CA-DWA-07	10/20/2006	< 140
CA-DWA-08	10/20/2006	< 140
CA-DWA-09	10/20/2006	< 140
CA-DWA-10	10/20/2006	< 140
CA-DWA-11	10/20/2006	< 140
CA-DWA-12	10/20/2006	< 140
CA-DWA-18	10/20/2006	< 140
CA-DWA-19	10/20/2006	< 140
CA-DWA-21	10/20/2006	< 160

C-5, Drinking Water, Analysis for tritium.

Location	Collection Date	Concentration H-3 (pCi/L)
CA-DWA-Brewer	11/6/2006	< 170
CA-DWA-Christian	11/6/2006	< 170
CA-DWA-McCall	11/6/2006	< 170
CA-DWA-Pate	11/6/2006	< 170
CA-DWA-Wildwood	11/6/2006	< 170
CA-DWA-CC Store	11/8/2006	< 170
CA-DWA-Dillon	11/8/2006	< 170
CA-DWA-Meehan	11/8/2006	< 170
CA-DWA-Perotti	11/8/2006	< 170
CA-DWA-Wallendorf	11/8/2006	< 170
CA-DWA-14	11/9/2006	< 170
CA-DWA-15	11/9/2006	< 170
CA-DWA-16	11/9/2006	< 170
CA-DWA-17	11/9/2006	< 170
CA-DWA-18	11/9/2006	< 170
CA-DWA-20	11/9/2006	< 170
CA-DWA-Farley	11/9/2006	< 170
CA-DWA-Kranzel	11/9/2006	< 170
CA-DWA-Mealy	11/9/2006	< 170
CA-DWA-Perotti	11/9/2006	< 170
CA-DWA-01	12/19/2006	< 170
CA-DWA-02	12/19/2006	< 170
CA-DWA-03	12/19/2006	< 170
CA-DWA-05	12/19/2006	< 170
CA-DWA-06	12/19/2006	< 170
CA-DWA-07	12/19/2006	< 170
CA-DWA-08	12/19/2006	< 170
CA-DWA-09	12/19/2006	< 170
CA-DWA-10	12/19/2006	< 170
CA-DWA-11	12/19/2006	< 170
CA-DWA-12	12/19/2006	< 170
CA-DWA-14	12/19/2006	< 170
CA-DWA-15	12/19/2006	< 170
CA-DWA-16	12/19/2006	< 134
CA-DWA-17	12/19/2006	< 134
CA-DWA-18	12/19/2006	< 134
CA-DWA-19	12/19/2006	< 134
CA-DWA-20	12/19/2006	< 134
CA-DWA-21	12/19/2006	< 134
CA-DWA-04	12/26/2006	< 134

C-6, Ground and Surface Water, Analysis for tritium and gamma-emitting isotopes.

Location	Collection Date	Concentration (pCi/L) H-3	Mn-54	Fe-59	Co-58	Co-60	Zr-Nb-95	Cs-134	Cs-137	Ba-La-140
936	1/19/2006	195 ± 106	< 3.1	< 5.7	< 1.3	< 3.2	< 3.2	< 3.1	< 1.6	< 1.9
937C	1/19/2006	< 187	< 1.8	< 4.4	< 1.8	< 3.3	< 3.4	< 3.3	< 3.0	< 2.0
937D	1/19/2006	< 182	< 3.2	< 9.4	< 2.8	< 2.9	< 3.3	< 3.8	< 5.7	< 2.7
Groundwater Sump (GWS)	1/19/2006	209 ± 120	< 2.5	< 3.0	< 1.6	< 1.7	< 2.9	< 4.2	< 1.8	< 2.3
Manhole 9B, CA-MH-9B	3/29/2006	< 169	< 2.2	< 3.0	< 1.2	< 2.3	< 3.1	< 2.5	< 3.0	< 3.1
Spring/Potential Break, CA-SPRING/PIT	3/29/2006	< 178	< 2.6	< 3.2	< 2.1	< 2.6	< 1.6	< 3.1	< 2.7	< 2.4
Spring, Location 1	3/30/2006	< 158	< 4.1	< 4.9	< 2.7	< 4.7	< 5.5	< 3.5	< 5.5	< 2.2
Spring, Location 2	3/30/2006	< 158	< 3.0	< 4.7	< 2.2	< 2.9	< 3.3	< 4.1	< 3.2	< 4.8
Spring, Location 3	3/30/2006	< 158	< 4.2	< 8.4	< 3.3	< 3.3	< 4.7	< 3.6	< 4.0	< 5.2
Spring, Location 4	3/30/2006	< 158	< 4.3	< 5.0	< 3.9	< 5.3	< 5.3	< 5.3	< 5.7	< 5.0
936	4/11/2006	155 ± 82	< 4.1	< 3.8	< 3.1	< 4.5	< 3.5	< 3.7	< 3.7	< 2.1
937C	4/11/2006	< 141	< 2.4	< 2.6	< 2.7	< 3.5	< 3.6	< 2.6	< 1.8	< 4.4
937D	4/11/2006	246 ± 86	< 6.6	< 7.6	< 5.5	< 5.4	< 5.4	< 6.2	< 4.6	< 4.5
Groundwater Sump (GWS)	4/11/2006	254 ± 86	< 4.7	< 3.8	< 5.0	< 3.7	< 6.5	< 4.4	< 5.3	< 2.8
CA-SWLC, CONTROL-01	4/13/2006	< 141	< 7.5	< 4.7	< 2.9	< 3.2	< 3.6	< 2.6	< 3.7	< 3.9
CA-SWLC-, MANHOLE 3-01	4/13/2006	< 141	< 7.5	< 8.9	< 4.4	< 3.0	< 4.6	< 4.7	< 3.2	< 4.1
CA-SWLC-, MANHOLE 6-01	4/13/2006	< 141	< 5.0	< 12.4	< 6.2	< 7.5	< 8.0	< 4.6	< 4.2	< 6.6
CA-SWLC-, MANHOLE 9-01	4/13/2006	< 141	< 4.6	< 3.7	< 3.3	< 4.9	< 3.0	< 3.0	< 5.1	< 3.3
CA-SWLC-, MANHOLE 3-02	4/13/2006	< 141	< 2.6	< 3.9	< 2.1	< 4.1	< 3.4	< 2.5	< 2.3	< 4.9
CA-SWLC-, CONFLUENCE-01	4/19/2006	< 164	< 6.7	< 8.4	< 4.9	< 5.6	< 5.3	< 4.7	< 4.3	< 5.9
CA-SWLC-, CONFLUENCE-02	4/19/2006	< 164	< 3.0	< 4.4	< 1.5	< 2.7	< 2.7	< 3.6	< 3.5	< 1.5
CA-SWLC-, CONFLUENCE-03	4/19/2006	< 141	< 7.3	< 15.1	< 4.6	< 8.8	< 9.5	< 7.7	< 4.9	< 9.2
CA-SWLC-, HUX-01	4/19/2006	< 141	< 4.0	< 9.8	< 5.1	< 5.7	< 6.0	< 5.1	< 5.7	< 3.2
CA-SWLC-, HUX-01	4/19/2006	< 141	< 3.9	< 6.1	< 4.4	< 5.5	< 5.8	< 5.1	< 3.9	< 4.9
CA-SWMC-, CONTROL-02	4/19/2006	< 141	< 2.5	< 5.9	< 3.5	< 2.7	< 2.2	< 3.7	< 3.0	< 3.3
Manhole 9B, 7-8"	5/4/2006	< 138	< 2.5	< 3.5	< 2.9	< 3.3	< 3.3	< 4.0	< 2.4	< 1.8
Borehole 9B, 2-9"	5/4/2006	< 138	< 3.0	< 6.5	< 3.8	< 4.2	< 2.5	< 3.6	< 2.5	< 3.9
Ditch 9B, Ground Level	5/4/2006	< 138	< 2.4	< 4.8	< 1.4	< 3.3	< 2.3	< 2.6	< 2.2	< 3.7
MW-1	6/15/2006	< 129	< 4.7	< 11.1	< 4.6	< 5.0	< 5.8	< 5.8	< 4.3	< 7.6
MW-2	6/15/2006	< 129	< 4.0	< 10.5	< 4.5	< 6.3	< 3.2	< 5.6	< 4.9	< 9.3
MW-3	6/15/2006	< 129	< 6.6	< 6.3	< 5.5	< 4.8	< 4.0	< 7.1	< 5.7	< 6.7
CA-SWA-WTP	6/20/2006	< 128	< 6.5	< 7.4	< 6.0	< 5.4	< 3.6	< 7.3	< 7.0	< 2.9
CA-SWA, LC9B/8	6/28/2006	981 ± 112	< 6.8	< 10.5	< 6.9	< 6.9	< 6.2	< 5.8	< 6.8	< 6.1

C-6, Ground and Surface Water, Analysis for tritium and gamma-emitting isotopes.

Location	Collection Date	Concentration (pCi/L) H-3	Mn-54	Fe-59	Co-58	Co-60	Zr-Nb-95	Cs-134	Cs-137	Ba-La-140
CA-GWA, MH-8 B-3	6/28/2006	< 124	< 3.3	< 7.8	< 3.8	< 4.4	< 4.7	< 2.9	< 4.5	< 3.3
CA-GWA, MH-8 B-1	6/28/2006	< 124	< 7.2	< 8.0	< 5.9	< 4.8	< 6.6	< 7.5	< 7.1	< 4.6
CA-GWA, MH-9B B-4	6/28/2006	155 ± 82	< 2.6	< 3.6	< 4.2	< 4.0	< 4.2	< 4.6	< 3.9	< 4.9
CA-GWA, MH-9B B-3	6/28/2006	< 124	< 3.5	< 9.1	< 8.0	< 6.7	< 12.8	< 5.6	< 4.7	< 9.3
CA-GWA, MH-9B B-2	6/28/2006	< 124	< 6.2	< 7.0	< 5.9	< 4.9	< 9.1	< 6.3	< 5.5	< 6.1
CA-GWA, MH-9B DUP	6/28/2006	< 124	< 6.9	< 5.7	< 4.5	< 4.3	< 4.9	< 5.6	< 7.4	< 2.6
CA-GWA, MH-9B B-1R	6/28/2006	< 124	< 3.7	< 2.7	< 5.0	< 2.0	< 4.1	< 2.7	< 5.5	< 4.1
CA-GWA, MH-8 B-2	6/28/2006	< 124	< 5.3	< 6.0	< 3.8	< 2.9	< 2.8	< 5.6	< 4.5	< 4.7
MH-8 B-4	6/29/2006	159 ± 75	< 3.5	< 4.0	< 3.3	< 1.6	< 2.1	< 3.1	< 4.0	< 3.6
MH-2 B-1	6/30/2006	590 ± 93	< 4.9	< 5.3	< 3.7	< 5.3	< 5.6	< 3.4	< 5.4	< 3.6
MH-2 B-1B	7/5/2006	< 128	< 3.6	< 8.0	< 3.5	< 2.4	< 5.9	< 5.9	< 4.8	< 5.7
MH-5 B2	7/5/2006	< 129	< 2.2	< 3.8	< 2.8	< 1.7	< 4.5	< 2.9	< 2.9	< 2.4
105+29, 50R	7/6/2006	< 128	< 2.0	< 4.6	< 2.0	< 2.5	< 2.2	< 1.9	< 2.0	< 2.6
105+121, 21L	7/6/2006	< 128	< 8.2	< 13.4	< 4.9	< 6.7	< 4.9	< 5.7	< 7.2	< 11.8
109+85, 17L	7/6/2006	1554 ± 124	< 1.3	< 2.0	< 2.4	< 1.9	< 3.2	< 1.9	< 2.8	< 3.7
109+90, 34R	7/6/2006	158 ± 75	< 1.4	< 5.8	< 2.6	< 2.6	< 4.2	< 2.6	< 2.0	< 5.7
937 A	7/6/2006	< 173	< 2.2	< 1.8	< 1.5	< 1.7	< 2.4	< 2.0	< 2.0	< 2.9
MW 003	7/6/2006	< 173	< 5.0	< 9.7	< 2.4	< 4.9	< 5.4	< 6.0	< 5.5	< 3.6
MW 002	7/6/2006	< 173	< 4.4	< 8.6	< 4.5	< 3.6	< 3.7	< 5.4	< 6.0	< 4.8
936 (RW-1)	7/6/2006	191 ± 98	< 5.5	< 8.8	< 3.4	< 3.6	< 4.8	< 4.1	< 4.7	< 4.0
937 D	7/6/2006	< 173	< 5.7	< 4.2	< 4.3	< 3.3	< 3.8	< 3.5	< 5.2	< 3.5
Ground Water Sump (GWS)	7/6/2006	< 173	< 3.5	< 6.2	< 2.2	< 2.1	< 6.4	< 3.5	< 2.9	< 7.1
78+10	7/10/2006	138 ± 85	< 6.7	< 8.2	< 6.0	< 5.4	< 8.7	< 5.6	< 5.5	< 2.4
109+60 18L	7/10/2006	910 ± 113	< 4.0	< 8.0	< 4.9	< 3.8	< 6.4	< 4.5	< 4.1	< 5.3
109+90 46L	7/10/2006	1306 ± 125	< 8.0	< 11.1	< 7.9	< 4.9	< 14.8	< 8.5	< 7.4	< 8.7
MH 11A B-3	7/11/2006	< 173	< 6.8	< 8.5	< 6.8	< 5.6	< 3.9	< 4.8	< 3.7	< 4.0
74+3 L34	7/11/2006	337 ± 102	< 4.4	< 8.7	< 4.6	< 3.9	< 3.6	< 5.4	< 5.1	< 2.6
73+68 R25	7/11/2006	340 ± 103	< 3.0	< 3.4	< 3.9	< 2.1	< 4.1	< 4.2	< 4.5	< 7.4
73+39 L16	7/11/2006	435 ± 106	< 4.0	< 11.0	< 5.0	< 3.9	< 2.8	< 4.5	< 4.1	< 6.1
MH 11A B-2	7/11/2006	< 173	< 3.7	< 5.9	< 4.8	< 4.5	< 5.1	< 6.0	< 5.4	< 3.3
78+55 50R	7/12/2006	< 139	< 3.8	< 4.8	< 4.4	< 3.3	< 5.5	< 4.1	< 4.8	< 1.9
78+52 14L	7/12/2006	< 139	< 3.3	< 4.5	< 2.9	< 2.0	< 3.0	< 3.1	< 4.1	< 2.8
78+55 50L	7/12/2006	< 139	< 3.6	< 10.4	< 3.5	< 3.7	< 6.1	< 5.1	< 5.7	< 5.3
108+00 12L, MH 6 B-1	7/13/2006	< 138	< 6.9	< 7.7	< 4.5	< 5.1	< 6.7	< 5.0	< 4.6	< 3.0

