Radiation Branch
Environmental Monitoring Summary
for 2008

July 2009

NOTE: Items within these environmental summaries have been removed due to confidential homeland security information under The Texas Public Information Act and House Bill 9, Gov. § code 418.

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Introduction

This is the twelth annual reporting of environmental monitoring results to be produced as an internal document. The document consists of the data collected for each monitoring point at each facility. The data are presented in the same manner as in the past. Limits of detection were not included with data in an effort to reduce the space required for data entry. A listing of expected limits of detection for various media, geometries, and radionuclides is found in the appendices. Maps of the facilities are included, but details have been omitted. Specific information about individual facilities can be found in the license files. Copies of this and the previous documents for 1993-1997 and individual reports for 1998-2008 can be made available through an open records request.

All analyses of environmental media, i.e., soil, air, water, vegetation, are performed by the Texas Department of State Health Services (DSHS), Laboratory Services Section. The Laboratory Services Section operates a highly capable radio-chemistry program. Currently, the Environmental Sciences Branch participates in a program sponsored by the United States Department of Energy (USDOE), referred to as Department of Energy Laboratory Accreditation Program. It was developed by the USDOE in order to provide quality assurance and control for USDOE contractors. The most recent results of the Laboratory Services Section's performance in these "cross checks" can be found in the appendices to this document or on the internet at the following location (http://www.eml.doe.gov/qap/reports/).

Thermoluminescent dosimeter (TLD) readings are performed by the staff of the Radiation Branch. The Radiation Branch maintains a Harshaw/Bicron Model 6600 TLD reader. Staff of Landauer, Inc. also perform TLD readings for the facilities that have neutron sources. Approximately 200 TLDs are exchanged and read each calendar quarter. Background is subtracted from all station readings except for Comanche Peak Nuclear Power Plant, South Texas Project, and Pantex. Background is not subtracted from these three locations because the readings should be ambient doses.

Analysis of sample data from the monitored facilities indicated no release of radioactive material to the environment that exceeded the regulatory or license limits of the DSHS or any other agency such as the United States Nuclear Regulatory Commission or the USDOE. Some of the TLD readings at a few of the monitored facilities exceeded 100 mrem for the year. All licensed facilities are required by rule to document that exposures from conducting operations do not cause doses in excess of the regulatory limits to employees or individual members of the general public. The documentation is maintained for inspection by the Radiation Branch. Licensees are allowed to use mitigating factors, such as occupancy and distance to nearest occupied areas, in demonstrating compliance with those limits.

Any questions should be directed to Robert E. Free at 512-834-6770, ext. 2022 or robert.free@dshs.state.tx.us.

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Robert Free

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Fixed Nuclear

Facilities

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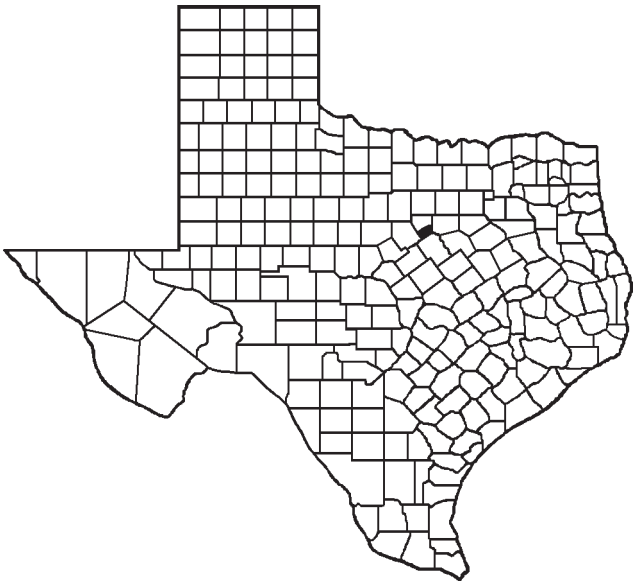
Comanche Peak Nuclear Power Plant

Radiation Branch Site No. 031

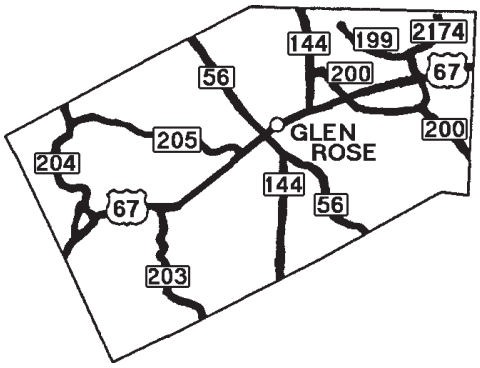
Comanche Peak Nuclear Power Plant (CPNPP) is a two-unit nuclear-fueled power plant owned and operated by Luminant Power. The plant is located in Somervell County four and one-half miles northwest of Glen Rose and approximately 80 miles southwest of downtown Dallas.

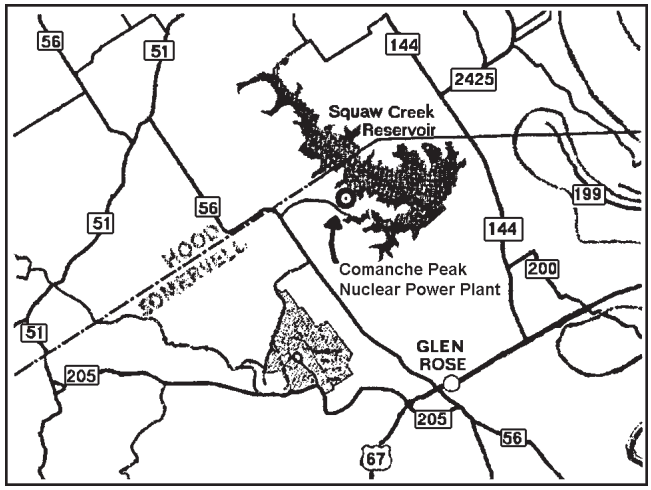
CPNPP, Luminant Power's sole nuclear power plant, with an operating capacity of 2,300 megawatts annually [two Westinghouse 1,150 megawatt (electric) pressurized water reactor units], began operation in 1990, although fuel had been received on-site in 1982-1983. The plant has approximately 1,300 employees. The Radiation Branch surveillance program consists of sampling air, fish, food products, sediment, vegetation, and water and TLD monitoring.



Shaded area indicates location of Somervell County

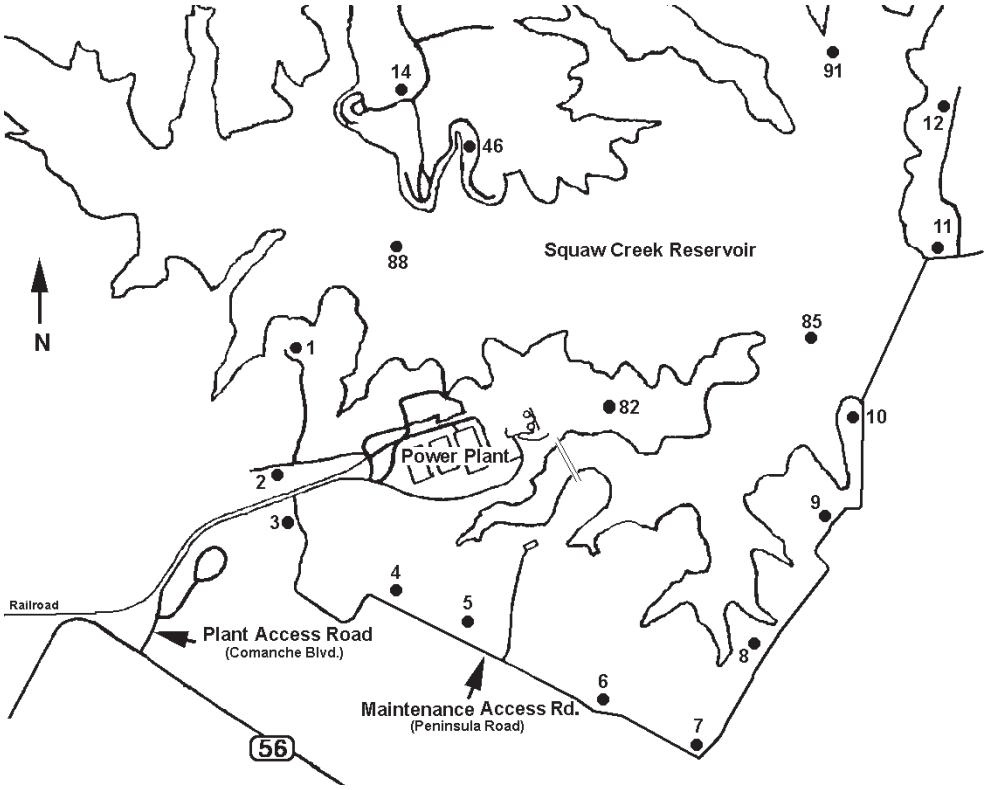
Somervell County

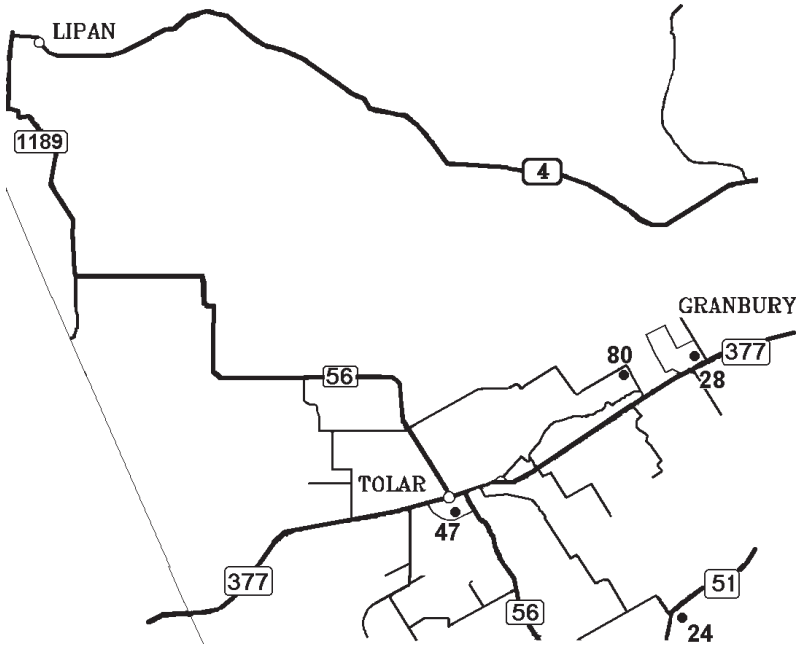


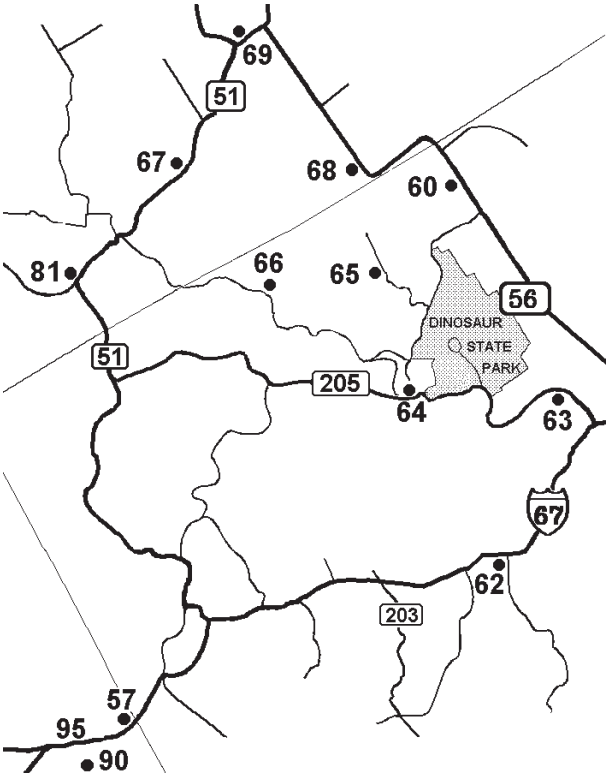


Monitoring Station Locations

Note: Sample type not indicated on maps.






69
51
67
68
60
81
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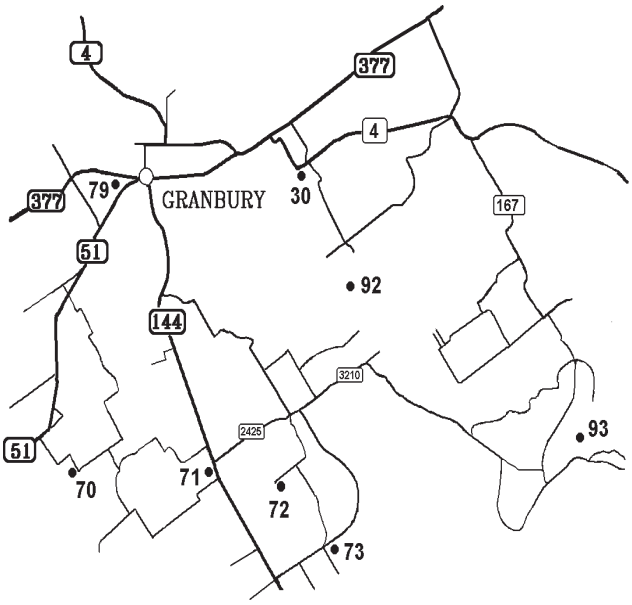
56
DINOSAUR
STATE
PARK
51
205
64
63
67
62
203
57
95
90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377
4
377
79
GRANBURY
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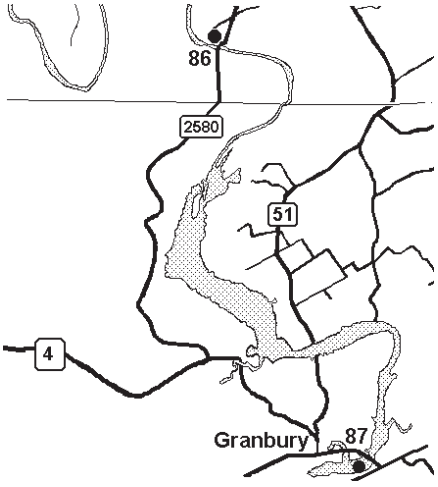
167
51
92
144
3210
2425
51
93
70
71
72
73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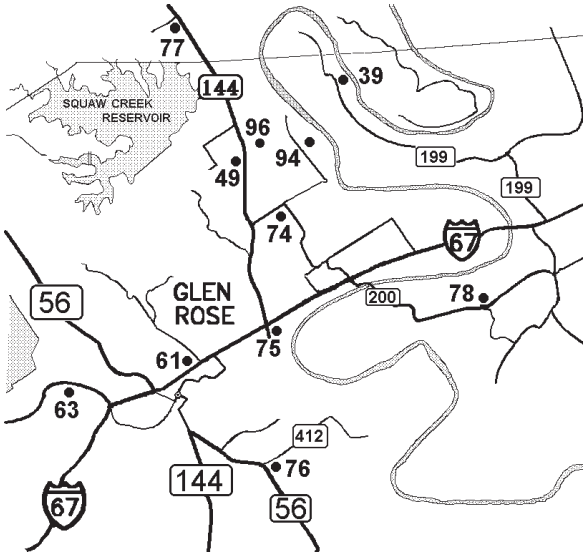
2580
51
4
Granbury
87


77
144
SQUAW CREEK
RESERVOIR
39
96
94
49
199
199
74
67
56
GLEN
ROSE
200
78
61
75
63
412
144
76
67
56

Thermoluminescent Dosimeter (TLD) Monitoring Results[1]
(quarterly and annual readings are in mrem)

Station	Q1	Q2	Q3	Q4	Annual Dose	Notes
01	18.9	10.7	8.8	18.2	56.6	
02	17.7	11.8	9.6	17.4	56.5	
03	14.2	9.6	7.9	14.4	46.1	
04	17.7	11.8	8.8	18.2	56.5	
05	16.5	10.7	8.8	17.4	53.4	
06	16.5	10.7	9.6	17.4	54.2	
07	15.4	10.7	7.9	15.9	49.9	
08	15.4	10.7	8.8	17.4	52.3	
09	17.7	11.8	9.6	18.2	57.3	
10	16.5	10.7	9.6	16.7	53.5	
11	16.5	10.7	8.8	0.0	35.8	tld missing 4th quarter
12	17.7	12.8	10.5	18.2	59.2	
14	15.4	10.7	8.8	17.7	52.6	
24	16.5	11.8	9.6	18.5	56.4	
28	17.7	12.8	10.5	18.5	59.5	
30	15.4	11.8	8.8	17.7	53.7	
39	17.7	11.8	8.8	17.0	55.3	
46	15.4	10.7	8.8	16.2	51.1	
47	16.5	11.8	9.6	18.5	56.4	
49	16.5	11.8	9.6	17.7	55.6	
60	15.2	10.8	9.6	16.5	52.1	
61	16.5	11.8	9.6	17.0	54.9	
62	20.1	10.7	8.8	17.0	56.6	
63	17.7	12.8	9.6	19.3	59.4	
64	17.7	11.8	9.6	17.7	56.8	
65	15.4	10.7	0.0	15.4	41.5	tld missing 3rd quarter
66	15.4	10.7	8.8	17.7	52.6	
67	16.5	11.8	8.8	17.0	54.1	
68	17.5	10.7	9.6	17.3	55.1	
69	15.4	10.7	7.9	15.4	49.4	
70	15.4	10.7	8.8	17.7	52.6	
71	15.4	10.7	8.8	17.7	52.6	
72	15.4	10.7	8.8	17.0	51.9	
73	16.5	10.7	7.9	16.2	51.3	
74	16.5	11.8	8.8	18.5	55.6	
75	15.4	9.6	7.9	16.2	49.1	
76	15.4	9.6	7.9	17.0	49.9	
77	18.9	9.6	7.9	15.4	51.8	
78	16.5	10.7	9.6	17.7	54.5	
79	16.5	10.7	8.8	17.7	53.7	
80	22.5	11.8	9.6	17.7	61.6	
81	20.1	12.8	10.5	18.5	61.9	
82	23.6	12.8	10.5	19.0	65.9	

NOTE: [1] Background is not subtracted from the data.

[2] If data are missing during a quarter, an average of known quarter readings for that year and location is used to fill in for the missing data.

[3] Readings are elevated for 4th quarter due to broken TLD reader, extended period between exchange and reading.

