Radiation Branch
Environmental Monitoring Summary
for 2004

June 2005

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 eighth 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 1998-2003 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, 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 U.S. Department of Energy, referred to as DOELAP (Department of Energy Laboratory Accreditation Program). It was developed by the U.S. Department of Energy in order to provide quality assurance and control for D.O.E. 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 two hundred TLD's are exchanged and read each calendar quarter. Background is subtracted from all station readings except for Comanche Peak Steam Electric Station, 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 Texas Department of State Health Services or any other agency such as the U.S. Nuclear Regulatory Commission or the U.S. Department of Energy. 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 512-834-6688, ext. 2022 or robert.free@dshs.state.tx.us.

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Robert E. Free

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Fixed Nuclear

Facilities

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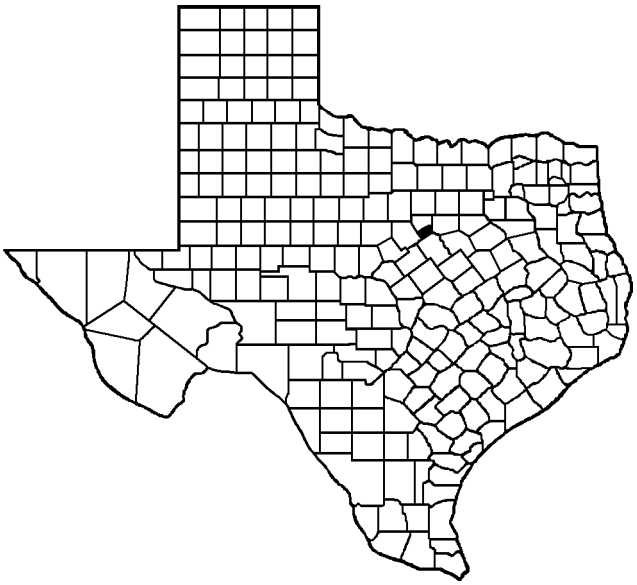
Comanche Peak Steam Electric Station

Radiation Branch Site No. 031

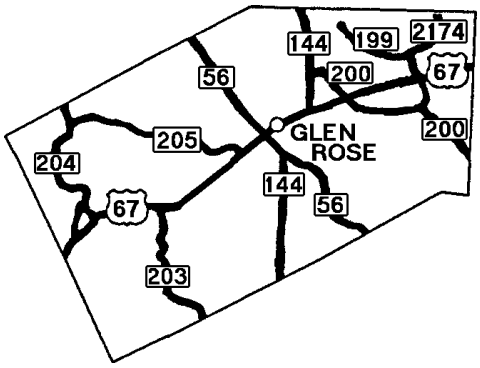
Comanche Peak Steam Electric Station (CPSES) is a two-unit nuclear-fueled power plant, owned and operated by TXU Energy, is located in Somervell County four and one-half miles northwest of Glen Rose and approximately 80 miles southwest of downtown Dallas.

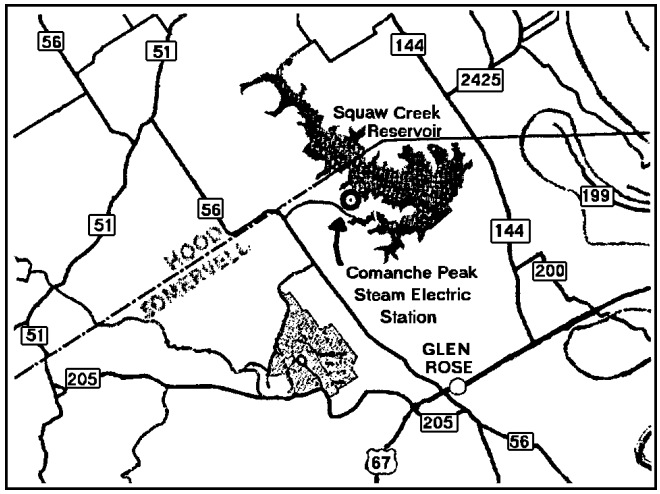
CPSES, TXU Energy's sole nuclear power plant, with an operating capacity of 2,300 megawatts annually [two Westinghouse 1,150 megawatt (electric) pressurized water reactor units], began operation in 1990, although fuel had been received on site in 1982-1983. The plant has approximately 1,300 employees.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



Shaded area indicates location of Somervell County

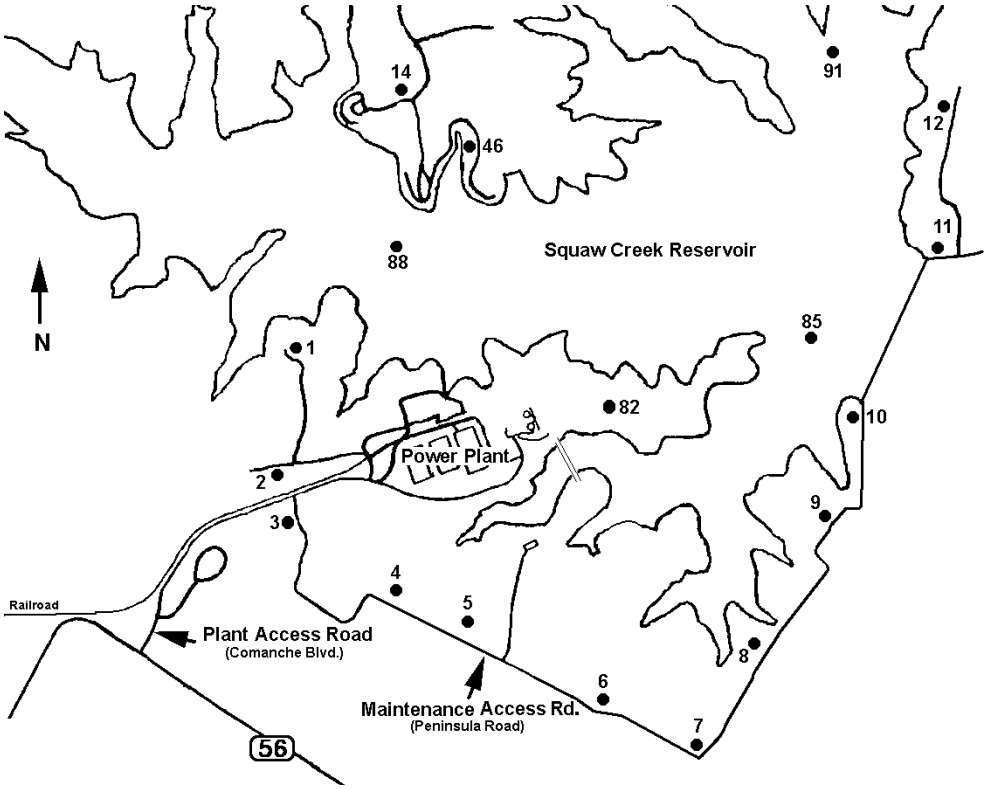
Somervell County

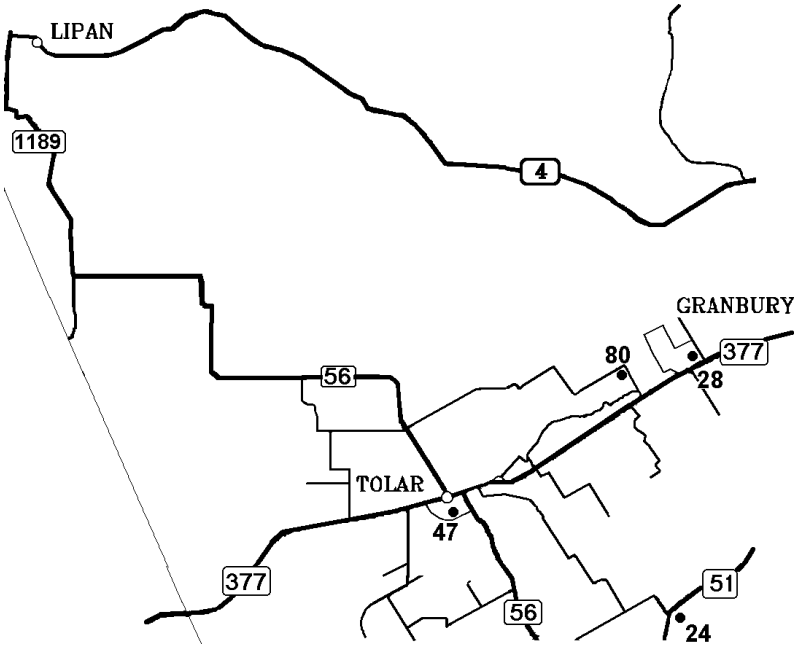


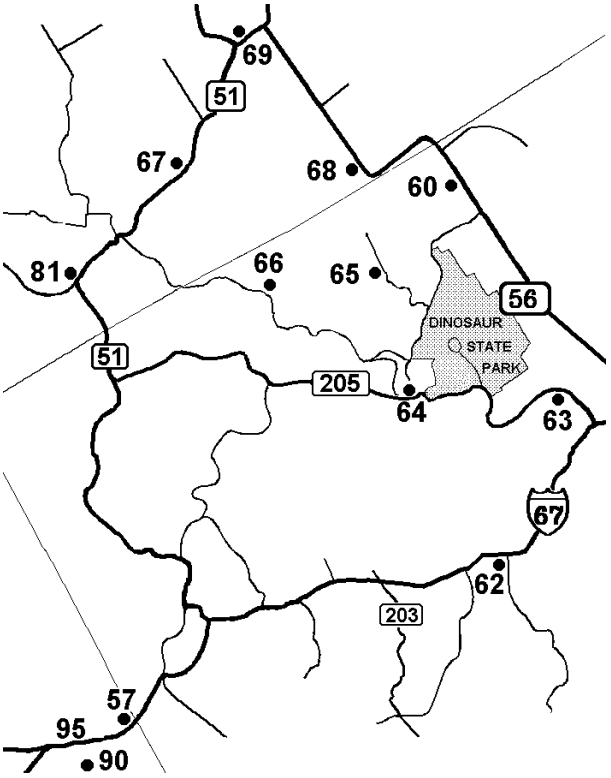


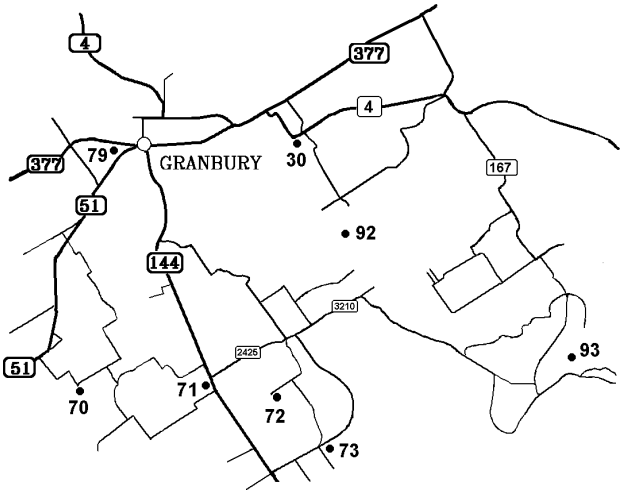
Monitoring Station Locations

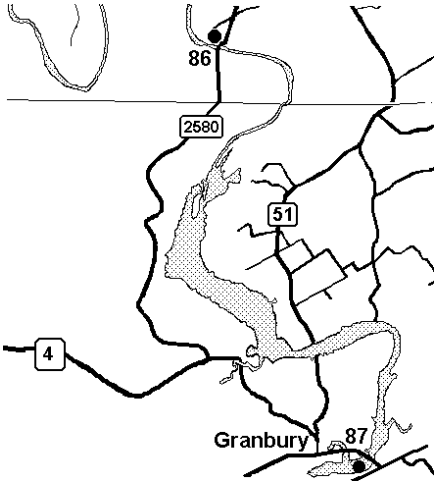
Note: Sample type not indicated on maps.

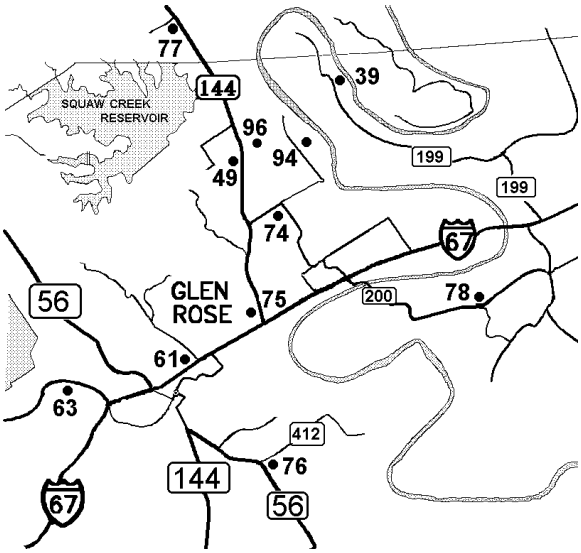





69
51
67
68
60
81
66
65
56
DINOSAUR
STATE
PARK
51
205
64
63
67
62
203
57
95
90


4
377
4
377
79
GRANBURY
30
167
51
92
144
3210
2425
51
93
70
71
72
73


86
2580
51
4
Granbury
87


77
144
SQUAW CREEK
RESERVOIR
39
96
94
49
199
199
74
67
56
GLEN
ROSE
75
200
78
61
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	22.0	11.9	10.1	16.8	60.8	
02	23.0	13.8	12.1	16.8	65.7	
03	19.0	9.9	9.1	12.9	50.9	
04	21.0	12.9	12.1	16.8	62.8	
05	19.0	11.9	11.1	14.8	56.8	
06	20.0	10.9	11.1	15.8	57.8	
07	19.0	10.9	10.1	14.8	54.8	
08	20.0	11.9	12.1	15.8	59.8	
09	23.0	13.8	13.1	17.8	67.7	
10	20.0	11.9	11.1	14.8	57.8	
11	20.0	11.9	12.1	13.8	57.8	
12	22.0	13.9	13.1	16.8	65.8	
14	21.0	11.9	11.0	15.8	59.7	
24	21.0	11.9	11.1	14.8	58.8	
28	20.0	12.9	11.1	--	58.7	[2]Q4 TLD missing
30	21.0	11.9	11.1	14.8	58.8	
39	22.0	11.9	12.1	15.8	61.8	
46	20.0	11.9	11.1	13.8	56.8	
47	21.0	12.9	12.1	15.8	61.8	
49	21.0	12.9	12.1	15.8	61.8	
60	22.0	11.9	12.1	14.8	60.8	
61	20.0	11.9	10.1	14.8	56.8	
62	20.0	11.9	11.1	13.8	56.8	
63	21.0	12.9	13.1	15.8	62.8	
64	21.0	11.9	11.1	15.8	59.8	
65	19.0	10.9	9.1	16.8	55.8	
66	19.0	12.9	11.1	14.8	57.8	
67	20.0	10.9	12.1	13.8	56.8	
68	19.0	10.9	10.1	14.8	54.8	
69	19.0	10.9	9.1	14.8	53.8	
70	22.0	11.9	12.1	--	61.3	[2]Q4 TLD missing
71	21.0	10.9	11.1	14.8	57.8	
72	21.0	11.9	11.1	14.8	58.8	
73	20.0	11.9	12.1	13.8	57.8	
74	21.0	11.9	11.1	14.8	58.8	
75	20.0	--	--	--	80.0	[2]Q2-4 TLD area inaccessible
76	20.0	10.9	10.1	13.8	54.8	
77	19.0	10.9	9.1	13.8	52.8	
78	21.0	11.9	11.1	14.8	58.8	
79	21.0	11.9	12.1	14.8	59.8	
80	22.0	12.9	12.1	16.8	63.8	
81	22.0	12.9	12.1	15.8	62.8	
82	22.0	12.9	12.1	17.8	64.8	

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.

Comanche Peak Steam Electric Station

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																
2004-01-06	ER040028	01									<8E-3					
2004-01-06	ER040030	57									<7E-3					
2004-01-13	ER040045	01									<6E-3					
2004-01-13	ER040047	57									<7E-3					
2004-01-20	ER040055	01									<5E-3					
2004-01-20	ER040053	57									<6E-3					
2004-01-27	ER040085	01									<6E-3					
2004-01-27	ER040087	57									<5E-3					
2004-02-03	ER040099	01									<5E-3					
2004-02-03	ER040097	57									<6E-3					
2004-02-10	ER040100	01									<6E-3					
2004-02-10	ER040102	57									<5E-3					
2004-02-17	ER040109	01									<6E-3					
2004-02-17	ER040111	57									<5E-3					
2004-02-24	ER040128	01									<7E-3					
2004-02-24	ER040126	57									<6E-3					
2004-03-02	ER040136	01									<6E-3					
2004-03-02	ER040138	57									<6E-3					
2004-03-09	ER040146	01									<4E-3					
2004-03-09	ER040144	57									<6E-3					
2004-03-16	ER040169	01									<5E-3					
2004-03-16	ER040167	57									<6E-3					
2004-03-23	ER040194	01									<5E-3					
2004-03-23	ER040192	57									<7E-3					
2004-03-30	ER040208	01									<9E-3					
2004-03-30	ER040206	57									<7E-3					
2004-04-06	ER040226	01									<6E-3					
2004-04-06	ER040228	57									<5E-3					
2004-04-13	ER040247	01									<5E-3					
2004-04-13	ER040249	57									<7E-3					
2004-04-20	ER040273	01									<7E-3					
2004-04-20	ER040271	57									<6E-3					
2004-04-27	ER040281	01									<6E-3					
2004-04-27	ER040283	57									<7E-3					
2004-05-04	ER040294	01									<5E-3					
2004-05-04	ER040292	57									<6E-3					
2004-05-11	ER040327	01									<5E-3					
2004-05-11	ER040325	57									<6E-3					
2004-05-18	ER040340	01									<5E-3					
2004-05-18	ER040338	57									<6E-3					
2004-05-25	ER040354	01									<5E-3					
2004-05-25	ER040352	57									<6E-3					
2004-06-01	ER040361	01									<4E-3					
2004-06-01	ER040361	57									<6E-3					
2004-06-08	ER040369	01									<9E-3					
2004-06-08	ER040367	57									<6E-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
2004-06-15	ER040379	01									<1.2E-2					
2004-06-15	ER040377	57									<5E-3					
2004-06-22	ER040390	01									<5E-3					
2004-06-22	ER040388	57									<6E-3					
2004-06-29		01									-- *					
2004-06-29	ER040397	57									<6E-3					
2004-07-06	ER040407	01									<8E-3 **					
2004-07-06	ER040409	57									<5E-3					
2004-07-13	ER040430	01									<5E-3					
2004-07-13	ER040432	57									<6E-3					
2004-07-20	ER040447	01									<5E-3					
2004-07-20	ER040449	57									<5E-3					
2004-07-27	ER040459	01									<7E-3					
2004-07-27	ER040461	57									<5E-3					
2004-08-03	ER040478	01									<5E-3					
2004-08-03	ER040480	57									<5E-3					
2004-08-10	ER040487	01									<4E-3					
2004-08-10	ER040489	57									<6E-3					
2004-08-17	ER040498	01									<2.8 ***					
2004-08-17	ER040496	57									<6E-3					
2004-08-24	ER040507	01									<7E-3					
2004-08-24		57									-- *					
2004-08-31	ER040514	01									<6E-3					
2004-08-31	ER040516	57									<6E-3					
2004-09-07	ER040523	01									<6E-3					
2004-09-07	ER040525	57									<6E-3					
2004-09-14	ER040542	01									<6E-3					
2004-09-14	ER040544	57									<6E-3					
2004-09-21	ER040546	01									<6E-3					
2004-09-21	ER040548	57									<6E-3					
2004-09-28	ER040560	01									<5E-3					
2004-09-28	ER040561	57									<6E-3					
2004-10-05	ER040572	01									<6E-3					
2004-10-05	ER040570	57									<5E-3					
2004-10-12	ER040596	01									<4E-3					
2004-10-12	ER040594	57									<4E-3					
2004-10-19	ER040615	01									<6E-3					
2004-10-19	ER040613	57									<7E-3					
2004-10-26	ER040632	01									<5E-3					
2004-10-26	ER040634	57									<5E-3					
2004-11-02	ER040650	01									<3E-3					
2004-11-02	ER040648	57									<4E-3					
2004-11-09	ER040658	01									<4E-3					
2004-11-09	ER040656	57									<4E-3					
2004-11-16	ER040666	01									<4E-3					
2004-11-16	ER040668	57									<4E-3					

*Sample unavailable
**Power failure caused short run time
***Units expressed as pCi/sample; air sampler found not running