C-6, Ground and Surface Water, Analysis for tritium and gamma-emitting isotopes.

Location	Collection Date	Concentration (pCi/L) H-3	Mn-54	Fe-59	Co-58	Co-60	Zr-Nb-95	Cs-134	Cs-137	Ba-La-140
108+03 50L, MH 6 B-2	7/13/2006	188 ± 81	< 4.0	< 10.7	< 4.9	< 3.9	< 2.7	< 4.4	< 4.1	< 5.4
108+03 40R, MH 6 B-3	7/13/2006	< 138	< 8.0	< 9.1	< 5.9	< 4.2	< 9.7	< 9.1	< 8.8	< 10.0
107+62 16L, MH 6 B-4	7/13/2006	281 ± 85	< 4.9	< 9.9	< 3.0	< 3.1	< 4.8	< 4.5	< 4.6	< 6.5
108+03, MH 6	7/13/2006	< 138	< 2.6	< 6.4	< 2.9	< 2.4	< 2.9	< 2.6	< 2.4	< 2.7
109+60, MH 6 A	7/13/2006	335 ± 87	< 4.7	< 11.3	< 3.8	< 4.1	< 4.9	< 5.6	< 5.1	< 3.0
MW-001	7/21/2006	< 159	< 4.0	< 10.4	< 3.5	< 3.9	< 4.6	< 6.3	< 3.7	< 4.1
937C	7/21/2006	< 159	< 4.0	< 10.4	< 3.5	< 3.9	< 4.6	< 6.3	< 3.7	< 4.1
Manhole 3	7/28/2006	1045 ± 122	< 4.1	< 4.1	< 1.9	< 2.5	< 5.4	< 1.6	< 2.7	< 6.7
Manhole 6	7/28/2006	< 160	< 3.8	< 3.6	< 3.8	< 2.0	< 4.6	< 1.5	< 5.3	< 7.6
Manhole 9	7/28/2006	186 ± 81	< 2.6	< 3.7	< 1.7	< 1.7	< 1.8	< 2.4	< 3.2	< 2.5
CA-MH-3	8/4/2006	951 ± 112	< 6.9	< 7.9	< 8.8	< 6.9	< 6.3	< 7.2	< 12.6	< 8.2
CA-MH-3	8/4/2006	1065 ± 116	< 8.5	< 15.0	< 9.0	< 11.4	< 12.6	< 7.5	< 8.5	< 8.8
CA-MH-3A	8/4/2006	157 ± 81	< 8.5	< 15.4	< 11.2	< 7.0	< 13.5	< 12.0	< 8.3	< 10.8
CA-MH-6	8/4/2006	< 141	< 6.2	< 4.1	< 4.7	< 2.5	< 4.9	< 5.7	< 7.1	< 4.4
CA-MH-6A	8/4/2006	363 ± 90	< 7.4	< 6.0	< 5.6	< 7.6	< 6.9	< 6.2	< 7.0	< 10.9
CA-MH-9	8/4/2006	220 ± 84	< 8.0	< 15.3	< 12.7	< 11.8	< 8.5	< 11.1	< 15.7	< 14.2
CA-MH-9A	8/4/2006	< 141	< 4.5	< 7.0	< 2.5	< 3.7	< 3.0	< 3.5	< 5.6	< 5.0
CA-MH-11	8/4/2006	< 141	< 8.5	< 12.2	< 7.3	< 9.3	< 4.1	< 9.0	< 10.2	< 2.9
Manhole 13	8/9/2006	< 132	< 6.9	< 15.6	< 4.1	< 9.6	< 8.5	< 9.5	< 11.3	< 10.0
Manhole 10A	8/9/2006	< 158	< 8.7	< 15.5	< 8.2	< 9.9	< 10.9	< 7.8	< 11.1	< 10.6
Manhole 86-6	8/9/2006	< 132	< 8.6	< 12.3	< 7.6	< 7.0	< 8.6	< 11.1	< 7.5	< 9.4
MW-501	8/15/2006	< 137	< 4.3	< 6.9	< 5.6	< 3.3	< 6.0	< 3.8	< 4.8	< 6.9
MW-501	8/15/2006	< 137	< 4.6	< 7.0	< 3.6	< 4.6	< 5.3	< 6.3	< 3.1	< 4.0
MW-502	8/15/2006	< 137	< 5.9	< 6.0	< 3.9	< 4.1	< 4.9	< 6.8	< 4.9	< 2.7
CA-POND-1	10/23/2006	< 133	< 7.9	< 7.4	< 4.9	< 4.6	< 7.5	< 5.5	< 6.5	< 5.3
CA-POND-1	10/23/2006	< 133	< 4.2	< 9.4	< 4.4	< 5.4	< 5.7	< 3.7	< 5.3	< 7.2
CA-POND-2	10/23/2006	< 133	< 5.2	< 4.7	< 4.7	< 4.6	< 6.0	< 4.8	< 3.0	< 6.1
CA-POND-3	10/23/2006	< 133	< 3.4	< 9.5	< 5.2	< 7.2	< 2.6	< 2.8	< 4.6	< 8.0
CA-POND-4	10/23/2006	< 133	< 5.8	< 8.4	< 4.5	< 4.5	< 4.8	< 4.3	< 3.9	< 5.6
CA-POND-5	10/23/2006	< 133	< 3.7	< 10.3	< 4.8	< 5.4	< 4.4	< 4.4	< 6.3	< 4.9
CA-POND-6	10/23/2006	< 133	< 5.7	< 7.8	< 4.9	< 5.2	< 6.9	< 5.2	< 5.4	< 6.9
CA-DITCH-1	10/23/2006	212 ± 83	< 7.2	< 12.6	< 8.5	< 4.7	< 6.3	< 6.2	< 8.5	< 5.6
CA-POND-7	10/23/2006	< 133	< 4.0	< 5.8	< 5.5	< 5.9	< 2.9	< 4.3	< 5.4	< 4.3
CA-POND-8	10/23/2006	< 130	< 5.3	< 8.2	< 4.0	< 5.7	< 3.9	< 2.8	< 5.1	< 4.6

C-6, Ground and Surface Water, Analysis for tritium and gamma-emitting isotopes.

Location	Collection Date	Concentration (pCi/L) H-3	Mn-54	Fe-59	Co-58	Co-60	Zr-Nb-95	Cs-134	Cs-137	Ba-La-140
CA-POND-9	10/23/2006	< 130	< 3.3	< 7.5	< 5.4	< 4.4	< 4.6	< 4.7	< 6.5	< 6.8
CA-POND-13	10/23/2006	< 130	< 5.5	< 10.1	< 5.1	< 4.6	< 6.2	< 4.5	< 6.3	< 9.6
CA-POND-14	10/23/2006	< 130	< 6.3	< 8.4	< 5.9	< 4.9	< 9.4	< 3.9	< 6.1	< 5.4
CA-POND-15	10/23/2006	< 130	< 4.2	< 8.3	< 4.9	< 5.7	< 6.7	< 4.3	< 4.4	< 7.3
CA-POND-16	10/23/2006	< 130	< 6.3	< 7.4	< 8.2	< 8.0	< 7.7	< 6.2	< 5.3	< 10.8
CA-POND-17	10/23/2006	< 130	< 4.6	< 6.6	< 3.6	< 4.2	< 5.7	< 6.0	< 4.2	< 5.0
CA-POND-18	10/24/2006	< 130	< 3.6	< 8.0	< 3.3	< 5.1	< 5.7	< 5.3	< 4.7	< 7.7
CA-POND-19	10/24/2006	< 139	< 4.0	< 3.5	< 4.1	< 5.0	< 3.5	< 3.4	< 6.5	< 8.3
CA-POND-22 (UHS)	10/24/2006	< 139	< 5.7	< 7.7	< 4.0	< 5.0	< 4.1	< 3.6	< 4.0	< 5.5
CA-DITCH-2	10/24/2006	< 139	< 5.3	< 11.6	< 3.6	< 5.1	< 8.0	< 5.6	< 5.2	< 8.4
CA-DITCH-3	10/24/2006	< 139	< 3.0	< 9.7	< 3.4	< 5.4	< 5.2	< 2.3	< 5.7	< 4.8
CA-DITCH-5	10/24/2006	< 139	< 1.9	< 12.8	< 4.4	< 6.7	< 6.1	< 5.9	< 4.2	< 7.9
CA-DITCH-5	10/24/2006	< 139	< 3.1	< 10.8	< 3.9	< 4.5	< 3.9	< 3.9	< 5.4	< 5.6
CA-DITCH-6	10/24/2006	< 147	< 3.6	< 8.3	< 3.9	< 4.5	< 4.7	< 5.0	< 5.8	< 9.1

C-7, Ground Water, Analyses for gross beta, iodine-131 and boron.

Location	Collection Date	Concentration (pCi/L) Gross Beta	I-131	Boron (mg/L) [a]
936	1/19/2006	16.9 ± 1.9	< 0.4	-
937C	1/19/2006	10.4 ± 1.3	< 0.4	-
937D	1/19/2006	12.2 ± 2.1	< 0.3	-
Groundwater Sump (GWS)	1/19/2006	16.4 ± 2.3	< 0.3	-
936	4/11/2006	9.4 ± 1.2	< 0.4	-
937C	4/11/2006	8.7 ± 3.6	< 0.3	-
937D	4/11/2006	4.1 ± 1.4	< 0.2	-
Groundwater Sump (GWS)	4/11/2006	6.5 ± 1.6	< 0.3	-
936	10/4/2006	-	-	0.186 [b]
937A	10/6/2007	-	-	0.288 [b]
937B	10/4/2006	-	-	0.381 [b]
937C	10/6/2007	-	-	0.430 [b]
937D	10/6/2007	-	-	< 0.125 [b]
937F	10/6/2007	-	-	0.308 [b]
Groundwater Sump (GWS)	10/4/2006	-	-	0.330
OW-1	10/4/2006	-	-	< 0.075
OW-2	10/4/2006	-	-	< 0.075
OW-3	10/4/2006	-	-	< 0.075
OW-4	10/4/2006	-	-	< 0.075
OW-5	10/4/2006	-	-	< 0.075
UHS Pond	10/17/2007	-	-	0.273
Unit 2 Hole	10/17/2007	-	-	< 0.075

[a] Analysis results provided by Terracon.