Comanche Peak Nuclear Power Plant

Date	Lab No.	Station	Beta	Ba-140	Co-58	Co-60	Cs-134	Cs-137	Fe-59	H-3	I-131	La-140	Mn-54	Nb-95	Zn-65	Zr-95
Air Iodine pCi/m³																
2008-01-01	ER080002	01									<9E-3					
2008-01-01	ER080004	57									<6E-3					
2008-01-08	ER080016	01									<5E-3					
2008-01-08	ER080018	57									<5E-3					
2008-01-15	ER080045	01									<4E-3					
2008-01-15	ER080047	57									<3E-3					
2008-01-22	ER080074	01									<4E-3					
2008-01-23	ER080072	57									<6E-3					
2008-01-29	ER080084	01									<5E-3					
2008-01-29	ER080086	57									<4E-3					
2008-02-05	ER080094	01									<4E-3					
2008-02-05	ER080096	57									<4E-3					
2008-02-12	ER080104	01									<4E-3					
2008-02-12	ER080106	57									<4E-3					
2008-02-19	ER080112	01									<4E-3					
2008-02-19	ER080114	57									<4E-3					
2008-02-26	ER080125	01									<5E-3					
2008-02-26	ER080123	57									<5E-3					
2008-03-04	ER080131	01									<4E-3					
2008-03-04	ER080133	57									<3E-3					
2008-03-11	ER080140	01									<6E-3					
2008-03-11	ER080142	57									<6E-3					
2008-03-18	ER080149	01									<4E-3					
2008-03-18	ER080151	57									<4E-3					
2008-03-25	ER080162	01									<7E-3					
2008-03-25	ER080164	57									<7E-3					
2008-04-01	ER080174	01									<7E-3					
2008-04-01	ER080176	57									<6E-3					
2008-04-08	ER080183	01									<4E-3					
2008-04-08	ER080185	57									<7E-3					
2008-04-15	ER080204	01									<6E-3					
2008-04-16	ER080206	57									<4E-3					
2008-04-22	ER080228	01									<6E-3					
2008-04-22	ER080230	57									<6E-3					
2008-04-29	ER080247	01									<7E-3					
2008-04-29	ER080249	57									<6E-3					
2008-05-06	ER080253	01									<4E-3					
2008-05-06	ER080251	57									<6E-3					
2008-05-13	ER080261	01									<7E-3					
2008-05-13	ER080263	57									<6E-3					
2008-05-20	ER080269	01									<5E-3					
2008-05-20	ER080271	57									<4E-3					
2008-05-27	ER080282	01									<4E-3					
2008-05-27	ER080284	57									<4E-3					
2008-06-03	ER080305	01									<4E-3					

Environmental Sample Results

Date	Lab. No.	Station	Beta	Ba-140	Co-58	Co-60	Cs-134	Cs-137	Fe-59	H-3	I-131	La-140	Mn-54	Nb-95	Zn-65	Zr-95
2008-06-03	ER080307	57									<5E-3					
2008-06-10	ER080317	01									<3E-3					
2008-06-10	ER080315	57									<4E-3					
2008-06-17	ER080323	01									<4E-3					
2008-06-17	ER080325	57									<3E-3					
2008-06-24	ER080334	01									<4E-3					
2008-06-24	ER080336	57									<4E-3					
2008-07-01	ER080351	01									<9E-3					
2008-07-01	ER080353	57									<9E-3					
2008-07-08	ER080361	01									<3E-3					
2008-07-08	ER080363	57									<4E-3					
2008-07-15	ER080368	01									<4E-3					
2008-07-15	ER080370	57									<3E-3					
2008-07-22	ER080400	01									<6E-3					
2008-07-22	ER080402	57									<5E-3					
2008-07-29	ER080413	01									<4E-3					
2008-07-29	ER080415	57									<4E-3					
2008-08-05	ER080424	01									<4E-3					
2008-08-05	ER080422	57									<4E-3					
2008-08-12	ER080438	01									<4E-3					
2008-08-12	ER080436	57									<4E-3					
2008-08-20	ER080445	01									<6E-3					
2008-08-20	ER080447	57									<6E-3					
2008-08-26	ER080455	01									<7E-3					
2008-08-26	ER080453	57									<7E-3					
2008-09-02	ER080465	01									<4E-3					
2008-09-02	ER080467	57									<4E-3					
2008-09-09	ER080475	01									<4E-3					
2008-09-09	ER080477	57									<4E-3					
2008-09-16	ER080483	01									<4E-3					
2008-09-16	ER080485	57									<4E-3					
2008-09-23	ER080496	01									<4E-3					
2008-09-23	ER080498	57									<4E-3					
2008-09-30	ER080502	01									<7E-3					
2008-09-30	ER080500	57									<5E-3					
2008-10-07	ER080515	01									<6E-3					
2008-10-07	ER080517	57									<5E-3					
2008-10-14	ER080534	01									<5E-3					
2008-10-14	ER080532	57									<5E-3					
2008-10-28	ER080569	01									<5E-3					
2008-10-30	ER080571	57									<4E-3					
2008-11-04	ER080580	01									<4E-3					
2008-11-04	ER080582	57									<3E-3					
2008-11-11	ER080591	01									<3E-3					
2008-11-11	ER080589	57									<4E-3					
2008-11-18	ER080601	01									<4E-3					
2008-11-19	ER080599	57									<6E-3					
2008-11-25	ER080610	01									<4E-3					
2008-11-25	ER080612	57									<3E-3					

Environmental Sample Results

Date	Lab. No.	Station	Beta	Ba-140	Co-58	Co-60	Cs-134	Cs-137	Fe-59	H-3	I-131	La-140	Mn-54	Nb-95	Zn-65	Zr-95
2008-12-02	ER080625	01									<6E-3					
2008-12-02	ER080627	57									<5E-3					
2008-12-09	ER080634	01									<4E-3					
2008-12-09	ER080636	57									<3E-3					
2008-12-16	ER080643	01									<4E-3					
2008-12-16	ER080645	57									<3E-3					
2008-12-23	ER080651	01									<1.3E-2					
2008-12-23	ER080653	57									<1.0E-2					
2008-12-30	ER080662	01									<5E-3					
2008-12-30	ER080664	57									<5E-3					
Air Particulate pCi/m³																
2008-01-01	ER080001	01	3.3E-2													
2008-01-01	ER080003	57	3.6E-2													
2008-01-08	ER080015	01	2.0E-2													
2008-01-08	ER080017	57	1.9E-2													
2008-01-15	ER080044	01	2.0E-2													
2008-01-15	ER080046	57	2.0E-2													
2008-01-22	ER080073	01	2.2E-2													
2008-01-22	ER080071	57	1.9E-2													
2008-01-29	ER080083	01	3.3E-2													
2008-01-29	ER080085	57	3.5E-2													
2008-02-05	ER080093	01	2.2E-2													
2008-02-05	ER080095	57	2.2E-2													
2008-02-12	ER080103	01	2.7E-2													
2008-02-12	ER080105	57	2.7E-2													
2008-02-19	ER080111	01	2.5E-2													
2008-02-19	ER080113	57	2.2E-2													
2008-02-26	ER080124	01	2.8E-2													
2008-02-26	ER080122	57	2.7E-2													
2008-03-04	ER080130	01	2.2E-2													
2008-03-04	ER080132	57	2.2E-2													
2008-03-11	ER080139	01	2.2E-2													
2008-03-11	ER080141	57	2.1E-2													
2008-03-18	ER080148	01	2.4E-2													
2008-03-18	ER080150	57	2.5E-2													
2008-03-25	ER080161	01	2.4E-2													
2008-03-25	ER080163	57	2.3E-2													
2008-04-01	ER080173	01	3.4E-2													
2008-04-01	ER080175	57	3.0E-2													
2008-04-08	ER080182	01	1.9E-2													
2008-04-08	ER080184	57	1.8E-2													
2008-04-15	ER080203	01	2.0E-2													
2008-04-15	ER080205	57	2.0E-2													
2008-04-22	ER080227	01	2.2E-2													
2008-04-22	ER080229	57	2.1E-2													
2008-04-29	ER080246	01	2.3E-2													
2008-04-29	ER080248	57	2.4E-2													
2008-05-06	ER080252	01	2.4E-2													

Environmental Sample Results

Date	Lab. No.	Station	Beta	Ba-140	Co-58	Co-60	Cs-134	Cs-137	Fe-59	H-3	I-131	La-140	Mn-54	Nb-95	Zn-65	Zr-95
2008-05-06	ER080250	57	2.2E-2													
2008-05-13	ER080260	01	2.0E-2													
2008-05-13	ER080262	57	2.1E-2													
2008-05-20	ER080268	01	2.1E-2													
2008-05-20	ER080270	57	2.1E-2													
2008-05-27	ER080281	01	1.9E-2													
2008-05-27	ER080283	57	2.0E-2													
2008-06-03	ER080304	01	1.8E-2													
2008-06-03	ER080306	57	1.8E-2													
2008-06-10	ER080314	57	1.5E-2													
2008-06-11	ER080316	01	1.6E-2													
2008-06-17	ER080322	01	1.5E-2													
2008-06-17	ER080324	57	1.4E-2													
2008-06-24	ER080333	01	2.1E-2													
2008-06-24	ER080335	57	2.3E-2													
2008-07-01	ER080350	01	1.9E-2													
2008-07-01	ER080352	57	2.2E-2													
2008-07-08	ER080362	57	2.1E-2													
2008-07-15	ER080367	01	1.8E-2													
2008-07-15	ER080369	57	2.0E-2													
2008-07-22	ER080399	01	1.1E-2													
2008-07-22	ER080401	57	2.4E-2													
2008-07-29	ER080412	01	2.3E-2													
2008-07-29	ER080414	57	2.4E-2													
2008-08-05	ER080423	01	2.1E-2													
2008-08-05	ER080421	57	2.3E-2													
2008-08-12	ER080437	01	1.7E-2													
2008-08-12	ER080435	57	1.9E-2													
2008-08-20	ER080444	01	2.2E-2													
2008-08-20	ER080446	57	2.5E-2													
2008-08-26	ER080454	01	1.9E-2													
2008-08-26	ER080452	57	2.2E-2													
2008-09-02	ER080464	01	2.5E-2													
2008-09-02	ER080466	57	2.9E-2													
2008-09-09	ER080474	01	2.0E-2													
2008-09-09	ER080476	57	2.2E-2													
2008-09-16	ER080482	01	1.7E-2													
2008-09-16	ER080484	57	2.0E-2													
2008-09-23	ER080495	01	2.9E-2													
2008-09-23	ER080497	57	3.6E-2													
2008-09-30	ER080501	01	3.9E-2													
2008-09-30	ER080499	57	4.7E-2													
2008-10-07	ER080514	01	3.6E-2													
2008-10-07	ER080516	57	3.6E-2													
2008-10-14	ER080533	01	2.4E-2													
2008-10-14	ER080531	57	2.6E-2													
2008-10-28	ER080568	01	2.5E-2													
2008-10-30	ER080570	57	2.9E-2													
2008-11-04	ER080579	01	3.0E-2													

Date	Lab. No.	Station	Beta	Ba-140	Co-58	Co-60	Cs-134	Cs-137	Fe-59	H-3	I-131	La-140	Mn-54	Nb-95	Zn-65	Zr-95
2008-11-04	ER080581	57	3.6E-2													
2008-11-11	ER080592	01	2.2E-2													
2008-11-11	ER080590	57	2.5E-2													
2008-11-18	ER080598	57	2.4E-2													
2008-11-18	ER080600	01	2.1E-2													
2008-11-25	ER080609	01	3.2E-2													
2008-11-25	ER080611	57	2.6E-2													
2008-12-02	ER080624	01	4.7E-2													
2008-12-02	ER080626	57	4.3E-2													
2008-12-09	ER080633	01	2.9E-2													
2008-12-09	ER080635	57	2.3E-2													
2008-12-16	ER080642	01	2.5E-2													
2008-12-16	ER080644	57	2.6E-2													
2008-12-23	ER080650	01	3.7E-2													
2008-12-23	ER080652	57	4.1E-2													
2008-12-30	ER080661	01	2.5E-2													
2008-12-30	ER080663	57	2.5E-2													
Air Particulate Composite pCi/Sample																
2008-01-23	ER080049	01		<4.6	<1.5	<1.8	<1.5	<1.6	<2.9		<1.4	<1.9	<1.5	<1.5	<3.3	<2.6
2008-01-23	ER080050	57		<9.9	<3.1	<4.3	<2.9	<3.6	<6.7		<3.0	<3.9	<3.3	<3.1	<7.3	<5.0
2008-04-11	ER080186	01		<9.7	<3.1	<3.6	<3.0	<3.5	<6.3		<3.0	<3.5	<3.3	<3.2	<7.5	<5.3
2008-04-11	ER080187	57		<9.4	<3.2	<4.4	<2.8	<3.6	<6.0		<2.9	<3.7	<3.0	<3.1	<8.0	<5.3
2008-07-29	ER080391	01		<1.1E+1	<3.2	<3.6	<2.9	<3.4	<6.6		<2.8	<3.9	<3.3	<3.1	<7.7	<5.6
2008-07-29	ER080392	57		<7.6	<2.2	<2.8	<2.4	<2.7	<4.8		<2.3	<2.8	<2.3	<2.3	<5.8	<4.0
2008-10-23	ER080553	01		<1.1+1	<3.0	<3.8	<3.2	<3.2	<6.3		<2.9	<4.0	<3.4	<3.3	<7.7	<5.5
2008-10-23	ER080554	57		<6.6	<2.0	<2.4	<2.0	<2.3	<4.3		<2.0	<2.6	<2.1	<2.1	<5.1	<3.6
Fish pCi/kg																
2008-04-28	ER080245	91		<2.9E+1	<7.6	<8.7	<7.0	<8.2	<1.7E+1		<9.0	<8.6	<7.9	<7.9	<1.9E+1	<1.4E+1
2008-10-14	ER080529	91		<2.9E+1	<6.8	<7.2	<5.9	<6.4	<1.6E+1		<9.7	<8.5	<6.4	<7.2	<1.8E+1	<1.2E+1
2008-10-14	ER080530	92		<8.5E+1	<2.0E+1	<2.9E+1	<1.7E+1	<2.3E+1	<4.0E+1		<3.0E+1	<2.8E+1	<2.0E+1	<2.1E+1	<4.6E+1	<3.4E+1
Food Product pCi/kg																
2008-11-11	ER080593	93		<3.3E+1	<8.1	<9.2	<7.4	<8.7	<1.9E+1		<9.7	<9.6	<8.4	<8.3	<2.2E+1	<1.5E+1
Sediment pCi/kg																
2008-01-15	ER080048	88		<1.65E+2	<4.3E+1	<4.7E+1	<4.8E+1	<4.8E+1	<9.6E+1		<5.0E+1	<6.8E+1	<4.9E+1	<6.2E+1	<1.35E+2	<8.8E+1
2008-07-01	ER080354	88		<2.34E+2	<5.1E+1	<6.0E+1	<5.7E+1	<6.4E+1	<1.16E+2		<7.8E+1	<7.1E+1	<5.9E+1	<5.8E+1	<1.48E+2	<9.9E+1
Vegetation for Milk pCi/kg																
2008-01-29	ER080080	14		<4.8E+1	<1.1E+1	<1.2E+1	<9.7	<1.2E+1	<2.4E+1		<1.7E+1	<1.5E+1	<1.1E+1	<1.2E+1	<2.5E+1	<2.0E+1
2008-02-26	ER080119	14		<3.9E+1	<7.8	<8.7	<7.6	<9.0	<1.9E+1		<1.4E+1	<1.2E+1	<7.9	<9.0	<2.0E+1	<1.4E+1
2008-03-25	ER080167	14		<4.1E+1	<8.8	<9.1	<8.5	<9.4	<2.0E+1		<1.5E+1	<1.3E+1	<9.1	<9.8	<2.2E+1	<1.7E+1
2008-03-27	ER080168	90		<3.2E+1	<7.6	<8.6	<6.8	<7.6	<2.1E+1		<1.2E+1	<8.8	<7.6	<8.2	<2.2E+1	<1.4E+1
2008-04-29	ER080242	14		<6.6E+1	<1.6E+1	<1.7E+1	<1.5E+1	<1.7E+1	<3.3E+1		<2.5E+1	<2.0E+1	<1.6E+1	<1.7E+1	<3.6E+1	<2.8E+1
2008-05-27	ER080285	14		<4.3E+1	<9.4	<1.1E+1	<9.0	<1.0E+1	<2.3E+1		<1.7E+1	<1.3E+1	<9.4	<1.0E+1	<2.5E+1	<1.7E+1
2008-06-24	ER080339	14		<6.5E+1	<1.4E+1	<1.5E+1	<1.5E+1	<1.6E+1	<3.3E+1		<2.5E+1	<1.9E+1	<1.3E+1	<1.5E+1	<3.6E+1	<2.5E+1
2008-06-24	ER080340	90		<5.1E+1	<1.1E+1	<1.1E+1	<1.1E+1	<1.2E+1	<2.5E+1		<2.1E+1	<1.6E+1	<1.1E+1	<1.2E+1	<2.7E+1	<1.9E+1

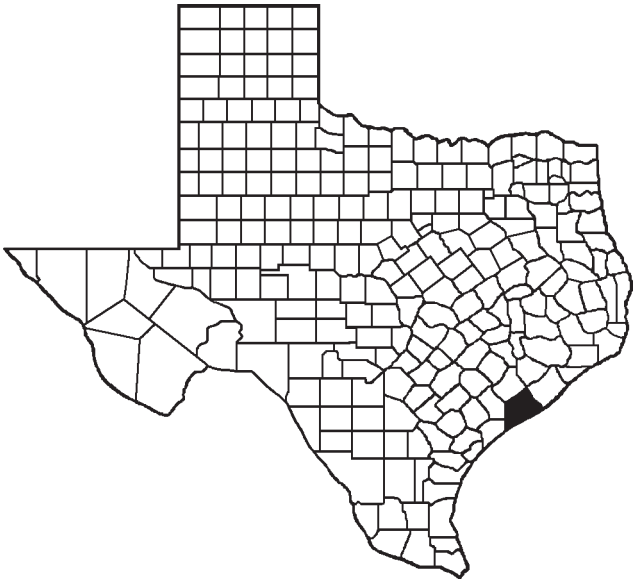
Date	Lab. No.	Station	Beta	Ba-140	Co-58	Co-60	Cs-134	Cs-137	Fe-59	H-3	I-131	La-140	Mn-54	Nb-95	Zn-65	Zr-95
2008-07-29	ER080411	14		<4.7E+1	<1.2E+1	<1.3E+1	<1.3E+1	<1.3E+1	<2.7E+1		<1.7E+1	<1.4E+1	<1.2E+1	<1.2E+1	<2.9E+1	<2.0E+1
2008-08-26	ER080456	14		<3.4E+1	<8.8	<1.0E+1	<8.0	<9.0	<2.0E+1		<1.1E+1	<1.0E+1	<9.1	<9.2	<2.2E+1	<1.6E+1
2008-09-30	ER080504	14		<5.5E+1	<1.2E+1	<1.3E+1	<1.2E+1	<1.3E+1	<2.7E+1		<1.9E+1	<1.7E+1	<1.2E+1	<1.4E+1	<3.0E+1	<2.2E+1
2008-09-30	ER080503	90		<4.4E+1	<9.3	<1.1E+1	<9.9	<1.1E+1	<2.2E+1		<1.4E+1	<1.2E+1	<9.6	<9.9	<2.4E+1	<1.7E+1
2008-10-28	ER080572	14		<3.8E+1	<8.3	<1.1E+1	<9.1	<9.6	<2.0E+1		<1.2E+1	<1.1E+1	<9.1	<8.6	<2.3E+1	<1.5E+1
2008-11-25	ER080613	14		<6.9E+1	<1.5E+1	<1.4E+1	<1.3E+1	<1.4E+1	<3.0E+1		<2.6E+1	<2.1E+1	<1.4E+1	<1.5E+1	<3.1E+1	<2.5E+1
2008-12-30	ER080667	14		<4.3E+1	<8.6	<8.8	<8.2	<9.0	<2.1E+1		<1.7E+1	1.3E+1	<8.3	<9.5	2.1E+1	<1.6E+1
2008-12-30	ER080668	90		<6.0E+1	<1.2E+1	<1.3E+1	<1.2E+1	<1.2E+1	<2.4E+1		<2.5E+1	<1.9E+1	<1.2E+1	<1.4E+1	<2.9E+1	<2.0E+1
Water-Surface pCi/l																
2008-01-29	ER080081	85	9.9	<8.5	<2.2	<2.1	<1.9	<2.3	<4.1		<2.7	<2.6	<2.1	<2.3	<4.4	<3.8
2008-01-29	ER080082	86	8.4	<7.4	<1.8	<2.1	<1.9	<1.9	<3.9		<2.5	<2.8	<1.9	<2.0	<3.9	<3.2
2008-02-26	ER080120	85	1.0E+1	<8.4	<2.0	<2.2	<2.0	<2.2	<3.9		<2.6	<2.8	<2.1	<2.2	<4.4	<3.6
2008-02-26	ER080121	86	5.5	<7.2	<1.8	<2.0	<1.8	<2.1	<3.8		<2.5	<2.7	<1.8	<1.9	<4.0	<3.1
2008-03-25	ER080165	85	1.6E+1	<6.8	<1.8	<2.0	<1.9	<2.0	<3.8		<2.3	<2.6	<1.9	<2.0	<3.6	<3.1
2008-03-25	ER080166	86	9.4	<7.3	<1.9	<2.1	<1.9	<2.0	<3.8		<2.5	<2.9	<2.0	<2.0	<4.1	<3.1
2008-04-29	ER080243	85	1.2E+1	<7.0	<1.9	<2.1	<1.9	<2.1	<4.0		<2.4	<2.6	<1.8	<2.0	<4.2	<3.4
2008-04-29	ER080244	86	8.2	<8.0	<2.1	<2.1	<2.1	<2.4	<4.1		<2.7	<2.6	<2.1	<2.3	<4.5	<3.8
2008-05-27	ER080287	85	9.5	<8.2	<1.9	<2.1	<1.8	<2.0	<3.7		<2.7	<2.7	<2.0	<1.9	<3.9	<3.3
2008-05-27	ER080286	86	5.8	<7.3	<1.8	<1.8	<1.9	<2.0	<3.6		<2.5	<2.5	<1.9	<2.0	<4.0	<3.3
2008-06-24	ER080337	85	1.1E+1	<6.7	<1.7	<1.9	<1.8	<1.9	<3.8		<2.4	<2.7	<1.8	<1.9	<3.8	<3.4
2008-06-24	ER080338	86	6.2	<9.6	<2.3	<2.2	<1.9	<2.2	<4.3		<3.4	<3.1	<2.2	<2.3	<4.4	<3.8
2008-07-29	ER080409	85	9.3	<7.5	<1.9	<2.2	<2.0	<2.1	<3.8		<2.5	<2.6	<1.8	<1.8	<4.2	<3.1
2008-07-29	ER080410	86	7.0	<8.5	<2.1	<2.1	<2.0	<2.2	<4.2		<2.6	<2.6	<2.2	<2.2	<4.4	<3.6
2008-08-26	ER080458	85	1.1E+1	<7.3	<1.9	<2.0	<1.9	<2.2	<3.8		<2.3	<2.6	<1.9	<1.9	<3.9	<3.4
2008-08-26	ER080457	86	5.8	<7.9	<2.1	<2.2	<2.0	<2.2	<4.0		<2.4	<2.5	<2.1	<2.3	<4.5	<3.7
2008-09-30	ER080505	85	1.0E+1	<7.9	<2.0	<2.1	<2.0	<2.1	<4.1		<2.4	<2.6	<2.1	<2.1	<4.6	<3.7
2008-09-30	ER080506	86	4.0	<8.0	<1.9	<2.2	<2.0	<2.1	<3.9		<2.5	<2.6	<1.9	<1.9	<4.4	<3.3
2008-10-28	ER080573	85	1.3E+1	<8.3	<2.1	<2.1	<2.0	<2.2	<4.3		<2.6	<2.7	<2.1	<2.2	<4.6	<3.7
2008-10-28	ER080574	86	6.5	<8.3	<1.9	<2.0	<2.0	<2.1	<3.8		<2.7	<2.9	<1.9	<2.0	<4.4	<3.3
2008-11-25	ER080614	85	1.4E+1	<1.1E+1	<2.2	<2.2	<1.9	<2.2	<4.5		<3.7	<3.6	<2.1	<2.5	<4.5	<3.9
2008-11-25	ER080615	86	6.1	<1.0E+1	<2.0	<2.0	<1.8	<2.1	<4.0		<3.8	<3.3	<1.8	<2.2	<3.9	<3.2
2008-12-30	ER080665	85	1.02E+1	<7.9	<1.9	<1.8	<1.9	<2.1	<3.9		<2.7	<2.8	<1.8	<2.0	<4.2	<3.3
2008-12-30	ER080666	86	8.9	<9.0	<2.0	<2.1	<1.9	<2.1	<3.9		<3.4	<3.5	<1.9	<2.2	<4.3	<3.4
Water-Surface Composite pCi/l																
2008-02-26	ER080055	85								7.7E+3						
2008-02-26	ER080056	86								<1.0E+3						
2008-04-29	ER080192	85								1.23E+4						
2008-04-29	ER080193	86								<1.0E+3						
2008-08-19	ER080397	85								1.34E+4						
2008-08-19	ER080398	86								<1.0E+3						
2008-11-04	ER080557	85								1.38E+4						
2008-11-04	ER080558	86								<1.0E+3						