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*
2004-11-23	ER040678	01									<6E-3					
2004-11-23	ER040680	57									<6E-3					
2004-11-30	ER040692	01									<7E-3					
2004-11-30	ER040690	57									<8E-3					
2004-12-07	ER040695	01									<4E-3					
2004-12-07	ER040697	57									<4E-3					
2004-12-14	ER040706	01									<5E-3					
2004-12-14	ER040704	57									<7E-3					
2004-12-21	ER040770	01									<9E-3					
2004-12-21	ER040768	57									<8E-3					
2004-12-28	ER040780	01									<8E-3					
2004-12-28	ER040782	57									<5E-3					
Air Particulate pCi/m³																
2004-01-06	ER040027	01	3.7E-2													
2004-01-06	ER040029	57	2.7E-2													
2004-01-13	ER040044	01	6.6E-2													
2004-01-13	ER040046	57	4.9E-2													
2004-01-20	ER040054	01	4.1E-2													
2004-01-20	ER040052	57	2.7E-2													
2004-01-27	ER040084	01	5.9E-2													
2004-01-27	ER040086	57	4.3E-2													
2004-02-03	ER040098	01	5.9E-2													
2004-02-03	ER040096	57	4.2E-2													
2004-02-10	ER040101	01	5.2E-2													
2004-02-10	ER040103	57	3.7E-2													
2004-02-17	ER040108	01	5.1E-2													
2004-02-17	ER040110	57	3.5E-2													
2004-02-24	ER040127	01	4.9E-2													
2004-02-24	ER040125	57	3.4E-2													
2004-03-02	ER040137	01	2.7E-2													
2004-03-02	ER040139	57	1.9E-2													
2004-03-09	ER040147	01	2.3E-2													
2004-03-09	ER040145	57	1.6E-2													
2004-03-16	ER040168	01	2.6E-2													
2004-03-16	ER040166	57	1.9E-2													
2004-03-23	ER040193	01	2.5E-2													
2004-03-23	ER040191	57	2.0E-2													
2004-03-30	ER040207	01	3.3E-2													
2004-03-30	ER040205	57	2.4E-2													
2004-04-06	ER040225	01	3.2E-2													
2004-04-06	ER040227	57	2.1E-2													
2004-04-13	ER040246	01	2.7E-2													
2004-04-13	ER040248	57	1.9E-2													
2004-04-20	ER040272	01	4.0E-2													
2004-04-20	ER040270	57	2.8E-2													
2004-04-27	ER040280	01	2.9E-2													
2004-04-27	ER040282	57	2.2E-2													
2004-05-04	ER040293	01	3.5E-2													
2004-05-04	ER040291	57	2.3E-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
2004-05-11	ER040326	01	3.4E-2													
2004-05-11	ER040324	57	2.6E-2													
2004-05-18	ER040339	01	1.1E-2													
2004-05-18	ER040337	57	1.7E-2													
2004-05-25	ER040353	01	1.2E-2													
2004-05-25	ER040351	57	1.9E-2													
2004-06-01	ER040360	01	1.0E-2													
2004-06-01	ER040358	57	2.0E-2													
2004-06-08	ER040368	01	2.1E-2													
2004-06-08	ER040366	57	1.7E-2													
2004-06-15	ER040378	01	9E-3													
2004-06-15	ER040376	57	1.2E-2													
2004-06-22	ER040389	01	1.8E-2													
2004-06-22	ER040387	57	1.6E-2													
2004-06-29		01	--*													
2004-06-29	ER040396	57	1.7E-2													
2004-07-06	ER040406	01	2.3E-2 **													
2004-07-06	ER040408	57	1.8E-2													
2004-07-13	ER040429	01	2.0E-2													
2004-07-13	ER040431	57	1.9E-2													
2004-07-20	ER040446	01	3.1E-2													
2004-07-20	ER040448	57	2.8E-2													
2004-07-27	ER040458	01	2.1E-2													
2004-07-27	ER040460	57	2.0E-2													
2004-08-03	ER040479	01	2.1E-2													
2004-08-03	ER040481	57	1.9E-2													
2004-08-10	ER040486	01	2.6E-2													
2004-08-10	ER040488	57	3.1E-2													
2004-08-17	ER040497	01	6.1 ***													
2004-08-17	ER040495	57	2.7E-2													
2004-08-24	ER040508	01	1.6E-2													
2004-08-24		57	--*													
2004-08-31	ER040515	01	2.1E-2													
2004-08-31	ER040517	57	1.9E-2													
2004-09-07	ER040522	01	2.3E-2													
2004-09-07	ER040524	57	1.9E-2													
2004-09-14	ER040541	01	2.9E-2													
2004-09-14	ER040543	57	2.5E-2													
2004-09-21	ER040545	01	2.1E-2													
2004-09-21	ER040547	57	1.6E-2													
2004-09-28	ER040559	01	2.7E-2													
2004-09-28	ER040562	57	2.4E-2													
2004-10-05	ER040571	01	3.2E-2													
2004-10-05	ER040569	57	2.8E-2													
2004-10-12	ER040595	01	1.7E-2													
2004-10-12	ER040593	57	1.5E-2													

*Sample unavailable
**Power failure caused short run time
***Units expressed as pCi/sample; air sampler found not running

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*
2004-10-19	ER040614	01	2.6E-2													
2004-10-19	ER040612	57	1.6E-2													
2004-10-26	ER040631	01	1.9E-2													
2004-10-26	ER040633	57	1.6E-2													
2004-11-02	ER040649	01	1.9E-2													
2004-11-02	ER040647	57	1.7E-2													
2004-11-09	ER040657	01	3.4E-2													
2004-11-09	ER040655	57	2.8E-2													
2004-11-16	ER040665	01	2.8E-2													
2004-11-16	ER040667	57	2.3E-2													
2004-11-23	ER040677	01	1.6E-2													
2004-11-23	ER040679	57	1.3E-2													
2004-11-30	ER040691	01	2.2E-2													
2004-11-30	ER040689	57	1.8E-2													
2004-12-07	ER040694	01	3.9E-2													
2004-12-07	ER040696	57	3.2E-2													
2004-12-14	ER040705	01	2.0E-2													
2004-12-14	ER040703	57	1.5E-2													
2004-12-21	ER040769	01	2.6E-2													
2004-12-21	ER040767	57	2.1E-2													
2004-12-28	ER040779	01	3.3E-2													
2004-12-28	ER040781	57	3.0E-2													
Air Particulate Composite pCi/Sample																
2004-04-15	ER040235	01		<1.1E+1	<3.0	<3.8	<3.3	<3.4	<5.9		<2.7	<3.7	<3.2	<3.3	<7.0	<5.3
2004-04-15	ER040236	57		<7.8	<2.4	<2.6	<2.3	<2.5	<4.7		<2.3	<2.9	<2.3	<2.3	<5.8	<4.4
2004-07-26	ER040438	01		<1.0E+1	<2.9	<3.5	<2.9	<3.2	<6.0		<2.5	<3.4	<3.1	<2.8	<6.9	<4.7
2004-07-26	ER040439	57		<7.4	<2.3	<2.5	<2.6	<2.6	<4.6		<2.4	<3.2	<2.4	<2.5	<5.8	<4.2
2004-10-18	ER040598	01		<1.1E+1	<3.2	<3.8	<3.1	<3.6	<6.3		<3.0	<4.0	<3.5	<3.3	<7.8	<5.5
2004-10-18	ER040599	57		<9.8	<3.2	<4.0	<3.1	4.8	<6.5		<2.9	<4.1	<3.3	<3.3	<7.1	<5.8
2005-01-10	ER050005	01		<9.7	<2.8	<3.8	<3.0	<3.5	<5.9		<2.7	<4.1	<3.2	<3.0	<7.1	<4.9
2005-01-10	ER050006	57		<7.5	<2.1	<2.5	<2.4	<2.9	<4.1		<2.3	<2.8	<2.3	<2.3	<5.2	<3.9
Fish pCi/kg																
2004-04-04	ER040251	92		<3.1E+1	<4.6	<4.2	<3.5	<3.8	<1.2E+1		<1.7E+1	<8.7	<4.0	<5.2	<1.1E+1	<7.5
2004-04-07	ER040250	91		<4.6E+1	<8.3	<7.6	<7.2	<7.8	<1.9E+1		<2.0E+1	<1.4E+1	<7.5	<9.0	<2.0E+1	<1.5E+1
2004-04-07	ER040252	91		<5.9E+1	<9.4	<1.1E+1	<8.4	<9.8	<2.4E+1		<2.4E+1	<1.8E+1	<9.3	<1.2E+1	<2.3E+1	<1.8E+1
2004-10-12	ER040606	91		<9.8	<2.8	<3.0	<2.4	<3.0	<6.1		<2.9	<2.7	<2.8	<2.9	<6.9	<4.9
2004-10-12	ER040597	92		<2.6E+1	<7.2	<8.4	<6.3	<7.2	<1.7E+1		<8.0	<7.9	<7.0	<7.6	<1.3E+1	<1.3E+1
Food Product pCi/kg																
2004-11-09	ER040659	93		<1.7E+1	<4.6	<5.6	<4.7	<5.6	<1.1E+1		<5.5	<4.9	<5.4	<5.2	<1.3E+1	<8.9
Sediment pCi/kg																
2004-01-13	ER040048	88		<2.37E+2	<4.3E+1	<4.6E+1	<4.7E+1	<5.2E+1	<9.8E+1		<7.6E+1	<7.7E+1	<4.8E+1	<5.8E+1	<1.39E+2	<7.9E+1
Vegetation for Milk pCi/kg																
2004-01-27	ER040090	14		<8.4E+1	<1.7E+1	<1.9E+1	<1.7E+1	2.6E+1	<3.7E+1		<3.3E+1	<2.8E+1	<1.8E+1	<2.1E+1	<3.7E+1	<3.1E+1
2004-02-24	ER040129	14		<2.9E+1	<5.5	<6.4	<5.7	<6.1	<1.3E+1		<1.2E+1	<9.4	<5.6	<6.3	<1.4E+1	<1.1E+1
2004-03-30	ER040211	14		<7.5E+1	<2.1E+1	<2.3E+1	<2.0E+1	<2.3E+1	<4.4E+1		<2.4E+1	<2.8E+1	<2.1E+1	<2.1E+1	<4.8E+1	<3.7E+1

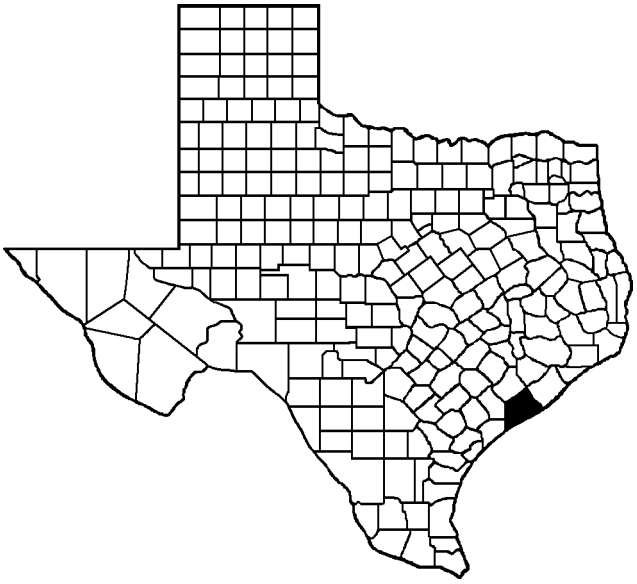
Date	*Lab. No.*	*Station*	*Beta*	*Ba-140*	*Co-58*	*Co-60*	*Cs-134*	*Cs-137*	*Fe-59*	*H-3*	*I-131*	*La-140*	*Mn-54*	*Nb-95*	*Zn-65*	*Zr-95*
2004-03-30	ER040212	90		<6.1E+1	<1.7E+1	<2.1E+1	<1.5E+1	<1.8E+1	<3.7E+1		<1.9E+1	<1.8E+1	<1.7E+1	<1.7E+1	<4.3E+1	<2.9E+1
2004-04-27	ER040286	14		<1.04E+2	<2.3E+1	<2.5E+1	<2.2E+1	<2.3E+1	<5.0E+1		<3.5E+1	<4.1E+1	<2.3E+1	<2.4E+1	<5.3E+1	<4.0E+1
2004-05-25	ER040355	14		<6.9E+1	<1.4E+1	<1.5E+1	<1.4E+1	<1.5E+1	<3.2E+1		<2.8E+1	<2.2E+1	<1.4E+1	<1.5E+1	<3.2E+1	<2.5E+1
2004-06-29	ER040398	14		<7.2E+1	<1.8E+1	<2.1E+1	<1.9E+1	3.0E+1	<3.9E+1		<2.5E+1	<2.3E+1	<1.8E+1	<2.0E+1	<4.3E+1	<3.1E+1
2004-06-29	ER040399	90		<6.0E+1	<1.6E+1	<1.9E+1	<1.5E+1	<1.7E+1	<3.5E+1		<2.0E+1	<2.3E+1	<1.6E+1	<1.6E+1	<3.8E+1	<2.7E+1
2004-07-27	ER040464	14		<5.8E+1	<1.4E+1	<1.7E+1	<1.4E+1	<1.5E+1	<3.1E+1		<2.0E+1	<2.0E+1	<1.4E+1	<1.5E+1	<3.4E+1	<2.5E+1
2004-08-31	ER040511	14		<4.4E+1	<9.9	<1.1E+1	<9.3	<1.1E+1	<2.3E+1		<1.7E+1	<1.5E+1	<9.9	<1.1E+1	<2.5E+1	<1.8E+1
2004-09-28	ER040563	14		<5.3E+1	<1.1E+1	<1.2E+1	<1.1E+1	<1.3E+1	<2.5E+1		<2.0E+1	<1.8E+1	<1.1E+1	<1.3E+1	<2.6E+1	<2.0E+1
2004-09-28	ER040564	90		<5.5E+1	<1.1E+1	<1.3E+1	<1.1E+1	<1.3E+1	<2.6E+1		<2.1E+1	<1.7E+1	<1.2E+1	<1.3E+1	<2.8E+1	<2.1E+1
2004-10-26	ER040635	14		<7.9E+1	<1.7E+1	<1.8E+1	<1.7E+1	<2.0E+1	<3.3E+1		<3.3E+1	<2.7E+1	<1.8E+1	<1.9E+1	<3.6E+1	<3.1E+1
2004-11-30	ER040693	14		<5.3E+1	<1.1E+1	<1.2E+1	<1.1E+1	<1.2E+1	<2.6E+1		<2.3E+1	<1.7E+1	<1.1E+1	<1.3E+1	<2.7E+1	<2.0E+1
2004-12-28	ER040785	14		<5.3E+1	<1.2E+1	<1.3E+1	<1.1E+1	<1.3E+1	<2.4E+1		<2.1E+1	<1.6E+1	<1.2E+1	<1.3E+1	<2.5E+1	<2.1E+1
2004-12-28	ER040786	90		<6.4E+1	<1.4E+1	<1.5E+1	<1.4E+1	1.4E+1	<3.0E+1		<2.5E+1	<1.8E+1	<1.4E+1	<1.6E+1	<3.2E+1	<2.6E+1
Water-Surface pCi/l																
2004-01-27	ER040088	85	1.6E+1	<7.6	<1.9	<1.9	<1.8	<2.0	<3.8		<2.5	<2.5	<1.9	<2.1	<3.7	<3.4
2004-01-27	ER040089	86	9.1	<1.9E+1	<4.9	<5.5	<5.0	<5.1	<9.4		<6.1	<6.2	<4.6	<5.1	<1.2E+1	<8.3
2004-02-24	ER040130	85	1.5E+1	<7.2	<1.8	<1.9	<1.8	<2.0	<3.6		<2.5	<2.8	<1.9	<2.1	<3.9	<3.5
2004-02-24	ER040131	86	9.1	<6.8	<1.9	<1.9	<1.8	<2.0	<3.6		<2.4	<2.6	<1.9	<1.9	<3.8	<3.1
2004-03-30	ER040209	85	1.1E+1	<7.1	<1.9	<2.0	<1.9	<2.0	<3.8		<2.4	<2.7	<2.0	<2.0	<4.4	<3.5
2004-03-30	ER040210	86	5.9	<7.6	<1.8	<2.0	<1.9	<2.1	<3.9		<2.6	<2.6	<1.9	<1.9	<3.9	<3.3
2004-04-27	ER040284	85	2.0E+1	<7.7	<2.0	<2.1	<1.8	<2.0	<3.7		<2.5	<2.7	<1.9	<2.0	<3.7	<3.2
2004-04-27	ER040285	86	8.6	<6.7	<1.9	<2.0	<2.0	<2.0	<3.7		<2.3	<2.6	<1.9	<1.9	<3.8	<3.3
2004-05-25	ER040356	85	1.8E+1	<7.6	<1.8	<1.9	<1.9	<2.2	<3.8		<2.5	<2.9	<1.9	<2.1	<3.6	<3.2
2004-05-25	ER040357	86	1.0E+1	<9.6	<1.9	<2.0	<1.9	<2.2	<4.1		<3.5	<3.2	<1.9	<2.1	<4.0	<3.4
2004-06-29	ER040400	85	1.8E+1	<7.3	<1.8	<1.9	<1.9	<2.0	<3.7		<2.4	<2.6	<1.9	<2.0	<3.9	<3.2
2004-06-29	ER040401	86	8.8	<1.3E+1	<2.7	<3.0	<2.6	<2.9	<5.6		<4.5	<4.1	<2.5	<2.8	<6.0	<4.7
2004-07-27	ER040462	85	1.6E+1	<7.6	<2.2	<2.1	<1.9	<2.1	<4.1		<2.3	<2.5	<2.1	<2.2	<4.5	<3.6
2004-07-27	ER040463	86	6.9	<7.2	<1.8	<1.9	<1.8	<2.0	<3.8		<2.3	<2.5	<1.9	<1.9	<3.8	<3.4
2004-08-31	ER040512	85	1.4E+1	<7.2	<1.9	<1.9	<1.9	<2.1	<3.7		<2.9	<2.8	<1.9	<2.0	<3.8	<3.1
2004-08-31	ER040513	86	7.7	<7.1	<1.9	<2.0	<1.8	<2.0	<3.6		<2.3	<2.5	<1.9	<2.0	<4.2	<3.1
2004-09-28	ER040565	86	7.9	<8.4	<2.1	<2.1	<2.0	<2.1	<4.2		<2.7	<2.7	<2.2	<2.3	<4.6	<3.8
2004-09-28	ER040566	86	1.3E+1	<7.1	<1.8	<2.0	<1.8	<2.1	<3.9		<2.5	<2.8	<1.9	<2.0	<3.9	<3.3
2004-10-26	ER040636	85	1.5E+1	<7.9	<2.2	<2.1	<2.0	<2.3	<4.0		<2.5	<2.6	<2.1	<2.3	<4.4	<3.8
2004-10-26	ER040637	86	1.0E+1	<6.9	<1.8	<1.9	<1.8	<2.0	<3.6		<2.4	<2.6	<1.7	<2.1	<3.7	<3.0
2004-11-30	ER040687	85	1.4E+1	<7.4	<1.9	<2.0	<1.8	<2.0	<3.7		<2.6	<2.7	<1.8	<1.9	<4.3	<3.2
2004-11-30	ER040688	86	9.9	<8.8	<1.8	<2.0	<1.9	<2.1	<4.1		<3.4	<3.3	<1.9	<2.1	<3.8	<3.2
2004-12-28	ER040783	85	1.2E+1	<1.1E+1	<2.2	<2.1	<1.9	<2.3	<4.2		<3.6	<3.1	<2.1	<2.5	<4.5	<4.0
2004-12-28	ER040784	86	4.6	<9.1	<1.9	<2.0	<1.8	<2.1	<3.6		<3.5	<3.3	<1.8	<2.0	<3.9	<3.4
Water-Surface Composite pCi/l																
2004-05-13	ER040239	85								1.23E+4						
2004-05-13	ER040240	86								<1.0E+3						
2004-08-05	ER040444	85								1.09E+4						
2004-08-05	ER040445	86								<1.0E+3						
2004-11-05	ER040604	85								8.9E+3						
2004-11-05	ER040605	86								<1.0E+3						
2005-02-22	ER050011	85								9.86E+3						
2005-02-22	ER050012	86								<1.0E+3						

South Texas Project

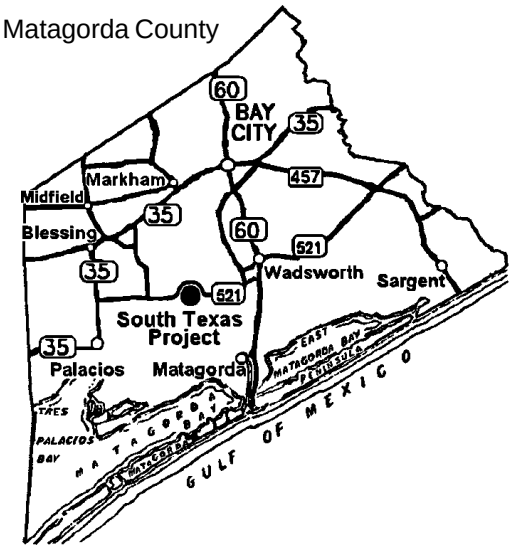
Radiation Branch Site No. 012

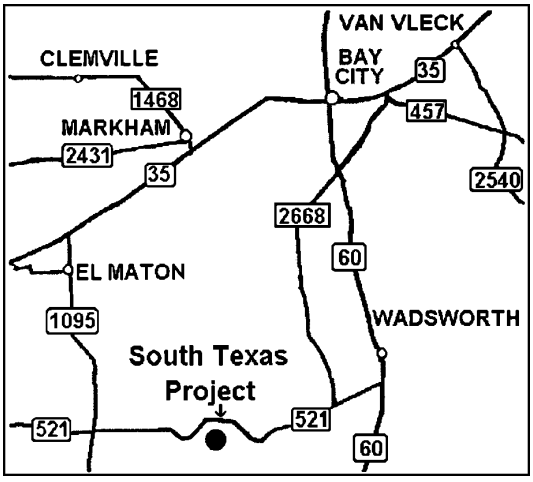
The South Texas Project (STP) is a commercial nuclear power plant operated by STP Nuclear Operating Company and is located 89 miles southwest of Houston and 14 miles south-southwest of Bay City. Two 1250 megawatt (electric) Westinghouse pressurized water reactor nuclear steam supply electrical generating 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 AEP Central Power and Light Company, Austin Energy, City Public Service of San Antonio, and Reliant Energy HL&P. 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, water, sediment, fish, food products, and vegetation and TLD monitoring.