[b] Sample contaminated with diesel fuel.

C-8, Ground Water, Analysis for tritium.

Location	Collection Date	Concentration H-3 (pCi/L)
Spring, Marshy Area SW, CA-MARSH	3/29/2006	< 179
CA-SWLC-CONTROL-01	4/13/2006	< 141
CA-SWLC-Manhole 3-01	4/13/2006	< 141
CA-SWLC-Manhole 3-02	4/13/2006	< 141
CA-SWLC-Manhole 6-01	4/13/2006	< 141
CA-SWLC-Manhole 9-01	4/13/2006	< 141
MH-86-1, Inside Manhole	8/15/2006	223 ± 82
MH-86-2, Inside Manhole	8/15/2006	8759 ± 261
MH-86-3, Inside Manhole	8/15/2006	30806 ± 477
MH-86-4A, Inside Manhole	8/15/2006	< 137
MH-86-5, Inside Manhole	8/15/2006	< 137
MH-86-1, Inside Manhole	8/15/2006	7600 ± 245
CA-GWA- MW-004	8/30/2006	< 139
CA-GWA- MW-005	8/30/2006	< 160
CA-GWA- MW-006	8/30/2006	< 139
CA-GWA- MW-007	8/30/2006	< 139
CA-GWA- MW-008	8/30/2006	< 139
CA-GWA- 145+62.5 7'LT	9/1/2006	< 168
CA-GWA- 148+27.5 5'LT	9/1/2006	< 168
CA-GWA- MW-004	9/1/2006	< 168
CA-GWA- MW-005	9/1/2006	< 168
CA-MW-012	9/29/2006	< 156
CA MW-001	10/2/2006	< 159
CA MW-002	10/2/2006	< 159
CA MW-004	10/3/2006	< 159
CA MW-005	10/3/2006	< 159
CA MW-006	10/3/2006	< 146
CA MW-007	10/3/2006	< 146
CA MW-008	10/3/2006	< 146
CA MW-009	10/3/2006	< 146
CA MW-010	10/3/2006	< 146
CA MW-012	10/3/2006	< 146
CA 936	10/4/2006	164 ± 84
CA 937B	10/4/2006	199 ± 88
CA Groundwater Sump (GWS)	10/4/2006	< 146
CA OW-1	10/4/2006	238 ± 89
CA OW-2	10/4/2006	251 ± 90
CA OW-4	10/4/2006	215 ± 88
CA OW-5	10/4/2006	245 ± 90
CA 937A	10/6/2006	202 ± 88
CA 937C	10/6/2006	< 159
CA 937D	10/6/2006	< 159
CA 937F	10/6/2006	< 159
CA-XMA01, Transformer Pit	10/9/2006	< 173
CA-XMR01, Transformer Pit	10/9/2006	< 173
CA-XNB01, Transformer Pit	10/9/2006	176 ± 98
CA-XPB03, Transformer Pit	10/9/2006	< 173
CA-XPB04, Transformer Pit	10/9/2006	< 172
CA-XPG109, Transformer Pit	10/9/2006	< 173
CA-XPG111, Transformer Pit	10/9/2006	< 173
CA-XPG130, Transformer Pit	10/9/2006	< 173
CA M-2	10/13/2006	< 159

C-8, Ground Water, Analysis for tritium.

Location	Collection Date	Concentration H-3 (pCi/L)
CA M-7	10/13/2006	< 159
CA MW-003	10/17/2006	< 145
CA OW-3	10/17/2006	< 145
CA SPRING	10/17/2006	< 145
CA UHS POND	10/17/2006	175 ± 84
CA UNIT 2 HOLE	10/17/2006	< 145
CA MW-501	10/18/2006	< 145
CA MW-502	10/18/2006	< 145
Aux Boiler F.O. Berm	10/30/2006	< 158
Aux Boiler F.O. Berm	10/30/2006	< 158
Reclaimed Oil Berm	10/30/2006	< 158
Reclaimed Oil Berm	10/30/2006	< 158
Stores 1 Gas Berm	10/30/2006	< 161
Stores Diesel F.O. Berm	10/30/2006	< 161
T.B. Acid Caustic Berm	10/30/2006	266 ± 94
XPG 135 Sump, Transformer Pit	10/30/2006	< 161
XPG 206, Transformer Pit	10/30/2006	< 158
XPG 206, Transformer Pit	10/30/2006	< 158
XPG 210 Sump, Transformer Pit	10/30/2006	< 158
XPG 210 Sump, Transformer Pit	10/30/2006	< 158
XPG 212 Sump, Transformer Pit	10/30/2006	< 158
XPG 212 Sump, Transformer Pit	10/30/2006	< 158
XPG 236 Sump, Transformer Pit	10/30/2006	< 141
XPG 236 Sump, Transformer Pit	10/30/2006	< 141
Clearwell Add Tote Basin	10/31/2006	< 141
Clearwell Add Tote Basin	10/31/2006	< 141
Safeguards A, Transformer Pit	10/31/2006	< 161
Safeguards B, Transformer Pit	10/31/2006	< 141
Safeguards B, Transformer Pit	10/31/2006	< 141
Safeguards B, Transformer Pit	10/31/2006	< 141
Safeguards B, Transformer Pit	10/31/2006	< 141
Supernatant Sump	10/31/2006	< 141
Supernatant Sump	10/31/2006	< 141
XPB 121 Sump, Transformer Pit	10/31/2006	< 141
XPB 121 Sump, Transformer Pit	10/31/2006	< 141
CA-MW-004	11/7/2006	< 170
CA-MW-005	11/7/2006	< 170
CA-MW-006	11/7/2006	< 143
CA-MW-007	11/7/2006	< 170
CA-MW-008	11/7/2006	< 143
CA-MW-012	11/7/2006	< 143
CA-MW-0502	11/7/2006	< 170
CA-MW-0501	11/8/2006	< 170
Manhole 10A, Inside Manhole	11/24/2006	< 174
Manhole 11, Inside Manhole	11/24/2006	< 134
Manhole 11, Inside Manhole	11/24/2006	< 134
Manhole 3, Inside Manhole	11/24/2006	935 ± 122
Manhole 6, Inside Manhole	11/24/2006	< 174
Manhole 6A, Inside Manhole	11/24/2006	286 ± 102
Manhole 9, Inside Manhole	11/24/2006	< 174
Manhole 9A, Inside Manhole	11/24/2006	< 174

C-8, Ground Water, Analysis for tritium.

Location	Collection Date	Concentration H-3 (pCi/L)
CA-GWA-Sta 141+24.5 56'LT	11/27/2006	211 ± 96
CA-GWA-Sta 142+06 88'RT	11/27/2006	191 ± 95
CA-GWA-MH-5 sta 104+94 60' LT	12/5/2006	468 ± 104
CA-GWA-MH-5 sta 104+96 71' RT	12/5/2006	< 177
CA-GWA-MH-5 sta 104+96 71' RT	12/5/2006	< 177
CA-GWA-MH-8 sta 138+86 137' LT	12/5/2006	< 177
CA-GWA-MH-8 sta 138+86 137' LT	12/5/2006	< 177
CA-GWA-MH-8 sta 138+90 28' LT	12/5/2006	< 177
CA-GWA-MH-8 sta 138+90 28' LT	12/5/2006	< 177
CA-GWA-MH-8 sta 139+17 62' RT	12/5/2006	< 177
CA-GWA-MH-8 sta 139+17 62' RT	12/5/2006	< 177
CA-GWA-MH-8 sta 140+20 90' RT	12/5/2006	343 ± 100
CA-GWA-MW-6 sta 110+65 70' LT	12/8/2006	< 176
CA-GWA-MH-6 sta 107+00 90' LT	12/13/2006	< 184
CA-GWA-MH-6 sta 107+62 110' LT	12/13/2006	< 184
CA-GWA-MH-6 sta 108+03 100' RT	12/13/2006	< 184
CA-GWA-MH-6B sta 109+39 63' RT	12/13/2006	< 184
CA-GWA-MH-6B sta 109+85 67' LT	12/13/2006	2518 ± 171
MANHOLE 86-1, Inside Manhole	12/13/2006	< 184
MANHOLE 86-3, Inside Manhole	12/13/2006	609232 ± 2068
MANHOLE 86-4A, Inside Manhole	12/13/2006	< 184
MANHOLE 86-6, Inside Manhole	12/13/2006	< 184
CA-MW-004	12/14/2006	< 144
CA-MW-005	12/14/2006	< 144
CA-MW-006	12/14/2006	< 144
CA-MW-007	12/14/2006	< 144
CA-MW-008	12/14/2006	< 144
CA-MW-012	12/14/2006	< 144
CA-GWA-MH 2 72'+61' L34'	12/18/2006	583 ± 105
CA-GWA-MH 10A	12/20/2006	< 142
CA-GWA-MH 11	12/20/2006	< 154
CA-GWA-MH 13	12/20/2006	< 142
CA-GWA-MH 3	12/20/2006	809 ± 108
CA-GWA-MH 3A	12/20/2006	< 142
CA-GWA-MH 3A	12/20/2006	< 142
CA-GWA-MH 6	12/20/2006	< 154
CA-GWA-MH 6A	12/20/2006	277 ± 93
CA-GWA-MH 86-4A	12/20/2006	< 154
CA-GWA-MH 86-6	12/20/2006	< 142
CA-GWA-MH 9A	12/20/2006	< 154
CA-GWA-MH 86-3	12/21/2006	1110239 ± 2891
CA-GWA-MH-8 sta 140+20 90' RT	12/22/2006	< 170
CA-GWA-MH 8 STA 138+40 L28'	12/26/2006	< 142
CA-GWA-MH 2 74+03	12/28/2006	< 142

C-9, Soil, Analyses for tritium and gamma-emitting isotopes.