South Texas Project

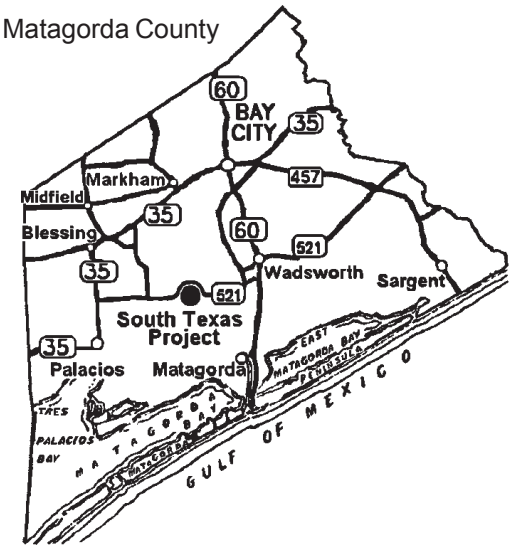
Radiation Branch Site No. 012

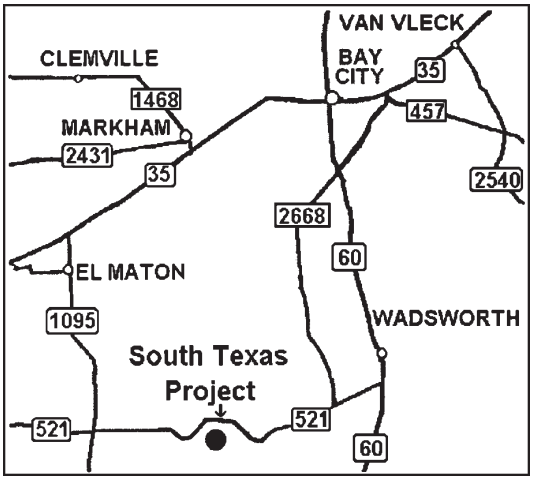
The South Texas Project (STP) is a commercial nuclear power plant operated by STP Nuclear Operating Company and is located 89 miles southwest of Houston and 14 miles south-southwest of Bay City. Two 1250 megawatt (electric) Westinghouse pressurized water reactor nuclear steam supply electrical generating units are in operation at the site. Unit 1 became operational in August of 1988 and Unit 2 in June of 1989.

STP Nuclear Operating Company is owned by NRG Energy, Austin Energy, and City Public Service of San Antonio. STP Nuclear Operating Company manages and operates the plant for its owners, who share its energy in proportion to their ownership interest. STP produces 2,500 megawatts of electricity annually, enough to serve more than one million homes in south central Texas. The Radiation Branch surveillance program consists of sampling air, fish, food products, sediment, vegetation, and water and TLD monitoring.



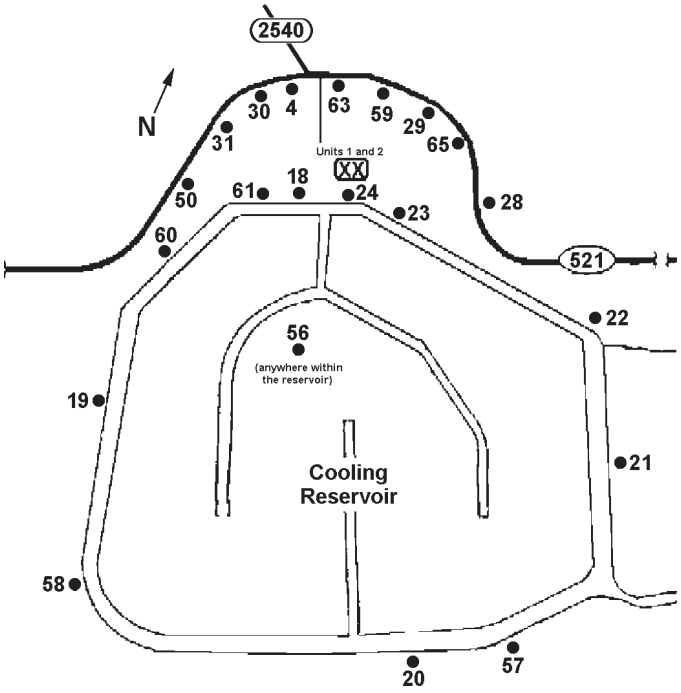
Shaded area indicates location of Matagorda County

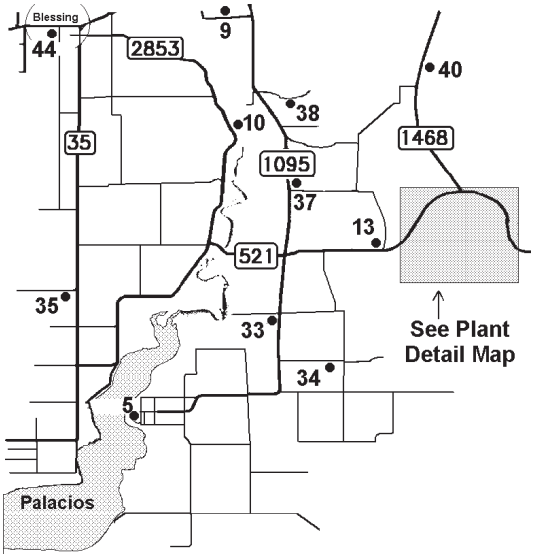


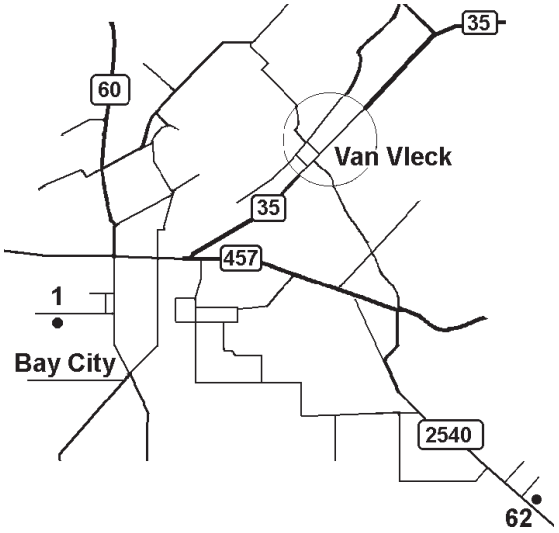


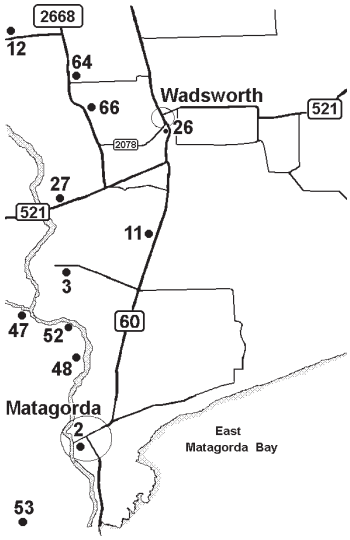
Monitoring Station Locations

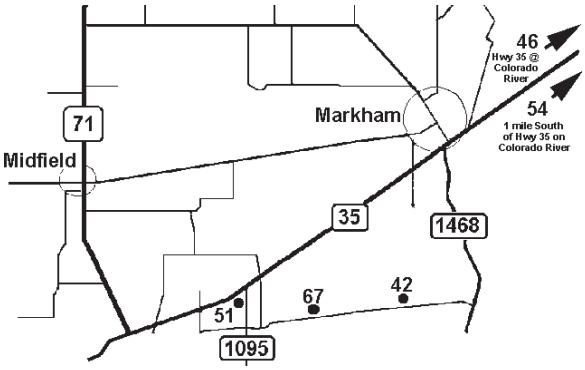
Note: Sample type not indicated on maps.











Thermoluminescent Dosimeter (TLD) Monitoring Results[1]
(quarterly and annual readings are in mrem)

Station	*Q1*	*Q2*	*Q3*	*Q4*	*Annual Dose*	*Notes*
01	14.0	12.0	11.0	23.0	60.0	
02	14.0	12.0	11.0	22.0	59.0	
03	12.0	9.0	10.0	20.0	51.0	
04	15.2	13.0	12.0	23.0	63.2	
05	12.0	10.0	11.0	21.0	54.0	
09	15.0	11.0	11.0	22.0	59.0	
10	14.0	12.0	11.0	22.0	59.0	
11	15.0	11.0	11.0	22.0	59.0	
12	15.0	12.0	12.0	23.0	62.0	
13	15.2	12.0	12.0	23.0	62.2	
18	13.1	11.0	9.0	23.0	56.1	
19	14.2	11.0	11.0	23.0	59.2	
20	14.2	11.0	8.0	23.0	56.2	
21	13.1	11.0	9.0	22.0	55.1	
22	13.1	11.0	11.0	22.0	57.1	
23	13.1	11.0	11.0	23.0	58.1	
24	13.1	11.0	11.0	23.0	58.1	
26	13.0	10.0	10.0	21.0	54.0	
27	0.0	10.0	10.0	21.0	41.0	tld missing 1st quarter
28	15.0	12.0	12.0	23.0	62.0	
29	15.2	12.0	12.0	24.0	63.2	
30	14.2	12.0	11.0	23.0	60.2	
31	16.2	13.0	13.0	25.0	67.2	
33	15.0	12.0	12.0	23.0	62.0	
34	14.0	11.0	12.0	22.0	59.0	
35	13.0	11.0	11.0	23.0	58.0	
37	16.0	13.0	12.0	25.0	66.0	
38	13.0	12.0	11.0	22.0	58.0	
40	14.0	11.0	12.0	21.0	58.0	
42	0.0	15.0	15.0	27.0	57.0	tld missing 1st quarter
44	13.0	11.0	46.0	0.0	70.0	tld missing 4th quarter
50	16.2	14.0	14.0	26.0	70.2	
51	15.0	12.0	12.0	25.0	64.0	
57	13.1	11.0	10.0	23.0	57.1	
58	13.1	10.0	10.0	22.0	55.1	
59	14.2	12.0	0.0	22.0	48.2	tld missing 3rd quarter
60	14.2	12.0	11.0	24.0	61.2	
61	14.2	10.0	11.0	22.0	57.2	
62	12.0	14.0	13.0	24.0	63.0	
63	15.2	11.0	11.0	22.0	59.2	
64	14.0	12.0	10.0	23.0	59.0	
65	14.2	12.0	11.0	22.0	59.2	
66	14.0	13.0	11.0	22.0	60.0	
67	16.0	12.0	12.0	24.0	64.0	

NOTE: [1] Background is not subtracted from the data.

[2] If data are missing during a quarter, an average of known quarter readings for that year and location is used to fill in for the missing data.

[3] Readings are elevated for 4th quarter due to broken TLD reader, extended period between exchange and reading.

South Texas Project

Date	Lab No.	Station	Beta	Ba-140	Co-58	Co-60	Cs-134	Cs-137	Fe-59	H-3	I-131	La-140	Mn-54	Nb-95	Zn-65	Zr-95
Air Iodine pCi/m³																
2008-01-02	ER080012	30									<3E-3					
2008-01-02	ER080010	35									<4E-3					
2008-01-08	ER080022	30									<7E-3					
2008-01-08	ER080020	35									<1.0E-2					
2008-01-15	ER080060	30									<5E-3					
2008-01-15	ER080058	35									<5E-3					
2008-01-23	ER080079	30									<5E-3					
2008-01-23	ER080077	35									<5E-3					
2008-01-29	ER080091	30									<1.0E-2					
2008-01-29	ER080089	35									<5E-3					
2008-02-05	ER080100	30									<4E-3					
2008-02-05	ER080098	35									<4E-3					
2008-02-12	ER080110	30									<4E-3					
2008-02-12	ER080108	35									<4E-3					
2008-02-19	ER080118	30									<5E-3					
2008-02-19	ER080116	35									<5E-3					
2008-02-26	ER080129	30									<7E-3					
2008-02-26	ER080127	35									<3E-3					
2008-03-04	ER080137	30									<4E-3					
2008-03-04	ER080135	35									<4E-3					
2008-03-11	ER080146	30									<4E-3					
2008-03-11	ER080144	35									<5E-3					
2008-03-18	ER080158	30	2.0E-2													
2008-03-18	ER080159	30									<5E-3					
2008-03-18	ER080157	35									<5E-3					
2008-03-25	ER080172	30									<6E-3					
2008-03-25	ER080170	35									<5E-3					
2008-04-02	ER080180	30									<4E-3					
2008-04-02	ER080178	35									<4E-3					
2008-04-09	ER080200	30									<3E-3					
2008-04-09	ER080198	35									<4E-3					
2008-04-15	ER080226	30									<6E-3					
2008-04-15	ER080224	35									<8E-3					
2008-04-23	ER080236	30									<5E-3					
2008-04-23	ER080234	35									<4E-3					
2008-04-29	ER080241	30									<8E-3					
2008-04-29	ER080239	35									<5E-3					
2008-05-06	ER080257	30									<5E-3					
2008-05-06	ER080255	35									<5E-3					
2008-05-13	ER080267	30									<7E-3					
2008-05-13	ER080265	35									<5E-3					
2008-05-20	ER080274	30									<9E-3					
2008-05-20	ER080273	35									<9E-3					
2008-05-28	ER080291	30									<4E-3					

Environmental Sample Results

Date	Lab. No.	Station	Beta	Ba-140	Co-58	Co-60	Cs-134	Cs-137	Fe-59	H-3	I-131	La-140	Mn-54	Nb-95	Zn-65	Zr-95
2008-05-28	ER080289	35									<4E-3					
2008-06-03	ER080311	30									<8E-3					
2008-06-03	ER080309	35									<4E-3					
2008-06-10	ER080321	30									<3E-3					
2008-06-10	ER080319	35									<4E-3					
2008-06-17	ER080329	30									<5E-3					
2008-06-17	ER080327	35									<5E-3					
2008-06-24	ER080344	30									<7E-3					
2008-06-24	ER080342	35									<6E-3					
2008-07-01	ER080348	30									<4E-3					
2008-07-01	ER080346	35									<4E-3					
2008-07-07	ER080358	30									<5E-3					
2008-07-07	ER080356	35									<5E-3					
2008-07-14	ER080375	30									<7E-3					
2008-07-14	ER080373	35									<7E-3					
2008-07-21	ER080408	30									<7E-3					
2008-07-21	ER080406	35									<5E-3					
2008-07-29	ER080419	30									<1.1E-2					
2008-07-29	ER080417	35									<6E-3					
2008-08-06	ER080433	30									<4E-3					
2008-08-06	ER080431	35									<4E-3					
2008-08-12	ER080442	30									<5E-3					
2008-08-12	ER080440	35									<5E-3					
2008-08-19	ER080451	30									<5E-3					
2008-08-19	ER080449	35									<5E-3					
2008-08-26	ER080462	30									<5E-3					
2008-08-26	ER080460	35									<7E-3					
2008-09-03	ER080471	30									<4E-3					
2008-09-03	ER080469	35									<4E-3					
2008-09-09	ER080481	30									<8E-3					
2008-09-09	ER080479	35									<4E-3					
2008-09-16	ER080489	30									<7E-3					
2008-09-16	ER080487	35									<9E-3					
2008-09-22	ER080494	30									<5E-3					
2008-09-22	ER080492	35									<5E-3					
2008-09-30	ER080510	30									<7E-3					
2008-09-30	ER080508	35									<6E-3					
2008-10-08	ER080521	30									<7E-3					
2008-10-08	ER080519	35									<3E-3					
2008-10-15	ER080552	30									<8E-3					
2008-10-15	ER080550	35									<3E-3					
2008-10-22	ER080564	30									<8E-3					
2008-10-22	ER080562	35									<6E-3					
2008-10-29	ER080578	30									<7E-3					
2008-10-29	ER080576	35									<1.0E-2					
2008-11-04	ER080586	30									<4E-3					
2008-11-04	ER080584	35									<5E-3					
2008-11-11	ER080597	30									<3E-3					
2008-11-11	ER080595	35									<4E-3					

Date	Lab. No.	Station	Beta	Ba-140	Co-58	Co-60	Cs-134	Cs-137	Fe-59	H-3	I-131	La-140	Mn-54	Nb-95	Zn-65	Zr-95
2008-11-18	ER080605	30									<5E-3					
2008-11-18	ER080603	35									<5E-3					
2008-11-25	ER080619	30									<5E-3					
2008-11-25	ER080617	35									<5E-3					
2008-12-03	ER080631	30									<3E-3					
2008-12-03	ER080629	35									<4E-3					
2008-12-09	ER080640	30									<4E-3					
2008-12-09	ER080638	35									<6E-3					
2008-12-16	ER080649	30									<5E-3					
2008-12-16	ER080647	35									<8E-3					
2008-12-22	ER080657	30									<1.4E-2					
2008-12-22	ER080655	35									<9E-3					
2008-12-30	ER090004	30									<6E-3					
2008-12-30	ER090002	35									<6E-3					
Air Particulate pCi/m^3																
2008-01-02	ER080011	30	3.4E-2													
2008-01-02	ER080009	35	3.4E-2													
2008-01-08	ER080021	30	1.8E-2													
2008-01-08	ER080019	35	1.6E-2													
2008-01-15	ER080059	30	2.3E-2													
2008-01-15	ER080057	35	2.2E-2													
2008-01-23	ER080078	30	2.2E-2													
2008-01-23	ER080076	35	2.3E-2													
2008-01-29	ER080090	30	2.7E-2													
2008-01-29	ER080088	35	2.9E-2													
2008-02-05	ER080099	30	2.0E-2													
2008-02-05	ER080097	35	2.0E-2													
2008-02-12	ER080109	30	3.3E-2													
2008-02-12	ER080107	35	3.3E-2													
2008-02-19	ER080117	30	1.9E-2													
2008-02-19	ER080115	35	1.8E-2													
2008-02-26	ER080128	30	2.3E-2													
2008-02-26	ER080126	35	2.4E-2													
2008-03-04	ER080136	30	1.7E-2													
2008-03-04	ER080134	35	1.8E-2													
2008-03-11	ER080145	30	2.0E-2													
2008-03-11	ER080143	35	2.0E-2													
2008-03-18	ER080156	35	2.0E-2													
2008-03-25	ER080171	30	2.2E-2													
2008-03-25	ER080169	35	2.4E-2													
2008-04-02	ER080179	30	1.8E-2													
2008-04-02	ER080177	35	1.9E-2													
2008-04-09	ER080199	30	1.4E-2													
2008-04-09	ER080197	35	1.5E-2													
2008-04-15	ER080225	30	2.1E-2													
2008-04-15	ER080223	35	2.0E-2													
2008-04-23	ER080235	30	1.9E-2													
2008-04-23	ER080233	35	2.0E-2													