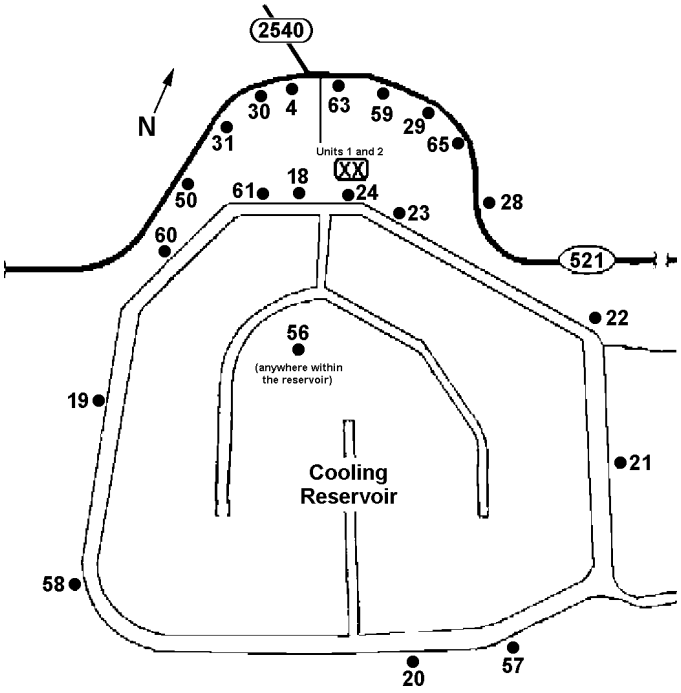
Shaded area indicates location of Matagorda County

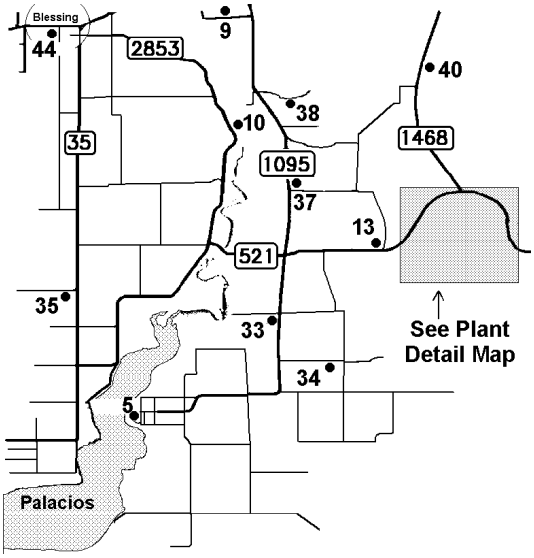


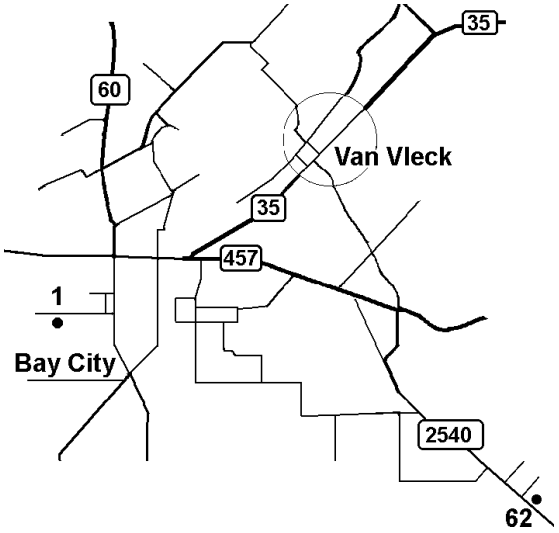


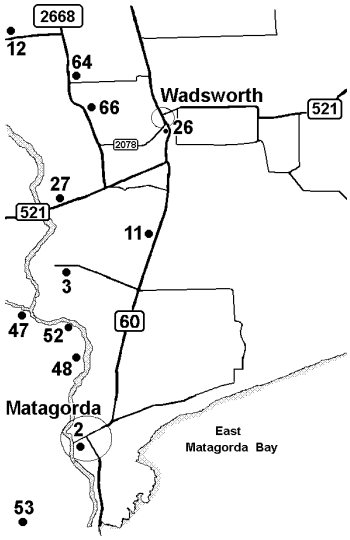
Monitoring Station Locations

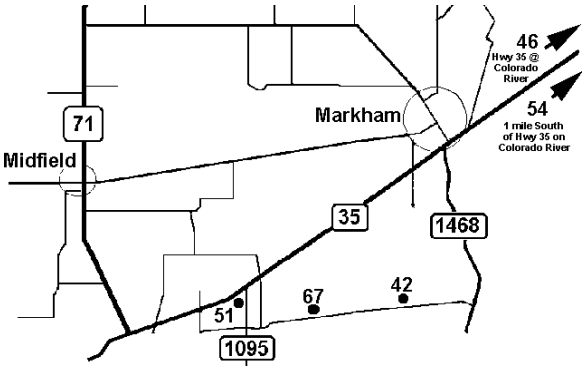
Note: Sample type not indicated on maps.











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

Station	*Q1*	*Q2*	*Q3*	*Q4*	*Annual Dose*	*Notes*
01	20.2	12.9	13.0	17.7	63.8	
02	21.2	13.8	13.0	17.7	65.7	
03	18.2	11.9	11.1	16.5	57.7	
04	22.2	14.7	14.9	17.7	69.5	
05	19.2	12.9	12.1	16.5	60.7	
09	21.2	14.7	13.9	18.9	68.7	
10	20.2	14.7	13.0	18.9	66.8	
11	20.2	12.9	12.1	16.5	61.7	
12	21.2	13.8	13.9	18.9	67.8	
13	21.2	13.8	13.9	18.9	67.8	
18	20.2	11.9	12.1	16.5	60.7	
19	20.2	12.9	12.1	17.7	62.9	
20	20.2	12.9	12.1	17.7	62.9	
21	20.2	11.9	12.1	17.7	61.9	
22	21.2	11.9	12.1	17.7	62.9	
23	21.2	11.9	12.1	17.7	62.9	
24	21.2	12.9	12.1	18.9	65.1	
26	20.2	11.9	12.1	16.5	60.7	
27	21.2	--	11.1	16.5	65.1	[2]Q2 TLD missing
28	22.2	13.8	13.9	17.7	67.6	
29	22.2	13.8	13.0	18.9	67.9	
30	22.2	13.8	13.0	17.7	66.7	
31	23.3	14.7	14.9	21.3	74.2	
33	21.2	13.8	13.0	18.9	66.9	
34	21.2	13.8	13.9	18.9	67.8	
35	20.2	12.9	13.9	17.7	64.7	
37	22.2	14.7	14.9	18.9	70.7	
38	20.2	12.9	12.1	17.7	62.9	
40	20.2	12.9	12.1	16.5	61.7	
42	25.3	15.6	16.7	22.5	80.1	
44	19.2	11.9	12.1	16.5	59.7	
50	23.3	15.6	--	--	77.8	[2]Q3-4 TLD missing; fence removed
51	21.2	14.7	13.9	18.9	68.7	
57	20.2	11.9	12.1	17.7	61.9	
58	20.2	11.9	12.1	16.5	60.7	
59	21.2	13.8	13.0	17.7	65.7	
60	20.2	13.8	13.0	17.7	64.7	
61	21.2	12.9	12.1	18.9	65.1	
62	22.2	16.5	15.8	20.1	74.6	
63	20.2	13.8	13.0	17.7	64.7	
64	21.2	13.8	13.0	18.9	66.9	
65	21.2	13.8	13.0	17.7	65.7	
66	21.2	12.9	12.1	17.7	63.9	
67	21.2	13.8	13.9	20.1	69.0	

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.

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																
2004-01-06	ER040026	30									<5E-3					
2004-01-06	ER040024	35									<5E-3					
2004-01-13	ER040042	30									<6E-3					
2004-01-13	ER040040	35									<6E-3					
2004-01-20	ER040072	30									<6E-3					
2004-01-20	ER040070	35									<7E-3					
2004-01-27	ER040083	30									<5E-3					
2004-01-27	ER040081	35									<7E-3					
2004-02-02	ER040095	30									<6E-3					
2004-02-02	ER040093	35									<8E-3					
2004-02-10	ER040107	30									<5E-3					
2004-02-10	ER040105	35									<5E-3					
2004-02-17	ER040120	30									<7E-3					
2004-02-17	ER040118	35									<6E-3					
2004-02-25	ER040135	30									<6E-3					
2004-02-25	ER040133	35									<7E-3					
2004-03-02	ER040143	30									<6E-3					
2004-03-02	ER040141	35									<8E-3					
2004-03-09	ER040154	30									<8E-3					
2004-03-09	ER040152	35									<7E-3					
2004-03-16	ER040185	30									<8E-3					
2004-03-16	ER040183	35									<1.0E-2					
2004-03-23	ER040189	30									<5E-3					
2004-03-23	ER040187	35									<6E-3					
2004-03-30	ER040204	30									<9E-3					
2004-03-30	ER040202	35									<7E-3					
2004-04-06	ER040232	30									<7E-3					
2004-04-06	ER040230	35									<6E-3					
2004-04-13	ER040244	30									<7E-3					
2004-04-13	ER040242	35									<6E-3					
2004-04-21	ER040278	30									<6E-3					
2004-04-21	ER040276	35									<7E-3					
2004-04-28	ER040290	30									<6E-3					
2004-04-28	ER040288	35									<8E-3					
2004-05-04	ER040298	30									<1.0E-2					
2004-05-04	ER040296	35									<7E-3					
2004-05-11	ER040323	30									<6E-3					
2004-05-11	ER040321	35									<7E-3					
2004-05-18	ER040344	30									<5E-3					
2004-05-18	ER040342	35									<7E-3					
2004-05-25	ER040350	30									<5E-3					
2004-05-25	ER040348	35									<7E-3					
2004-06-01	ER040363	30									<8E-3					
2004-06-01	ER040362	35									<9E-3					
2004-06-09	ER040373	30									<7E-3					
2004-06-09	ER040371	35									<6E-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
2004-06-15	ER040383	30									<6E-3					
2004-06-15	ER040381	35									<8E-3					
2004-06-22	ER040394	30									<9E-3 *					
2004-06-22	ER040392	35									<6E-3					
2004-06-29	ER040405	30									<4.6 **					
2004-06-29	ER040403	35									<1.3E-2					
2004-07-06	ER040428	30									<1.1E-2					
2004-07-06	ER040426	35									<1.0E-2					
2004-07-13	ER040436	30									<7E-3					
2004-07-13	ER040434	35									<7E-3					
2004-07-20	ER040457	30									<8E-3					
2004-07-20	ER040455	35									<8E-2 ***					
2004-07-27	ER040475	30									<9E-3 *					
2004-07-27	ER040473	35									<7E-3					
2004-08-03	ER040485	30									<7E-3					
2004-08-03	ER040483	35									<6E-3					
2004-08-11	ER040493	30									<5E-3					
2004-08-11	ER040491	35									<5E-3					
2004-08-17	ER040502	30									<5E-3					
2004-08-17	ER040500	35									<7E-3					
2004-08-24	ER040506	30									<5E-3					
2004-08-24	ER040504	35									<6E-3					
2004-09-01	ER040521	30									<5E-3					
2004-09-01	ER040519	35									<5E-3					
2004-09-08	ER040529	30									<9E-3					
2004-09-08	ER040527	35									<9E-3					
2004-09-14	ER040540	30									<8E-3					
2004-09-14	ER040538	35									<7E-3					
2004-09-20	ER040552	30									<8E-3					
2004-09-20	ER040550	35									<8E-3					
2004-09-28	ER040557	30									<5E-3					
2004-09-28	ER040555	35									<5E-3					
2004-10-05	ER040592	30									<6E-3					
2004-10-05	ER040590	35									<7E-3					
2004-10-12	ER040610	30									<5E-3					
2004-10-12	ER040608	35									<7E-3					
2004-10-19	ER040628	30									<4E-3					
2004-10-19	ER040626	35									<5E-3					
2004-10-26	ER040644	30									<6E-3					
2004-10-26	ER040642	35									<6E-3					
2004-11-03	ER040654	30									<4E-3					
2004-11-03	ER040652	35									<4E-3					
2004-11-09	ER040663	30									<1.0E-2					
2004-11-09	ER040661	35									<1.0E-2					
2004-11-16	ER040672	30									<7E-3					
2004-11-16	ER040670	35									<7E-3					

*Power failure caused short run time
**Units expressed as pCi/sample; air sampler found not running
***Air sampler was out of service; flow rate assumed to be 2.0 at stop time

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
2004-11-22	ER040676	30									<5E-3					
2004-11-22	ER040674	35									<5E-3					
2004-11-30	ER040684	30									<4E-3					
2004-11-30	ER040682	35									<4E-3					
2004-12-08	ER040701	30									<5E-3					
2004-12-08	ER040699	35									<5E-3					
2004-12-14	ER040714	30									<6E-3					
2004-12-14	ER040712	35									<9E-3					
2004-12-20	ER040774	30									<1.3E-2					
2004-12-20	ER040772	35									<1.4E-2					
2004-12-28	ER040778	30									<5E-3					
2004-12-28	ER040776	35									<5E-3					
Air Particulate pCi/m³																
2004-01-06	ER040025	30	2.7E-2													
2004-01-06	ER040023	35	2.5E-2													
2004-01-13	ER040041	30	3.8E-2													
2004-01-13	ER040039	35	3.6E-2													
2004-01-20	ER040071	30	2.3E-2													
2004-01-20	ER040069	35	2.3E-2													
2004-01-27	ER040082	30	4.0E-2													
2004-01-27	ER040080	35	4.0E-2													
2004-02-02	ER040094	30	3.0E-2													
2004-02-02	ER040092	35	2.9E-2													
2004-02-10	ER040106	30	2.9E-2													
2004-02-10	ER040104	35	3.1E-2													
2004-02-17	ER040119	30	2.4E-2													
2004-02-17	ER040117	35	2.3E-2													
2004-02-25	ER040134	30	3.8E-2													
2004-02-25	ER040132	35	3.5E-2													
2004-03-02	ER040142	30	2.3E-2													
2004-03-02	ER040140	35	2.2E-2													
2004-03-09	ER040153	30	1.7E-2													
2004-03-09	ER040151	35	1.7E-2													
2004-03-16	ER040184	30	2.0E-2													
2004-03-16	ER040182	35	1.9E-2													
2004-03-23	ER040188	30	2.1E-2													
2004-03-23	ER040186	35	2.1E-2													
2004-03-30	ER040203	30	5.3E-2													
2004-03-30	ER040201	35	6.9E-2													
2004-04-06	ER040231	30	2.5E-2													
2004-04-06	ER040229	35	2.4E-2													
2004-04-13	ER040243	30	1.7E-2													
2004-04-13	ER040241	35	1.8E-2													
2004-04-21	ER040277	30	2.8E-2													
2004-04-21	ER040275	35	2.9E-2													
2004-04-28	ER040289	30	1.8E-2													
2004-04-28	ER040287	35	2.0E-2													
2004-05-04	ER040297	30	2.3E-2													
2004-05-04	ER040295	35	2.2E-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
2004-05-11	ER040322	30	2.7E-2													
2004-05-11	ER040320	35	2.9E-2													
2004-05-18	ER040343	30	1.7E-2													
2004-05-18	ER040341	35	1.8E-2													
2004-05-25	ER040349	30	2.0E-2													
2004-05-25	ER040347	35	2.1E-2													
2004-06-01	ER040365	30	1.9E-2													
2004-06-01	ER040364	35	2.0E-2													
2004-06-09	ER040372	30	2.1E-2													
2004-06-09	ER040370	35	2.2E-2													
2004-06-15	ER040382	30	1.5E-2													
2004-06-15	ER040380	35	1.4E-2													
2004-06-22	ER040393	30	3.2E-2 *													
2004-06-22	ER040391	35	2.6E-2													
2004-06-29	ER040404	30	3.13 **													
2004-06-29	ER040402	35	2.3E-2													
2004-07-06	ER040427	30	2.3E-2													
2004-07-06	ER040425	35	2.1E-2													
2004-07-13	ER040435	30	1.8E-2													
2004-07-13	ER040433	35	1.7E-2													
2004-07-20	ER040456	30	2.8E-2													
2004-07-20	ER040454	35	6.4E-2 ***													
2004-07-27	ER040474	30	2.4E-2 *													
2004-07-27	ER040472	35	2.1E-2													
2004-08-03	ER040484	30	2.0E-2													
2004-08-03	ER040482	35	2.0E-2													
2004-08-11	ER040492	30	3.2E-2													
2004-08-11	ER040490	35	3.0E-2													
2004-08-17	ER040501	30	3.0E-2													
2004-08-17	ER040499	35	2.9E-2													
2004-08-24	ER040505	30	1.8E-2													
2004-08-24	ER040503	35	1.6E-2													
2004-09-01	ER040520	30	2.2E-2													
2004-09-01	ER040518	35	2.1E-2													
2004-09-08	ER040528	30	2.0E-2													
2004-09-08	ER040526	35	2.1E-2													
2004-09-14	ER040539	30	2.5E-2													
2004-09-14	ER040537	35	2.6E-2													
2004-09-20	ER040551	30	2.2E-2													
2004-09-20	ER040549	35	2.1E-2													
2004-09-28	ER040556	30	2.9E-2													
2004-09-28	ER040554	35	2.8E-2													
2004-10-05	ER040591	30	4.0E-2													
2004-10-05	ER040589	35	3.7E-2													
2004-10-12	ER040609	30	1.4E-2													
2004-10-12	ER040607	35	1.4E-2													

*Power failure caused short run time
**Units expressed as pCi/sample; air sampler found not running
***Air sampler was out of service; flow rate assumed to be 2.0 at stop time