Location	Collection Date	H-3 (pCi/L)	Concentration (pCi/kg dry) Co-58	Co-60	Cs-134	Cs-137
CA-SOL, Spring Potential Break	03/29/06	ND	ND	ND	ND	ND
CA-SOL-9B, Manhole, Outside Manhole	03/29/06	ND	ND	ND	ND	97 ± 24
CA-SOR-9B, Reference Soil	03/29/06	ND	ND	ND	ND	76 ± 38
CORE, CONTROL 01	04/27/06	ND	ND	ND	ND	ND
CORE, CONTROL 02	04/27/06	ND	ND	ND	ND	ND
CORE, CONTROL-03	04/27/06	ND	ND	ND	ND	ND
CORE, HWY 94 #1	04/27/06	ND	ND	ND	ND	ND
CORE, HWY 94 #2	04/27/06	ND	ND	ND	ND	ND
CORE, MH 9B #1	04/27/06	ND	ND	ND	ND	ND
CORE, MH 9B #2	04/27/06	ND	ND	ND	ND	ND
CORE, MH-11-1	04/27/06	ND	ND	ND	ND	ND
CORE, MH-11-2 (10-12 Ft)	04/27/06	ND	ND	ND	ND	ND
CORE, MH-11-2 (8-10 Ft)	04/27/06	ND	ND	ND	ND	ND
CORE, SGT Rd#1	04/27/06	ND	ND	ND	ND	ND
CA-SOL, MH-11A	06/02/06	1210 ± 128	ND	133 ± 47	ND	156 ± 45
CA-SOL, MH-5	06/02/06	7939 ± 261	159 ± 29	2260 ± 64	109 ± 20	1467 ± 63
CA-SOL, MH-8	06/02/06	2570 ± 164	ND	2312 ± 62	ND	3341 ± 56
CA-SOL, MH-9B	06/02/06	1197 ± 127	ND	1650 ± 43	195 ± 23	1181 ± 35
CA-SOL, MH-9B	06/02/06	1284 ± 130	ND	1670 ± 80	238 ± 62	1121 ± 86
MH-2, Inside Manhole	06/14/06	118988 ± 945	ND	1129 ± 56	ND	297 ± 61
MH-3B, Inside Manhole	06/14/06	19257 ± 388	ND	391 ± 40	ND	251 ± 44
MH-5, Inside Manhole	06/14/06	214455 ± 1266	ND	1627 ± 85	ND	1646 ± 97
MH-6B, Inside Manhole	06/14/06	144060 ± 1039	ND	197 ± 28	ND	81 ± 26
MH-8, Inside Manhole	06/14/06	57178 ± 658	ND	75 ± 22	ND	224 ± 31
MH-8, Inside Manhole	06/14/06	56326 ± 653	ND	75 ± 44	ND	220 ± 54
MH-11A, Inside Manhole	06/15/06	885 ± 117	ND	59 ± 16	ND	128 ± 26
MH-11A, Inside Manhole	06/15/06	1098 ± 136	ND	59 ± 16	ND	128 ± 26
WTP, Soil	06/20/06	4123 ± 199	ND	ND	ND	ND
MH-9B (0'-1')	06/27/06	154956 ± 1091	22.9 ± 7.8	23 ± 8	ND	29 ± 10
MH-9B (0'-2')	06/27/06	53735 ± 647	ND	ND	ND	ND
MH-9B B-1 (13.5'-15.5')	06/27/06	ND	ND	ND	ND	ND
MH-9B B-1 (3.5'-5.5')	06/27/06	480 ± 117	ND	ND	ND	ND
MH-9B B-1 (8.5'-10.5')	06/27/06	ND	ND	ND	ND	ND
MH-9B B-2 (13'-15')	06/27/06	ND	ND	ND	ND	ND
MH-9B B-2 (18'-20')	06/27/06	ND	ND	ND	ND	ND
MH-9B B-2 (23'-25')	06/27/06	ND	ND	ND	ND	ND
MH-9B B-2 (3'-5')	06/27/06	197 ± 108	ND	ND	ND	ND
MH-9B B-2 (8'-10')	06/27/06	ND	ND	ND	ND	ND
MH-9B B-3 (13'-15')	06/27/06	319 ± 99	ND	ND	ND	ND
MH-9B B-3 (13'-15')	06/27/06	284 ± 98	ND	ND	ND	ND
MH-9B B-3 (18'-20')	06/27/06	588 ± 109	ND	ND	ND	ND
MH-9B B-3 (23'-25')	06/27/06	569 ± 108	ND	ND	ND	ND
MH-9B B-3 (3'-5')	06/27/06	5223 ± 219	ND	ND	ND	ND
MH-9B B-3 (8'-10')	06/27/06	ND	ND	ND	ND	ND
MH-9B B-4 (3.5'-5.5')	06/27/06	204 ± 95	ND	ND	ND	ND
MH-9B B-4 (8'-9')	06/27/06	665 ± 112	ND	ND	ND	ND
MH-8 (0'-1')	06/28/06	230868 ± 1334	ND	23 ± 13	ND	48 ± 12
MH-8 (1'-2')	06/28/06	147428 ± 1067	ND	ND	ND	33 ± 18
MH-8 (1'-2')	06/28/06	147469 ± 1067	ND	ND	ND	ND
MH-8 B-1 (13.5'-15.5')	06/28/06	ND	ND	ND	ND	ND
MH-8 B-1 (18.5'-20.5')	06/28/06	ND	ND	ND	ND	ND
MH-8 B-1 (23.5'-25.5')	06/28/06	ND	ND	ND	ND	ND
MH-8 B-1 (3.5'-5.5')	06/28/06	761 ± 115	ND	ND	ND	33 ± 19
MH-8 B-1 (8.5'-10.5')	06/28/06	1889 ± 144	ND	ND	ND	ND
MH-8 B-2 (13'-15')	06/28/06	714 ± 112	ND	ND	ND	ND

C-9, Soil, Analyses for tritium and gamma-emitting isotopes.

Location	Collection Date	H-3 (pCi/L)	Concentration (pCi/kg dry) Co-58	Co-60	Cs-134	Cs-137
MH-8 B-2 (18'-20')	06/28/06	ND	ND	ND	ND	ND
MH-8 B-2 (23.5'-25.5')	06/28/06	ND	ND	ND	ND	ND
MH-8 B-2 (3'-5')	06/28/06	ND	ND	ND	ND	46 ± 24
MH-8 B-2 (8'-10')	06/28/06	924 ± 119	ND	ND	ND	56 ± 31
MH-8 B-3 (13'-15')	06/28/06	ND	ND	ND	ND	ND
MH-8 B-3 (18'-20')	06/28/06	ND	ND	ND	ND	ND
MH-8 B-3 (23'-25')	06/28/06	ND	ND	ND	ND	ND
MH-8 B-3 (3'-5')	06/28/06	ND	ND	ND	ND	51 ± 27
MH-8 B-3 (8'-10')	06/28/06	290 ± 97	ND	ND	ND	ND
MH-11A (0'-1')	06/29/06	816 ± 114	ND	ND	ND	ND
MH-11A (1'-2')	06/29/06	669 ± 109	ND	ND	ND	ND
MH-11A B-1 (13'-14.8')	06/29/06	ND	ND	ND	ND	ND
MH-11A B-1 (3'-5')	06/29/06	ND	ND	ND	ND	ND
MH-11A B-1 (8'-10')	06/29/06	ND	ND	ND	ND	ND
MH-11A B-2 (13'-14')	06/29/06	ND	ND	ND	ND	ND
MH-11A B-2 (17'-18')	06/29/06	ND	ND	ND	ND	ND
MH-11A B-2 (3'-5')	06/29/06	722 ± 116	ND	ND	ND	ND
MH-11A B-2 (8'-10')	06/29/06	ND	ND	ND	ND	ND
MH-11A B-3 (13'-15')	06/29/06	ND	ND	ND	ND	ND
MH-11A B-3 (18'-19.3')	06/29/06	ND	ND	ND	ND	ND
MH-11A B-3 (3'-5')	06/29/06	ND	ND	ND	ND	ND
MH-11A B-3 (8'-10')	06/29/06	992 ± 123	ND	ND	ND	123 ± 56
MH-8 B-4 (13.5'-15.5')	06/29/06	ND	ND	ND	ND	ND
MH-8 B-4 (9'-11')	06/29/06	3651 ± 182	ND	ND	ND	ND
MH-2 (0'-1')	06/30/06	219003 ± 1298	ND	174 ± 11	75 ± 14	255 ± 11
MH-2 (1'-2')	06/30/06	249630 ± 1386	ND	131 ± 11	55 ± 12	174 ± 12
MH-2 (1'-2')	06/30/06	249241 ± 1384	ND	131 ± 20	39 ± 10	185 ± 27
MH-2 B-1 (13'-15')	06/30/06	966 ± 119	ND	ND	ND	ND
MH-2 B-1 (18'-20')	06/30/06	1374 ± 131	ND	ND	ND	ND
MH-2 B-1 (23'-25')	06/30/06	1381 ± 131	ND	ND	ND	ND
MH-2 B-1 (3'-5')	06/30/06	673 ± 109	ND	ND	ND	ND
MH-2 B-1 (8'-10')	06/30/06	791 ± 113	ND	ND	ND	ND
MH-2 B-1 (COMP)	06/30/06	500 ± 103	ND	ND	ND	ND
MH-5 (0'-1')	06/30/06	141170 ± 1043	ND	128 ± 17	ND	118 ± 20
MH-5 (1'-2.')	06/30/06	96036 ± 862	ND	ND	ND	ND
MH-5 (3'-5')	06/30/06	174 ± 90	ND	ND	ND	ND
MH-5 B-1 (13'-15')	06/30/06	ND	ND	ND	ND	ND
MH-5 B-1 (18'-20')	06/30/06	ND	ND	ND	ND	ND
MH-5 B-1 A&B (8'-9' COMP)	07/05/06	387 ± 98	ND	ND	ND	ND
MH-5 B2 (14'-16')	07/05/06	ND	ND	ND	ND	ND
MH-5 B2 (19.5'-21.5')	07/05/06	ND	ND	ND	ND	ND
MH-5 B2 (4'-6')	07/05/06	ND	ND	ND	ND	ND
MH-5 B2 (9'-11')	07/05/06	ND	ND	ND	ND	ND
105+121 21I (19.5'-20.5')	07/06/06	ND	ND	ND	ND	ND
105+121 21L (4.5'-6.5')	07/06/06	ND	ND	ND	ND	ND
105+121 24L (14'-16')	07/06/06	ND	ND	ND	ND	ND
105+121 24L (9'-11')	07/06/06	ND	ND	ND	ND	ND
105+29 50R (14'-16')	07/06/06	ND	ND	ND	ND	ND
105+29 50R (18'-20')	07/06/06	ND	ND	ND	ND	ND
105+29 50R (18'-20')	07/06/06	ND	ND	ND	ND	ND
105+29 50R (4'-6')	07/06/06	ND	ND	ND	ND	ND
109+85 17L/109+88 17L COMP (13.5'-15.5')	07/06/06	3384 ± 180	ND	ND	ND	ND
109+85 17L/109+88 17L COMP (3.5'-5.5')	07/06/06	249 ± 93	ND	52 ± 23	41 ± 22	41 ± 23
109+85 17L/109+88 17L COMP (8.5'-10.5')	07/06/06	731 ± 111	ND	ND	ND	ND

C-9, Soil, Analyses for tritium and gamma-emitting isotopes.

Location	Collection Date	H-3 (pCi/L)	Concentration (pCi/kg dry) Co-58	Co-60	Cs-134	Cs-137
109+85 17L (18.5'-20.5')	07/06/06	ND	ND	ND	ND	ND
109+90 34R (13.5'-15.5')	07/06/06	ND	ND	ND	ND	ND
109+90 34R (19.5'-20.5')	07/06/06	ND	ND	ND	ND	ND
109+90 34R (3.5'-5.5')	07/06/06	ND	ND	ND	ND	ND
109+90 34R (8.5'-10.5')	07/06/06	ND	ND	ND	ND	ND
MH-6 B (0'-1')	07/06/06	64704 ± 709	ND	205 ± 27	48 ± 24	358 ± 35
MH-6 B (1'-2')	07/06/06	53981 ± 648	ND	125 ± 21	ND	309 ± 30
109+60 18L (13'-15')	07/10/06	5284 ± 218	ND	ND	ND	ND
109+60 18L (18'-20')	07/10/06	793 ± 114	ND	ND	ND	ND
109+60 18L (3'-5')	07/10/06	194 ± 92	ND	166 ± 20	ND	407 ± 35
109+60 18L (8'-10')	07/10/06	25863 ± 453	ND	ND	ND	212 ± 29
109+90 46L (13'-15')	07/10/06	8743 ± 272	ND	ND	ND	ND
109+90 46L (4.5'-6.5')	07/10/06	ND	ND	ND	ND	ND
78+10 17L (13'-15')	07/10/06	ND	ND	ND	ND	ND
78+10 17L (19'-20')	07/10/06	ND	ND	ND	ND	ND
78+10 17L (3'-5')	07/10/06	187 ± 92	ND	ND	ND	54 ± 25
78+10 17L (8'-10')	07/10/06	ND	ND	ND	ND	ND
78+55 (0'-1')	07/10/06	43304 ± 582	ND	254 ± 29	53 ± 24	231 ± 36
78+55 (1'-2')	07/10/06	117359 ± 951	ND	151 ± 18	ND	368 ± 31
73+39 L16 (13'-15')	07/11/06	ND	ND	ND	ND	ND
73+39 L16 (3'-5')	07/11/06	ND	ND	ND	ND	ND
73+39 L16 (8'-10')	07/11/06	ND	ND	ND	ND	ND
73+68 L16 (5.5'-7.5')	07/11/06	6378 ± 237	ND	ND	ND	ND
73+68 R25 (14'-16')	07/11/06	2361 ± 160	ND	ND	ND	ND
74+3 L34 (13'-15')	07/11/06	879 ± 119	ND	ND	ND	ND
74+3 L34 (3'-5')	07/11/06	174 ± 94	ND	ND	ND	29 ± 15
74+3 L34 (8'-10')	07/11/06	175 ± 94	ND	ND	ND	ND
78+52 14L (3'-5')	07/12/06	ND	ND	ND	ND	ND
78+52 14L (10'-15')	07/12/06	ND	ND	ND	ND	ND
78+52 14L (8'-10')	07/12/06	ND	ND	ND	ND	ND
78+55 50L (17'-19')	07/12/06	ND	ND	ND	ND	ND
78+55 50L (4'-6')	07/12/06	ND	ND	ND	ND	ND
78+55 50L (9'-11')	07/12/06	ND	ND	ND	ND	ND
78+55 50R (13'-15')	07/12/06	ND	ND	ND	ND	ND
78+55 50R (3'-5')	07/12/06	ND	ND	ND	ND	ND
78+55 50R (8'-10')	07/12/06	ND	ND	ND	ND	ND
107+62 16L, MH 6 B-4 (13'-15')	07/13/06	ND	ND	ND	ND	ND
107+62 16L, MH 6 B-4 (3'-5')	07/13/06	1204 ± 128	ND	ND	ND	ND
107+62 16L, MH 6 B-4 (8'-10')	07/13/06	2303 ± 158	ND	ND	ND	ND
108+00 12L, MH 6 B-1 (3'-5')	07/13/06	188 ± 94	ND	ND	ND	ND
108+00 12L, MH 6 B-1 (8'-10')	07/13/06	236 ± 96	ND	ND	ND	ND
108+00 12L, MH 6 B-4 (13'-15')	07/13/06	272 ± 97	ND	ND	ND	ND
108+03 40R , MH 6 B-3 (3'-5')	07/13/06	ND	ND	ND	ND	ND
108+03 40R, MH 6 B-3 (13'-15')	07/13/06	ND	ND	ND	ND	ND
108+03 40R, MH 6 B-3 (8'-10')	07/13/06	221 ± 95	ND	ND	ND	ND
108+03 50L, MH 6 B-2 (13'-15')	07/13/06	230 ± 95	ND	ND	ND	ND
108+03 50L, MH 6 B-2 (3'-5')	07/13/06	ND	ND	ND	ND	ND
108+03 50L, MH 6 B-2 (8'-10')	07/13/06	215 ± 95	ND	ND	ND	ND
MW-004-S-1 (3'-5')	08/29/06	ND	ND	ND	ND	ND
MW-004-S-2 (8'-10')	08/29/06	ND	ND	ND	ND	ND
MW-004-S-3 (13'-15')	08/29/06	ND	ND	ND	ND	ND
MW-005-S-1 (3'-5')	08/29/06	ND	ND	ND	ND	ND
MW-005-S-2 (8'-10')	08/29/06	ND	ND	ND	ND	ND