Environmental Sample Results

Date	Lab. No.	Station	Beta	Ba-140	Co-58	Co-60	Cs-134	Cs-137	Fe-59	H-3	I-131	La-140	Mn-54	Nb-95	Zn-65	Zr-95
2008-04-29	ER080240	30	2.4E-2													
2008-04-29	ER080238	35	2.4E-2													
2008-05-06	ER080256	30	2.1E-2													
2008-05-06	ER080254	35	2.3E-2													
2008-05-13	ER080266	30	2.3E-2													
2008-05-13	ER080264	35	2.1E-2													
2008-05-20	ER080275	30	2.5E-2													
2008-05-20	ER080272	35	2.3E-2													
2008-05-28	ER080290	30	1.9E-2													
2008-05-28	ER080288	35	1.9E-2													
2008-06-03	ER080310	30	1.6E-2													
2008-06-03	ER080308	35	1.7E-2													
2008-06-10	ER080320	30	1.1E-2													
2008-06-10	ER080318	35	1.4E-2													
2008-06-17	ER080328	30	1.6E-2													
2008-06-17	ER080326	35	1.4E-2													
2008-06-24	ER080343	30	1.8E-2													
2008-06-24	ER080341	35	1.9E-2													
2008-07-01	ER080347	30	2.2E-2													
2008-07-01	ER080345	35	2.2E-2													
2008-07-07	ER080357	30	1.8E-2													
2008-07-07	ER080355	35	1.7E-2													
2008-07-14	ER080374	30	1.7E-2													
2008-07-14	ER080372	35	1.8E-2													
2008-07-21	ER080407	30	4.3E-2													
2008-07-21	ER080405	35	2.1E-2													
2008-07-29	ER080418	30	2.9E-2													
2008-07-29	ER080416	35	2.2E-2													
2008-08-06	ER080432	30	1.8E-2													
2008-08-06	ER080430	35	1.8E-2													
2008-08-12	ER080441	30	1.8E-2													
2008-08-12	ER080439	35	1.8E-2													
2008-08-19	ER080450	30	1.6E-2													
2008-08-19	ER080448	35	1.6E-2													
2008-08-26	ER080461	30	1.9E-2													
2008-08-26	ER080459	35	2.0E-2													
2008-09-03	ER080470	30	2.3E-2													
2008-09-03	ER080468	35	2.6E-2													
2008-09-09	ER080480	30	2.1E-2													
2008-09-09	ER080478	35	2.2E-2													
2008-09-16	ER080488	30	1.7E-2													
2008-09-16	ER080486	35	1.7E-2													
2008-09-22	ER080493	30	2.6E-2													
2008-09-22	ER080491	35	2.9E-2													
2008-09-30	ER080509	30	3.8E-2													
2008-09-30	ER080507	35	4.2E-2													
2008-10-08	ER080520	30	2.9E-2													
2008-10-08	ER080518	35	3.1E-2													
2008-10-15	ER080551	30	2.0E-2													

Date	Lab. No.	Station	Beta	Ba-140	Co-58	Co-60	Cs-134	Cs-137	Fe-59	H-3	I-131	La-140	Mn-54	Nb-95	Zn-65	Zr-95	
2008-10-15	ER080549	35	2.1E-2														
2008-10-22	ER080563	30	3.2E-2														
2008-10-22	ER080561	35	2.9E-2														
2008-10-29	ER080577	30	2.0E-2														
2008-10-29	ER080575	35	2.2E-2														
2008-11-04	ER080585	30	2.7E-2														
2008-11-04	ER080583	35	2.8E-2														
2008-11-11	ER080596	30	2.3E-2														
2008-11-11	ER080594	35	2.2E-2														
2008-11-18	ER080604	30	1.8E-2														
2008-11-18	ER080602	35	1.9E-2														
2008-11-25	ER080618	30	2.8E-2														
2008-11-25	ER080616	35	2.9E-2														
2008-12-03	ER080630	30	2.8E-2														
2008-12-03	ER080628	35	3.1E-2														
2008-12-09	ER080639	30	2.5E-2														
2008-12-09	ER080637	35	2.4E-2														
2008-12-16	ER080648	30	2.2E-2														
2008-12-16	ER080646	35	2.1E-2														
2008-12-22	ER080656	30	2.8E-2														
2008-12-22	ER080654	35	2.4E-2														
2008-12-30	ER090003	30	2.1E-2														
2008-12-30	ER090001	35	2.2E-2														
Air Particulate Composite pCi/Sample																	
2008-01-23	ER080051	30		<1.1E+1	<3.2	<3.3	<2.9	<3.3	<6.4		<2.9	<3.7	<3.4	<3.0	<7.8	<5.2	
2008-01-23	ER080052	35		<6.7	<2.3	<2.5	<2.3	<2.6	<4.5		<2.1	<3.2	<2.3	<2.4	<4.9	<3.9	
2008-04-11	ER080188	30		<6.7	<2.4	<2.6	<2.4	<2.3	<4.1		<2.1	<2.9	<2.5	<2.2	<5.6	<3.9	
2008-04-11	ER080189	35		<6.5	<2.0	<2.8	<1.8	<2.2	<4.0		<1.9	<2.5	<2.1	<2.0	<4.7	<3.5	
2008-07-29	ER080393	30		<6.7	<2.1	<2.3	<1.8	<2.1	<4.0		<1.9	<2.5	<2.1	<2.0	<4.9	<3.4	
2008-07-29	ER080394	35		<4.9	<1.5	<1.8	<1.6	<1.6	<3.1		<1.5	<1.9	<1.4	<1.5	<3.4	<2.5	
2008-10-23	ER080555	30		<8.2	<2.1	<2.4	<2.4	<2.5	<4.3		<2.3	<3.3	<2.5	<2.1	<5.4	<3.7	
2008-10-23	ER080556	35		<1.1+1	<2.9	<3.7	<3.1	<3.2	<6.6		<3.0	<4.1	<3.1	<3.2	<8.2	<5.7	
Fish pCi/kg																	
2008-04-09	ER080202	48		<3.7E+1	<8.5	<1.1E+1	<7.2	<9.0	<2.1E+1		<1.3E+1	<1.1E+1	<8.3	<9.1	<2.1E+1	<1.5E+1	FS
2008-10-22	ER080566	53		<1.19E+2	<2.0E+1	<1.9E+1	<1.8E+1	<2.0E+1	<4.3E+1		<5.3E+1	<3.8E+1	<1.9E+1	<2.3E+1	<4.4E+1	<3.7E+1	FS
Food Product pCi/kg																	
2008-06-17	ER080330	35		<4.9E+1	<1.2E+1	<1.2E+1	<1.1E+1	<1.1E+1	<2.4E+1		<1.7E+1	<1.5E+1	<1.2E+1	<1.3E+1	<2.7E+1	<2.0E+1	
2008-06-17	ER080331	63		<4.6E+1	<1.1E+1	<1.1E+1	<9.7	<1.1E+1	<2.1E+1		<1.7E+1	<1.4E+1	<1.0E+1	<1.2E+1	<2.5E+1	<1.9E+1	
2008-09-30	ER080511	35		<6.0E+1	<1.3E+1	<1.4E+1	<1.3E+1	<1.4E+1	<3.2E+1		<2.2E+1	<1.6E+1	<1.3E+1	<1.4E+1	<3.4E+1	<2.2E+1	
2008-09-30	ER080512	63		<8.0E+1	<1.6E+1	<1.8E+1	<1.6E+1	<1.6E+1	<3.8E+1		<2.8E+1	<2.0E+1	<1.5E+1	<1.7E+1	<4.0E+1	<2.8E+1	
2008-12-22	ER080659	35		<1.32E+2	<2.1E+1	<2.0E+1	<1.8E+1	<2.0E+1	<4.9E+1		<5.8E+1	<4.1+1	<2.0E+1	<2.5E+1	<4.6E+1	<3.8E+1	
2008-12-22	ER080660	63		<1.86E+2	<2.7E+1	<2.6E+1	<2.4E+1	<2.6E+1	<5.8E+1		<8.9E+1	<5.6E+1	<2.6E+1	<3.1E+1	<5.7E+1	<4.9E+1	
Sediment pCi/kg																	
2008-10-12	ER080526	52		<2.70E+2	<6.7E+1	<6.8E+1	<8.3E+1	<7.4E+1	<1.54E+2		<7.9E+1	<9.7E+1	<6.8E+1	<8.0E+1	<2.11E+2	<1.23E+2	

Date	Lab. No.	Station	Beta	Ba-140	Co-58	Co-60	Cs-134	Cs-137	Fe-59	H-3	I-131	La-140	Mn-54	Nb-95	Zn-65	Zr-95
Vegetation for Milk pCi/kg																
2008-03-11	ER080147	30		<3.4E+1	<8.1	<9.0	<7.5	<8.8	<1.8E+1		<1.1E+1	<9.9	<8.9	<8.7	<2.1E+1	<1.6E+1
2008-04-09	ER080201	04		<3.8E+1	<9.2	<1.1E+1	<8.0	<9.0	<2.3E+1		<1.4E+1	<1.1E+1	<8.9	<9.6	<2.5E+1	<1.6E+1
2008-05-06	ER080259	04		<3.4E+1	<9.1	<1.1E+1	<8.4	<9.7	<2.1E+1		<1.1E+1	<1.1E+1	<9.0	<9.7	<2.3E+1	<1.7E+1
2008-06-03	ER080313	04		<3.2E+1	<8.1	<9.2	<7.6	<8.6	<2.0E+1		<1.1E+1	<8.8	<8.0	<8.3	<2.1E+1	<1.4E+1
2008-07-07	ER080359	04		<3.3E+1	<7.9	<9.2	<8.2	<8.6	<2.1E+1		<1.1E+1	<8.4	<8.4	<8.3	<2.3E+1	<1.5E+1
2008-08-12	ER080443	63		<3.1E+1	<7.5	<9.4	<8.4	<8.5	<2.0E+1		<9.7	<9.1	<8.0	<8.1	<2.2E+1	<1.5E+1
2008-09-16	ER080490	04		<4.4E+1	<9.0	<9.8	<8.3	<8.9	<2.2E+1		<1.5E+1	<1.2E+1	<7.9	<8.8	<2.3E+1	<1.6E+1
2008-10-22	ER080565	30		<4.2E+1	<9.2	<1.1E+1	<8.9	<9.5	<2.4E+1		<1.5E+1	<1.1E+1	<9.5	<9.4	<2.5E+1	<1.7E+1
2008-11-04	ER080588	30		<3.2E+1	<8.1	<8.9	<7.5	<8.3	<1.9E+1		<9.5	<9.3	<8.2	<8.7	<2.2E+1	<1.5E+1
2008-12-09	ER080641	04		<3.2E+1	<8.5	<9.8	<7.6	<9.0	<2.0E+1		<9.4	<9.5	<8.7	<8.9	<2.4E+1	<1.5E+1
Water-Surface pCi/l																
2008-01-08	ER080042	46	5.4	<9.6	<2.3	<1.9	<2.0	<2.2	<4.4		<3.4	<3.1	<2.2	<2.3	<4.7	<3.8
2008-01-30	ER080092	47	1.3E+1	<8.5	<1.8	<2.0	<1.9	<2.1	<3.9		<3.3	<3.3	<1.9	<2.2	<4.1	<3.4
2008-02-05	ER080101	46	5.6	<7.4	<1.9	<2.0	<1.9	<2.0	<3.9		<2.4	<2.7	<2.0	<2.0	<4.1	<3.4
2008-02-07	ER080102	52	1.7E+1	<8.5	<1.9	<2.0	<1.8	<2.1	<4.2		<3.0	<2.9	<1.9	<2.0	<3.8	<3.3
2008-03-04	ER080138	46	5.9	<7.1	<1.9	<1.9	<1.8	<2.1	<4.0		<2.5	<2.7	<1.9	<2.0	<3.8	<3.3
2008-03-20	ER080160	52	1.5E+1	<9.7	<2.2	<2.2	<2.0	<2.2	<4.6		<3.4	<3.3	<2.2	<2.4	<4.8	<3.8
2008-04-02	ER080181	46	6.8	<7.2	<1.8	<2.1	<1.9	<2.0	<3.6		<2.4	<2.6	<1.9	<2.0	<4.1	<3.3
2008-04-27	ER080237	52	1.6E+1	<8.0	<2.1	<2.2	<2.1	<2.4	<4.2		<2.5	<2.6	<2.2	<2.3	<4.5	<3.7
2008-05-06	ER080258	54	6.1	<7.0	<1.8	<2.1	<1.9	<2.1	<3.7		<2.3	<2.6	<1.8	<1.9	<4.6	<3.4
2008-05-29	ER080303	47	2.0E+1	<9.1	<1.9	<2.1	<1.9	<2.1	<4.0		<3.3	<3.2	<1.8	<2.0	<4.2	<3.5
2008-06-03	ER080312	54	6.1	<8.3	<2.0	<2.2	<1.9	<2.2	<4.0		<2.6	<2.8	<2.1	<2.2	<4.4	<3.6
2008-06-17	ER080332	47	1.8E+1	<7.7	<1.8	<1.9	<1.9	<1.9	<3.8		<2.8	<2.7	<2.0	<2.0	<4.1	<3.3
2008-07-01	ER080349	54	6.3	<7.4	<1.9	<2.1	<1.9	<2.0	<3.7		<2.5	<2.4	<1.9	<1.9	<4.2	<3.3
2008-07-31	ER080420	47	1.0E+1	<8.2	<1.9	<2.1	<2.0	<2.1	<4.0		<3.3	<2.9	<1.9	<2.0	<4.2	<3.5
2008-08-06	ER080434	46	6.1	<7.4	<1.9	<2.0	<2.0	<2.0	<3.9		<2.5	<2.7	<1.9	<2.0	<4.2	<3.2
2008-08-27	ER080463	47	8.4	<7.2	<1.9	<2.0	<1.9	<2.2	<3.6		<2.3	<2.6	<1.9	<1.8	<3.9	<3.3
2008-09-03	ER080472	46	5.9	<7.1	<1.8	<2.0	<1.9	<2.2	<3.8		<2.3	<2.5	<1.8	<1.9	<4.3	<3.2
2008-09-30	ER080513	47	7.1E+1	<8.3	<2.1	<2.2	<1.9	<2.1	<4.2		<2.6	<2.6	<2.2	<2.2	<4.6	<3.8
2008-10-08	ER080522	46	4.9	<9.0	<2.1	<2.1	<2.0	<2.2	<4.3		<3.0	<3.2	<2.1	<2.3	<4.6	<3.7
2008-10-12	ER080527	52	3.8E+1	<7.7	<2.1	<2.2	<2.0	<2.2	<4.1		<2.4	<2.7	<2.1	<2.1	<4.7	<3.7
2008-11-04	ER080587	46	5.2	<8.3	<1.8	<2.0	<2.0	<2.0	<3.8		<2.8	<2.8	<1.9	<2.0	<4.1	<3.2
2008-11-18	ER080606	52	3.3E+1	<7.4	<1.9	<2.0	<1.8	<2.0	<3.4		<2.5	<2.6	<1.9	<1.9	<4.0	<3.2
2008-12-03	ER080632	46	5.2	<8.6	<2.1	<2.0	<2.0	<2.1	<4.2		<3.3	<3.3	<1.9	<2.1	<4.0	<3.2
2008-12-18	ER080658	52	7.1E+1	<1.4E+1	<2.1	<2.1	<1.9	<2.0	<4.5		<6.3	<4.6	<1.9	<2.5	<3.9	<3.5
Water-Surface Composite pCi/l																
2008-02-26	ER080053	46								<1.0E+3						
2008-02-26	ER080054	52								<1.0E+3						
2008-04-29	ER080190	46								<1.0E+3						
2008-04-29	ER080191	47								<1.0E+3						
2008-08-19	ER080396	47								<1.0E+3						
2008-08-19	ER080395	54								<1.0E+3						
2008-11-04	ER080559	46								<1.0E+3						
2008-11-04	ER080560	47								<1.0E+3						

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Research Reactors

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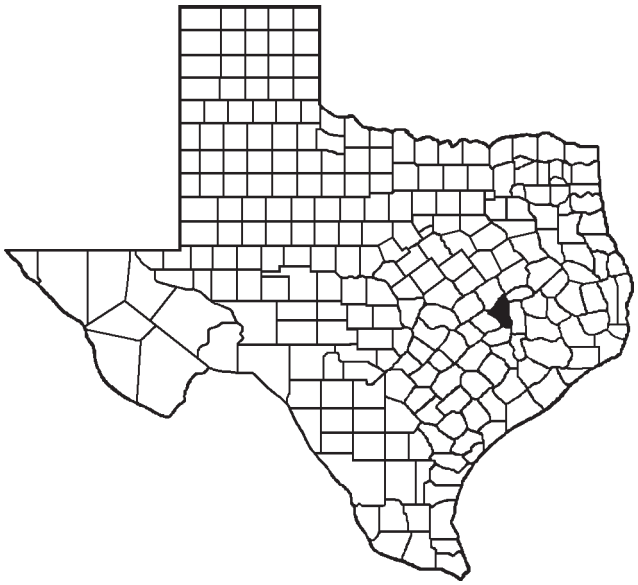
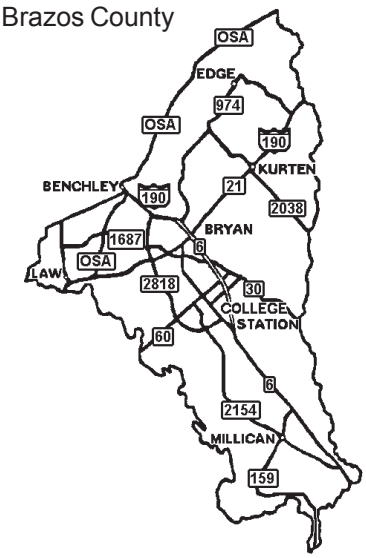
Texas A & M University Nuclear Science Center

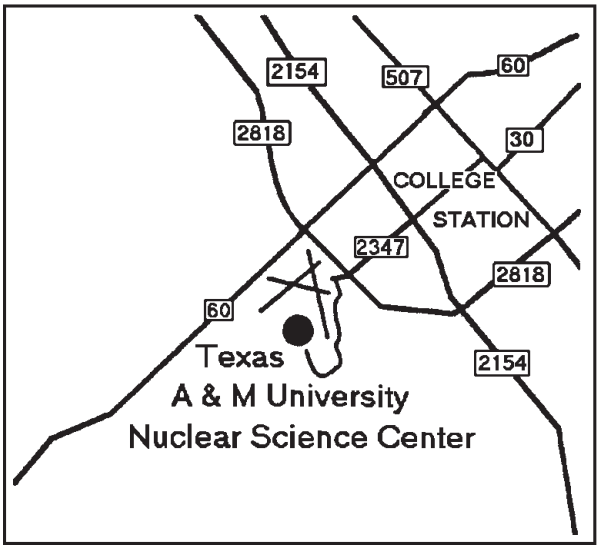
Radiation Branch Site No. 001

Texas A&M Nuclear Science Center (NSC) is located seven miles south of downtown Bryan just south of Easterwood Airport. NSC houses a one-megawatt TRIGA (Testing, Research, Isotope Production, General Atomics) research reactor that came online in 1961. The Radiation Branch surveillance program consists of sediment sampling and TLD monitoring.



Shaded area indicates location of Brazos County

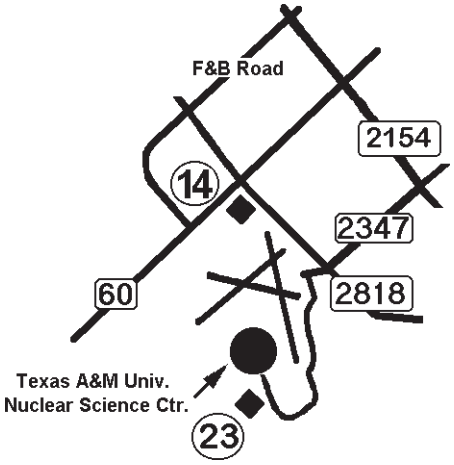




Monitoring Station Locations

♦ TLD Station	♥ Sample Station	♣ TLD & Sample Station

Homeland Security --
Diagram Removed



Thermoluminescent Dosimeter (TLD) Monitoring Results
(quarterly and annual readings are in mrem)

Station	*Q1*	*Q2*	*Q3*	*Q4*	*Annual[2] Dose*	*Notes*
02	3.3	3.1	3.2	3.7	13.3	
03	1.1	0.0	0.8	0.9	2.8	
04	4.4	3.1	4.0	2.8	14.3	
05	0.0	1.0	1.6	1.8	4.4	
10	0.0	1.0	2.4	0.0	3.4	
11	1.1	0.0	1.6	0.0	2.7	
14	20.9	9.1	11.0	19.0	60.0	Background
18	2.2	3.1	2.4	2.8	10.5	
19	0.0	0.0	0.8	0.0	0.8	
20	0.0	0.0	0.8	0.0	0.8	
21	0.0	0.0	0.0	0.0	0.0	
22	0.0	0.0	0.0	0.0	0.0	
23	18.2	12.7	12.1	22.0	65.0	Background

NOTE: [1] If data are missing during a quarter, an average of known quarter readings for that year and location is used to fill in for the missing data.
[2] Value does not include 1/16 occupancy factor.
[3] Readings are elevated for 4th quarter due to broken TLD reader, extended period between exchange and reading.