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
2004-10-19	ER040627	30	2.5E-2													
2004-10-19	ER040625	35	2.5E-2													
2004-10-26	ER040643	30	1.8E-2													
2004-10-26	ER040641	35	1.8E-2													
2004-11-03	ER040653	30	1.9E-2													
2004-11-03	ER040651	35	1.8E-2													
2004-11-09	ER040662	30	2.5E-2													
2004-11-09	ER040660	35	2.6E-2													
2004-11-16	ER040671	30	2.6E-2													
2004-11-16	ER040669	35	2.5E-2													
2004-11-22	ER040675	30	1.2E-2													
2004-11-22	ER040673	35	1.2E-2													
2004-11-30	ER040683	30	2.0E-2													
2004-11-30	ER040681	35	1.8E-2													
2004-12-08	ER040700	30	2.2E-2													
2004-12-08	ER040698	35	2.2E-2													
2004-12-14	ER040713	30	2.2E-2													
2004-12-14	ER040711	35	1.9E-2													
2004-12-20	ER040773	30	2.3E-2													
2004-12-20	ER040771	35	2.1E-2													
2004-12-28	ER040777	30	2.2E-2													
2004-12-28	ER040775	35	2.1E-2													
Air Particulate Composite pCi/Sample																
2004-04-15	ER040233	30		<1.1E+1	<3.1	<4.0	<2.9	<3.6	<5.6		<2.9	<3.6	<3.1	<3.1	<6.5	<5.1
2004-04-15	ER040234	35		<7.5	<2.0	<2.8	<2.4	<2.4	<4.5		<2.1	<2.8	<2.3	<2.4	<5.5	<3.9
2004-07-26	ER040440	30		<9.2	<2.7	<3.6	<2.6	<3.3	<5.4		<2.5	<3.4	<2.8	<2.8	<6.5	<5.0
2004-07-26	ER040441	35		<7.1	<2.0	<2.5	<2.3	<2.5	<4.4		<2.2	<2.9	<2.5	<2.4	<5.0	<4.0
2004-10-18	ER040600	30		<1.1E+1	<3.3	<3.5	<3.3	<3.5	<6.1		<2.9	<3.9	<3.3	<3.3	<7.8	<5.6
2004-10-18	ER040601	35		<7.6	<2.2	<2.6	<2.3	<2.4	<4.8		<2.3	<3.0	<2.6	<2.2	<5.3	<4.0
2005-01-10	ER050007	30		<9.9	<2.9	<3.7	<2.8	<3.4	<6.0		<2.7	<3.7	<2.9	<2.9	<6.7	<5.4
2005-01-10	ER050008	35		<7.2	<2.2	<2.6	<2.2	<2.5	<4.4		<2.2	<3.1	<2.3	<2.1	<4.8	<3.4
Fish pCi/kg																
2004-03-24	ER040200	53		<7.6E+1	<1.7E+1	<1.8E+1	<1.6E+1	<1.8E+1	<3.3E+1		<2.8E+1	<2.5E+1	<1.6E+1	<1.8E+1	<3.6E+1	<2.9E+1
2004-10-12	ER040629	53		<1.16E+2	<1.8E+1	<2.0E+1	<1.5E+1	<1.8E+1	<4.0E+1		<5.6E+1	<3.5E+1	<1.8E+1	<2.2E+1	<3.7E+1	<3.4E+1
Food Product pCi/kg																
2004-06-15	ER040384	35		<4.9E+1	<1.3E+1	<1.5E+1	<1.3E+1	<1.5E+1	<2.6E+1		<1.7E+1	<1.6E+1	<1.3E+1	<1.4E+1	<2.9E+1	<2.2E+1
2004-06-15	ER040385	63		<4.8E+1	<1.1E+1	<1.1E+1	<9.9	<1.2E+1	<2.3E+1		<1.7E+1	<1.4E+1	<1.1E+1	<1.2E+1	<2.5E+1	<1.9E+1
2004-09-29	ER040568	30		<4.9E+1	<9.8	<1.1E+1	<8.7	<1.1E+1	<2.3E+1		<1.8E+1	<1.5E+1	<9.7	<1.1E+1	<2.4E+1	<1.7E+1
2004-09-29	ER040567	35		<9.7E+1	<2.1E+1	<2.0E+1	<1.8E+1	<2.0E+1	<4.3E+1		<3.7E+1	<2.9E+1	<2.0E+1	<2.2E+1	<4.4E+1	<3.6E+1
2004-12-14	ER040717	04		<7.6E+1	<1.6E+1	<1.6E+1	<1.4E+1	<1.6E+1	<3.4E+1		<3.0E+1	<2.2E+1	<1.6E+1	<1.8E+1	<3.6E+1	<2.9E+1
2004-12-14	ER040716	35		<7.4E+1	<1.5E+1	<1.6E+1	<1.5E+1	<1.5E+1	<3.2E+1		<2.8E+1	<2.2E+1	<1.5E+1	<1.6E+1	<3.3E+1	<2.8E+1
Sediment pCi/kg																
2004-03-24	ER040196	52		<4.36E+2	<9.7E+1	<9.2E+1	<1.06E+2	<1.07E+2	<1.86E+2		<1.55E+2	<1.64E+2	<9.2E+1	<1.15E+2	<2.17E+2	<1.64E+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																
2004-03-23	ER040190	63		<1.9E+1	<4.9	<5.6	<4.7	<4.9	<1.2E+1		<5.7	<5.1	<5.0	<5.1	<1.3E+1	<8.8
2004-04-21	ER040279	04		<3.7E+1	<1.1E+1	<1.3E+1	<1.1E+1	<1.1E+1	<2.6E+1		<1.2E+1	<1.1E+1	<1.1E+1	<1.2E+1	<2.8E+1	<1.9E+1
2004-05-18	ER040345	04		<2.6E+1	<5.8	<6.7	<5.8	<6.2	<1.5E+1		<9.4	<7.9	<6.1	<6.6	<1.6E+1	<1.1E+1
2004-06-17	ER040386	04		<5.4E+1	<9.6	<1.1E+1	<8.1	<9.0	<2.5E+1		<2.2E+1	<1.3E+1	<9.3	<1.2E+1	<2.4E+1	<1.7E+1
2004-07-27	ER040476	30		<4.5E+1	<1.3E+1	<1.5E+1	<1.1E+1	<1.2E+1	<2.8E+1		<1.4E+1	<1.8E+1	<1.3E+1	<1.3E+1	<3.2E+1	<2.1E+1
2004-08-24	ER040509	30		<5.3E+1	<1.2E+1	<1.2E+1	<9.8	<1.2E+1	<2.5E+1		<1.9E+1	<1.5E+1	<1.2E+1	<1.3E+1	<2.7E+1	<2.0E+1
2004-09-28	ER040558	04		<4.5E+1	<1.1E+1	<1.0E+1	<8.7	<9.8	<2.4E+1		<1.6E+1	<1.4E+1	<9.7	<1.1E+1	<2.4E+1	<1.7E+1
2004-10-26	ER040646	04		<4.2E+1	<9.2	<1.1E+1	<8.2	<9.2	<2.2E+1		<1.7E+1	<1.2E+1	<8.9	<1.1E+1	<2.5E+1	<1.6E+1
2004-11-30	ER040686	04		<5.2E+1	<1.2E+1	<1.2E+1	<9.6	<1.2E+1	<2.7E+1		<1.9E+1	<1.4E+1	<1.2E+1	<1.3E+1	<2.8E+1	<2.1E+1
2004-12-14	ER040715	30		<5.5E+1	<1.3E+1	<1.3E+1	<1.1E+1	<1.3E+1	<2.8E+1		<2.1E+1	<1.6E+1	<1.2E+1	<1.4E+1	<2.9E+1	<2.2E+1
Water-Surface pCi/l																
2004-01-13	ER040043	54	8.1	<7.7	<1.9	<2.0	<1.9	<2.1	<3.6		<2.6	<2.8	<1.8	<2.1	<4.1	<3.3
2004-01-28	ER040091	47	8.8	<8.3	<1.9	<2.0	<1.9	<2.1	<3.9		<2.9	<2.9	<2.0	<2.0	<3.7	<3.6
2004-02-17	ER040121	46	1.1E+1	<7.2	<1.9	<2.1	<1.9	<2.0	<3.8		<2.4	<2.4	<2.0	<2.0	<4.0	<3.3
2004-02-19	ER040124	52	8.9	<8.6	<2.1	<1.9	<1.8	<2.0	<4.0		<3.0	<2.9	<2.0	<2.2	<4.1	<3.4
2004-03-09	ER040155	46	7.5	<7.5	<2.0	<2.0	<1.8	<2.1	<3.5		<2.4	<2.9	<1.9	<2.0	<3.8	<3.3
2004-03-24	ER040195	52	2.0E+1	<9.5	<1.9	<2.0	<1.9	<2.0	<4.1		<3.6	<3.6	<2.0	<2.2	<4.2	<3.3
2004-04-13	ER040245	54	5.7	<7.1	<2.0	<1.9	<1.9	<2.0	<3.6		<2.3	<2.5	<1.9	<2.0	<4.2	<3.1
2004-04-15	ER040269	52	2.7E+1	<8.6	<1.9	<2.1	<2.0	<2.1	<4.2		<3.0	<3.0	<1.9	<2.1	<4.0	<3.5
2004-05-04	ER040299	54	5.9	<7.2	<1.8	<2.0	<1.9	<1.9	<3.6		<2.5	<2.4	<1.9	<1.9	<3.9	<3.3
2004-05-24	ER040346	52	9.7	<2.1E+1	<4.8	<6.0	<4.7	<5.3	<9.8		<6.6	<6.8	<4.7	<5.3	<1.1E+1	
2004-06-09	ER040374	54	1.1E+1	<1.6E+1	<2.8	<3.1	<3.0	<3.0	<6.2		<6.0	<5.3	<2.9	<3.3	<6.3	<5.5
2004-06-21	ER040395	52	2.1E+1	<7.8	<1.9	<1.9	<1.8	<2.1	<3.9		<2.8	<2.8	<1.9	<2.0	<3.9	<3.4
2004-07-13	ER040437	54	9.8	<9.2	<2.0	<2.0	<1.9	<2.0	<3.8		<3.3	<2.9	<2.0	<2.2	<4.4	<3.4
2004-07-28	ER040477	52	1.3E+1	<7.5	<2.1	<2.1	<1.9	<2.2	<4.0		<2.3	<2.5	<2.1	<2.2	<4.7	<3.5
2004-08-11	ER040494	54	5.4	<9.5	<2.2	<2.2	<2.0	<2.2	<4.1		<3.2	<3.1	<2.1	<2.3	<4.5	<3.8
2004-08-25	ER040510	52	5.3E+1	<8.4	<1.9	<1.9	<1.8	<2.1	<3.7		<3.1	<3.3	<1.9	<2.2	<4.2	<3.4
2004-09-08	ER040530	54	7.0	<8.9	<1.9	<1.9	<1.8	<2.1	<3.9		<3.7	<3.4	<1.9	<2.2	<3.9	<3.4
2004-09-21	ER040553	52	6.1E+1	<7.4	<1.8	<2.1	<1.9	<2.2	<3.9		<2.6	<2.6	<1.9	<2.0	<4.1	<3.4
2004-10-12	ER040611	54	5.4	<6.7	<1.7	<2.0	<1.8	<2.2	<3.8		<2.4	<2.5	<1.8	<1.9	<3.9	<3.3
2004-10-26	ER040645	52	3.3E+1	<7.8	<1.9	<1.9	<1.8	<2.2	<4.1		<2.9	<3.1	<1.8	<2.0	<4.2	<3.3
2004-11-09	ER040664	46	9.5	<8.4	<1.8	<2.0	<1.8	<2.0	<3.9		<3.5	<3.1	<1.8	<2.1	<4.0	<3.3
2004-11-30	ER040685	46	1.9E+1	<8.8	<2.2	<2.1	<2.0	<2.3	<4.4		<2.9	<2.8	<2.1	<2.3	<4.5	<3.9
2004-12-08	ER040702	46	1.3E+1	<8.9	<1.9	<2.0	<1.8	<2.1	<3.9		<3.7	<3.3	<1.9	<2.0	<3.8	<3.3
2004-12-30	ER050017	47	6.5	<1.2E+1	<2.1	<1.9	<1.9	<2.0	<4.2		<5.0	<4.2	<2.0	<2.3	<3.8	<3.5
Water-Surface Composite pCi/l																
2004-05-13	ER040237	46								<1.0E+3						
2004-05-13	ER040238	52								<1.0E+3						
2004-08-05	ER040442	52								<1.0E+3						
2004-08-05	ER040443	54								<1.0E+3						
2004-11-05	ER040602	52								<1.0E+3						
2004-11-05	ER040603	54								<1.0E+3						
2005-02-22	ER050009	46								<1.0E+3						
2005-02-22	ER050010	52								<1.0E+3						

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Radioactive Waste

Processors

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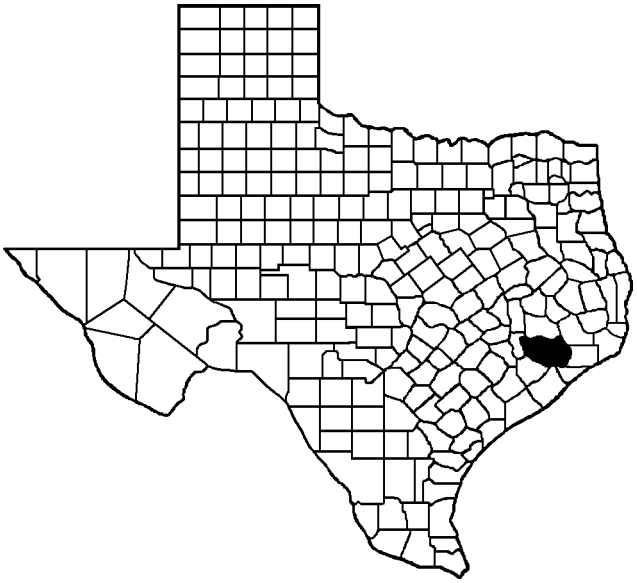
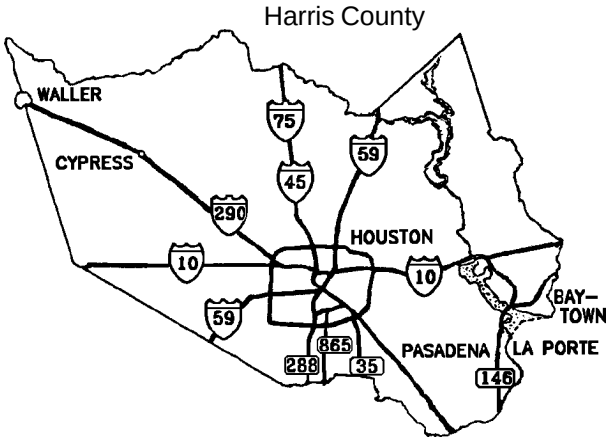
Nuclear Sources and Services, Inc.

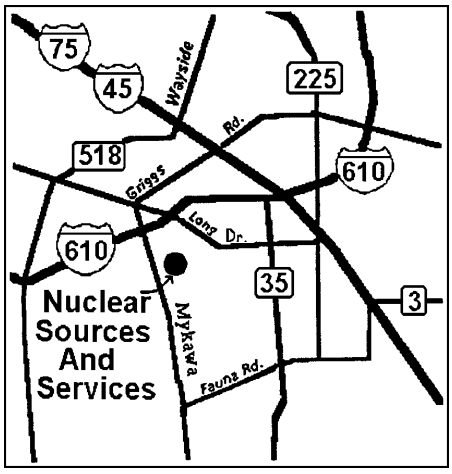
Radiation Branch Site No. 023

The Nuclear Sources and Services, Inc. (NSSI) facility occupies approximately 5 acres in a light industrial area of Southeast Houston approximately 4 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 offsite generators both inside and outside of Texas. At the conclusion of treatment or storage, the residues are shipped to permitted offsite facilities for disposal. The Radiation Branch surveillance program consists of soil sampling and TLD monitoring.





Shaded area indicates location of Harris County



Monitoring Station Locations

♦ TLD Station	♥ Sample Station	♣ TLD & Sample Station

Homeland Security --
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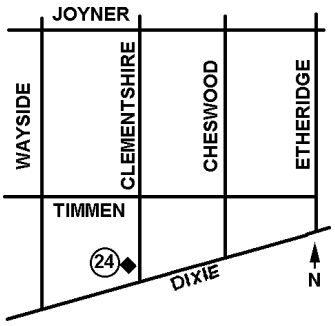

Thermoluminescent Dosimeter (TLD) Monitoring Results[1] (quarterly and annual readings are in mrem)

Station	Q1	Q2	Q3	Q4	Annual[2] Dose	Notes
03	217.4	173.7	136.5	177.3	704.9	
04	44.5	102.9	23.2	123.7	294.3	
06	4.0	4.6	0.9	7.0	16.5	
07	17.2	25.7	26.0	796.8	865.7	
11	3.0	1.8	1.9	7.0	13.7	
12	2.0	6.4	18.6	35.0	62.0	
16	20.2	37.7	26.9	35.0	119.8	
18	5.1	14.7	30.6	10.5	60.9	
19	18.2	46.0	48.3	52.5	165.0	
20	16.2	31.3	34.4	47.8	129.7	
21	186.0	294.1	310.1	352.3	1142.5	
22	2.0	16.5	14.9	19.8	53.2	
23	7.1	19.3	16.7	23.3	66.4	
24	21.2	0.0	0.0	0.0	21.2	Background; Q2-4 Landauer, Inc. reading was minimal
25	39.4	46.0	69.6	65.3	220.3	
41	80.9	102.9	123.5	85.2	392.5	

NOTE: [1]Combined neutron/gamma dosimeters are deployed at this facility. Exposure reported includes neutron and gamma doses.
[2]Occupancy factor not provided.

Environmental Sample Results

Date	Lab No.	Station	Alpha	Ra-226*	Am-241	Co-60	Cs-137	I-125	Ra-226
Soil µCi/g									
2004-01-15	ER040050	26	1.9E-5	1.2E-6	<4E-7	<2E-7	2.9E-5	<4E-7	<5.0E-6
2004-01-15	ER040049	28	1.7E-5	1.0E-6	<3E-7	<2E-7	<2E-7	<3E-7	<2.9E-6
2004-04-14	ER040267	26	1.3E-5	1.0E-6	<4E-7	<2E-7	2.8E-5	<4E-7	<4.6E-6
2004-04-14	ER040266	28	1.2E-5	1.3E-6	<3E-7	<2E-7	2E-7	<2E-7	<2.5E-6
2004-07-22	ER040452	26	1.3E-5	8E-7	<2E-7	<2E-7	1.9E-6	<2E-7	<2.3E-6
2004-07-22	ER040451	28	1.8E-5	1.0E-6	<2E-7	<2E-7	<2E-7	<2E-7	<2.4E-6
2004-10-28	ER040639	26	1.6E-5	6E-7	<3E-7	<2E-7	1.1E-5	<4E-7	<3.5E-6
2004-10-28	ER040638	28	1.7E-5	1.4E-6	<3E-7	<3E-7	<2E-7	<3E-7	<3.0E-6

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

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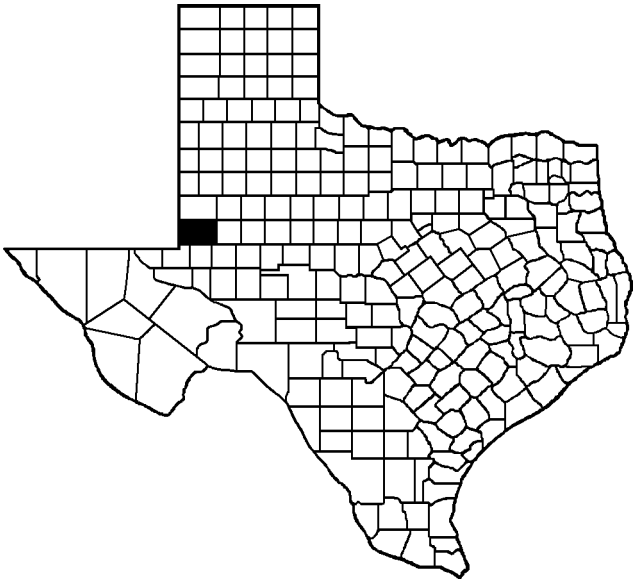
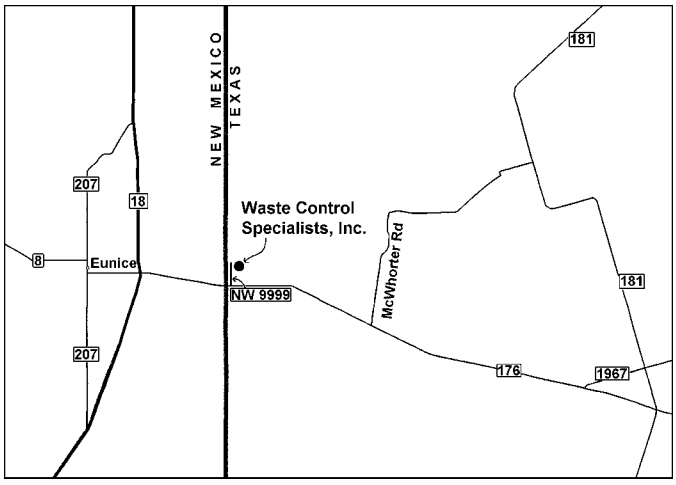
Waste Control Specialists

Radiation Branch Site No. 048

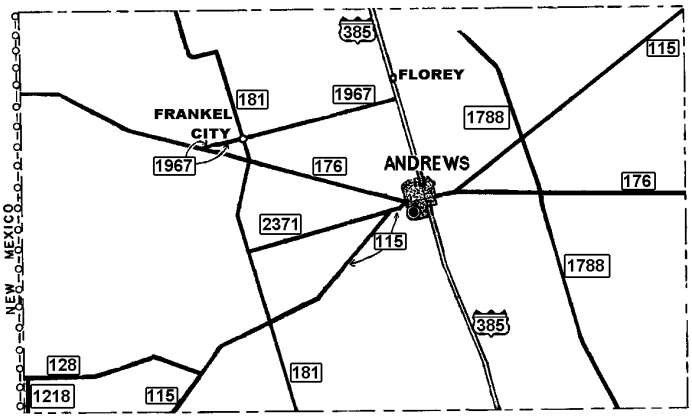
Waste Control Specialists (WCS) facility occupies 14,400 acres, in Andrews County approximately 30 miles west of Andrews on the Texas-New Mexico border. Approximately 1,300 acres are devoted to low-level radioactive waste storage. The primary activities of WCS currently are treatment, storage, and disposal of radioactive and hazardous wastes. The Radiation Branch surveillance program consists of sampling water, sewage, and soil and TLD monitoring.



Shaded area indicates location of Andrews County



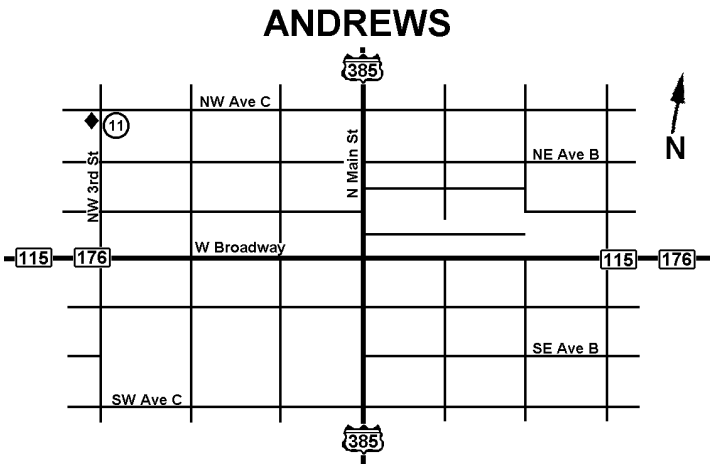
Andrews County



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	1.7	0.0	0.0	0.0	1.7	
02	0.8	0.0	0.0	0.0	0.8	
03	0.8	0.0	0.0	0.0	0.8	
04	1.7	0.0	0.0	0.0	1.7	
05	0.8	0.0	0.0	0.0	0.8	
11	19.9	20.1	20.6	26.5	87.1	Background

NOTE: *Value does not include 1/48 occupancy factor for TLD stations 1, 2, 4, and 5 or 1/20 occupancy factor for TLD station 3.