C-9, Soil, Analyses for tritium and gamma-emitting isotopes.

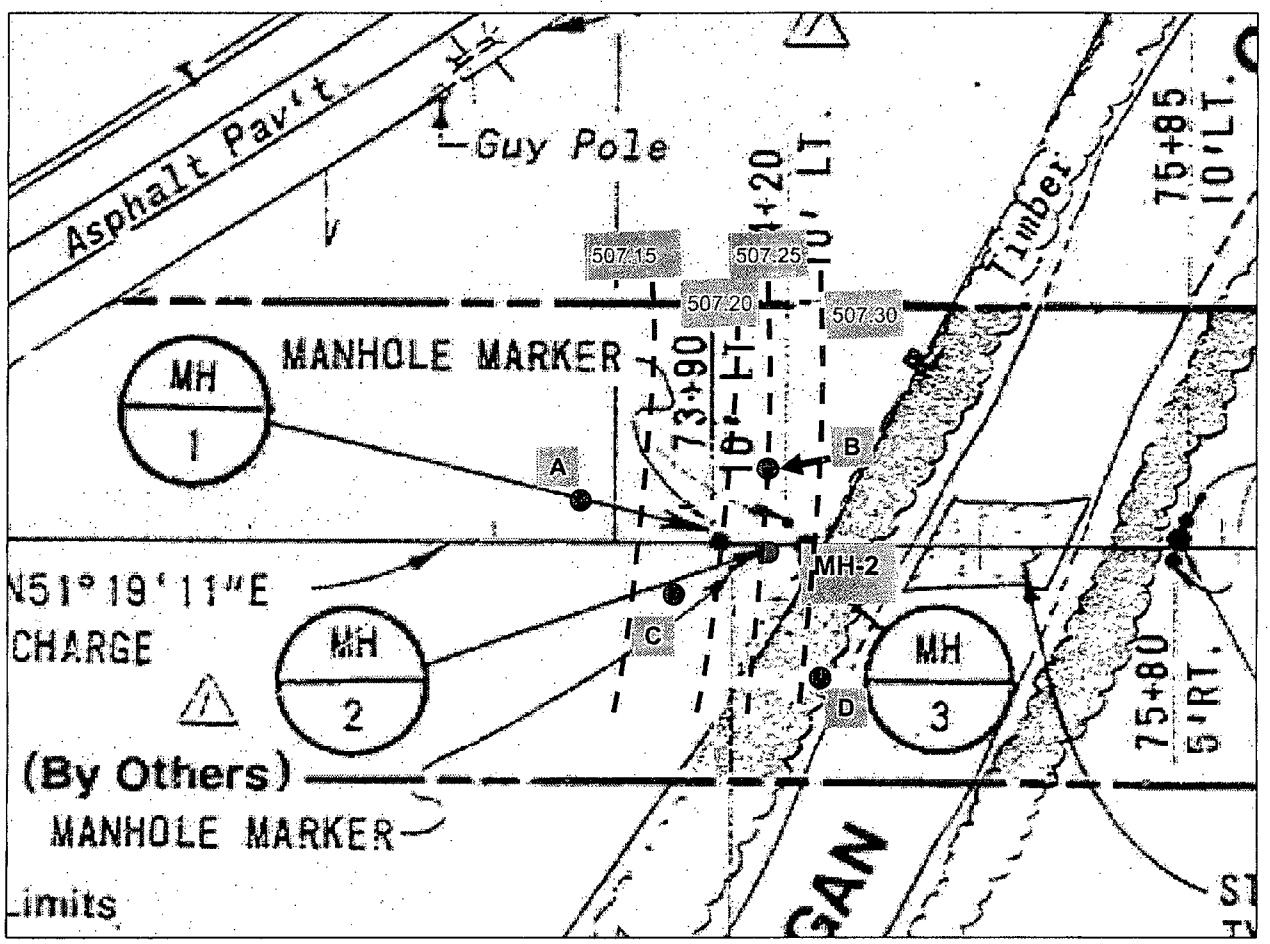
Location	Collection Date	H-3 (pCi/L)	Concentration (pCi/kg dry) Co-58	Co-60	Cs-134	Cs-137
MW-006-S-1 (3'-5')	08/29/06	ND	ND	ND	ND	ND
MW-006-S-2 (8'-10')	08/29/06	ND	ND	ND	ND	ND
MW-006-S-3 (13'-15')	08/29/06	ND	ND	ND	ND	ND
MW-007-S-1 (3'-5')	08/30/06	ND	ND	ND	ND	ND
MW-008-S-1 (3'-5')	08/30/06	ND	ND	ND	ND	ND
MW-008-S-2 (8'-10')	08/30/06	ND	ND	ND	ND	ND
MW-008-S-3 (14'-18')	08/30/06	ND	ND	ND	ND	ND
B-4, Sta 233+35-78' RT (3-5')	11/20/06	ND	ND	ND	ND	ND
B-5, Sta 232+83-123' RT (8-10')	11/20/06	ND	ND	ND	ND	ND
B-5, Sta 232+83-78' RT (3-5')	11/20/06	ND	ND	ND	ND	18 ± 10
B-6, Sta 230+95-25'RT (13-15')	11/20/06	247 ± 95	ND	ND	ND	ND
B-6, Sta 230+95-25'RT (3-5')	11/20/06	ND	ND	ND	ND	ND
B-6, Sta 230+95-25'RT (8-10')	11/20/06	ND	ND	ND	ND	ND
B-5, Sta 141+24.5-56' LT (14-16')	11/21/06	ND	ND	ND	ND	ND
B-5, Sta 141+24.5-56' LT (19-21')	11/21/06	ND	ND	ND	ND	ND
B-5, Sta 141+24.5-56' LT (24-26')	11/21/06	ND	ND	ND	ND	ND
B-5, Sta 141+24.5-56' LT (4-6')	11/21/06	1537 ± 138	ND	ND	ND	ND
B-5, Sta 141+24.5-56' LT (9-11')	11/21/06	ND	ND	ND	ND	ND
B-6, Sta 142+06-88' RT (14-18')	11/21/06	ND	ND	ND	ND	ND
B-6, Sta 142+06-88' RT (19-21')	11/21/06	ND	ND	ND	ND	ND
B-6, Sta 142+06-88' RT (4-6')	11/21/06	253 ± 95	ND	ND	ND	ND
B-6, Sta 142+06-88' RT (9-11')	11/21/06	ND	ND	ND	ND	ND
B-6, Sta 142+06-88'RT (24-26')	11/21/06	ND	ND	ND	ND	ND
B-7, Sta 139+17-137' RT (14-16')	11/27/06	ND	ND	ND	ND	ND
B-7, Sta 139+17-137' RT (19-21')	11/27/06	ND	ND	ND	ND	ND
B-7, Sta 139+17-137' RT (4-6')	11/27/06	ND	ND	ND	ND	370 ± 40
B-7, Sta 139+17-137' RT (9-11')	11/27/06	ND	ND	ND	ND	90 ± 20
B-7, Sta 142+17.5-127'LT (14-16')	11/27/06	ND	ND	ND	ND	ND
B-7, Sta 142+17.5-127'LT (4-6')	11/27/06	ND	ND	ND	ND	ND
B-7, Sta 142+17.5-127'LT (9-11')	11/27/06	ND	ND	ND	ND	ND
B-5, Sta 140+20-90' RT (14-16')	11/28/06	ND	ND	ND	ND	ND
B-5, Sta 140+20-90' RT (19-21')	11/28/06	ND	ND	ND	ND	ND
B-5, Sta 140+20-90' RT (4-6')	11/28/06	ND	ND	ND	ND	ND
B-5, Sta 140+20-90' RT (9-11')	11/28/06	ND	ND	ND	ND	ND
B-6, Sta 139+17-62' RT (14-16')	11/28/06	ND	ND	ND	ND	ND
B-6, Sta 139+17-62' RT (19-21')	11/28/06	ND	ND	ND	ND	ND
B-6, Sta 139+17-62' RT (4-6')	11/28/06	ND	ND	ND	ND	ND
B-6, Sta 139+17-62' RT (9-11')	11/28/06	ND	ND	ND	ND	ND
B-8, Sta 138+90-28'LT (14.5-16.5')	11/28/06	ND	ND	ND	ND	ND
B-8, Sta 138+90-28'LT (19.5-21.5')	11/28/06	ND	ND	ND	ND	ND
B-8, Sta 138+90-28'LT (4.5-6.5')	11/28/06	ND	ND	ND	ND	ND
B-8, Sta 138+90-28'LT (9.5-11.5')	11/28/06	273 ± 101	ND	ND	ND	ND
MH-5, Sta 104 + 94 60' LT (14-16')	12/04/06	556 ± 110	ND	ND	ND	ND
MH-5, Sta 104 + 94 60' LT (4-6')	12/04/06	ND	ND	ND	ND	ND
MH-5, Sta 104 + 94 60' LT (9-11')	12/04/06	ND	ND	ND	ND	ND
MH-5, Sta 104 + 96 71' RT (19-21')	12/04/06	ND	ND	ND	ND	ND
MH-5, Sta 104 + 96 71' RT (24-26')	12/04/06	ND	ND	ND	ND	ND
MH-5, Sta 104 + 96 71' RT (29-31')	12/04/06	ND	ND	ND	ND	ND
MH-6B , Sta 109+85-67' LT (4-6')	12/06/06	ND	ND	ND	ND	ND
MH-6B, Sta 109+85-67' LT (14-16')	12/06/06	3116 ± 185	ND	ND	ND	ND
MH-6B, Sta 109+85-67' LT (19-21')	12/06/06	1662 ± 149	ND	ND	ND	ND
MH-6B, Sta 109+85-67' LT (24-26')	12/06/06	2343 ± 167	ND	ND	ND	ND
MH-6B, Sta 109+85-67' LT (9-11')	12/06/06	ND	ND	ND	ND	ND

C-9, Soil, Analyses for tritium and gamma-emitting isotopes.