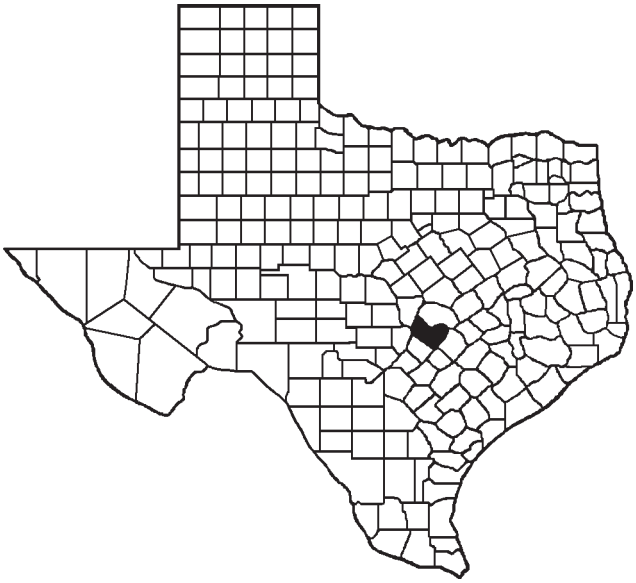
Texas A & M University Nuclear Science Center

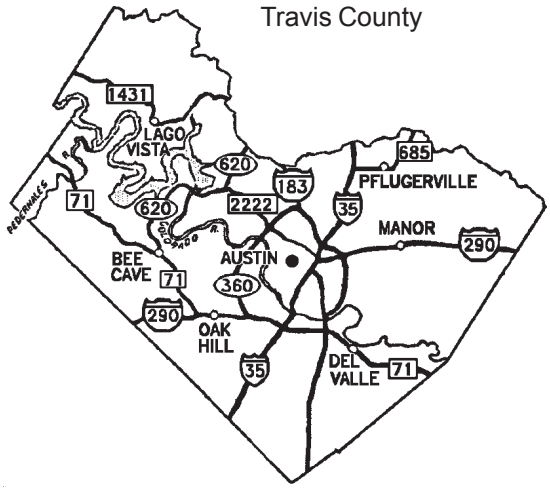
Date	*Lab No.*	*Station*	*Ba-140*	*Co-58*	*Co-60*	*Cs-134*	*Cs-137*	*Fe-59*	*I-131*	*La-140*	*Mn-54*	*Nb-95*	*Zn-65*	*Zr-95*
Sediment µCi/g														
2008-01-11	ER080075	16	<6E-7	<1E-7	3E-7	<1E-7	<1E-7	<2E-7	<3E-7	<2E-7	3E-7	<2E-7	<3E-7	<2E-7
2008-04-03	ER080207	16	<5E-7	<1E-7	2E-7	<1E-7	<1E-7	<2E-7	<2E-7	<2E-7	1E-7	<1E-7	<3E-7	<2E-7
2008-06-30	ER080376	16	<7E-7	<1E-7	<2E-7	<1E-7	<1E-7	<2E-7	<4E-7	<2E-7	<2E-7	<2E-7	<4E-7	<2E-7
2008-10-21	ER080567	16	<5E-7	<1E-7	3E-7	<1E-7	<1E-7	<2E-7	<2E-7	<2E-7	2E-7	<1E-7	2E-7	<2E-7

University of Texas Nuclear Engineering Teaching Laboratory

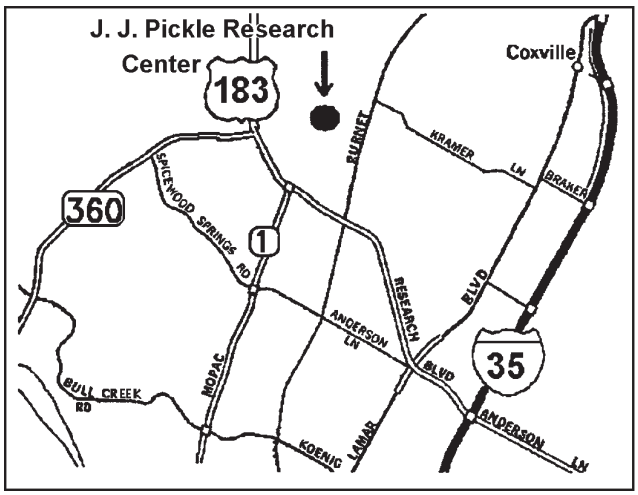
Radiation Branch Site No. 003

University of Texas Nuclear Engineering Teaching Laboratory (NETL) is located at the J. J. Pickle Research Center, approximately five miles north of the Texas Department of State Health Services main campus. NETL houses an above-ground, fixed-core 1.1 megawatt TRIGA (Testing, Research, Isotope Production, General Atomics) research reactor that came online in 1992. The Radiation Branch surveillance program consists of sampling sewage and water and TLD monitoring.





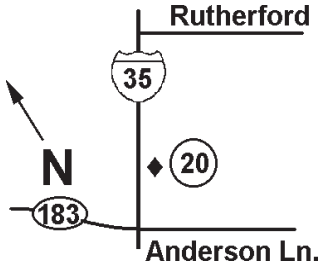
Shaded area indicates location of Travis County



Monitoring Station Locations

♦ TLD Station ♥ Sample Station ♣ TLD & Sample Station

Homeland Security --
Diagram Removed



Thermoluminescent Dosimeter (TLD) Monitoring Results
(quarterly and annual readings are in mrem)

Station	*Q1*	*Q2*	*Q3*	*Q4*	*Annual* Dose*	*Note*
01	2.0	0.0	0.0	0.0	2.0	
02	0.0	0.0	0.0	0.0	0.0	
03	0.0	0.0	0.0	0.0	0.0	
04	0.0	2.0	1.0	3.0	6.0	
05	0.0	0.0	0.0	1.0	1.0	
20	15.5	10.9	10.9	22.2	59.5	Background

NOTE: *Occupancy factors not provided.
Readings are elevated for 4th quarter due to broken TLD reader, extended period between exchange and reading.

Environmental Sample Results

University of Texas Nuclear Engineering Teaching Laboratory

Date	Lab No.	Station	Ba-140	Co-58	Co-60	Cs-134	Cs-137	Fe-59	H-3	I-131	La-140	Mn-54	Nb-95	Zn-65	Zr-95
Sewage µCi/ml															
2008-01-15	ER080043	08	<2.2E-8	<6.3E-9	<8.6E-9	<5.8E-9	<7.0E-9	<1.4E-8	<1.0E-6	<6.5E-9	<7.4E-9	<6.6E-9	<6.8E-9	<1.6E-8	<1.2E-8
2008-04-16	ER080208	09	<1.8E-8	<5.1E-9	<5.6E-9	<5.3E-9	<5.8E-9	<1.1E-8	<1.0E-6	<5.1E-9	<7.1E-9	<5.1E-9	<5.8E-9	<1.3E-8	<8.5E-9
2008-07-16	ER080371	08	<2.3E-8	<6.5E-9	<8.4E-9	<6.0E-9	<7.7E-9	<1.3E-8	<1.0E-6	<6.7E-9	<6.9E-9	<6.7E-9	<6.5E-9	<1.5E-8	<1.2E-8
2008-10-16	ER080528	09	<2.2E-8	<6.2E-9	<9.7E-9	<6.2E-9	<8.3E-7	<1.2E-8	2.47E-6	<6.0E-9	<7.3E-9	<6.7E-9	<6.6E-9	<1.6E-8	<1.2E-8

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Other Facilities

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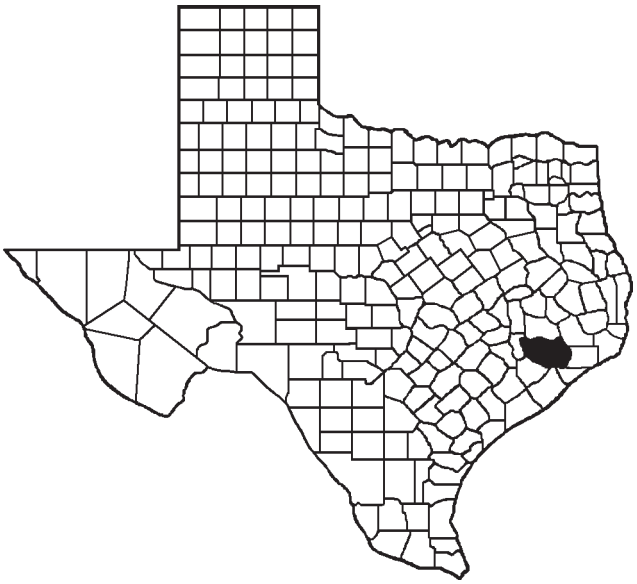
Gammatron, Inc.

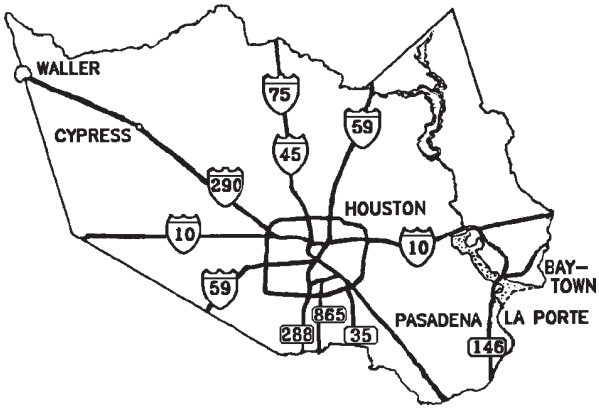
Radiation Branch Site No. 018

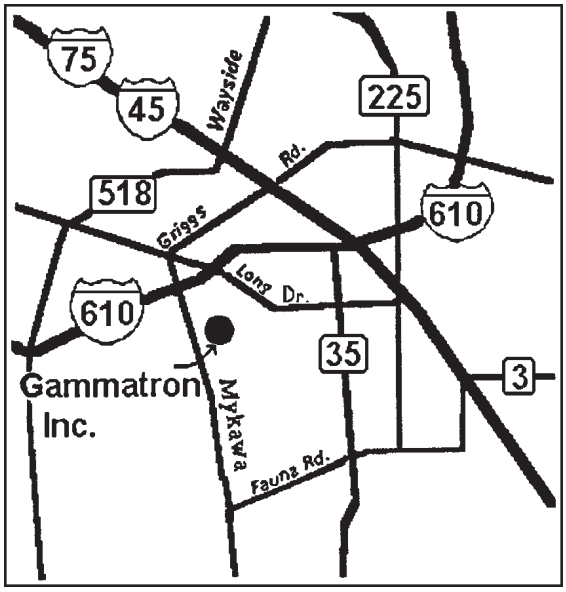
Gammatron, Inc. is a manufacturer of sealed radioactive sources, specializing in Am241Be and Am241Li neutron sources and Cs137 gamma sources. The facility is located in an industrial area of Houston approximately four miles northwest of William P. Hobby Airport. The Radiation Branch surveillance program consists of soil sampling and TLD monitoring.



Shaded area indicates location of Harris County

Harris County

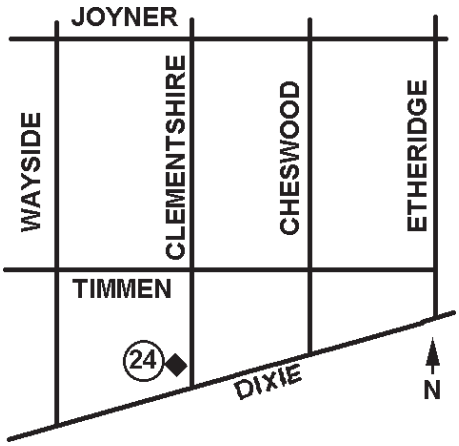




Monitoring Station Locations

♦ TLD Station ♥ Sample Station ♣ TLD & Sample Station

Homeland Security -- Diagram Removed



Thermoluminescent Dosimeter (TLD) Monitoring Results[1]
(quarterly and annual readings are in mrem)

Station	*Q1*	*Q2*	*Q3*	*Q4*	*Annual[2] Dose*	*Notes*
03	66.0	24.0	21.0	38.0	83.0	
05	332.0	517.0	363.0	231.0	1443.0	
08	247.0	361.0	299.0	326.0	1233.0	
24	1.0	1.0	1.0	1.0	4.0	Background - Landauer AM #40
24	12.7	10.9	11.0	13.0	47.6	Background
30	47.0	29.0	25.0	49.0	150.0	
31	11.0	5.0	9.0	7.0	32.0	
34	227.0	41.0	153.0	185.0	606.0	
40	13.0	12.0	14.0	68.0	107.0	

NOTE: [1]Combined neutron/gamma dosimeters are deployed at this facility. Exposure reported includes neutron and gamma doses.
[2]Occupancy factors not provided. Occupancy factors have been requested from licensee.
[3] Readings are elevated for 4th quarter due to broken TLD reader, extended period between exchange and reading.

Environmental Sample Results

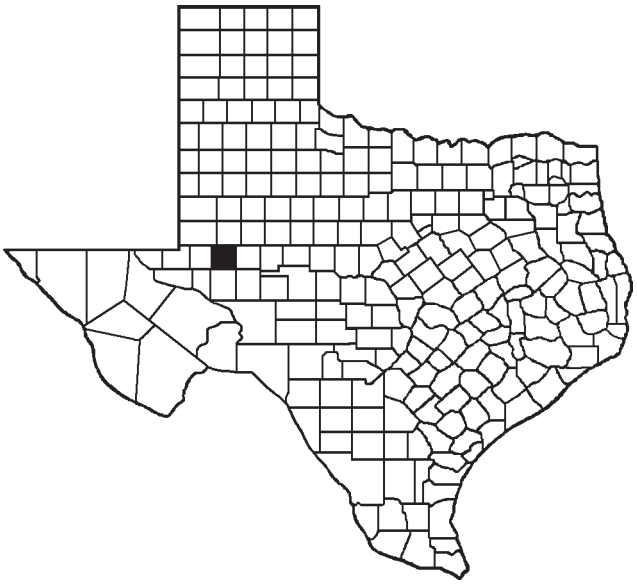
Date	*Lab No.*	*Station*	*Alpha*	*Ra-226**	*Am-241*	*Co-60*	*Cs-137*	*Ra-226*
Soil µCi/g								
2008-01-09	ER080039	31	1.9E-5	1.2E-6	<3E-7	<2E-7	<2E-7	<2.6E-6
2008-04-11	ER080196	31	1.4E-5	8E-7	<3E-7	<2E-7	<2E-7	<2.6E-6
2008-07-09	ER080364	31	2.4E-5	1.3E-6	<3E-7	<2E-7	<4E-7	<2.5E-6
2008-10-08	ER080525	31	2.0E-5	1.4E-6	<3E-7	<2E-7	<2E-7	<2.9E-6

NOTE: *Indicates the analysis was by alpha spectrometry, or if Ra-226, analysis by radon emanation.

GeoCo, Inc.

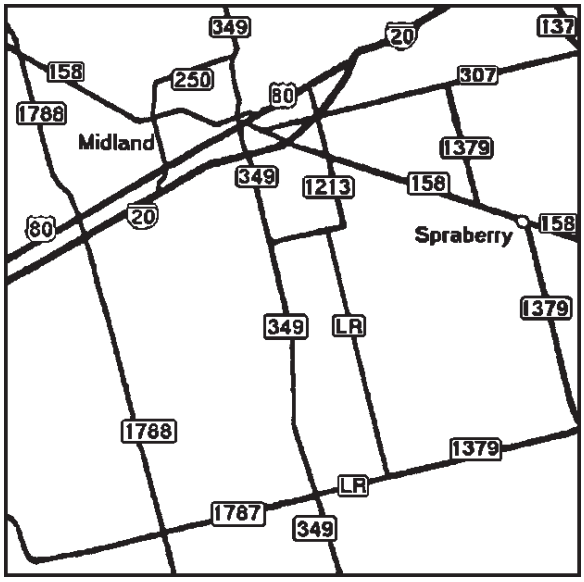
Radiation Branch Site No. 051

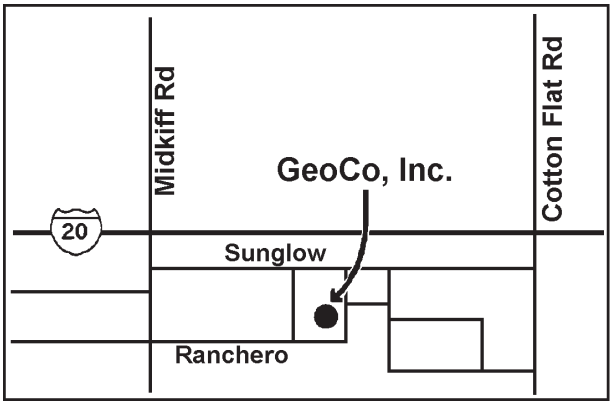
GeoCo, Inc. is a tracer studies company specializing in oil and gas wells. The facility is located in Midland approximately six miles east of Midland-Odessa International Airport. The Radiation Branch surveillance program consists of TLD monitoring.



Shaded area indicates location of Midland County

Midland County

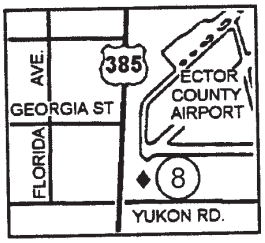




Monitoring Station Locations

♦ TLD Station ♥ Sample Station ♣ TLD & Sample Station

Homeland Security -- Diagram Removed



Thermoluminescent Dosimeter (TLD) Monitoring Results
(quarterly and annual readings are in mrem)

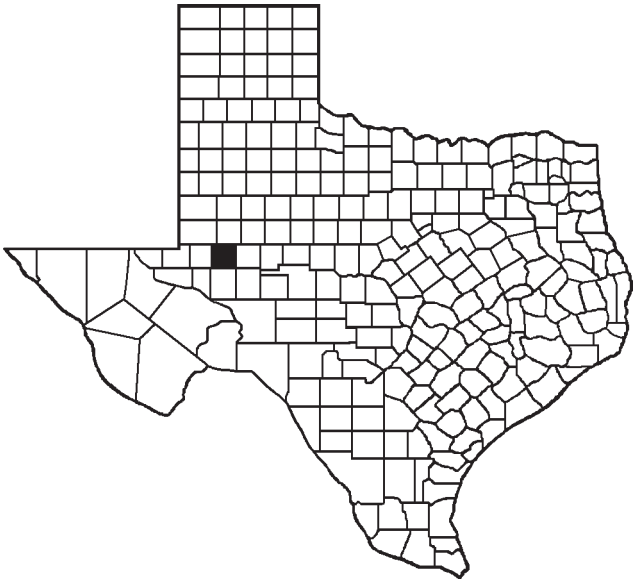
Station	*Q1*	*Q2*	*Q3*	*Q4*	*Annual* Dose*	*Notes*
01	58.0	7.3	91.0	76.8	233.1	
08	21.8	22.8	14.0	25.3	83.9	Background

Note: *Value does not include 1/10 occupancy factor.
Readings are elevated for 4th quarter due to broken TLD reader, extended period between exchange and reading.

Isotech Laboratories, Inc.

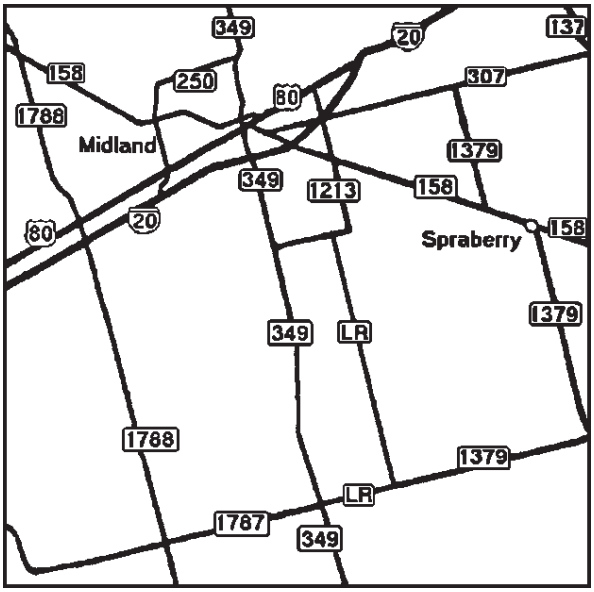
Radiation Branch Site No. 008

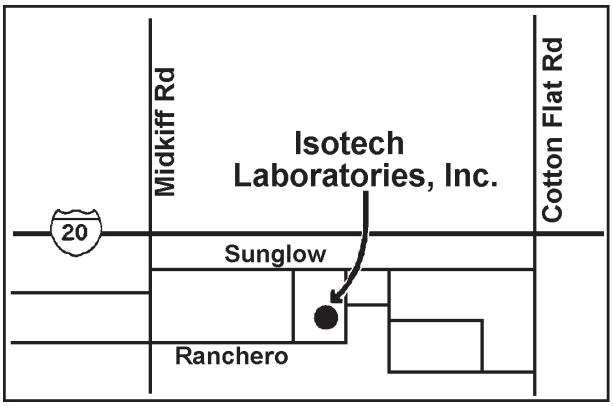
Isotech Laboratories, Inc. manufactures tracer material for the oil and gas industry, calibrates radiation detection instruments, and provides radiation safety training for well-logging and tracer services. The facility is located in Midland approximately six miles east of Midland-Odessa International Airport. The Radiation Branch surveillance program consists of TLD monitoring.