Environmental Sample Results

Date	*Lab No.*	*Station*	*Alpha*	*Beta*	*Pu-239**	*Ra-226**	*Th-232**	*U-234**	*U-238**	*Cs-137*
Sewage µCi/ml										
2004-05-11	ER040330	12	-	-	4.4E-9	1.2E-9	<1.0E-9	1.0E-8	6.0E-9	<8.8E-9
Soil µCi/g										
2004-01-22	ER040074	01	-	-	-	5E-7	-	<1.0E-6	<1.0E-6	-
2004-01-22	ER040076	02	-	-	-	6E-7	-	<1.0E-6	<1.0E-6	-
2004-01-22	ER040077	04	-	-	-	1.0E-6	-	<1.0E-6	<1.0E-6	-
2004-01-22	ER040078	05	-	-	-	7E-7	-	<1.0E-6	<1.0E-6	-
2004-01-22	ER040079	09	-	-	-	8E-7	-	<1.0E-6	<1.0E-6	2E-7
2004-05-11	ER040332	01	-	-	-	5E-7	-	<1.0E-6	<1.0E-6	-
2004-05-11	ER040334	02	-	-	-	6E-7	-	<1.0E-6	<1.0E-6	-
2004-05-11	ER040331	04	-	-	-	1.1E-6	-	<1.0E-6	<1.0E-6	1E-7
2004-05-11	ER040335	05	-	-	-	8E-7	-	<1.0E-6	<1.0E-6	-
2004-05-11	ER040333	09	-	-	-	3E-7	-	<1.0E-6	<1.0E-6	-
2004-07-27	ER040468	01	-	-	-	4E-7	-	<1.0E-6	<1.0E-6	-
2004-07-27	ER040469	02	-	-	-	7E-7	-	<1.0E-6	<1.0E-6	-
2004-07-27	ER040465	04	-	-	-	1.0E-6	-	<1.0E-6	<1.0E-6	-
2004-07-27	ER040466	05	-	-	-	2E-7	-	<1.0E-6	<1.0E-6	-
2004-07-27	ER040470	09	-	-	-	5E-7	-	<1.0E-6	<1.0E-6	-
2004-10-19	ER040617	01	-	-	-	8E-7	-	<1.0E-6	<1.0E-6	-
2004-10-19	ER040619	02	-	-	-	8E-7	-	<1.0E-6	<1.0E-6	-
2004-10-19	ER040620	04	-	-	-	6E-7	-	<1.0E-6	<1.0E-6	-
2004-10-19	ER040621	05	-	-	-	7E-7	-	<1.0E-6	<1.0E-6	-
2004-10-19	ER040622	09	-	-	-	7E-7	-	<1.0E-6	<1.0E-6	-
Water-Monitor Well µCi/ml										
2004-01-22	ER040075	01	9.0E-8	9.3E-8	-	2.2E-9	-	6.1E-8	3.8E-8	-
2004-05-11	ER040328	01	1.11E-7	8.3E-8	-	2.7E-9	-	6.4E-8	4.1E-8	-
2004-05-11	ER040329	09	2.7E-9	4.1E-9	-	3E-10	-	1.2E-9	<1.0E-9	-
2004-07-27	ER040467	01	1.21E-7	8.0E-8	-	2.2E-9	-	6.6E-8	4.0E-8	-
2004-07-27	ER040471	09	2.4E-9	4.7E-9	-	6E-10	-	1.0E-9	<1.0E-9	-
2004-10-19	ER040618	01	1.03E-7	9.2E-8	-	2.6E-9	-	6.8E-8	4.3E-8	-
2004-10-19	ER040623	09	2.2E-9	6.2E-9	-	8E-10	-	<1.0E-9	<1.0E-9	-

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

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Research Reactors

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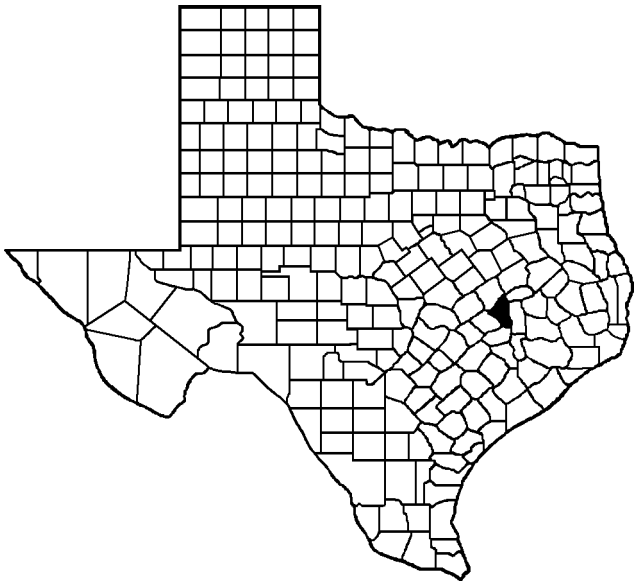
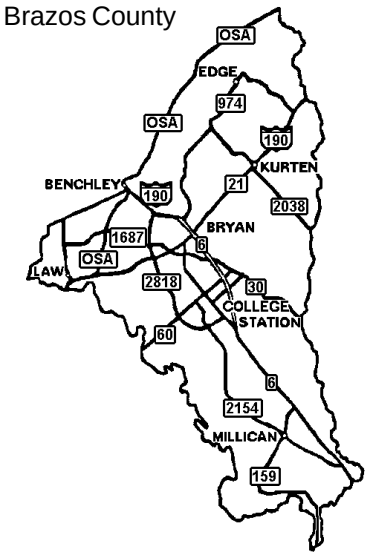
Texas A & M University Nuclear Science Center

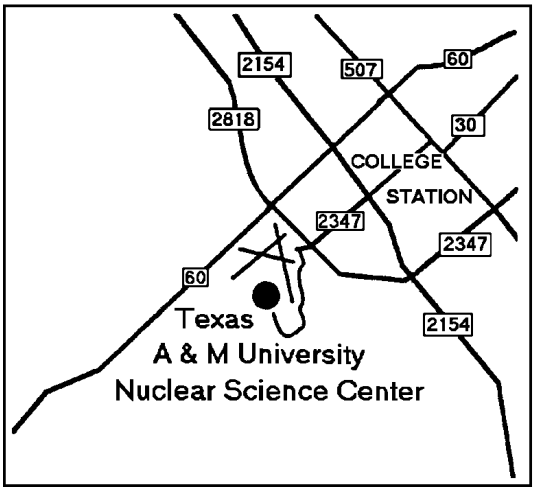
Radiation Branch Site No. 001

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

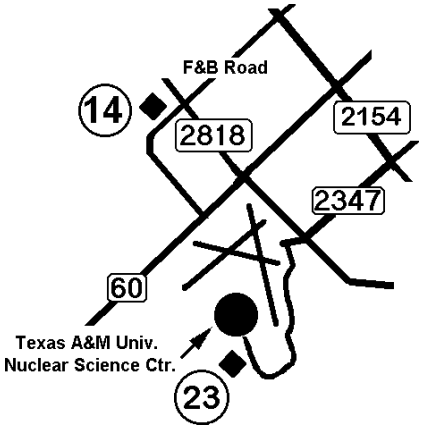




Monitoring Station Locations

♦ 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	2.2	2.0	2.9	0.0	7.1	
03	1.1	0.0	1.0	0.0	2.1	
04	4.3	5.0	6.7	1.0	17.0	
05	1.1	2.0	3.8	0.0	6.9	
10	0.0	1.0	1.9	0.0	2.9	
11	0.0	0.0	1.0	0.0	1.0	
14	26.0	13.7	--	17.2	75.9	Background;[1]Q3 TLD missing
18	2.2	3.0	4.8	0.0	10.0	
19	0.0	2.0	1.9	0.0	3.9	
20	0.0	0.0	1.0	0.0	1.0	
21	0.0	0.0	0.0	0.0	0.0	
22	0.0	0.0	0.0	0.0	0.0	
23	27.0	16.0	14.4	23.0	80.4	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.

Environmental Sample Results

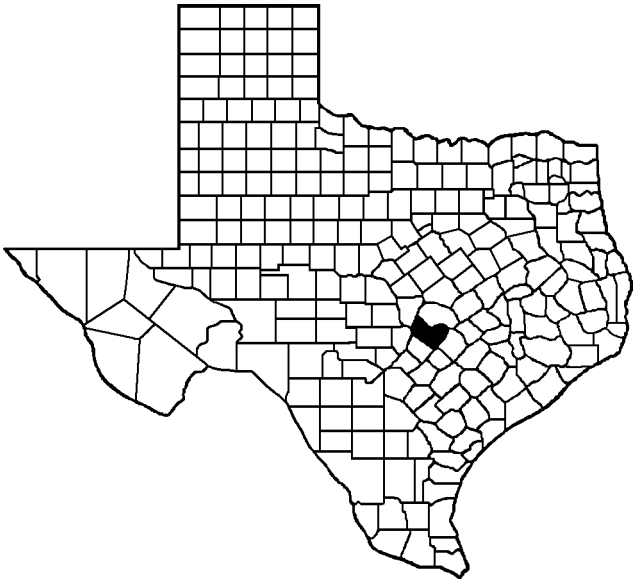
Texas A & M University Nuclear Science Center

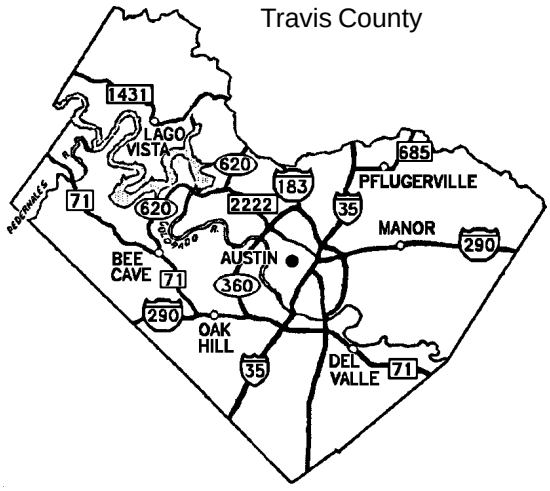
Date	Lab No.	Station	Ba-140	Co-58	Co-60	Cs-134	Cs-137	Fe-59	I-131	La-140	Mn-54	Nb-95	Sc-46	Zn-65	Zr-95
Sediment µCi/g															
2004-01-22	ER040073	16	<5E-7	<1E-7	7E-7	<2E-7	<2E-7	<2E-7	<2E-7	<2E-7	9E-7	<2E-7	8E-7	<5E-7	<2E-7
2004-04-15	ER040268	16	<4E-7	<1E-7	8E-7	<1E-7	<1E-7	<2E-7	<1E-7	<1E-7	8E-7	<1E-7	-	<3E-7	<2E-7
2004-07-16	ER040450	16	<4E-7	<1E-7	6E-7	<1E-7	<1E-7	<2E-7	<2E-7	<1E-7	4E-7	<1E-7	-	<3E-7	<2E-7
2004-10-22	ER040630	16	<1.7E-6	<4E-7	9E-7	<4E-7	<4E-7	<5E-7	<6E-7	<3E-7	8E-7	<4E-7	3.0E-5	<1.9E-6	<6E-7

University of Texas Nuclear Engineering Teaching Laboratory

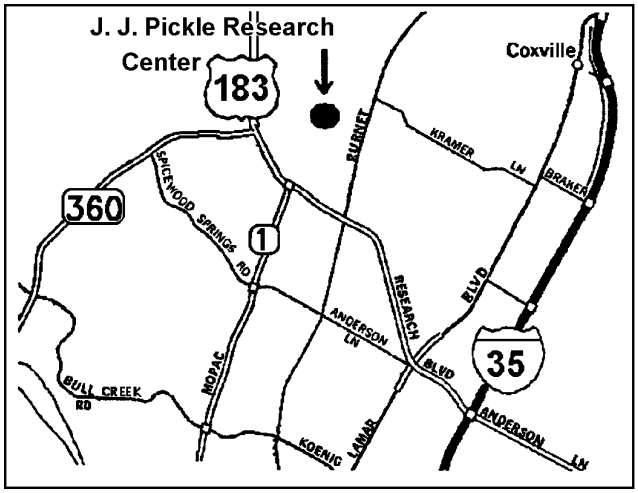
Radiation Branch Site No. 003

U. T. 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 water and sewage and TLD monitoring.





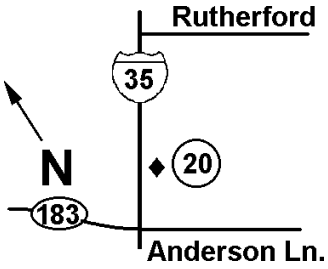
Shaded area indicates location of Travis County



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	0.0	0.0	0.0	0.0	0.0	
02	0.0	0.0	0.0	0.0	0.0	
03	0.0	0.0	0.0	0.0	0.0	
04	1.0	0.0	0.9	2.0	3.9	
05	1.0	0.0	0.0	4.0	5.0	
20	21.5	13.9	12.9	14.8	63.1	Background

NOTE: *Occupancy factor not provided.

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															
2004-01-21	ER040056	08	<4.9E-8	<1.3E-8	<1.3E-8	<1.3E-8	<1.4E-8	<2.3E-8	<1.0E-6	<1.7E-8	<1.6E-8	<1.2E-8	<1.3E-8	<2.3E-8	<2.3E-8
2004-04-22	ER040274	09	<2.8E-8	<7.5E-9	<9.4E-9	<7.5E-9	<8.5E-9	<1.6E-8	<1.0E-6	<8.4E-9	<8.9E-9	<7.9E-9	<8.0E-9	<1.9E-8	<1.4E-8
2004-07-13	ER040410	09	<3.5E-8	<8.6E-9	<1.1E-8	<1.1E-8	<1.1E-8	<1.9E-8	<1.0E-6	<1.1E-8	<1.3E-8	<1.1E-8	<1.1E-8	<2.1E-8	<1.7E-8
2004-10-20	ER040616	08	<2.5E-8	<6.7E-9	<7.7E-9	<6.0E-9	<7.3E-9	<1.4E-8	7.73E-6	<7.8E-9	<8.2E-9	<6.4E-9	<7.0E-9	<1.5E-8	<1.2E-8

Surface water samples from Station 07 were unavailable in 2004.

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Other Facilities

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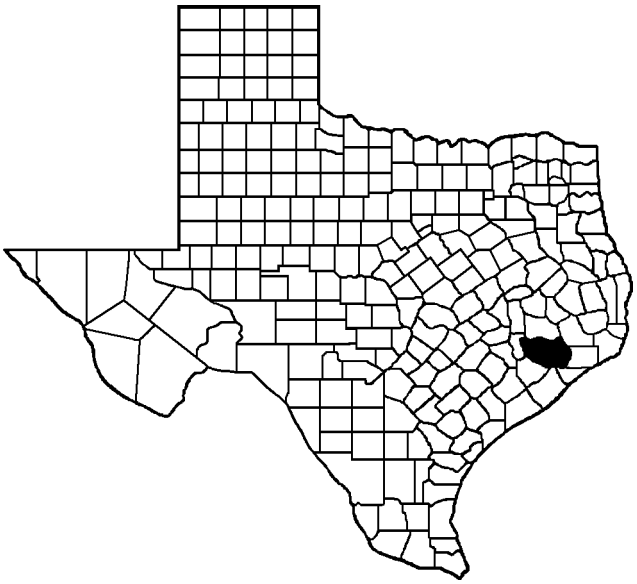
Gammatron, Inc.

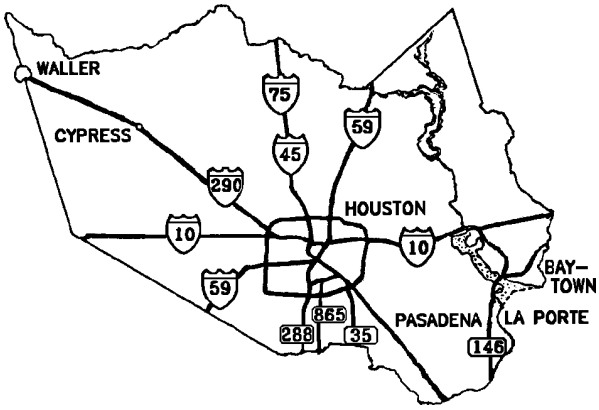
Radiation Branch Site No. 018

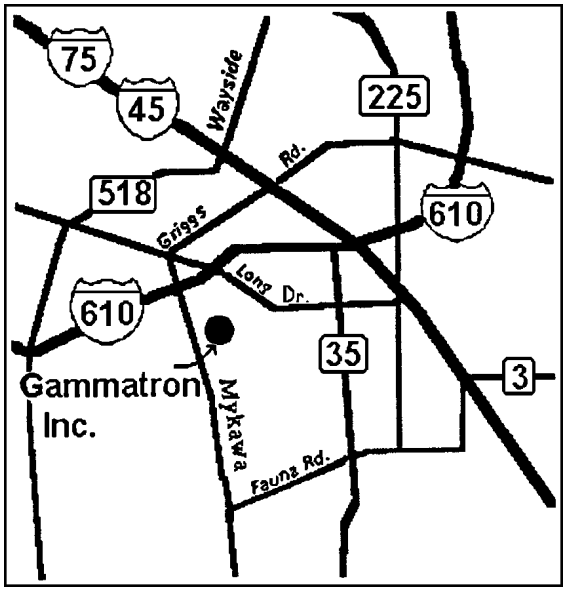
Gammatron, Inc. is a manufacturer of sealed radioactive sources, specializing in Am241Be and Am241Li neutron sources and Cs137 gamma sources. The facility is located in an industrial area of Houston approximately 4 miles northwest of William P. Hobby Airport. The Radiation Branch surveillance program consists of soil sampling and TLD monitoring.



Shaded area indicates location of Harris County

Harris County

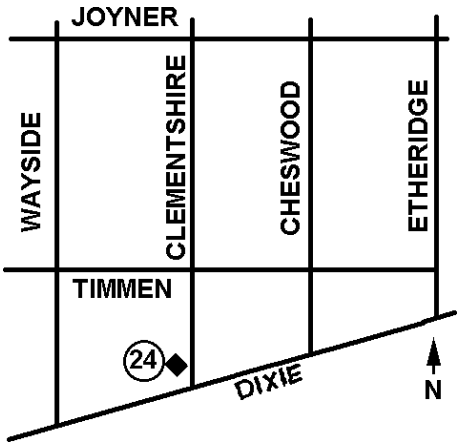




Monitoring Station Locations

♦ 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	58.6	120.4	274.9	478.3	932.2	
05	81.9	126.8	117.0	155.2	480.9	
08	148.6	167.3	140.2	158.7	614.8	
24	21.2	0.0	0.0	0.0	21.2	Background; Q2-4 Landauer, Inc. reading was minimal
30	59.7	66.2	74.3	127.2	327.4	
31	26.3	4.6	9.3	10.5	50.7	
34	154.7	196.7	173.6	182.0	707.0	
40	101.1	14.7	52.9	53.7	222.4	

NOTE: [1]Combined neutron/gamma dosimeters are deployed at this facility. Exposure reported includes neutron and gamma doses.
[2]Occupancy factor not provided.

Environmental Sample Results

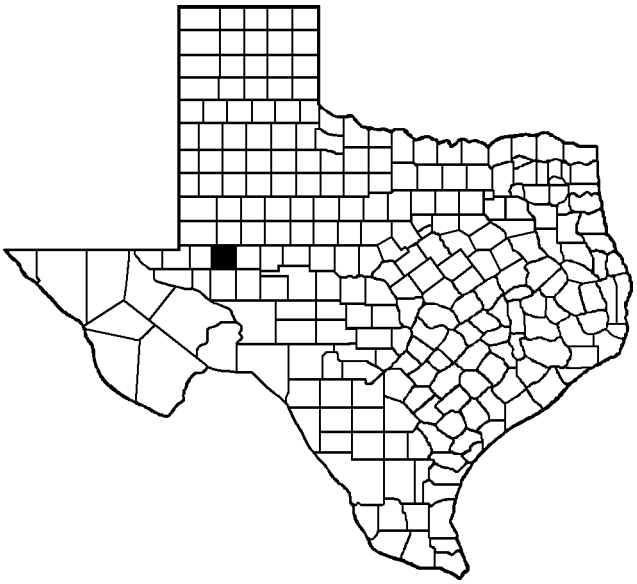
Date	*Lab No.*	*Station*	*Alpha*	*Ra-226**	*Am-241*	*Co-60*	*Cs-137*	*Ra-226*
Soil µCi/g								
2004-01-15	ER040051	31	1.5E-5	1.4E-6	<3E-7	<2E-7	<2E-7	<2.7E-6
2004-04-14	ER040265	31	1.9E-5	1.5E-6	<3E-7	<2E-7	<2E-7	<2.4E-6
2004-07-22	ER040453	31	1.6E-5	1.1E-6	<3E-7	<2E-7	<2E-7	<2.9E-6
2004-10-28	ER040640	31	2.1E-5	7E-7	<2E-7	<2E-7	<2E-7	<2.5E-6

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

GeoCo, Inc.