Location	Collection Date	H-3 (pCi/L)	Concentration (pCi/kg dry) Co-58	Co-60	Cs-134	Cs-137
MH-6B, Sta 110+65-70' LT (14-16')	12/06/06	ND	ND	ND	ND	ND
MH-6B, Sta 110+65-70' LT (19-21')	12/06/06	ND	ND	ND	ND	ND
MH-6B, Sta 110+65-70' LT (24-26')	12/06/06	ND	ND	ND	ND	ND
MH-6B, Sta 110+65-70' LT (4-6')	12/06/06	228 ± 103	ND	ND	ND	ND
MH-6B, Sta 110+65-70' LT (9-11')	12/06/06	ND	ND	ND	ND	ND
MH-6B, Sta 109+39-63' RT (14-16')	12/08/06	ND	ND	ND	ND	ND
MH-6B, Sta 109+39-63' RT (19-21')	12/08/06	ND	ND	ND	ND	ND
MH-6B, Sta 109+39-63' RT (24-26')	12/08/06	ND	ND	ND	ND	ND
MH-6, Sta 107+62-110' LT (14-16')	12/11/06	ND	ND	ND	ND	ND
MH-6, Sta 107+62-110' LT (19-21')	12/11/06	ND	ND	ND	ND	ND
MH-6, Sta 107+62-110' LT (24-26')	12/11/06	ND	ND	ND	ND	ND
MH-6, Sta 107+62-110' LT (4-6')	12/11/06	ND	ND	ND	ND	ND
MH-6, Sta 107+62-110' LT (9-11')	12/11/06	ND	ND	ND	ND	ND
MH-6, Sta 108+03-100' RT (14-16')	12/11/06	ND	ND	ND	ND	ND
MH-6, Sta 108+03-100' RT (4-6')	12/11/06	ND	ND	ND	ND	ND
MH-6, Sta 108+03-100' RT (9-11')	12/11/06	ND	ND	ND	ND	ND
MH-6B, Sta 109+39-63' RT (4-6')	12/11/06	ND	ND	ND	ND	ND
MH-6B, Sta 109+39-63' RT (9-11')	12/11/06	ND	ND	ND	ND	ND
MH-6, Sta 107 + 00 90' LT (14-16')	12/13/06	ND	ND	ND	ND	ND
MH-6, Sta 107 + 00 90' LT (4-6')	12/13/06	ND	ND	ND	ND	ND
MH-6, Sta 107 + 00 90' LT (9-11')	12/13/06	171 ± 95	ND	ND	ND	ND
MH-2, Sta 72 + 61 34' LT (14-16')	12/15/06	ND	ND	ND	ND	ND
MH-2, Sta 72 + 61 34' LT (19-21')	12/15/06	429 ± 105	ND	ND	ND	ND
MH-2, Sta 72 + 61 34' LT (24-26')	12/15/06	451 ± 106	ND	ND	ND	ND
MH-2, Sta 72 + 61 34' LT (29-31')	12/15/06	431 ± 105	ND	ND	ND	ND
MH-2, Sta 72 + 61 34' LT (4-6')	12/15/06	ND	ND	ND	ND	35 ± 17
MH-2, Sta 72 + 61 34' LT (9-11')	12/15/06	ND	ND	ND	ND	ND
MH-2, Sta 72+ 61 34' LT (4-6')	12/15/06	ND	ND	ND	ND	ND
MH-2, Sta 72+61 34' LT (34-36')	12/15/06	274 ± 99	ND	ND	ND	ND
MH-10, -30 20' LT (0-2.5')	12/21/06	920 ± 121	ND	ND	ND	ND
MH-11, Sta 230+45 R25' (4- 6')	12/21/06	ND	ND	ND	ND	ND
MH-11, Sta 230+45 R25' (8-10')	12/21/06	ND	ND	ND	ND	ND
MH-8, 138+40 28' LT (14-16')	12/22/06	216 ± 96	ND	ND	ND	ND
MH-8, 138+40 28' LT (4-6')	12/22/06	403 ± 102	ND	ND	ND	ND
MH-8, Sta 138+40 28' LT (14-16')	12/22/06	ND	ND	ND	ND	ND
MH-8, Sta 138+40 28' LT (4-6')	12/22/06	249 ± 97	ND	ND	ND	ND
MH-8, Sta 138+40 28' LT (9-11')	12/22/06	ND	ND	ND	ND	ND
MH-2, Sta 74+03 117' LT (14-16')	12/27/06	ND	ND	ND	ND	ND
MH-2, Sta 74+03 117' LT (19-21')	12/27/06	ND	ND	ND	ND	ND
MH-2, Sta 74+03 117' LT (24-26')	12/27/06	ND	ND	ND	ND	ND
MH-2, Sta 74+03 117' LT (4- 6')	12/27/06	ND	ND	ND	ND	ND
MH-2, Sta 74+03 117' LT (9-11')	12/27/06	ND	ND	ND	ND	ND
MH-2, Sta 69+45 45' RT (14-16')	12/28/06	ND	ND	ND	ND	ND
MH-2, Sta 69+45 45' RT (19-21')	12/28/06	ND	ND	ND	ND	ND
MH-2, Sta 69+45 45' RT (24-26')	12/28/06	ND	ND	ND	ND	ND
MH-2, Sta 69+45 45' RT (4-6')	12/28/06	ND	ND	ND	ND	ND
MH-2, Sta 73+94 100' RT (14-16')	12/28/06	ND	ND	ND	ND	ND
MH-2, Sta 73+94 100' RT (19- 21')	12/28/06	ND	ND	ND	ND	ND
MH-2, Sta 73+94 100' RT (24-26')	12/28/06	ND	ND	ND	ND	ND
MH-2, Sta 73+94 100' RT (4-6')	12/28/06	ND	ND	ND	ND	ND
MH-2, Sta 73+94 100' RT (9-11')	12/28/06	ND	ND	ND	ND	ND

ND = Not detected. Less than detection level.

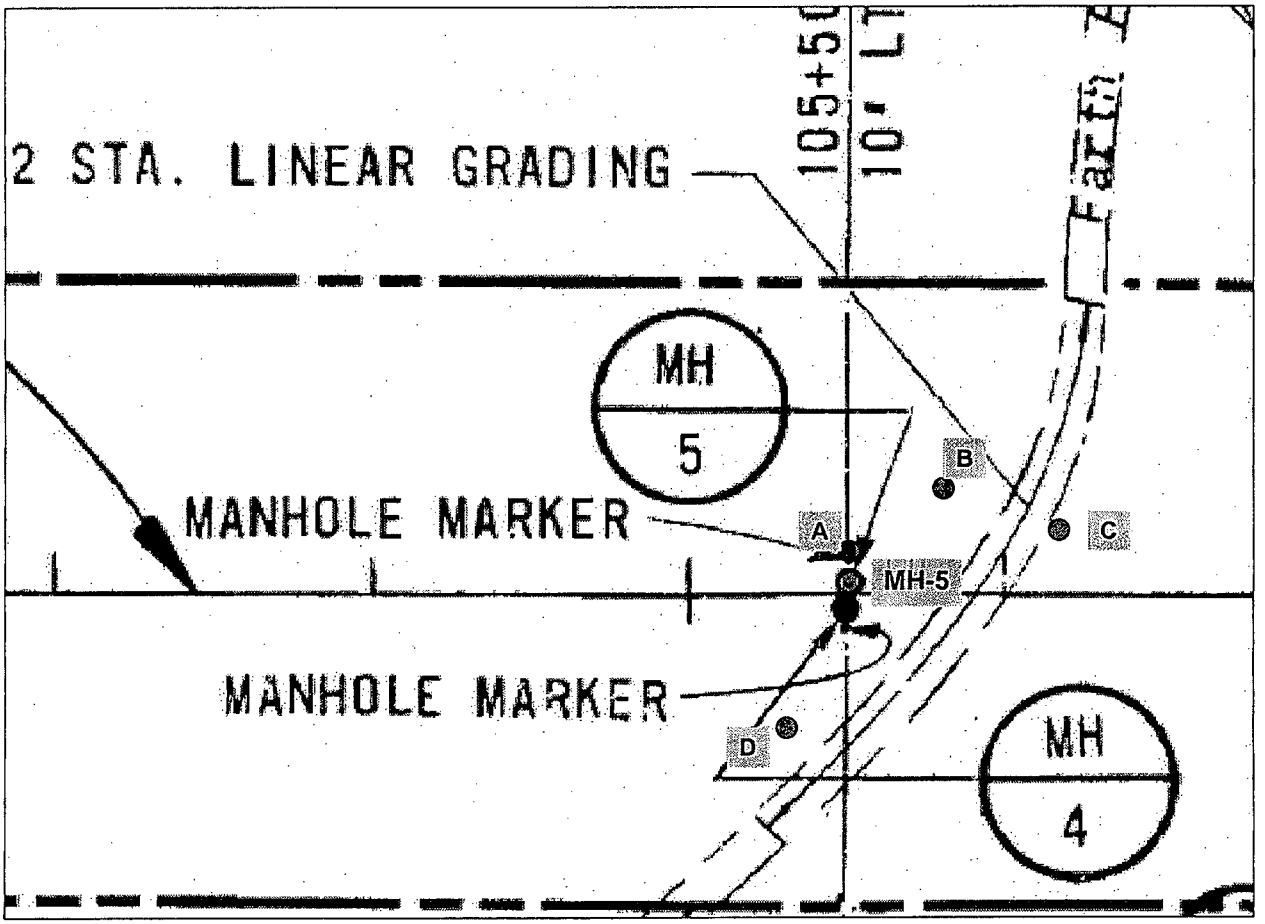
Table 10. Results of the discharge pipeline manhole tritium investigation, Manhole #2.



Map Point	Description	Ground Water Elevation	Tritium Concentration (pCi/L)							
			Water	Soil, Sediment						
				0'-1'	1'-2'	3'-5'	8'-10'	13'-15'	17'-20'	23'-25'
MH-2	Manhole #2			219003 [a]	249630					
A	73+39 L16 (B4)	507.12	435	-	-	< 165	< 165	< 165	-	-
B	74+03 L34 (B2)	507.25	337	-	-	6378 [b]	-	2361 [b]	-	-
C	73+68 R25 (B3)	507.18	340	-	-	< 176	992	< 166	< 166	-
D	74+20 R65 (B1)	507.32	590	-	-	673	791	966	1374	1381

[a] (6-14-06) 118988 pCi/L.
[b] core depths of 5'-8' and 14'-16'.

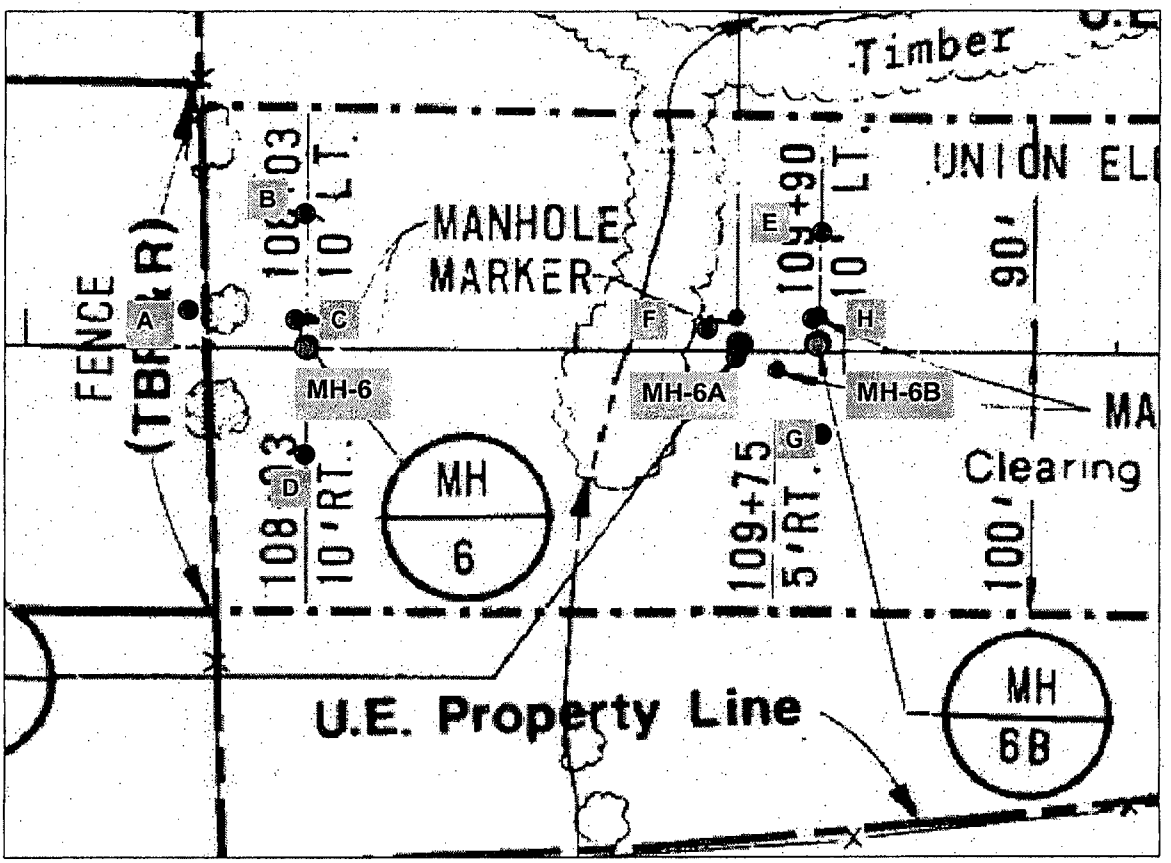
Table 10. Results of the discharge pipeline manhole tritium investigation, Manhole #5.