Shaded area indicates location of Midland County

Midland County

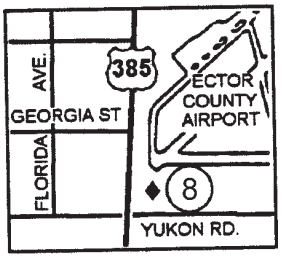




Monitoring Station Locations

♦ TLD Station ♥ Sample Station ♣ TLD & Sample Station

Homeland Security -- Diagram Removed



Thermoluminescent Dosimeter (TLD) Monitoring Results (quarterly and annual readings are in mrem)

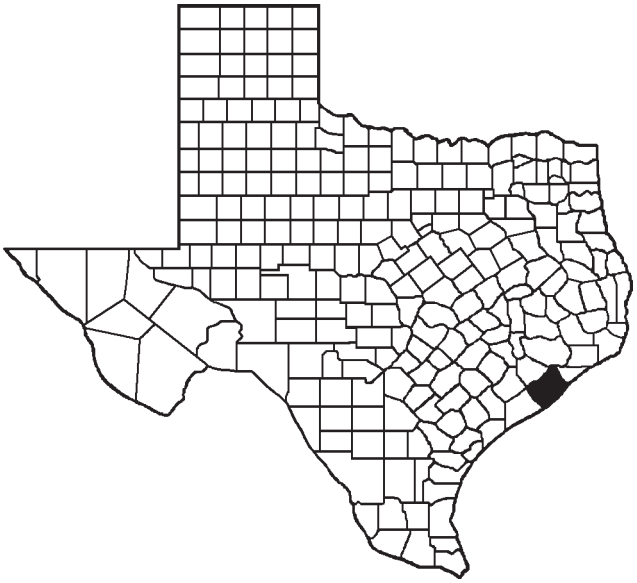
Station	*Q1*	*Q2*	*Q3*	*Q4*	*Annual* Dose*	*Notes*
01	4.0	11.9	2.0	0.9	18.8	
02	25.0	28.2	16.0	13.3	82.5	
03	16.0	17.3	12.0	21.8	67.1	
04	20.0	24.9	19.0	19.9	83.8	
06	12.0	15.2	18.0	12.3	57.5	
08	21.9	7.3	14.0	25.3	68.5	Background

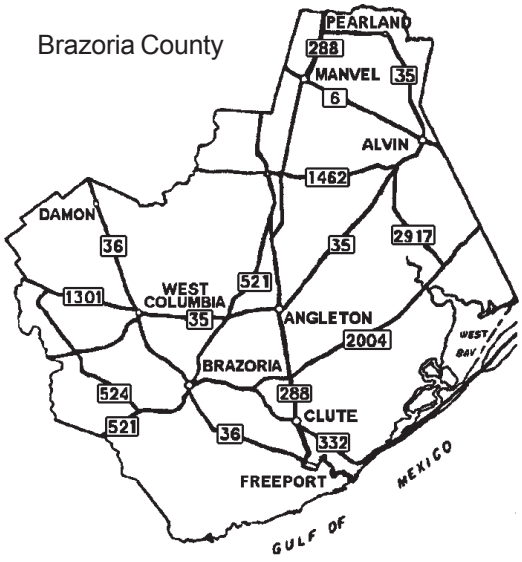
Note: *Value does not include 1/4 occupancy factor.
Readings are elevated for 4th quarter due to broken TLD reader, extended period between exchange and reading.

Iso-Tex, Inc.

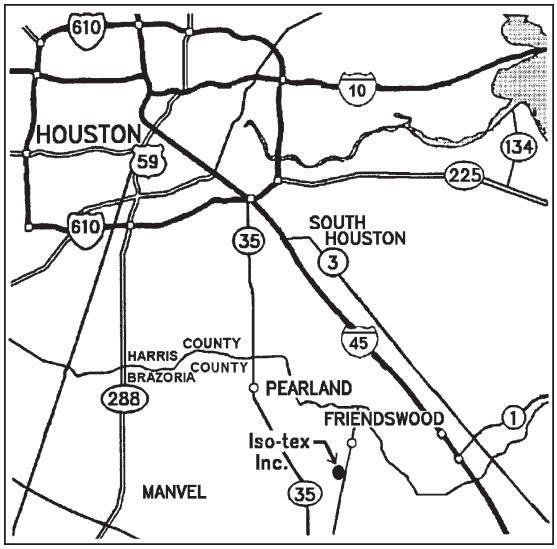
Radiation Branch Site No. 021

Iso-Tex, Inc. is an FDA licensed facility for drug manufacturing of radio-pharmaceuticals and radio-isotope labeling. The facility is located 17 miles south southeast of downtown Houston and approximately five miles southeast of Pearland on County Road 129. The Radiation Branch surveillance program consists of TLD monitoring.





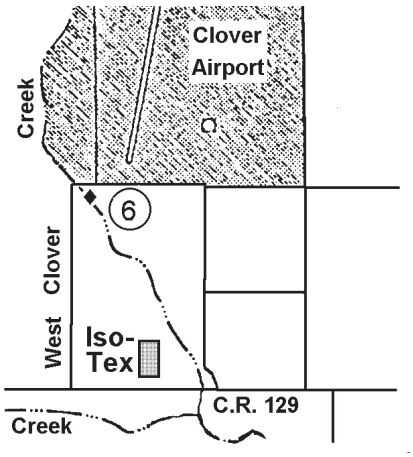
Shaded area indicates location of Brazoria County



Monitoring Station Locations

♦ TLD Station ♥ Sample Station ♣ TLD & Sample Station

Homeland Security --
Diagram Removed



Thermoluminescent Dosimeter (TLD) Monitoring Results
(quarterly and annual readings are in mrem)

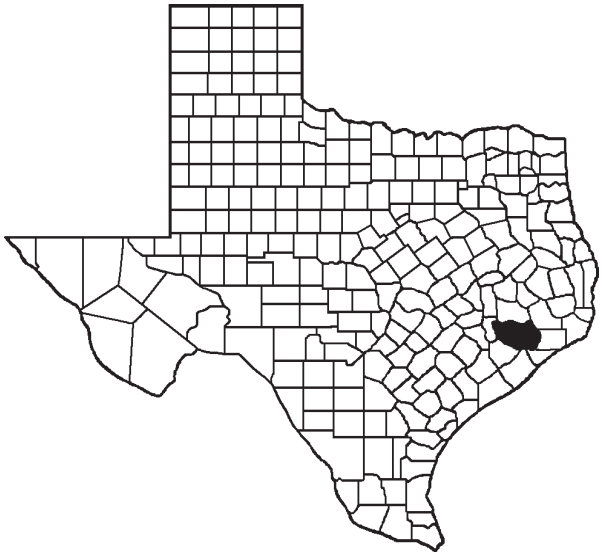
Station	*Q1*	*Q2*	*Q3*	*Q4*	*Annual* Dose*	*Notes*
01	10.0	14.0	2.0	1.0	27.0	
06	0.0	11.8	11.0	23.0	45.8	Background, TLD missing 1st and 2nd quarters
07	10.0	18.0	4.0	6.0	38.0	
10	11.0	14.0	2.0	2.0	29.0	

NOTE: *Occupancy factors not provided.
Readings are elevated for 4th quarter due to broken TLD reader, extended period between exchange and reading.
DSHS will no longer monitor this facility after this 4th quarter.

Nuclear Sources and Services, Inc.

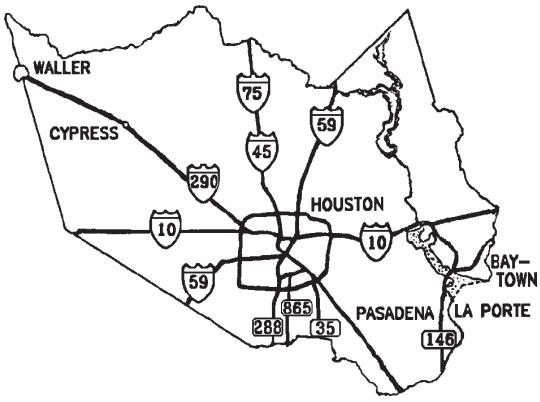
Radiation Branch Site No. 023

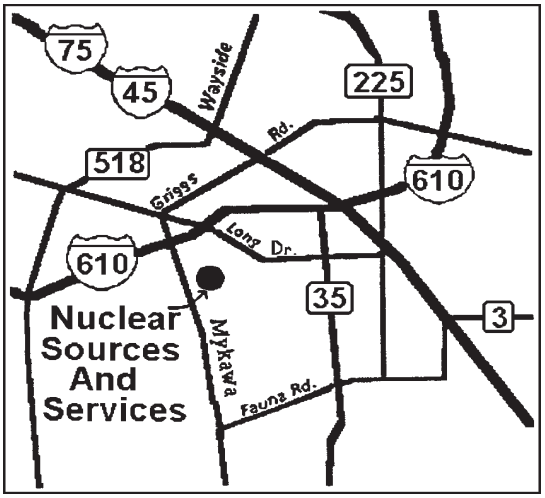
The Nuclear Sources and Services, Inc. (NSSI) facility occupies approximately five acres in a light industrial area of Southeast Houston approximately four miles northwest of William P. Hobby Airport. The primary activities of NSSI currently are waste treatment, storage, and disposal of radioactive and chemical hazardous materials. NSSI receives wastes from a variety of off-site generators both inside and outside of Texas. At the conclusion of treatment or storage, the residues are shipped to permitted off-site facilities for disposal. The Radiation Branch surveillance program consists of soil sampling and TLD monitoring.



Shaded area indicates location of Harris County

Harris County

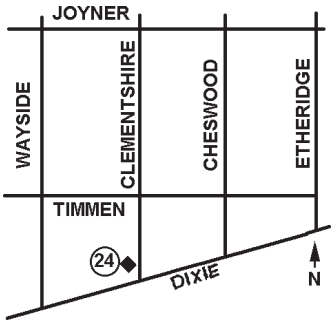




Monitoring Station Locations

♦ TLD Station ♥ Sample Station ♣ TLD & Sample Station

Homeland Security --
Diagram Removed



Thermoluminescent Dosimeter (TLD) Monitoring Results[1]
(quarterly and annual readings are in mrem)

Station	Q1	Q2	Q3	Q4	Annual[2] Dose	Notes
03	191.0	256.0	299.0	291.0	1037.0	
04	8.0	8.0	11.0	10.0	37.0	
06	6.0	8.0	7.0	89.0	110.0	
07	8.0	16.0	27.0	20.0	71.0	
11	0.0	2.0	4.0	4.0	10.0	
12	28.0	82.0	78.0	94.0	282.0	
16	43.0	29.0	42.0	53.0	167.0	
18	41.0	11.0	0.0	62.0	114.0	tld missing 3rd quarter
19	35.0	34.0	44.0	66.0	179.0	
20	28.0	25.0	32.0	52.0	137.0	
21	491.0	531.0	457.0	543.0	2022.0	
22	4.0	4.0	14.0	26.0	48.0	
23	6.0	5.0	16.0	31.0	58.0	
24	1.0	1.0	1.0	1.0	4.0	Background - Landauer AM #40
24	12.7	10.9	11.0	22.0	56.6	Background
25	27.0	30.0	45.0	89.0	191.0	
41	149.0	145.0	36.0	125.0	455.0	

NOTE: [1]Combined neutron/gamma dosimeters are deployed at this facility. Exposure reported includes neutron and gamma doses.
[2]Occupancy factors not provided. Occupancy factors have been requested from licensee.
[3] Readings are elevated for 4th quarter due to broken TLD reader, extended period between exchange and reading.

Environmental Sample Results

Date	Lab No.	Station	Alpha	Ra-226*	Am-241	Co-60	Cs-137	I-125	Ra-226
Soil µCi/g									
2008-01-09	ER080040	26	2.4E-5	1.0E-6	<3E-7	<2E-7	<2E-7	<2E-7	<2.6E-6
2008-01-09	ER080041	28	2.3E-5	1.0E-6	<3E-7	<2E-7	7.8E-6	<3E-7	<3.4E-6
2008-04-09	ER080194	26	1.6E-5	7E-7	<3E-7	<3E-7	<3E-7	<3E-7	<3.4E-6
2008-04-09	ER080195	28	2.5E-5	<9E-7	<5E-7	<2E-7		<5E-7	<7.5E-6
2008-07-09	ER080365	26	2.0E-5	9E-7	<3E-7	<2E-7	2E-7	<2E-7	<2.9E-6
2008-07-09	ER080366	28	1.7E-5	7E-7	<3E-7	<2E-7	1.1E-5	<2E-7	<3.5E-6
2008-10-08	ER080523	26	2.0E-5	9E-7	<3E-7	<2E-7	9E-7	<2E-7	<2.9E-6
2008-10-08	ER080524	28	2.1E-5	1.0E-6	<3E-7	<2E-7		<3E-7	<4.4E-6

NOTE: *Indicates the analysis was by alpha spectrometry, or if Ra-226, analysis by radon emanation.

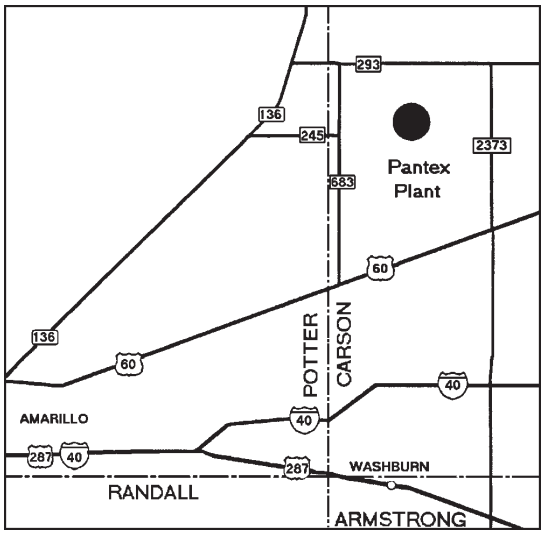
Pantex

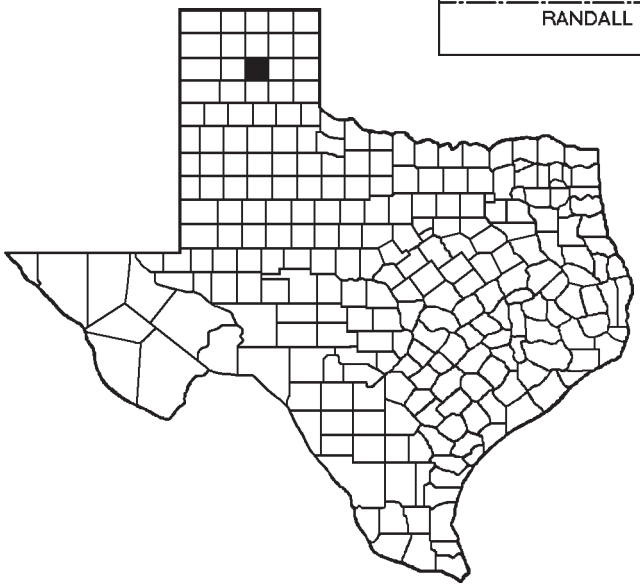
Radiation Branch Site No. 005

The Pantex plant site is located in Carson County in the Texas Panhandle, north of U.S. Highway 60. The plant is located 17 miles (27 kilometers) northeast of downtown Amarillo. It is centered on a 16,000-acre site. The Pantex facility consists of 10,080 acres of United States Department of Energy (USDOE) owned land and 5,856 acres of land leased from Texas Tech University, used as a safety and security buffer zone.

The Pantex plant is located on the Llano Estacado (staked plains) portion of the Great Plains at an elevation of approximately 3,500 feet (1,067 meters). The topography at Pantex plant is relatively flat, characterized by rolling grassy plains and numerous natural playa basins. The region is a semi-arid farming and ranching area. Pantex plant is surrounded by agricultural land, but several significant industrial facilities are also located nearby.

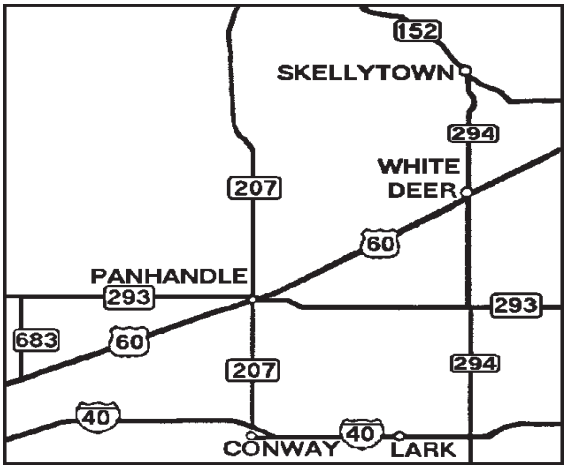
The Radiation Branch surveillance program consists of sampling air, food products, sediment, soil, vegetation, and water and TLD monitoring. Analysis of samples is concentrated on determining presence of any special nuclear material.





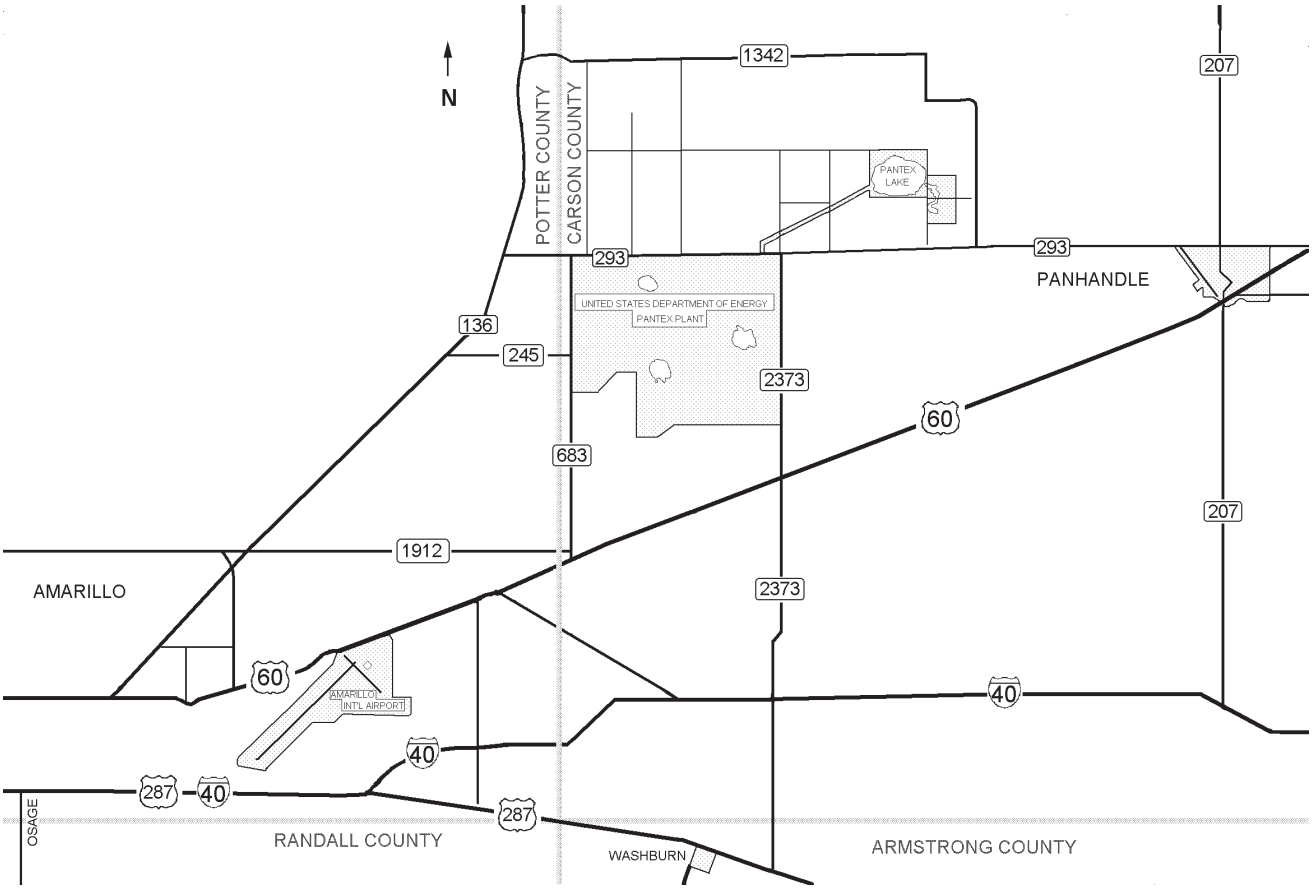
Shaded area indicates location of Carson County