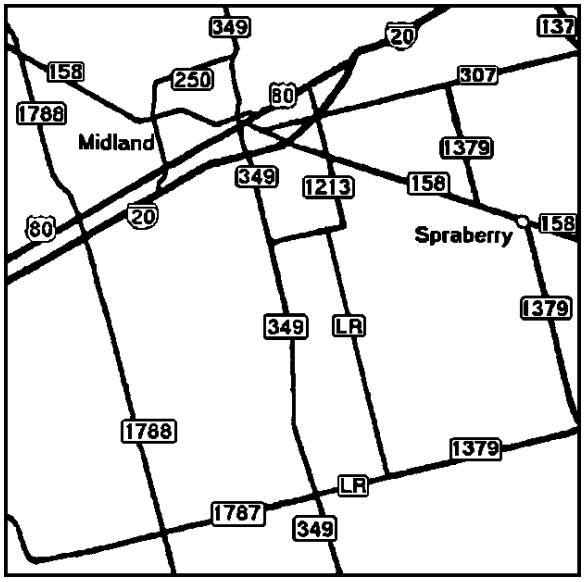
Radiation Branch Site No. 051

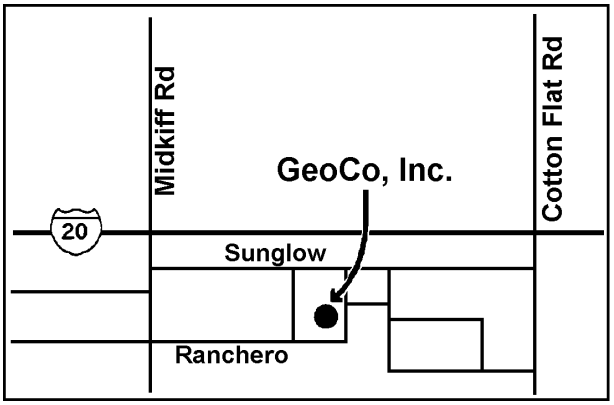
GeoCo, Inc. is a tracer studies company specializing in oil and gas wells. The facility is located in Midland approximately six miles east of Midland-Odessa International Airport. The Radiation Branch surveillance program consists of TLD monitoring.



Shaded area indicates location of Midland County

Midland County

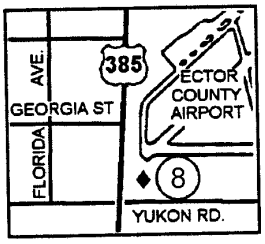




Monitoring Station Locations

♦ TLD Station ♥ Sample Station ♣ TLD & Sample Station

Homeland Security -- Diagram Removed



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

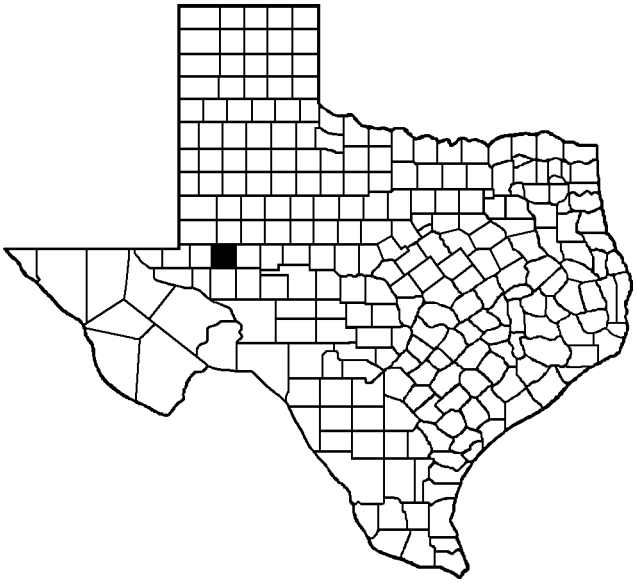
Station	*Q1*	*Q2*	*Q3*	*Q4*	*Annual* Dose*	*Notes*
01	140.9	214.8	180.9	202.7	739.3	
08	22.1	20.4	18.4	23.0	83.9	Background

Note: *Value does not include 1/10 occupancy factor.

Isotech Laboratories, Inc.

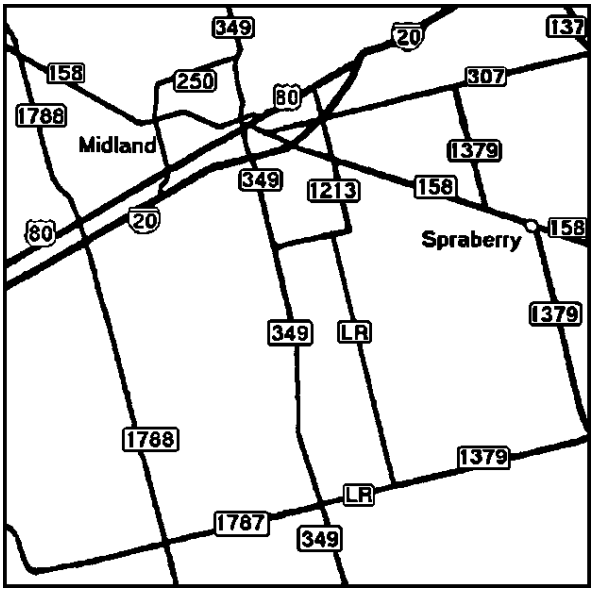
Radiation Branch Site No. 008

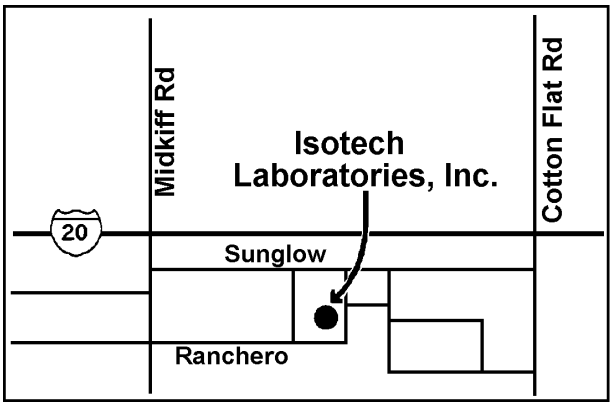
Isotech Laboratories, Inc. manufactures tracer material for the oil and gas industry, calibrates radiation detection instruments, and provides radiation safety training for well-logging and tracer services. The facility is located in Midland approximately six miles east of Midland-Odessa International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



Shaded area indicates location of Midland County

Midland County

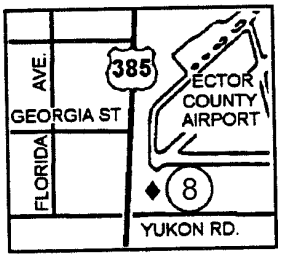




Monitoring Station Locations

♦ TLD Station ♥ Sample Station ♣ TLD & Sample Station

Homeland Security -- Diagram Removed



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

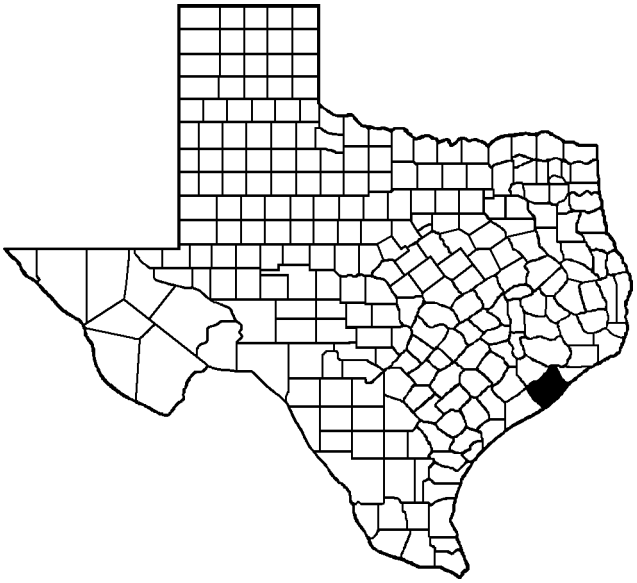
Station	*Q1*	*Q2*	*Q3*	*Q4*	*Annual* Dose*	*Notes*
01	11.3	12.1	10.8	15.0	49.2	
02	99.9	74.0	80.2	61.1	315.2	
03	63.6	57.0	57.4	61.1	239.1	
04	83.8	72.8	79.1	104.8	340.5	
06	39.5	37.6	66.1	130.2	273.4	
08	22.1	20.4	18.4	23.0	83.9	Background

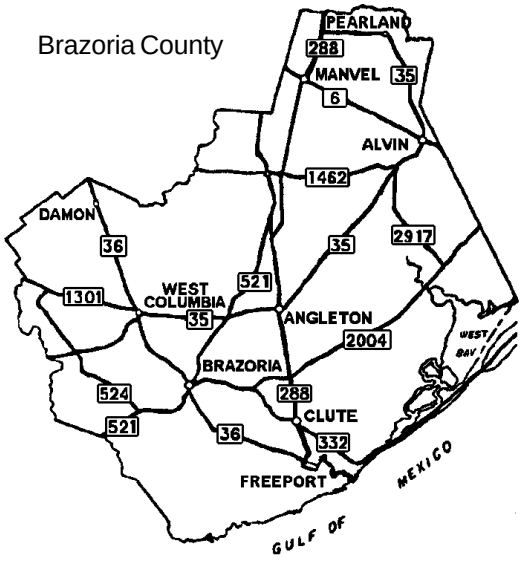
Note: *Value does not include 1/4 occupancy factor.

Iso-Tex, Inc.

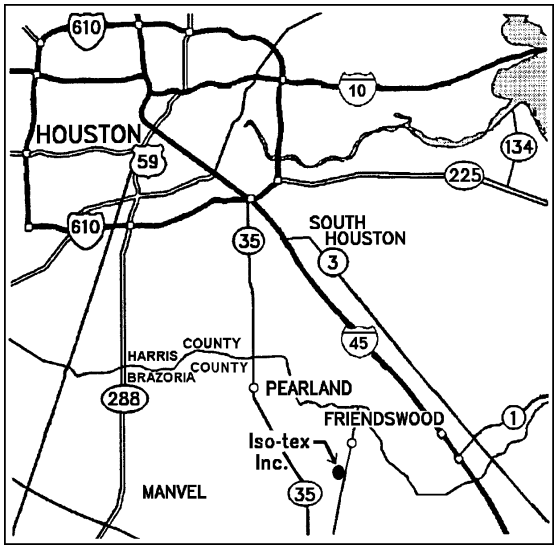
Radiation Branch Site No. 021

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 5 miles southeast of Pearland on County Road 129. The Radiation Branch surveillance program consists of TLD monitoring.





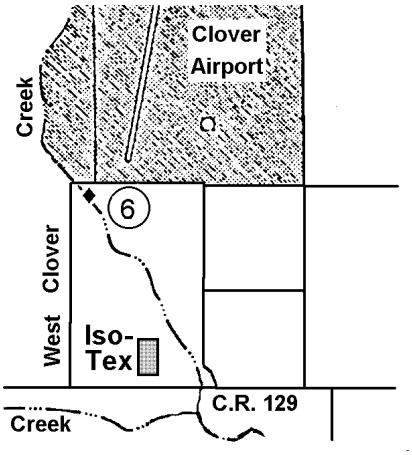
Shaded area indicates location of Brazoria County



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	1.0	0.9	0.0	0.0	1.9	
06	21.2	12.9	13.9	17.3	65.3	Background
07	3.0	4.6	2.8	2.3	12.7	
10	1.0	0.9	0.9	1.2	4.0	

NOTE: *Occupancy factor not provided.

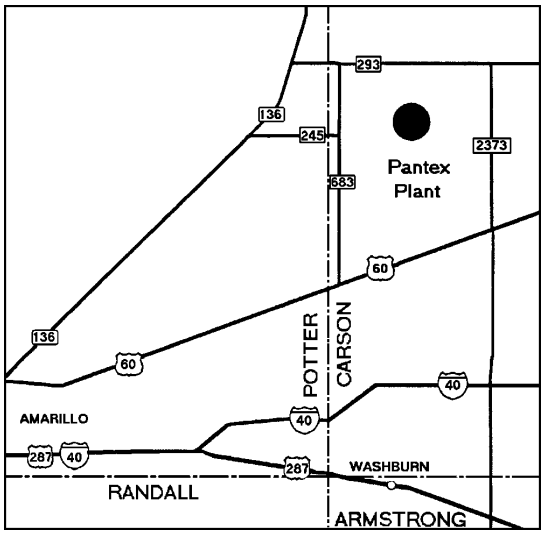
Pantex

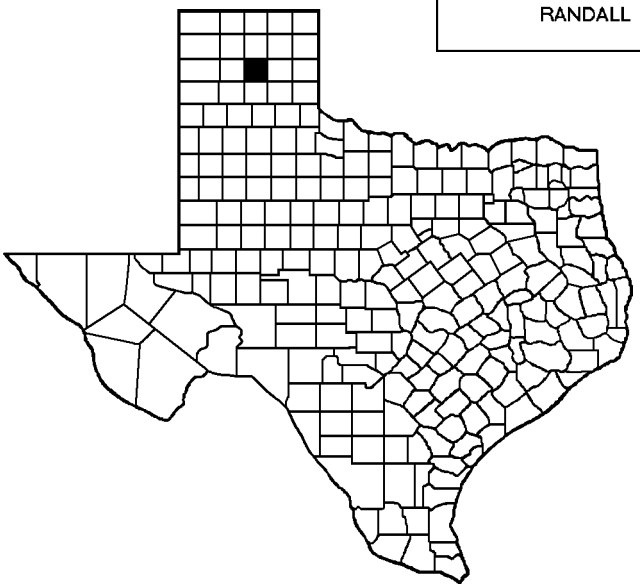
Radiation Branch Site No. 005

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 U.S. Department of Energy (DOE) 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.

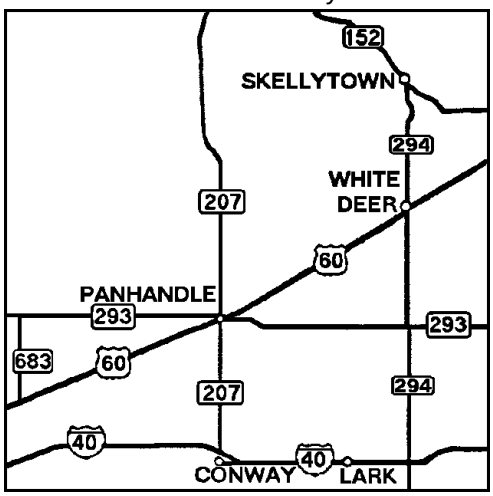
The Radiation Branch surveillance program consists of sampling air, water, soil, sediment, food products, and vegetation and TLD monitoring. Analysis of samples is concentrated on determining presence of any special nuclear material.





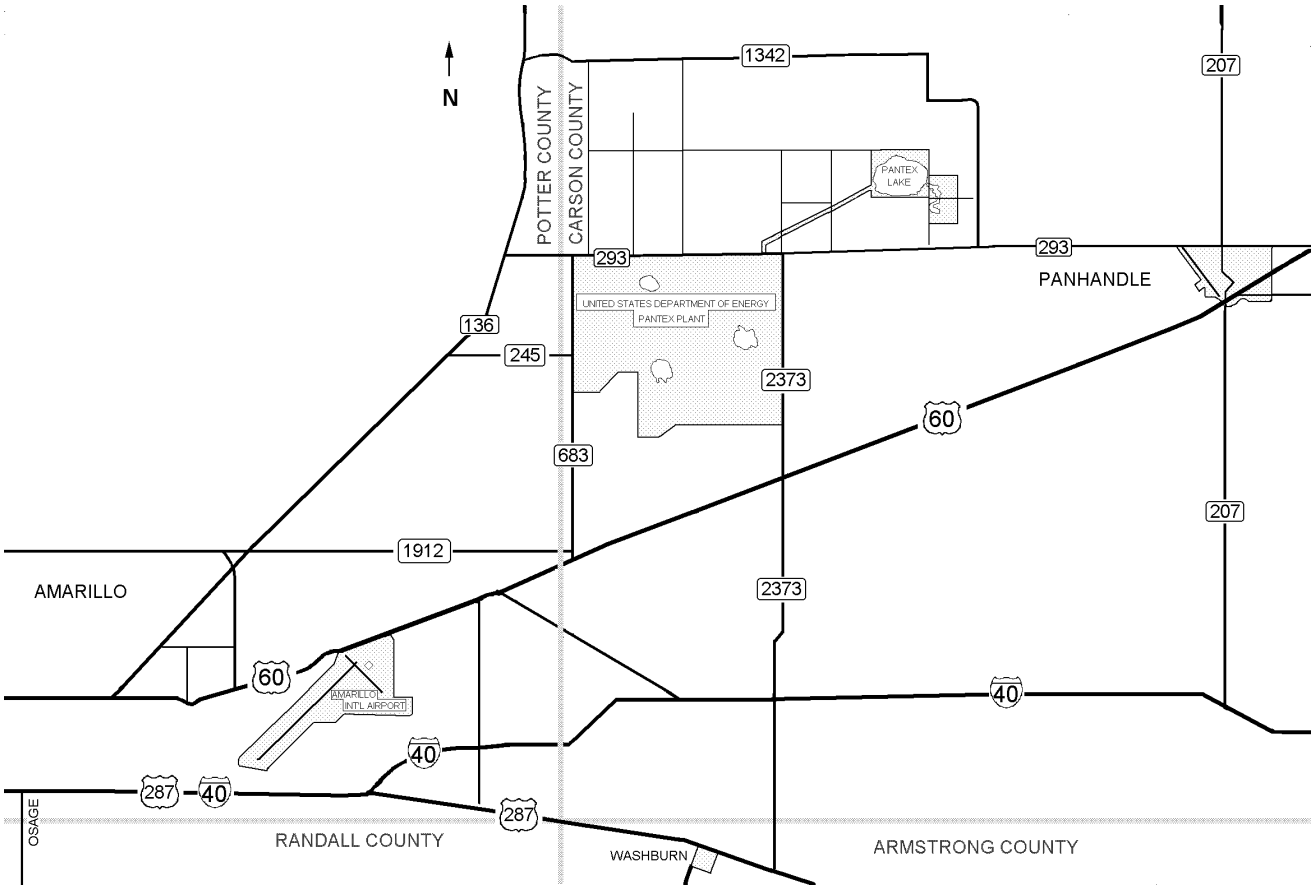
Shaded area indicates location of Carson County