Map Point	Description	Ground Water Elevation	Tritium Concentration (pCi/L)							
			Water	Soil, Sediment						
				0'-1'	1'-2'	4'-7'	9'-11'	14'-16'	18'-22'	23'-25'
MH-5	Manhole #5			141170 [a]	96036					
A	105+51 L13 (B1)	-13.0	< 129	-	-	174 [b]	387 [b]	< 165 [b]	< 166	-
B	105+87 L49 (B2)	-12.2	< 128	-	-	< 165	< 165	< 165	< 165	-
C	106+21 L21 (B4)	-9.5	< 128	-	-	< 166	< 166	< 166	-	-
D	105+29 R50 (B3)	-13.8	< 128	-	-	< 166	< 166	< 166	< 166	-

[a] (6-14-06) 214455 pCi/L.
[b] core depths at 3-5', 8-10 and 13-15'.

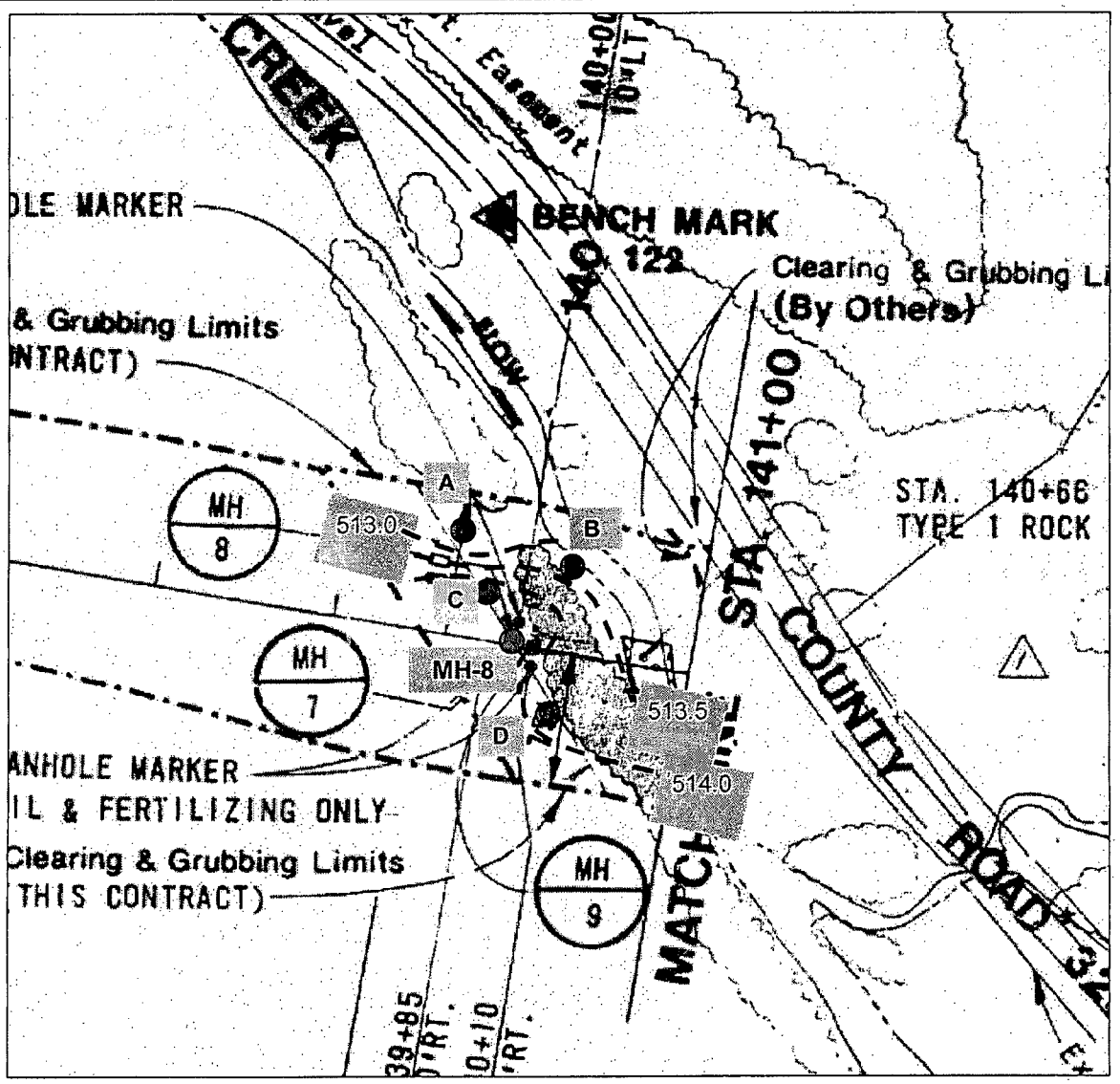
Table 10. Results of the discharge pipeline manhole tritium investigation, Manhole #6, 6B.



Map Point	Description	Ground Water Elevation	Tritium Concentration (pCi/L)						
			Water	Soil, Sediment					
				0'-1'	1'-2'	3'-5'	8'-10'	13'-15'	18'-21'
MH-6	MH-6 (108+03)		< 160	300	-	-	-	-	-
MH-6A	MH-6A		335	-	-	-	-	-	-
MH-6B	MH-6B			64704	53981 [a]	-	-	-	-
A	107+62 L16 (B4)	-	231	-	-	1204	2303	< 163	-
B	108+00 L50 (B2)	-10.5	188	-	-	< 163	215	230	-
C	108+00 L12 (B1)	-12.0	< 138	-	-	188	236	272	-
D	108+03 R40 (B3)	-11.0	< 138	-	-	< 163	221	< 163	-
E	109+90 L46 (B3)	507.92	1306	-	-	< 159 [b]	-	8743	-
F	109+60 L18 (B4)	505.71	910	-	-	194	25863	5284	793
G	109+90 R34 (B2)	-8.5	158	-	-	-	< 166	< 166	< 166
H	109+85 L17 (B1)	-8.5	1554	-	-	-	731	3384	< 165

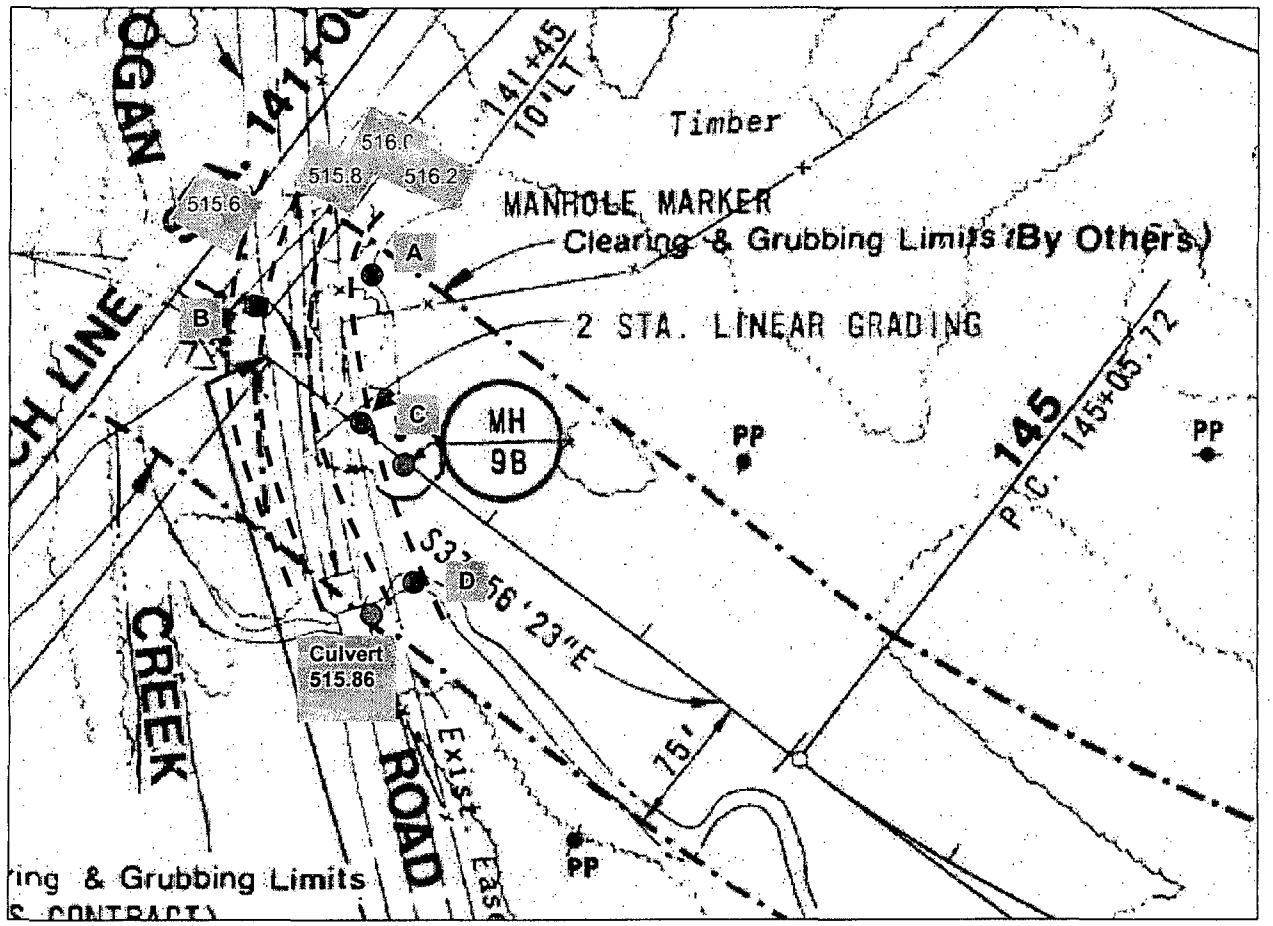
[a] 6-14-06. 144,060 pCi/L.
[b] core depth, 4.5-6.5

Table 10. Results of the discharge pipeline manhole tritium investigation, Manhole #8.