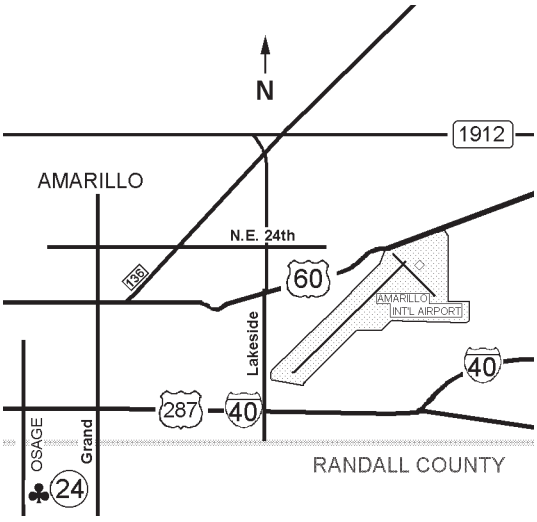
Carson County

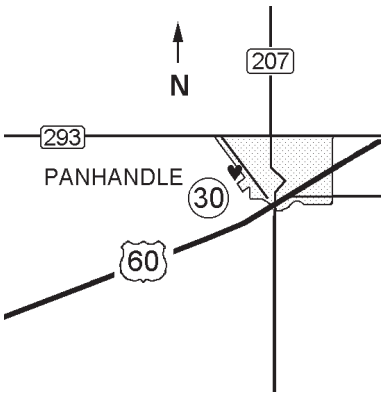


Monitoring Station Locations

♦ TLD Station ♥ Sample Station ♣ TLD & Sample Station







Homeland Security --
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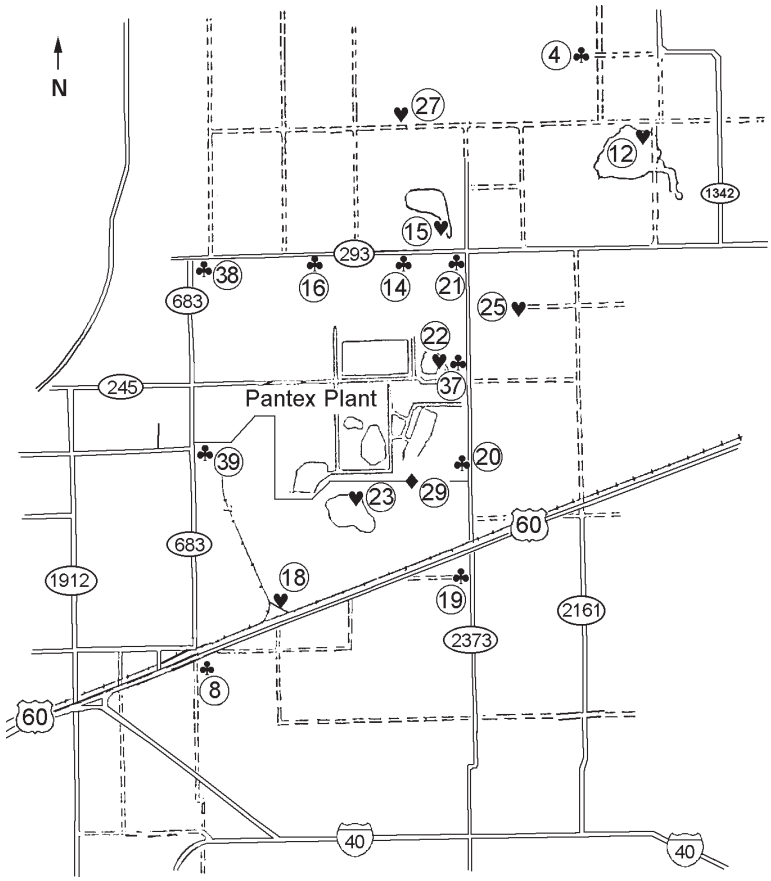


Thermoluminescent Dosimeter (TLD) Monitoring Results*
(quarterly and annual readings are in mrem)

Station	Q1	Q2	Q3	Q4	Annual Dose	Notes
04	22.3	17.5	17.5	34.3	91.6	
08	21.4	0.0	17.8	26.7	65.9	tld missing 2nd quarter
14	21.4	16.4	18.8	29.4	86.0	
16	21.4	17.5	17.8	30.3	87.0	
19	25.1	18.6	18.2	34.3	96.2	
20	21.4	17.5	17.8	28.5	85.2	
21	20.4	17.5	16.8	27.6	82.3	
24	18.4	17.3	14.8	29.4	79.9	
29	21.1	15.3	18.8	30.3	85.5	
37	21.4	17.5	18.8	30.3	88.0	
38	19.5	16.4	16.8	28.5	81.2	
39	23.2	16.4	17.8	30.3	87.7	

NOTE: *Background is not subtracted from the data.
Readings are elevated for 4th quarter due to broken TLD reader, extended period between exchange and reading.

Environmental Sample Results

Date	Lab No.	Station	Pu-239*	U-234*	U-235*	U-238*	Ra-226
Air Samples µCi/ml							
2008-01-09	ER080087	104	<5E-17	<4.8E-16	<4.8E-16	<4.8E16	<8.1E-15
2008-02-08	ER080152	104	<5E-17	<4.9E-16	<4.9E-16	4.8E-16	<9.2E15
2008-02-15	ER080155	104	<5E-17	<4.9E-16	<4.9E-16	<4.9E-16	<9.6E-15
2008-03-06	ER080154	104	<5E-17	<4.8E-16	<4.8E-16	<4.8E-16	<1.4E-14
2008-03-14	ER080153	104	<5E-17	4.9E-16	<4.9E-16	<4.9E-16	<1.5E-14
2008-03-20	ER080276	104	<5E-17	<5.0E-16	<5.0E-16	<5.0E-16	<1.5E-14
2008-04-04	ER080277	104	<6E-17	<5.1E-16	<5.1E-16	<5.1E-16	<1.5E-14
2008-04-10	ER080278	105	<6E-17	<5.5E-16	<5.5E-16	<5.5E-16	<1.1E-14
2008-04-22	ER080279	104	<6E-17	<5.0E-16	<5.0E-16	<5.0E-16	<1.5E-14
2008-05-09	ER080280	104	<6E-17	<5.1E-16	<5.1E-16	<5.1E-16	<1.5E-14
2008-05-15	ER080426	104	<5E-17	<4.9E-16	<4.9E-16	<4.9E-16	1.3E-14
2008-06-02	ER080425	105	<6E-17	<5.4E-16	<5.4E-16	5.4E-16	<1.6E-14
2008-06-09	ER080429	105	<6E-17	<5.1E-16	<5.1E-16	<5.1E-16	<1.5E-14
2008-07-02	ER080428	105	<6E-17	<5.2E-16	<5.2E-16	5.2E-16	<1.5E-14
2008-07-25	ER080427	105	<6E-17	<5.5E-16	<5.5E-16	<5.5E-16	<1.6E-14

Date	Lab No.	Station	Pu-239*	U-234*	U-235*	U-238*	H-3**	Ra-226	U-238
Food Product µCi/g									
2008-10-15	ER080544	25	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<7E-7
Sediment µCi/g									
2008-01-08	ER080037	22	<1E-7	<1.0E-6	<1.0E-6	1.0E-6	<1.0E-6	<2.1E-6	<2.1E-6
2008-04-15	ER080219	12	<1E-7	<1.0E-6	<1.0E-6	1.1E-6		<2.3E-6	<1.4E-6
2008-07-14	ER080382	23	<1E-7	1.1E-6	<1.0E-6	<1.0E-6		<2.0E-6	<1.8E-6
2008-11-21	ER080623	15	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6		<2.9E-6	<2.6E-6
Soil µCi/g									
2008-01-08	ER080028	14	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6		<2.7E-6	<1.7E-6
2008-01-08	ER080029	18	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6		1.8E-6	<1.7E-6
2008-01-08	ER080030	20	<1E-7	<1.0E-6	<1.0E-6	1.1E-6		<2.5E-6	<2.3E-6
2008-01-08	ER080031	37	<1E-7	1.1E-6	<1.0E-6	<1.0E-6		<2.4E-6	<1.5E-6
2008-01-08	ER080032	39	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6		2.5E-6	<1.8E-6
2008-04-15	ER080209	04	<1E-7	<1.0E-6	<1.0E-6	1.0E-6		<2.0E-6	<1.3E-6
2008-04-15	ER080210	08	<1E-7	<1E-7	<1.0E-6	<1.0E-6		<2.3E-6	<1.4E-6
2008-04-15	ER080211	19	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6		<1.9E-6	<1.8E-6
2008-04-15	ER080212	38	<1E-7	<1.0E-6	<1.0E-6	1.0E-6		<2.4E-6	<1.5E-6
2008-04-22	ER080231	16	<1E-7	1.0E-6	<1.0E-6	1.1E-6		1.7E-6	<1.3E-6
2008-04-22	ER080232	21	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6		9E-7	<1.3E-6
2008-07-14	ER080378	14	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6		<2.2E-6	<1.4E-6
2008-07-14	ER080380	20	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6		<2.3E-6	<1.4E-6
2008-07-14	ER080377	37	<1E-7	1.0E-6	<1.0E-6	1.0E-6		<2.2E-6	<1.4E-6
2008-07-14	ER080381	39	<1E-7	1.1E-6	<1.0E-6	1.0E-6		1.3E-6	<1.4E-6
2008-07-15	ER080379	18	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6		<2.0E-6	<1.8E-6
2008-10-15	ER080535	08	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6		<2.1E-6	<1.4E-6
2008-10-15	ER080536	16	<1E-7	<1.0E-6	<1.0E-6	1.3E-6		<2.4E-6	<2.2E-6
2008-10-15	ER080537	19	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6		<2.2E-6	<1.5E-6
2008-10-15	ER080538	21	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6		<3.0E-6	<1.9E-6
2008-10-15	ER080539	38	<1E-7	<1.0E-6	<1.0E-6	1.0E-6		<2.2E-6	<2.0E-6
2008-11-21	ER080621	04	<1E-7	1.0E-6	<1.0E-6	<1.0E-6		<2.5E-6	<1.5E-6
Vegetation µCi/g									
2008-01-08	ER080023	14	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6		<8E-7	<5E-7
2008-01-08	ER080024	18	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<7E-7	<6E-7
2008-01-08	ER080025	20	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<8E-7	<6E-7
2008-01-08	ER080026	37	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6		<9E-7	<8E-7
2008-01-08	ER080027	39	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6		<1.0E-6	<7E-7
2008-04-15	ER080213	04	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6		<7E-7	<7E-7
2008-04-15	ER080214	08	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6		<1.1E-6	<7E-7
2008-04-15	ER080215	16	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<6E-7	<6E-7
2008-04-15	ER080216	19	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<1.2E-6	<8E-7
2008-04-15	ER080218	38	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6		<1.1E-6	<1.0E-6
2008-04-17	ER080217	21	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	7E-7	<6E-7
2008-07-14	ER080383	14	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<9E-7	<7E-7
2008-07-14	ER080384	18	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<1.2E-6	<8E-7
2008-07-14	ER080385	20	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<9E-7	<7E-7
2008-07-14	ER080386	37	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<9E-7	<8E-7
2008-07-14	ER080387	39	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<7E-7	<5E-7
2008-10-15	ER080540	08	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<7E-7	<5E-7
2008-10-15	ER080541	16	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<9E-7	<7E-7
2008-10-15	ER080542	19	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<9E-7	<7E-7
2008-10-15	ER080543	21	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<8E-7	<7E-7
2008-10-15	ER080545	38	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<1.1E-6	<8E-7
2008-11-21	ER080622	04	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<8E-7	<6E-7
Water-Drinking µCi/ml									
2008-01-08	ER080036	30	<1E-10	5.0E-9	<1.0E-9	1.9E-9	<1.0E-6	<4.3E-8	<4.3E-8
2008-04-15	ER080220	30	<1E-10	5.0E-9	<1.0E-9	2.5E-9	<1.0E-6	<5.6E-8	<3.9E-8
2008-07-14	ER080390	30	<1E-10	5.2E-9	<1.0E-9	2.9E-9	<1.0E-6	<5.3E-8	<3.8E-8
2008-10-14	ER080548	30	<1E-10	5.1E-9	<1.0E-9	2.3E-9	<1.0E-6	<5.1E-8	<4.3E-8

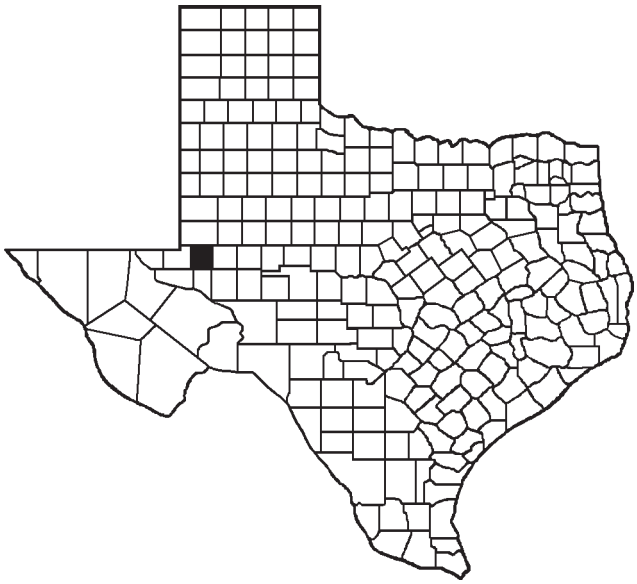
Date	*Lab No.*	*Station*	*Pu-239**	*U-234**	*U-235**	*U-238**	*H-3***	*Ra-226*	*U-238*
Water-Ground µCi/ml									
2008-01-08	ER080035	27	<1E-10	4.4E-9	<1.0E-9	2.2E-9	<1.0E-6	<4.9E-8	<3.7E-8
2008-04-16	ER080221	27	<1E-10	4.4E-9	<1.0E-7	2.5E-9	<1.0E-6	<4.6E-8	<4.5E-8
2008-07-15	ER080389	27	<1E-10	4.0E-9	<1.0E-9	1.9E-9	<1.0E-6	<5.3E-8	<4.5E-8
2008-10-14	ER080547	27	<1E-10	4.4E-9	<1.0E-9	2.0E-9	<1.0E-6	<5.1E-8	<3.8E-8
Water-Surface µCi/ml									
2008-01-08	ER080033	22	<1E-10	4.0E-9	<1.0E-9	3.6E-9	<1.0E-6	<5.1E-8	<3.9E-8
2008-01-08	ER080034	24	<1E-10	3.8E-9	<1.0E-9	1.9E-9	<1.0E-6	<4.4E-8	<4.4E-8
2008-04-16	ER080222	24	<1E-10	3.9E-9	<1.0E-9	1.9E-9	<1.0E-6	<5.3E-8	<3.8E-8
2008-07-15	ER080388	24	<1E-10	4.6E-9	<1.0E-9	2.1E-9	<1.0E-6	<5.2E-8	<3.8E-8
2008-10-14	ER080546	24	<1E-10	3.8E-9	<1.0E-9	2.0E-9	<1.0E-6	<4.9E-8	<4.2E-8
2008-11-21	ER080620	22	<1E-10	<1.0E-9	<1.0E-9	<1.0E-9	<1.0E-6	<5.0E-8	<4.7E-8

NOTE: *Indicates the analysis was by alpha spectrometry, or if Ra-226, analysis by radon emanation.
**Indicates the tritium (H-3) analysis for food product, sediment, and vegetation is reported in µCi/ml.

Radiation Technology, Inc.

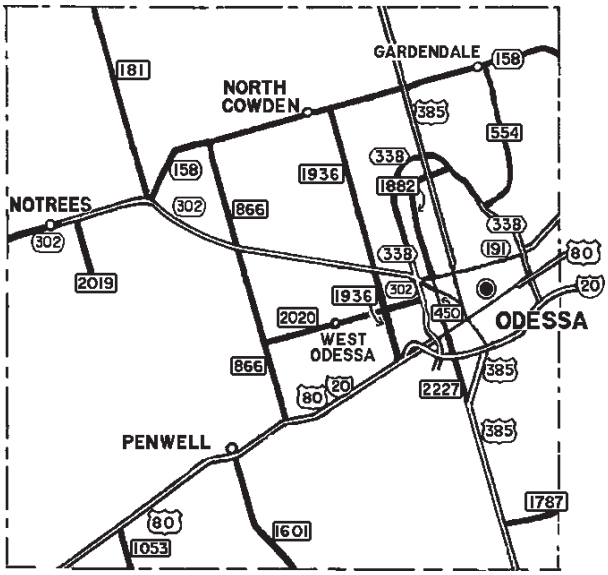
Radiation Branch Site No. 050

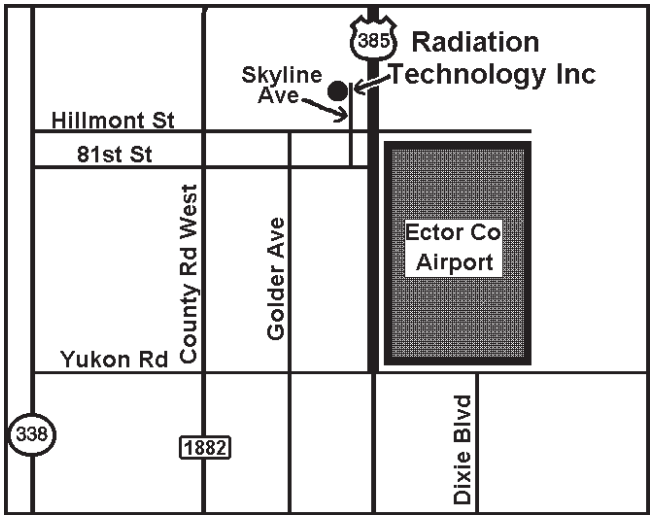
Radiation Technology, Inc. (RTI), located six miles north of downtown Odessa, provides installation, repair, and maintenance of nuclear gauging devices and services for loading and unloading radioactive sources in nuclear gauges. The Radiation Branch surveillance program consists of TLD monitoring.



Shaded area indicates location of Ector County

Ector County

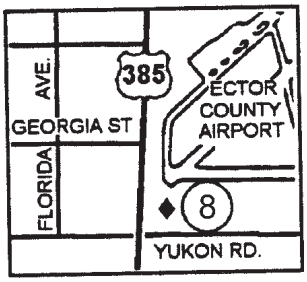




Monitoring Station Locations

♦ TLD Station	♥ Sample Station	♣ TLD & Sample Station

Homeland Security -- Diagram Removed



Thermoluminescent Dosimeter (TLD) Monitoring Results[1]
(quarterly and annual readings are in mrem)

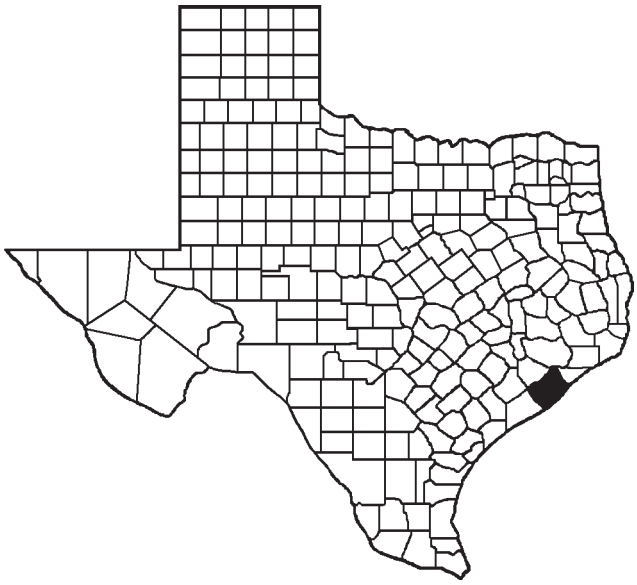
Station	*Q1*	*Q2*	*Q3*	*Q4*	*Annual[2] Dose*	*Notes*
01	43.5	45.0	13.0	5.6	107.1	
02	1324.6	1065.2	399.0	290.8	3079.6	
03	736.1	554.6	50.0	48.8	1389.5	
04	160.8	126.3	15.0	15.0	317.1	
08	2.7	7.3	2.0	2.8	14.8	Background - Landauer #41

NOTE: [1]Combined neutron/gamma dosimeters are deployed at this facility. Exposure reported includes neutron and gamma doses.
[2]Occupancy factors not provided. Occupancy factors have been requested from licensee.
[3] Readings are elevated for 4th quarter due to broken TLD reader, extended period between exchange and reading.

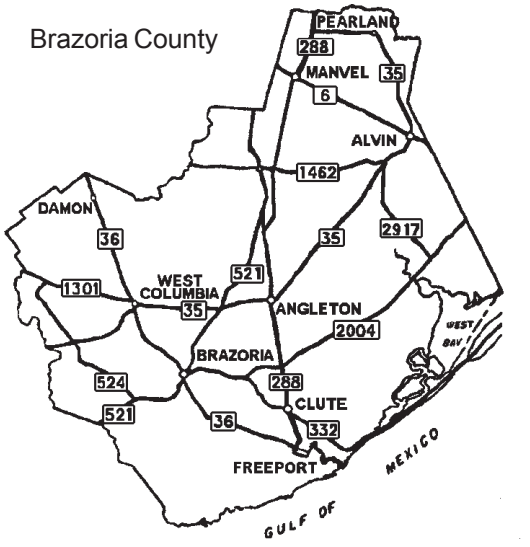
Rhodia, Inc.