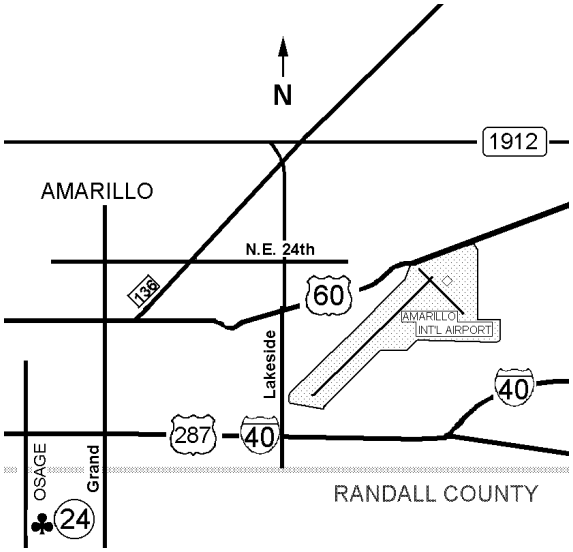
Carson County

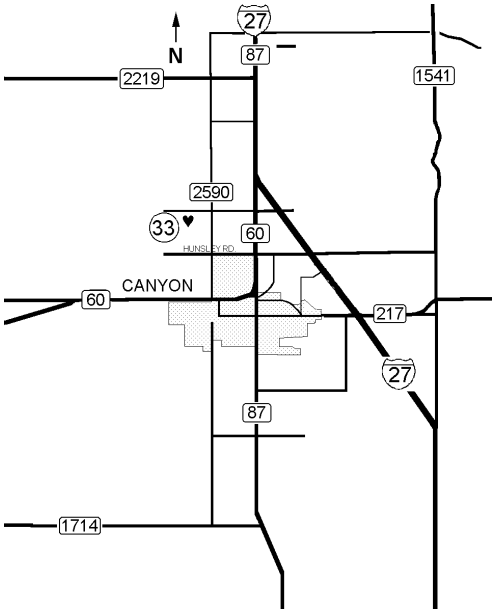


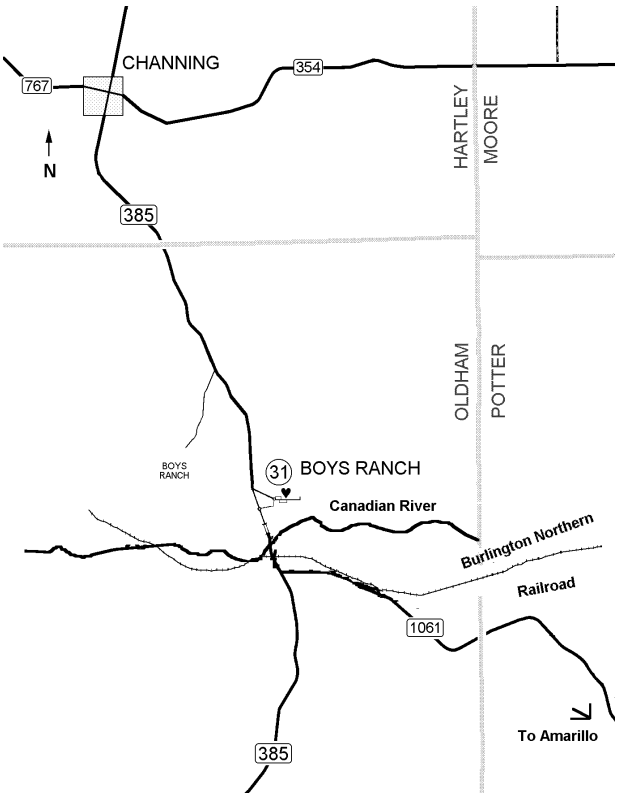
Monitoring Station Locations

♦ TLD Station ♥ Sample Station ♣ TLD & Sample Station

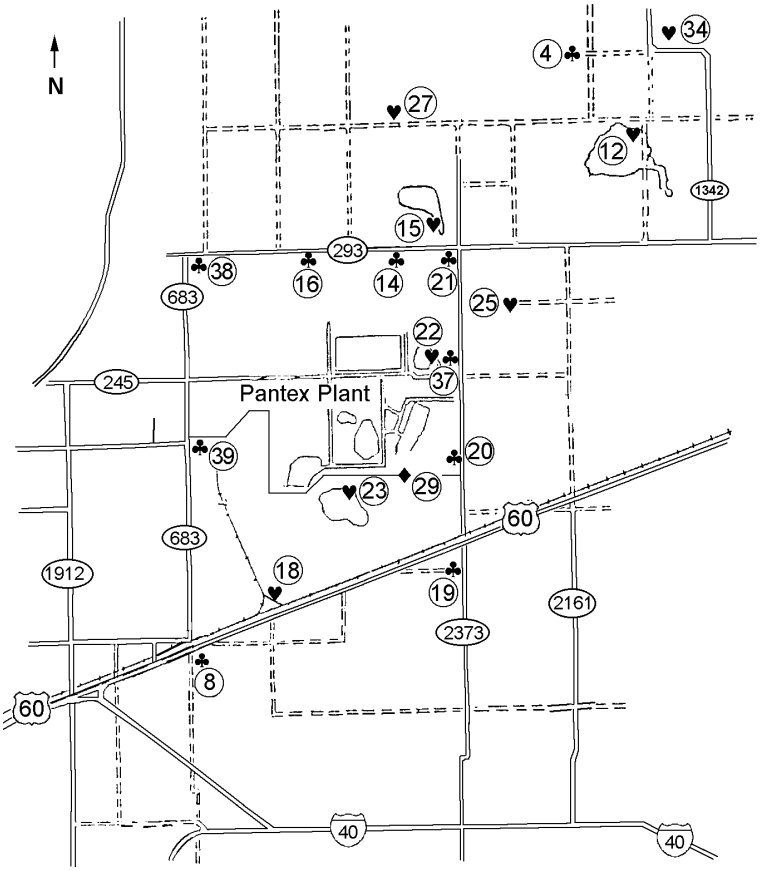


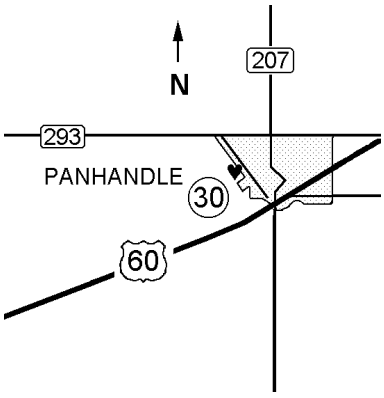






Homeland Security -- Diagram Removed





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

Station	Q1	Q2	Q3	Q4	Annual Dose	Notes
04	30.6	24.0	22.8	26.0	103.4	
08	30.6	24.0	21.4	25.3	101.3	
14	30.6	25.0	21.4	25.3	102.3	
16	29.7	23.0	21.4	24.4	98.5	
19	30.6	23.0	22.5	24.4	100.5	
20	29.7	24.0	21.4	24.4	99.5	
21	28.8	22.0	21.4	24.4	96.6	
24	27.9	22.0	20.3	23.5	93.7	Background
29	30.6	24.0	23.8	25.1	103.5	
37	31.6	24.0	23.6	26.3	105.5	
38	28.8	23.0	21.4	23.5	96.7	
39	28.8	23.0	21.4	25.3	98.5	

NOTE: *Background is not subtracted from the data.

Environmental Sample Results

Date	Lab No.	Station	Pu-239*	U-234*	U-235*	U-238*	Ra-226
Air Samples µCi/ml							
2004-01-29	ER040300	104	<5E-17	<4.3E-16	<4.3E-16	4.9E-16	<1.3E-14
2004-01-29	ER040301	105	<5E-17	<4.9E-16	<4.9E-16	<4.9E-16	<1.1E-14
2004-02-05	ER040302	104	<5E-17	<4.3E-16	<4.3E-16	<4.3E-16	<1.3E-14
2004-02-05	ER040303	104Q	<5E-17	<4.9E-16	<4.9E-16	<4.9E-16	<1.1E-14
2004-02-05	ER040304	105	<5E-17	<5.0E-16	<5.0E-16	<5.0E-16	<1.5E-14
2004-03-03	ER040305	104	<5E-17	<4.4E-16	<4.4E-16	<4.4E-16	<9.4E-15
2004-03-03	ER040306	104Q	<5E-17	<5.0E-16	<5.0E-16	<5.0E-16	<1.5E-14
2004-03-03	ER040307	105	<6E-17	<5.1E-16	<5.1E-16	<5.1E-16	<1.2E-14
2004-03-09	ER040308	104	<5E-17	<4.2E-16	<4.2E-16	<4.2E-16	<1.3E-14
2004-03-09	ER040309	105	<5E-17	<4.9E-16	<4.9E-16	<4.9E-16	<1.1E-14
2004-03-20	ER040310	104	<5E-17	<4.4E-16	<4.4E-16	<4.4E-16	<1.4E-14
2004-03-20	ER040311	104Q	<5E-17	<5.0E-16	<5.0E-16	<5.0E-16	<1.5E-14
2004-03-20	ER040312	105	<5E-17	<5.0E-16	<5.0E-16	<5.0E-16	<1.2E-14
2004-03-23	ER040313	104	<5E-17	<4.4E-16	<4.4E-16	<4.4E-16	<1.4E-14
2004-03-23	ER040314	105	<5E-17	5.7E-16	<4.9E-16	<4.9E-16	<1.1E-14
2004-04-13	ER040315	104	<6E-17	<5.0E-16	<5.0E-16	<5.0E-16	<1.6E-14
2004-04-13	ER040316	105	<5E-17	<4.7E-16	<4.7E-16	<4.7E-16	<1.5E-14
2004-04-15	ER040317	104	<5E-17	<4.8E-16	<4.8E-16	<4.8E-16	<1.5E-14
2004-04-15	ER040318	104Q	<6E-17	<5.1E-16	<5.1E-16	<5.1E-16	<1.6E-14
2004-04-15	ER040319	105	<5E-17	<4.9E-16	<4.9E-16	<4.9E-16	<1.1E-14
2004-05-11	ER040719	104	<5E-17	<4.7E-16	<4.7E-16	<4.7E-16	<1.5E-14
2004-05-11	ER040720	104Q	<5E-17	<4.9E-16	<4.9E-16	<4.9E-16	<9.9E-15
2004-05-11	ER040718	105	<5E-17	<4.9E-16	<4.9E-16	<4.9E-16	<1.4E-14
2004-05-13	ER040722	104	<5E-17	<4.3E-16	<4.3E-16	<4.3E-16	<1.4E-14
2004-05-13	ER040721	105	<5E-17	<4.6E-16	<4.6E-16	<4.6E-16	<1.3E-14
2004-05-18	ER040724	104	<5E-17	<4.5E-16	<4.5E-16	<4.5E-16	<1.3E-14
2004-05-18	ER040723	105	<5E-17	4.7E-16	<4.6E-16	4.7E-16	<9.2E-15
2004-05-26	ER040726	104	<5E-17	<4.5E-16	<4.5E-16	5.4E-16	<8.9E-15
2004-05-26	ER040725	105	<5E-17	<4.6E-16	<4.6E-16	5.4E-16	1.0E-14
2004-06-03	ER040728	104	<5E-17	<4.2E-16	<4.2E-16	<4.2E-16	<1.3E-14
2004-06-03	ER040729	104Q	<5E-17	<4.9E-16	<4.9E-16	<4.9E-16	<9.6E-15
2004-06-03	ER040727	105	<5E-17	<4.6E-16	<4.6E-16	<4.6E-16	<1.3E-14

Date	*Lab No.*	*Station*	*Pu-239**	*U-234**	*U-235**	*U-238**	*Ra-226*
2004-06-15	ER040731	104	<5E-17	<4.3E-16	<4.3E-16	<4.3E-16	<7.5E-14
2004-06-15	ER040730	105	<5E-17	5.6E-16	<4.6E-16	5.1E-16	<1.3E-14
2004-06-23	ER040734	104Q	<5E-17	<4.8E-16	<4.8E-16	<4.8E-16	<8.6E-14
2004-06-24	ER040733	104	<5E-17	<4.3E-16	<4.3E-16	<4.3E-16	<1.8E-14
2004-06-24	ER040732	105	<5E-17	<4.6E-16	<4.6E-16	<4.6E-16	<9.4E-15
2004-07-07	ER040736	104	<5E-17	4.3E-16	<4.2E-16	<4.2E-16	<1.1E-14
2004-07-07	ER040737	104Q	<5E-17	<4.7E-16	<4.7E-16	4.7E-16	<1.3E-14
2004-07-07	ER040735	105	<5E-17	5.3E-16	<4.7E-16	4.7E-16	<9.3E-15
2004-07-22	ER040739	104	<6E-17	<5.1E-16	<5.1E-16	<5.1E-16	<1.1E-14
2004-07-22	ER040738	105	<5E-17	<4.6E-16	<4.6E-16	4.6E-16	<1.5E-14
2004-08-03	ER040741	104	<6E-17	<5.1E-16	<5.1E-16	<5.1E-16	<1.7E-14
2004-08-03	ER040742	104Q	<5E-17	5.0E-16	<4.8E-16	<4.8E-16	<9.5E-15
2004-08-03	ER040740	105	<5E-17	<4.7E-16	<4.7E-16	<4.7E-16	<1.3E-14
2004-08-17	ER040744	104	<5E-17	<5.0E-16	<5.0E-16	<5.0E-16	<1.6E-14
2004-08-17	ER040745	104Q	<5E-17	<4.8E-16	<4.8E-16	<4.8E-16	<9.8E-15
2004-08-17	ER040743	105	<5E-17	<4.6E-16	<4.6E-16	<4.6E-16	<1.3E-14
2004-08-19	ER040747	104	<5E-17	<4.9E-16	<4.9E-16	<4.9E-16	1.2E-14
2004-08-19	ER040746	105	<5E-17	<4.7E-16	<4.7E-16	<4.7E-16	<1.3E-14
2004-08-24	ER040749	104	<6E-17	<5.1E-16	<5.1E-16	5.1E-16	<1.4E-14
2004-08-24	ER040748	105	<6E-17	<5.1E-16	<5.1E-16	<5.1E-16	<1.1E-14
2004-09-16	ER040751	104	<5E-17	<5.0E-16	<5.0E-16	<5.0E-16	<1.0E-14
2004-09-16	ER040750	105	<5E-17	4.6E-16	<4.7E-16	<4.7E-16	<1.5E-14
2004-10-05	ER040753	104	<6E-17	<5.2E-16	<5.2E-16	<5.2E-16	<1.7E-14
2004-10-05	ER040752	105	<5E-17	<4.7E-16	<4.7E-16	<4.7E-16	<1.3E-14
2004-10-27	ER040755	104	<6E-17	<5.2E-16	<5.2E-16	<5.2E-16	<1.7E-14
2004-10-27	ER040756	104Q	<6E-17	<5.1E-16	<5.1E-16	<5.1E-16	<9.9E-15
2004-10-27	ER040754	105	<5E-17	<4.6E-16	<4.6E-16	<4.6E-16	<1.3E-14
2004-11-11	ER040758	104	<5E-17	<4.9E-16	<4.9E-16	<4.9E-16	<1.6E-14
2004-11-11	ER040757	105	<5E-17	<4.6E-16	<4.6E-16	<4.6E-16	<1.3E-14
2004-11-17	ER040760	104	<6E-17	<5.2E-16	<5.2E-16	<5.2E-16	<1.5E-14
2004-11-17	ER040759	105	<5E-17	<4.7E-16	<4.7E-16	<4.7E-16	<9.3E-15
2004-12-01	ER040762	104	<5E-17	<5.0E-16	<5.0E-16	5.2E-16	<1.4E-14
2004-12-01	ER040763	104Q	<5E-17	<4.9E-16	<4.9E-16	4.9E-16	<1.4E-14
2004-12-01	ER040761	105	<5E-17	<4.6E-16	<4.6E-16	<4.6E-16	<1.5E-14
2004-12-09	ER040765	104	<5E-17	<4.8E-16	<4.8E-16	<4.8E-16	<9.5E-15
2004-12-09	ER040766	104Q	<6E-17	5.3E-16	<5.1E-16	<5.1E-16	<1.4E-14
2004-12-09	ER040764	105	<6E-17	<5.3E-16	<5.3E-16	<5.3E-16	<1.7E-14
2004-12-16	ER050058	104	<5E-17	5.1E-16	<4.8E-16	<4.8E-16	<9.3E-15
2004-12-16	ER050057	105	<5E-17	5.2E-16	<5.0E-16	<5.0E-16	<1.6E-14
2004-12-28	ER050060	104	<5E-17	4.5E-16	<4.4E-16	<4.4E-16	<1.5E-14
2004-12-28	ER050061	104Q	<6E-17	<5.1E-16	<5.1E-16	<5.1E-16	<1.1E-14
2004-12-28	ER050059	105	<1.2E-16	5.7E-16	<5.3E-16	5.3E-16	<1.5E-14

Date	*Lab No.*	*Station*	*Pu-239**	*U-234**	*U-235**	*U-238**	*H-3*	*Ra-226*	*U-238*
Food Product µCi/g									
2004-04-12	ER040264	25	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<2.0E-6	<1.4E-6
Sediment µCi/g									
2004-01-05	ER040022	22	<1E-7	1.0E-6	<1.0E-6	1.1E-6	<1.0E-6	<2.0E-6	<1.8E-6
2004-04-12	ER040263	12	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	-	1.2E-6	<1.5E-6
2004-07-12	ER040411	23	<1E-7	1.0E-6	<1.0E-6	1.0E-6	-	<2.5E-6	<1.6E-6
2004-10-05	ER040577	15	<1E-7	1.0E-6	<1.0E-6	1.0E-6	-	<3.0E-6	<1.9E-6

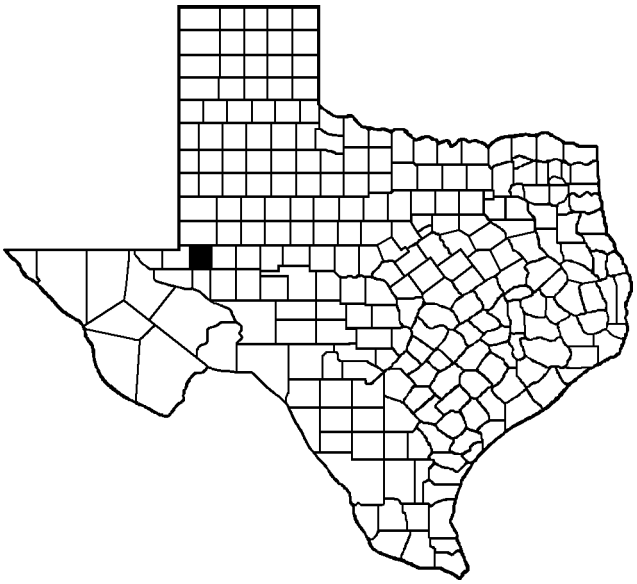
Date	Lab No.	Station	Pu-239*	U-234*	U-235*	U-238*	H-3	Ra-226	U-238
Soil µCi/g									
2004-01-05	ER040013	14	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	-	<2.4E-6	<1.5E-6
2004-01-05	ER040014	18	<1E-7	1.0E-6	<1.0E-6	1.0E-6	-	<2.7E-6	<2.4E-6
2004-01-05	ER040015	20	<1E-7	1.0E-6	<1.0E-6	1.1E-6	-	<2.4E-6	<1.6E-6
2004-01-05	ER040016	37	<1E-7	1.0E-6	<1.0E-6	1.0E-6	-	<2.8E-6	<2.4E-6
2004-01-05	ER040017	39	<1E-7	<1.0E-6	<1.0E-6	1.0E-6	-	<2.4E-6	<1.5E-6
2004-04-12	ER040253	04	<1E-7	1.1E-6	<1.0E-6	1.2E-6	-	<2.8E-6	<1.7E-6
2004-04-12	ER040254	08	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	-	<3.1E-6	<2.6E-6
2004-04-12	ER040255	16	<1E-7	1.0E-6	<1.0E-6	1.0E-6	-	<3.0E-6	<2.0E-6
2004-04-12	ER040256	19	<1E-7	1.0E-6	<1.0E-6	<1.0E-6	-	<3.1E-6	<2.8E-6
2004-04-12	ER040257	21	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	-	<2.8E-6	<1.7E-6
2004-04-12	ER040258	38	<1E-7	1.0E-6	<1.0E-6	1.0E-6	-	<2.7E-6	<2.5E-6
2004-07-12	ER040412	14	<1E-7	1.0E-6	<1.0E-6	1.1E-6	-	<2.6E-6	<1.6E-6
2004-07-12	ER040413	18	<1E-7	1.0E-6	<1.0E-6	1.0E-6	-	<2.4E-6	<2.2E-6
2004-07-12	ER040416	39	<1E-7	<1.0E-6	<1.0E-6	1.0E-6	-	<2.3E-6	<2.1E-6
2004-07-13	ER040414	20	<1E-7	1.1E-6	<1.0E-6	1.1E-6	-	<2.5E-6	<1.6E-6
2004-07-13	ER040415	37	<1E-7	1.2E-6	<1.0E-6	1.1E-6	-	<2.3E-6	<2.1E-6
2004-10-04	ER040573	04	<1E-7	<1.0E-6	<1.0E-6	1.0E-6	-	<3.1E-6	<2.0E-6
2004-10-05	ER040575	08	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	-	<2.8E-6	<2.4E-6
2004-10-05	ER040578	16	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	-	<2.5E-6	<2.2E-6
2004-10-05	ER040580	19	<1E-7	1.0E-6	<1.0E-6	1.0E-6	-	2.1E-6	<1.8E-6
2004-10-05	ER040582	21	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	-	<2.8E-6	<2.5E-6
2004-10-05	ER040587	38	<1E-7	<1.0E-6	<1.0E-6	1.0E-6	-	<2.5E-6	<1.6E-6
Vegetation µCi/g									
2004-07-12	ER040417	14	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<1.2E-6	<8E-7
2004-07-12	ER040418	18	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	1.0E-6	<9E-7
2004-07-12	ER040421	39	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<9E-7	<7E-7
2004-07-13	ER040419	20	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<2.0E-6	<1.4E-6
2004-07-13	ER040420	37	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	2.4E-6	<1.7E-6
2004-10-04	ER040574	04	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<1.4E-6	<1.2E-6
2004-10-05	ER040576	08	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<1.3E-6	<8E-7
2004-10-05	ER040579	16	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<8E-7
2004-10-05	ER040581	19	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<1.1E-6	<7E-7
2004-10-05	ER040583	21	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<1.2E-6	<7E-7
2004-10-05	ER040588	38	<1E-7	<1.0E-6	<1.0E-6	<1.0E-6	<1.0E-6	<1.6E-6	<1.3E-6
Water-Drinking µCi/ml									
2004-01-05	ER040020	30	<1E-10	5.0E-9	<1.0E-9	2.5E-9	<1.0E-6	3.8E-8	<4.6E-8
2004-04-12	ER040261	30	<1E-10	4.7E-9	<1.0E-9	2.2E-9	<1.0E-6	<4.8E-8	<4.6E-8
2004-07-12	ER040423	30	<1E-10	4.6E-9	<1.0E-9	2.1E-9	<1.0E-6	<4.8E-8	<4.6E-8
2004-10-05	ER040586	30	<1E-10	5.0E-9	<1.0E-9	2.5E-9	<1.0E-6	<4.9E-8	<4.6E-8
Water-Ground µCi/ml									
2004-01-06	ER040019	27	<1E-10	4.0E-9	<1.0E-9	2.4E-9	<1.0E-6	<4.9E-8	<4.5E-8
2004-04-12	ER040260	27	<1E-10	4.4E-9	<1.0E-9	1.7E-9	<1.0E-6	<4.9E-8	<4.6E-8
2004-07-12	ER040422	27	<1E-10	4.0E-9	<1.0E-9	2.3E-9	<1.0E-6	<6.8E-8	<6.3E-8
2004-10-05	ER040585	27	<1E-10	4.1E-9	<1.0E-9	2.1E-9	<1.0E-6	<4.9E-8	<4.7E-8
Water-Surface µCi/ml									
2004-01-05	ER040021	22	<1E-10	1.4E-9	<1.0E-9	1.0E-9	<1.0E-6	4.5E-8	<4.6E-8
2004-01-06	ER040018	24	<1E-10	4.7E-9	<1.0E-9	2.4E-9	<1.0E-6	<4.9E-8	7.9E-8
2004-04-12	ER040262	12	<1E-10	<1.0E-9	<1.0E-9	<1.0E-9	<1.0E-6	<5.0E-8	<4.5E-8
2004-04-12	ER040259	24	<1E-10	3.8E-9	<1.0E-9	2.7E-9	<1.0E-6	<4.9E-8	<4.5E-8
2004-07-12	ER040424	24	<1E-10	4.6E-9	<1.0E-9	2.5E-9	<1.0E-6	<4.9E-8	<4.6E-8
2004-10-05	ER040584	24	<1E-10	4.2E-9	<1.0E-9	2.2E-9	<1.0E-6	<5.2E-8	<3.7E-8

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

Radiation Technology, Inc.