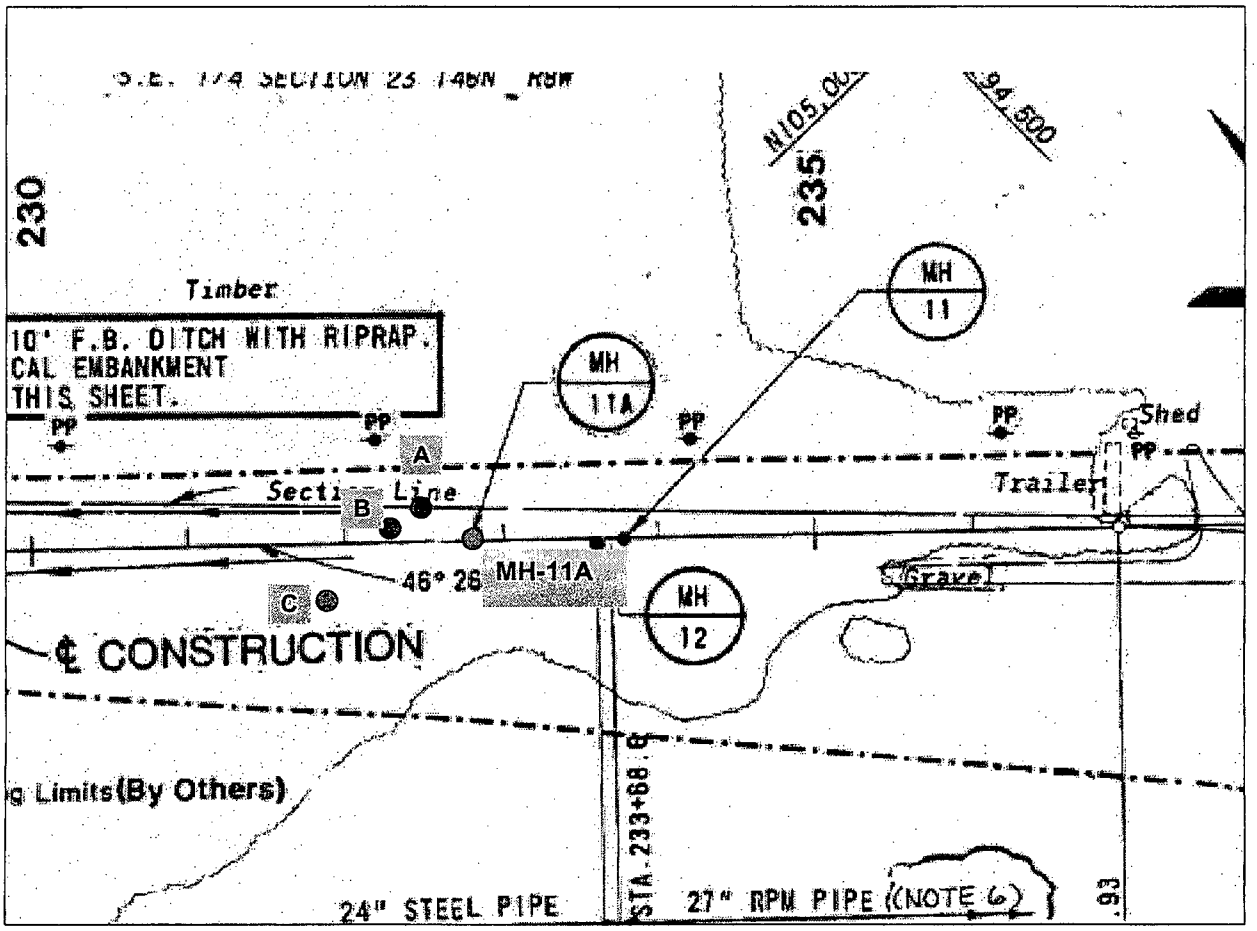
Map Point	Description	Ground Water Elevation	Tritium Concentration (pCi/L)							
			Water	Soil, Sediment						
				0'-1'	1'-2'	3'-5'	8'-11'	13'-15'	18'-21'	23'-25'
MH-8	Manhole #8			230868	147428					
A	139+70 L65 (B1)	512.80	< 124		-	761	1889	< 171	< 171	< 162
B	140+20 L50 (B4)	513.35	159		-	-	3651	< 176	230	-
C	139+85 L30 (B2)	514.07	< 124		-	< 162	924	714	< 162	< 171
D	140+35 R45 (B3)	513.95	< 124		-	< 162	290	< 162	< 162	< 163

Table 10. Results of the discharge pipeline manhole tritium investigation, Manhole #9B.



Map Point	Description	Ground Water Elevation	Tritium Concentration (pCi/L)							
			Water	Soil, Sediment						
				0'-1'	1'-2'	3'-5'	8'-10'	13'-15'	18'-21'	23'-25'
MH-9B	Manhole #9B		< 138	154956	53735					
A	141+85 70L (B3)	516.30	< 124	-	-	5223	< 171	302	588	569
B	141+30 15L (B4)	515.61	155	-	-	204	665	-	-	-
C	142+05.00 (B1)	-	< 124	-	-	480	< 166	< 166	-	-
D	142+90 50R (B2)	516.10	< 124	-	-	197	< 171	< 171	< 171	< 171

Table 10. Results of the discharge pipeline manhole tritium investigation, Manhole #11A.



Map Point	Description	Ground Water Elevation	Tritium Concentration (pCi/L)							
			Water	Soil, Sediment						
				0'-1'	1'-2'	3'-5'	8'-10'	13'-15'	17'-20'	23'-25'
MH-11A	Manhole #11A			816 [a]	669					
A	232+40 L20 (B1)	Dry	< 124	-	-	< 176	< 176	< 176	-	-
B	232+25 L25 (B2)	NM	< 173	-	-	722	< 176	< 165	< 165	-
C	232+90 R40 (B3)	NM	< 173	-	-	< 176	992	< 166	< 166	-

[a] (6-15-06) 885 pCi/L.

C-11, Sediments, Analysis for strontium-89, -90, tritium and gamma-emitting isotopes.

Location	Collection Date	H-3 (pCi/L)	Concentration (pCi/kg dry) Sr-89	Sr-90	Co-58	Co-60	Cs-134	Cs-137
CA-BSLC, CONTROL-01	4/13/2006	< 141	-	-	ND	ND	ND	ND
CA-BSLC, MANHOLE 3-01	4/13/2006	< 141	-	-	ND	ND	ND	ND
CA-BSLC, MANHOLE 6-01	4/13/2006	< 144	-	-	ND	ND	ND	ND
CA-BSLC, MANHOLE 9-01	4/13/2006	< 141	-	-	ND	ND	ND	ND
CA-BSLC, MANHOLE 3-02	4/13/2006	< 141	-	-	ND	ND	ND	ND
CA-BSLC, CONFLUENCE-01	4/19/2006	< 128	-	-	ND	ND	ND	ND
CA-BSLC, CONFLUENCE-02	4/19/2006	< 164	-	-	ND	ND	ND	105 ± 35
CA-BSLC, CONFLUENCE-03	4/19/2006	< 164	-	-	ND	ND	ND	ND
CA-BSLC, HUX-01	4/19/2006	< 164	-	-	ND	ND	ND	74 ± 21
CA-BSMC, CONTROL-02	4/19/2006	< 164	-	-	ND	ND	ND	181 ± 49
CA-POND-1	10/23/2006	< 188	-	-	ND	ND	ND	52 ± 27
CA-POND-2	10/23/2006	< 178	-	-	ND	ND	ND	46 ± 17
CA-POND-3	10/23/2006	< 182	-	-	ND	ND	ND	20 ± 11
CA-POND-4	10/23/2006	< 182	-	-	ND	ND	ND	38 ± 21
CA-POND-5	10/23/2006	< 161	-	-	ND	ND	ND	43 ± 23
CA-POND-6	10/23/2006	< 188	-	-	ND	ND	ND	ND
CA-POND-7	10/23/2006	< 161	-	-	ND	ND	ND	ND
CA-POND-8	10/23/2006	< 188	-	-	ND	ND	ND	ND
CA-POND-9	10/23/2006	< 161	-	-	ND	ND	ND	57 ± 27
CA-POND-10	10/23/2006	< 182	-	-	ND	ND	ND	ND
CA-POND-11	10/23/2006	< 161	-	-	ND	ND	ND	ND
CA-POND-12	10/23/2006	< 188	-	-	ND	ND	ND	71 ± 23
CA-POND-13	10/23/2006	< 167	-	-	ND	ND	ND	ND
CA-POND-14	10/23/2006	< 167	-	-	ND	ND	ND	ND
CA-POND-15	10/23/2006	< 167	-	-	ND	ND	ND	ND
CA-POND-16	10/23/2006	< 167	-	-	ND	ND	ND	46 ± 21
CA-POND-17	10/23/2006	< 178	-	-	ND	ND	ND	ND
CA-POND-18	10/23/2006	< 188	-	-	ND	ND	ND	ND
CA-POND-19	10/23/2006	< 182	-	-	ND	ND	ND	ND
CA-POND-20	10/23/2006	< 182	-	-	ND	ND	ND	53 ± 18
CA-POND-20	10/23/2006	< 182	-	-	ND	ND	ND	42 ± 19
CA-POND-21	10/23/2006	< 178	ND	16 ± 4	ND	ND	ND	321 ± 35

C-11, Sediments, Analysis for strontium-89, -90, tritium and gamma-emitting isotopes.

Location	Collection Date	H-3 (pCi/L)	Concentration (pCi/kg dry) Sr-89	Sr-90	Co-58	Co-60	Cs-134	Cs-137
CA-DITCH-2	10/23/2006	< 188	-	-	ND	ND	ND	ND
CA-DITCH-3	10/23/2006	< 188	-	-	ND	ND	ND	ND
CA-DITCH-4	10/23/2006	< 188	-	-	ND	ND	ND	ND
CA-DITCH-5	10/23/2006	< 188	-	-	ND	ND	ND	ND
CA-DITCH-6	10/23/2006	< 188	-	-	ND	ND	ND	27 ± 12
CA-AQS-X, River Sediment	11/2/2006	-	ND	ND	ND	ND	ND	ND
CA-AQS-Y, River Sediment	11/2/2006	-	-	35 ± 6	66 ± 22	119 ± 24	32 ± 16	94 ± 31
CA-AQS-Z, River Sediment	11/2/2006	-	ND	ND	ND	ND	ND	ND
CA-AQS-Y, River Sediment	11/2/2006	-	ND	7 ± 4	ND	ND	ND	54 ± 27

Note: Blank space indicates an analysis not requested.
ND = Not detected. Less than detection level.

C-12, Vegetation, Analysis for tritium and gamma-emitting isotopes.

Location	Collection Date	H-3 (pCi/L)	Concentration (pCi/g wet) Co-58	Co-60	Cs-134	Cs-137
CA-SPRING/PIT, Potential Break	3/29/2006	< 153	ND	ND	ND	ND
Manhole #2, soybeans (CAVE-6162)	9/7/2006	< 182	-	-	-	-
Manhole #3B, soybeans (CAVE-6163)	9/7/2006	< 215	-	-	-	-
Manhole #5, soybeans (CAVE-6164)	9/7/2006	< 169	ND	ND	ND	ND
120' S of pipeline corridor, Corn (CAVE-6447)	9/19/2006	< 213	-	-	-	-
220' S of pipeline corridor, Corn (CAVE-6448)	9/19/2006	< 213	-	-	-	-
Pipeline Corridor, Corn (CAVE-6449)	9/19/2006	< 213	-	-	-	-
Manhole #5, A1, Soybeans (CAVE-6450)	9/21/2006	< 169	-	-	-	-
Manhole #5, A2, Soybeans (CAVE-6451)	9/21/2006	< 169	-	-	-	-
Manhole #5, A3, Soybeans (CAVE-6452)	9/21/2006	< 169	-	-	-	-
Sample #1, Soybeans (CAVE-6471)	9/21/2006	< 213	-	-	-	-
Sample #2, Soybeans (CAVE-6472)	9/21/2006	< 177	-	-	-	-
Sample #3, Soybeans (CAVE-6473)	9/21/2006	< 169	-	-	-	-
Sample #4, Soybeans (CAVE-6474)	9/21/2006	< 169	-	-	-	-
Sample #5, Soybeans (CAVE-6475)	9/21/2006	< 213	-	-	-	-
Control 1, Soybeans (CAVE-6502)	9/22/2006	< 213	-	-	-	-
Control 2, Soybeans (CAVE-6503)	9/22/2006	< 213	-	-	-	-
Sample 3, Corn (CAVE-6504)	9/22/2006	< 213	-	-	-	-
Manhole #2, Soybeans (CAVE-6505)	9/22/2006	< 212	-	-	-	-
Manhole #5, Soybeans (CAVE-6506)	9/22/2006	< 230	-	-	-	-
Manhole 3B, Soybeans (CAVE-6789)	9/29/2006	< 149	-	-	-	-
Manhole 3B, Control, Soybeans (CAVE-6790)	9/29/2006	< 149	-	-	-	-
Soybean Control (CAVE-7912)	10/2/2006	-	ND	ND	ND	ND

Note: Blank space indicates an analysis not requested.
ND = Not detected. Less than detection level.