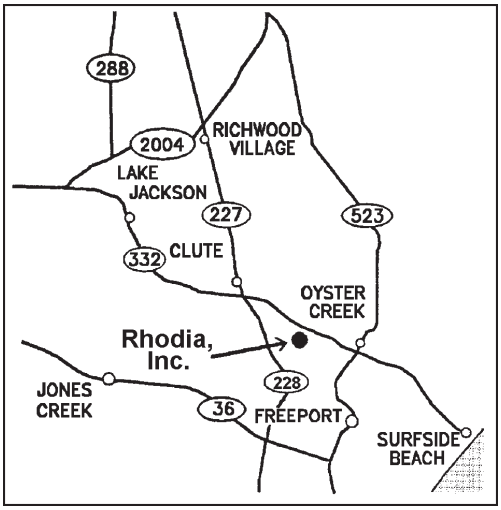
Radiation Branch Site No. 026

Rhodia, Inc. is an international specialty chemicals manufacturer. Rhodia's Freeport facility, located approximately 55 miles south of Houston, uses material containing uranium and thorium. The Radiation Branch surveillance program consists of TLD monitoring.



Shaded area indicates location of Brazoria County





Monitoring Station Locations

♦ TLD Station	♥ Sample Station	♣ TLD & Sample Station

Homeland Security --
Diagram Removed

Thermoluminescent Dosimeter (TLD) Monitoring Results
(quarterly and annual readings are in mrem)

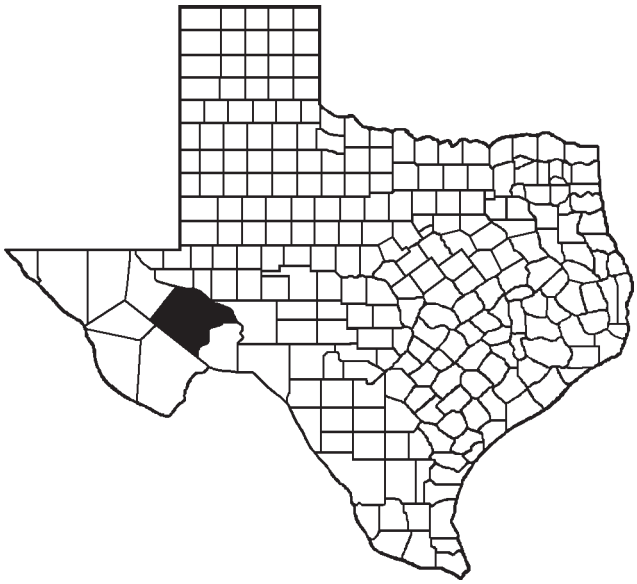
Station	*Q1*	*Q2*	*Q3*	*Q4*	*Annual* Dose*	*Notes*
01	0.0	0.0	0.0	0.0	0.0	
02	0.0	0.0	0.0	0.0	0.0	
04	4.0	4.0	5.0	4.0	17.0	
05	25.0	23.0	24.0	26.0	98.0	
06	23.0	20.0	19.0	22.0	84.0	
16	16.4	13.7	12.0	24.0	66.1	Background

Note: *Value does not include 1/16 occupancy factor.
Readings are elevated for 4th quarter due to broken TLD reader, extended period between exchange and reading.

University of Texas Systems Interim Waste Storage Facility

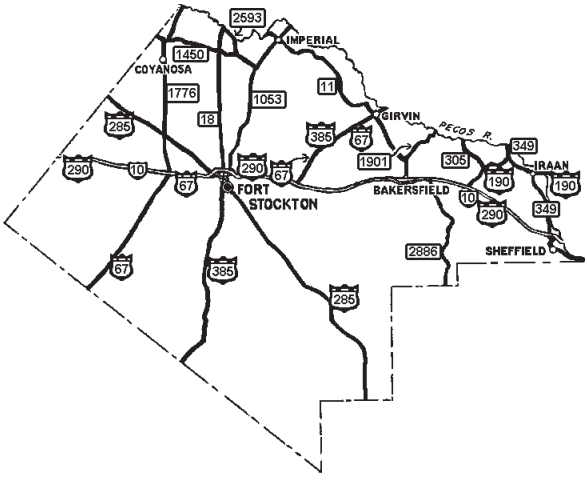
Radiation Branch Site No. 042

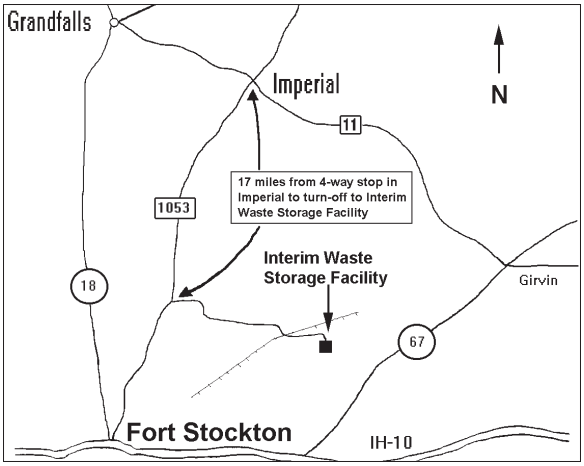
University of Texas Systems Interim Waste Storage Facility, located in Pecos County, provides temporary storage for low-level radioactive waste from several University of Texas campuses throughout Texas. The Radiation Branch surveillance program consists of TLD monitoring.



Shaded area indicates location of Pecos County

Pecos County

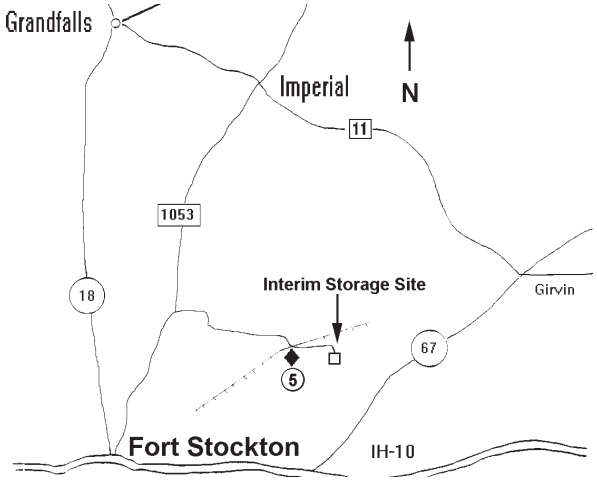




Monitoring Station Locations

♦ TLD Station ♥ Sample Station ♣ TLD & Sample Station

Homeland Security -- Diagram Removed



Thermoluminescent Dosimeter (TLD) Monitoring Results
(quarterly and annual readings are in mrem)

Station	*Q1*	*Q2*	*Q3*	*Q4*	*Annual[1] Dose*	*Note*
01	4.9	0.0	2.0	2.8	9.7	
02	0.0	0.0	0.0	0.0	0.0	
03	0.0	0.0	0.0	0.0	0.0	
04	0.0	0.0	0.0	0.0	0.0	
05	22.8	19.1	14.8	27.5	84.2	Background

NOTE: [1] Background is not subtracted from the data.

[2] If data are missing during a quarter, an average of known quarter readings for that year and location is used to fill in for the missing data.

[3] Readings are elevated for 4th quarter due to broken TLD reader, extended period between exchange and reading.

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Appendices

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QAP 0403

QAP 60 Results by Laboratory

Lab: TX Texas Dept. of Health/Laboratories, Austin

No. Test	Radionuclide	Reported Value	Reported Error	EML Value	EML Error	Reported EML	Evaluation
Matrix: AI Air Filter Bq/filter							
1	AM241	0.115	0.01	0.1045	0.0025	1.100	A
1	CO60	37.5	0.4	35.4	0.85	1.059	A
1	CS134	16.7	0.2	18.2	0.402	0.918	A
1	CS137	28.9	0.5	26.4	0.86	1.095	A
1	Gross Alpha	1.19	0.08	1.2	0.12	0.992	A
1	Gross Beta	2.89	0.13	2.85	0.28	1.014	A
1	PU238	0.041	0.002	0.0405	0.0027	1.012	A
1	PU239	0.164	0.005	0.1644	0.0112	0.998	A
1	U234	0.092	0.005	0.0858	0.0008	1.072	A
1	U238	0.09	0.005	0.085	0.0029	1.059	A
Matrix: SO Soil Bq/kg							
1	AC228	52.4	1.8	49.0	1.96	1.069	A
1	AM241	13.9	0.9	13.0	0.43	1.069	A
1	BI212	51.2	8.2	50.43	4.61	1.015	A
1	BI214	52.3	1.9	58.4	2.2	0.896	A
1	CS137	1359.0	30.0	1323.0	66.17	1.027	A
1	K40	564.0	17.0	539.0	29.11	1.046	A
1	PB212	50.1	1.9	47.73	2.53	1.050	A
1	PB214	55.6	2.0	61.0	2.38	0.911	A
1	PU238	0.888	0.185	0.82	0.05	1.083	A
1	PU239	22.4	1.2	22.82	0.56	0.982	A
1	SR90	52.5	9.4	51.0 *	5.9	1.029	A
1	TH234	71.1	8.9	84.0	5.96	0.846	A
1	U234	84.6	2.7	87.22	1.97	0.970	A
1	U238	90.6	2.7	89.73	4.22	1.010	A
Matrix: VE Vegetation Bq/kg							
1	AM241	5.33	0.56	4.93	0.29	1.081	A
1	CO60	17.7	0.9	14.47	0.64	1.223	A
1	CS137	659.0	11.0	584.67	29.23	1.127	A
1	K40	837.0	25.0	720.0	37.92	1.163	A
1	PU238	0.592	0.159	0.455	0.0485	1.301	A
1	PU239	6.56	0.53	6.81	0.28	0.963	A
1	SR90	688.0	22.0	734.0 *	82.0	0.937	A
Matrix: WA Water Bq/L							
1	AM241	1.22	0.11	1.31	0.04	0.931	A
1	CO60	162.0	1.0	163.2	5.9	0.993	A
1	CS137	52.2	0.9	51.95	2.7	1.005	A
1	Gross Alpha	320.0	28.0	326.0	32.0	0.982	A
1	Gross Beta	1217.0	60.0	1170.0	117.0	1.040	A
1	H3	255.0	18.0	186.6	3.3	1.367	W
1	PU238	1.03	0.06	1.1	0.03	0.936	A
1	PU239	2.86	0.14	3.08	0.1	0.929	A
1	SR90	5.68	0.67	4.76 *	0.5	1.193	W
1	U234	2.26	0.09	2.28	0.02	0.991	A
1	U238	2.25	0.09	2.25	0.06	1.000	A

Values for elemental uranium are reported in µg/filter, g, or mL. **pCi/g or mL = Bq x 0.027**

Evaluation: A=Acceptable, W=Acceptable with Warning, N=Not Acceptable

If the evaluation system is not appropriate for the types of analyses performed in your lab, apply site specific evaluation.

* Grand mean average used in lieu of experimentally determined EML value

Department of Homeland Security
Environmental Measurements Laboratory
201 Varick Street
New York, NY 10014-7447

March 1, 2004

To: Participants in Quality Assessment Program (QAP)
From: Mitchell D. Erickson, Laboratory Director

TERMINATION OF THE QUALITY ASSESSMENT PROGRAM

The Department of Energy's (DOE) Quality Assessment Program (QAP), managed by the Environmental Measurements Laboratory (EML), will be terminated after we issue the report for this current performance sample distribution (QAP 60).

The Program was established in 1976 to test the quality of the environmental radiological analysis being reported to DOE by its contractors for site cleanup and regulatory compliance. Since the Program's inception, DOE/EML successfully prepared, analyzed, and distributed thousands of performance samples to DOE contractors and other participants in the program. DOE/EML then collected, compiled, assessed, and reported the resulting analytical data, which was used by DOE program managers to select qualified contractors, monitor contractors' performance, and assure data quality. QAP data show continuous improvement in radiochemical analyses as labs gained proficiency and EML's QA scientists encouraged better performance through consultation, feedback, and new methods. Detailed information on QAP, including full reports, is available at http://www.eml.doe.gov/qap/.

EML is proud to have successfully managed the Program for 27 years on behalf of DOE; helping the Nation by ensuring that the quality of the radiological analysis from DOE contractors was demonstrated. We would also like to take this opportunity to thank all those individuals and organizations that have helped and supported us over the years.

EML transferred to the Science and Technology (S&T) Directorate of the Department of Homeland Security (DHS) on March 1, 2003. As we continue to respond to the challenges of our new mission, we need to redirect our proficiency testing (PT) activities to reflect our new mission. We will keep you informed as these new PT activities develop.

Laboratory Services Section
Environmental Sciences Branch

Each laboratory procedure is performed under unique analysis conditions. Variations occur in volumes, counting efficiencies, detector backgrounds, count times, decay factors, chemical recoveries, and other analysis parameters which affect the sensitivity of the measurement. The detection limits listed in the following tables were derived using standard analysis conditions and are routinely achievable on normal samples. If greater sensitivity is required, it is usually possible to adjust detection limits by changing one or more of these parameters.

Detection Limits for Gamma Spectroscopy
Sample Type

Isotope	Soil - Sediment		Air Filter		Water - Milk		Vegetation - Fish	
	µCi/g	pCi/kg	µCi/filter	pCi/filter	µCi/ml	pCi/l	µCi/g	pCi/kg
Ac-228	2.0E-07	2.0E+02	2.0E-05	2.0E+01	2.0E-08	2.0E+01	1.0E-07	1.0E+02
Ag-110m	1.0E-07	1.0E+02	5.0E-06	5.0E+00	5.0E-09	5.0E+00	1.0E-07	1.0E+02
Am-241	1.0E-07	1.0E+02	5.0E-06	5.0E+00	1.0E-08	1.0E+01	1.0E-07	1.0E+02
Ba-140	4.0E-07	4.0E+02	2.0E-05	2.0E+01	2.0E-08	2.0E+01	1.0E-07	1.0E+02
Be-7	1.0E-06	1.0E+03	3.0E-05	3.0E+01	3.0E-08	3.0E+01	1.0E-07	1.0E+02
Bi-212	5.0E-07	5.0E+02	3.0E-05	3.0E+01	1.0E-07	1.0E+02	1.0E-07	1.0E+02
Bi-214	2.0E-07	2.0E+02	1.0E-05	1.0E+01	1.0E-08	1.0E+01	1.0E-07	1.0E+02
Co-57	1.0E-07	1.0E+02	2.0E-06	2.0E+00	5.0E-09	5.0E+00	1.0E-07	1.0E+02
Co-58	1.0E-07	1.0E+02	5.0E-06	5.0E+00	5.0E-09	5.0E+00	1.0E-07	1.0E+02
Co-60	1.0E-07	1.0E+02	1.0E-05	1.0E+01	1.0E-08	1.0E+01	1.0E-07	1.0E+02
Cr-51	1.0E-06	1.0E+03	3.0E-05	3.0E+01	3.0E-08	3.0E+01	1.0E-07	1.0E+02
Cs-134	1.0E-07	1.0E+02	5.0E-06	5.0E+00	5.0E-09	5.0E+00	1.0E-07	1.0E+02
Cs-137	1.0E-07	1.0E+02	5.0E-06	5.0E+00	5.0E-09	5.0E+00	1.0E-07	1.0E+02
Fe-59	1.0E-07	1.0E+02	1.0E-05	1.0E+01	1.0E-08	1.0E+01	1.0E-07	1.0E+02
I-125	1.0E-06	1.0E+03	1.0E-05	1.0E+01	2.0E-08	2.0E+01	1.0E-07	1.0E+02
I-131*	1.0E-07	1.0E+02	5.0E-06	5.0E+00	1.0E-08	1.0E+01	1.0E-07	1.0E+02
Ir-192	1.0E-07	1.0E+02	5.0E-06	5.0E+00	1.0E-08	1.0E+01	1.0E-07	1.0E+02
K-40	2.0E-06	2.0E+03	1.0E-04	1.0E+02	4.0E-08	4.0E+01	1.0E-07	1.0E+02
La-140	1.0E-07	1.0E+02	5.0E-06	5.0E+00	5.0E-09	5.0E+00	1.0E-07	1.0E+02
Mn-54	1.0E-07	1.0E+02	5.0E-06	5.0E+00	5.0E-09	5.0E+00	1.0E-07	1.0E+02
Nb-95	1.0E-07	1.0E+02	5.0E-06	5.0E+00	5.0E-09	5.0E+00	1.0E-07	1.0E+02
Pb-210	4.0E-07	4.0E+02	2.0E-05	2.0E+01	5.0E-09	5.0E+00	1.0E-07	1.0E+02
Pb-212	2.0E-07	2.0E+02	1.0E-05	1.0E+01	3.0E-08	3.0E+01	1.0E-07	1.0E+02
Pb-214	2.0E-07	2.0E+02	1.0E-05	1.0E+01	1.0E-08	1.0E+01	1.0E-07	1.0E+02
Ra-226	2.0E-06	2.0E+03	1.0E-04	1.0E+02	1.0E-07	1.0E+02	2.0E-07	2.0E+02
Sb-124	1.0E-07	1.0E+02	5.0E-06	5.0E+00	5.0E-09	5.0E+00	1.0E-07	1.0E+02
Sc-46	1.0E-07	1.0E+02	5.0E-06	5.0E+00	5.0E-09	5.0E+00	1.0E-07	1.0E+02
Th-230	1.0E-05	1.0E+04	3.0E-04	3.0E+02	1.0E-06	1.0E+03	2.0E-06	2.0E+03
Th-234	1.0E-06	1.0E+03	4.0E-05	4.0E+01	1.0E-07	1.0E+02	2.0E-07	2.0E+02
Tl-208	1.0E-07	1.0E+02	5.0E-06	5.0E+00	5.0E-09	5.0E+00	1.0E-07	1.0E+02
U-235	4.0E-07	4.0E+02	2.0E-05	2.0E+01	3.0E-08	3.0E+01	1.0E-07	1.0E+02
U-238	1.0E-06	1.0E+03	3.0E-05	3.0E+01	6.0E-08	6.0E+01	2.0E-07	2.0E+02
Zn-65	2.0E-07	2.0E+02	1.0E-05	1.0E+01	1.0E-08	1.0E+01	1.0E-07	1.0E+02
Zr-95	1.0E-07	1.0E+02	1.0E-05	1.0E+01	1.0E-08	1.0E+01	1.0E-07	1.0E+02

*Air iodine can be determined by using cartridges. Detection limits are 2.0E-14µCi/ml or 2.0E-02 pCi/m^3.

Laboratory Services Section
Environmental Sciences Branch

Detection Limits for Chemical Analysis Procedures
Sample Type

Isotope	Soil - Sediment		Air Filter		Water - Milk		Vegetation - Fish	
	µCi/g	pCi/kg	µCi/filter	pCi/filter	µCi/ml	pCi/l	µCi/g	pCi/kg
Alpha	6.1E-06	6.1E+03	7.0E-07	7.0E-01	3.3E-09	3.3E+00	3.3E-06	3.3E+03
Beta	1.2E-05	1.2E+04	1.3E-06	1.3E+00	6.6E-09	6.6E+00	6.6E-06	6.6E+03
C-14					3.0E-07	3.0E+02		
H-3			2.0E-06	2.0E+00	1.0E-06	1.0E+03		
Ra-226	4.0E-07	4.0E+02	8.0E-07	8.0E-01	8.0E-10	8.0E-01	4.0E-07	4.0E+02
Ra-228	1.9E-06	1.9E+03	3.9E-06	3.9E+00	3.9E-09	3.9E+00	1.9E-06	1.9E+03
Sr-89	9.0E-07	9.0E+02	1.7E-06	1.7E+00	1.7E-09	1.7E+00	9.0E-07	9.0E+02
Sr-90	1.3E-06	1.3E+03	2.7E-06	2.7E+00	2.7E-09	2.7E+00	1.3E-06	1.3E+03

Detection Limits for Alpha Spectroscopy
Sample Type

Isotope	Soil - Sediment		Air Filter		Water - Milk		Vegetation - Fish	
	µCi/g	pCi/kg	µCi/filter	pCi/filter	µCi/ml	pCi/l	µCi/g	pCi/kg
Am-241	1.0E-06	1.0E+03	1.0E-06	1.0E+00	1.0E-09	1.0E+00	1.0E-06	1.0E+03
Pu-239	2.0E-07	2.0E+02	2.0E-07	2.0E-01	2.0E-10	2.0E-01	2.0E-07	2.0E+02
Th-228	1.0E-06	1.0E+03	1.0E-06	1.0E+00	1.0E-09	1.0E+00	1.0E-06	1.0E+03
Th-230	1.0E-06	1.0E+03	1.0E-06	1.0E+00	1.0E-09	1.0E+00	1.0E-06	1.0E+03
Th-232	1.0E-06	1.0E+03	1.0E-06	1.0E+00	1.0E-09	1.0E+00	1.0E-06	1.0E+03
U-234	1.0E-06	1.0E+03	1.0E-06	1.0E+00	1.0E-09	1.0E+00	1.0E-06	1.0E+03
U-238	1.0E-06	1.0E+03	1.0E-06	1.0E+00	1.0E-09	1.0E+00	1.0E-06	1.0E+03

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Publication #22-12142