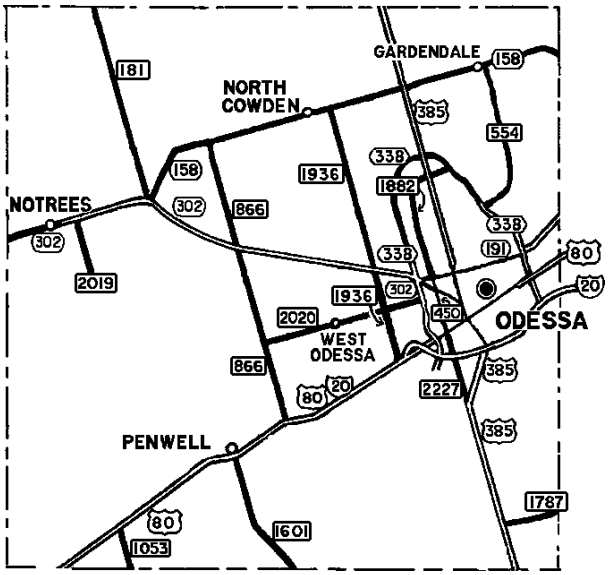
Radiation Branch Site No. 050

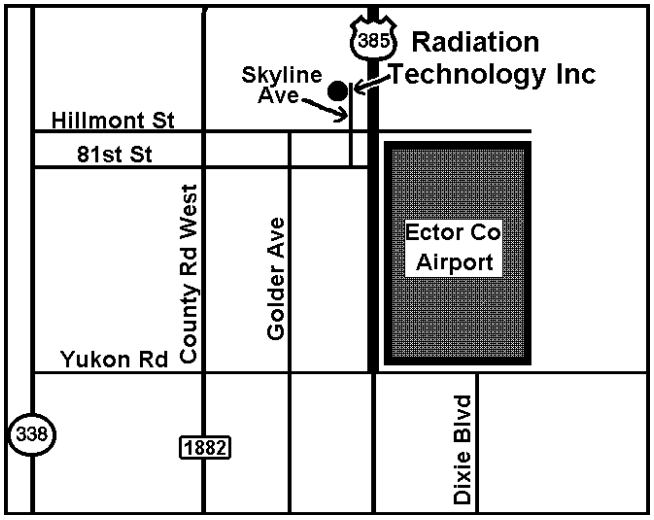
Radiation Technology, Inc. (RTI), located six miles north of downtown Odessa, provides installation, repair, and maintenance of nuclear gauging devices and provides services for loading and unloading radioactive sources in nuclear gauges. Radiation Branch surveillance program consists of TLD monitoring.



Shaded area indicates location of Ector County

Ector County

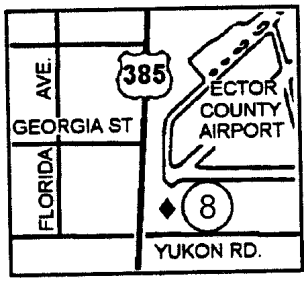




Monitoring Station Locations

♦ TLD Station ♥ Sample Station ♣ TLD & Sample Station

Homeland Security -- Diagram Removed



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

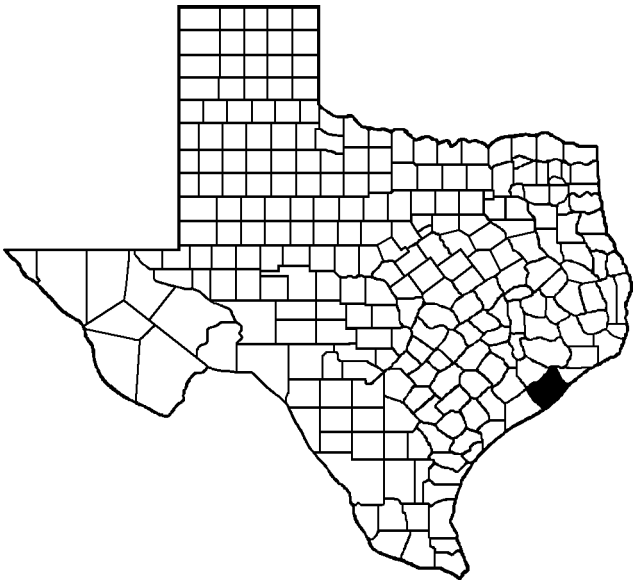
Station	*Q1*	*Q2*	*Q3*	*Q4*	*Annual[2] Dose*	*Notes*
01	23.8	22.8	16.3	42.6	105.5	
02	1370.7	1210.5	1002.1	1397.3	4980.6	
03	294.3	183.2	182.0	190.1	849.6	
04	49.2	40.7	30.3	26.5	146.7	
08	22.1	20.4	18.4	23.0	83.9	Background

NOTE: [1]Combined neutron/gamma dosimeters are deployed at this facility. Exposure reported includes neutron and gamma doses.
[2]Occupancy factor not provided.

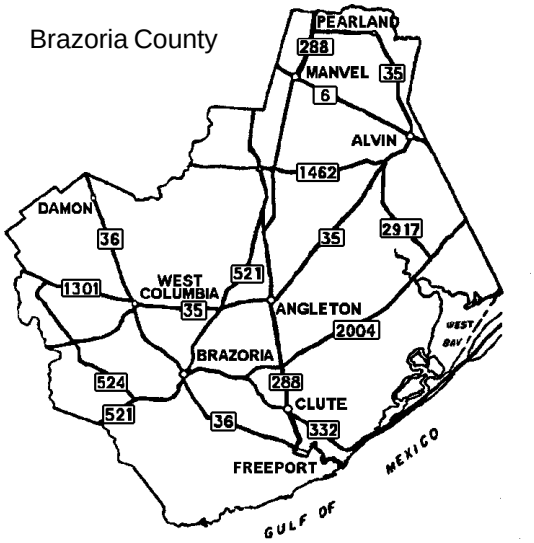
Rhodia, Inc.

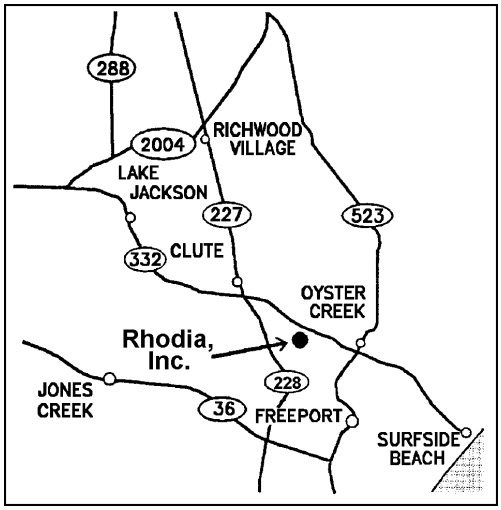
Radiation Branch Site No. 026

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

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	1.2	1.2	
02	0.0	0.0	0.0	0.0	0.0	
04	6.1	6.4	7.4	7.1	27.0	
05	32.4	29.4	31.6	34.3	127.7	
06	27.3	24.8	28.8	30.7	111.6	
16	22.2	13.8	13.9	17.7	67.6	Background

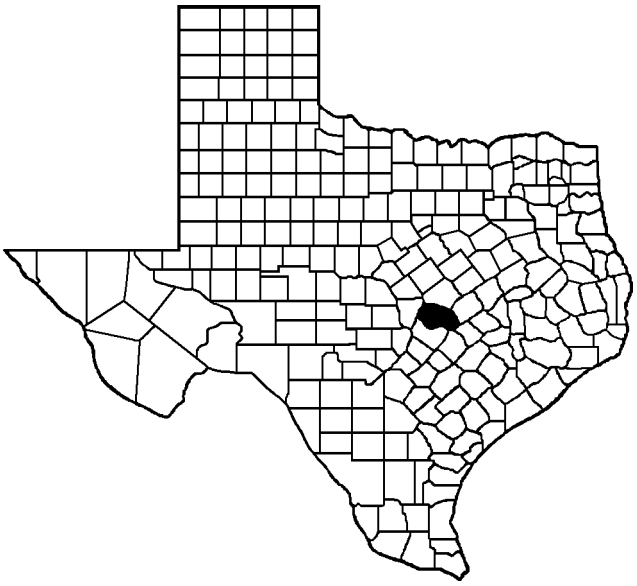
Note: *Value does not include 1/16 occupancy factor.

Thermo MeasureTech

Radiation Branch Site No. 004

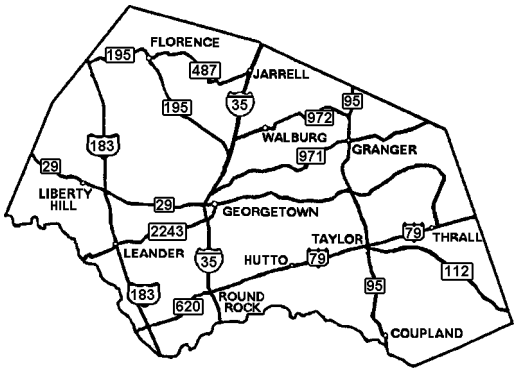
Thermo MeasureTech is located just north of Round Rock in Williamson County. The Radiation Branch implemented a monitoring program in July of 1990 and collected baseline radiation data prior to the licensee moving any radioactive materials to the site. The major licensed activity at the facility is the manufacture and distribution of gauging devices and fluorescence analyzers.

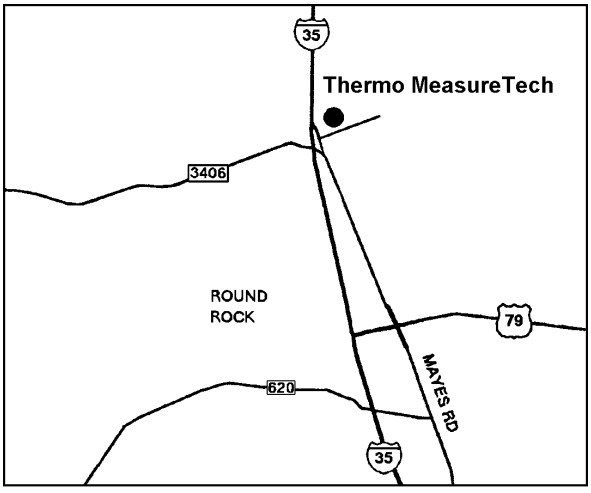
Upon receipt of a statement from Thermo MeasureTech, that it no longer wished to pursue a license to process radioactive waste in 1992, the Radiation Branch removed the soil and vegetation sampling from the monitoring program. Consequently, reports after 1992 only contain the results of doses indicated by TLD's used to monitor ambient radiation levels at selected locations on and around the premises.



Shaded area indicates location of Williamson County

Williamson County

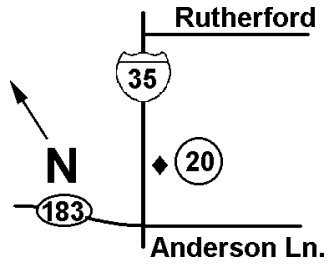




Monitoring Station Locations

♦ TLD Station	♥ Sample Station	♣ TLD & Sample Station

Homeland Security -- Diagram Removed



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

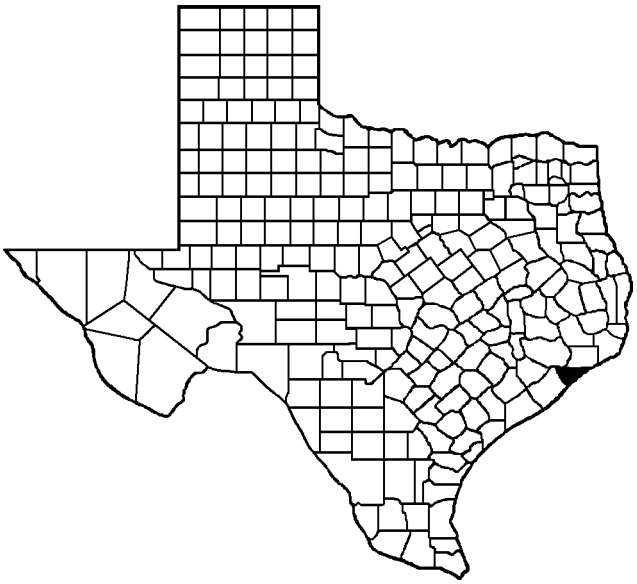
Station	*Q1*	*Q2*	*Q3*	*Q4*	*Annual[2] Dose*	*Notes*
04	7.2	16.1	11.0	20.8	55.1	
05	677.9	1257.9	2002.0	2533.2	6471.0	
06	159.5	563.1	830.0	680.5	2233.1	
07	479.5	2105.8	2091.2	1641.0	6317.5	
08	1.0	1.1	1.8	2.0	5.9	
09	1.0	2.1	4.6	6.9	14.6	
10	780.1	1067.4	998.2	1103.9	3949.6	
11	564.4	920.7	834.6	902.1	3221.8	
12	803.7	1311.5	1240.0	1248.3	4603.5	
13	1240.3	1103.8	1390.7	1405.6	5140.4	
20	21.5	13.9	12.9	14.8	63.1	Background

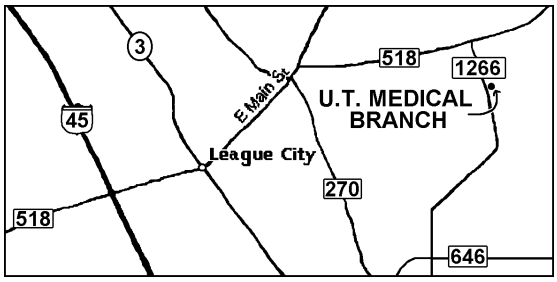
NOTE: [1]Combined neutron/gamma dosimeters are deployed at this facility. Exposure reported includes neutron and gamma doses.
[2]Occupancy factor not provided.

University of Texas Medical Branch

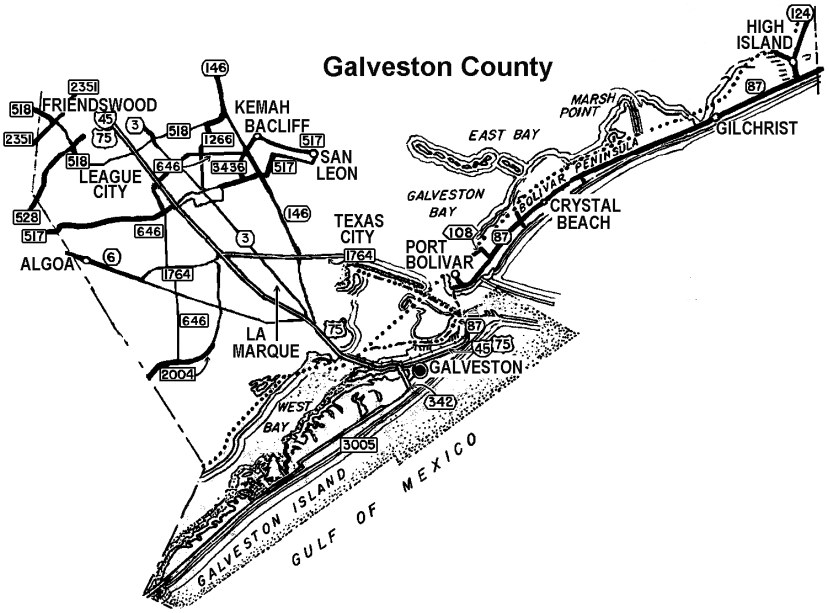
Radiation Branch Site No. 049

University of Texas Medical Branch (UTMB), located in Galveston, is a research medical hospital. The Radiation Branch surveillance program consisted of TLD monitoring at their laundry facility near League City. Monitoring ended in February 2004 due to the removal of radioactive material and termination of the radioactive material license on January 23, 2004.





Shaded area indicates location of Galveston 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)

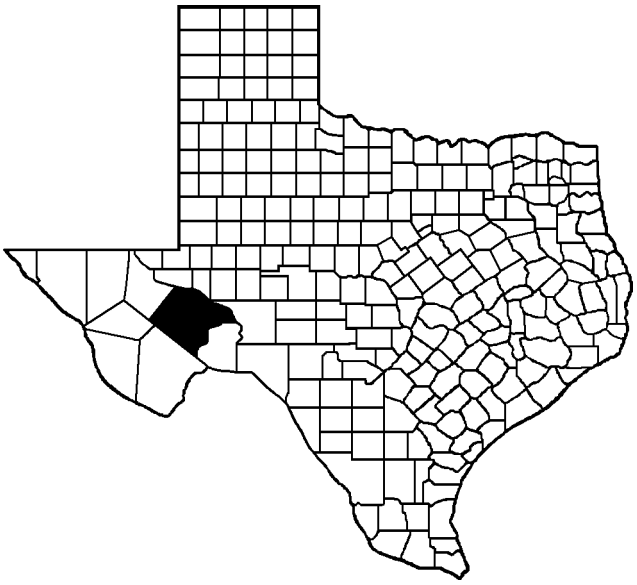
Station	*Q1*	*Q2*	*Q3*	*Q4*	*Annual[2] Dose*	*Note*
01	0.0	--	--	--	0.0	Monitoring ended in February 2004.
02	0.0	--	--	--	0.0	(See narrative on page 69 for
03	0.0	--	--	--	0.0	explanation.)
04	0.0	--	--	--	0.0	
05	24.1	--	--	--	24.1	Background

NOTE: [1]Combined neutron/gamma dosimeters are deployed at this facility. Exposure reported includes neutron and gamma doses.
[2]Occupancy factor not provided.

U. T. Systems Interim Waste Storage Facility

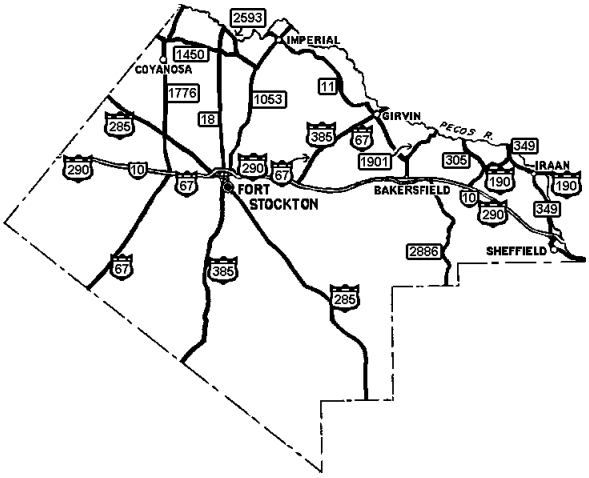
Radiation Branch Site No. 042

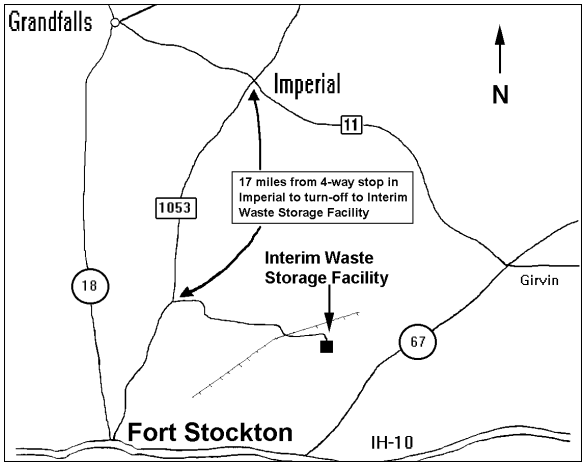
University of Texas Systems Interim Waste Storage Facility, located in Pecos County, provides temporary storage for low-level radioactive waste from several U.T. campuses throughout Texas. The Radiation Branch surveillance program consists of TLD monitoring.



Shaded area indicates location of Pecos County

Pecos County

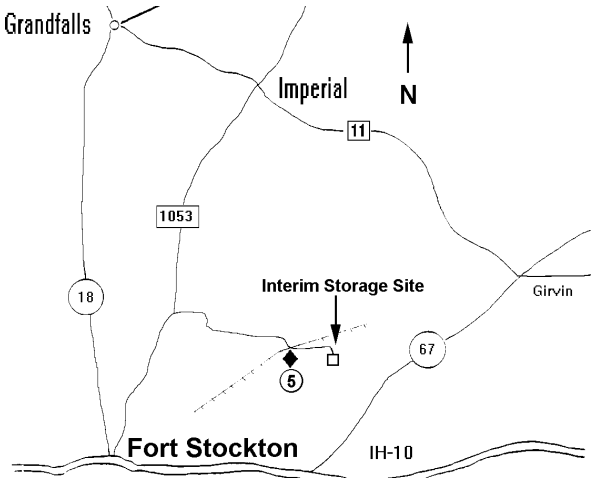




Monitoring Station Locations

♦ 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* Dose*	*Note*
01	3.2	1.8	1.0	1.1	7.1	
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	28.6	18.6	20.5	21.1	88.8	Background

NOTE: *Occupancy factor not provided.

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

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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