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STILLHOUSE HOLLOW LAKE

A PUBLIC WATER SUPPLY PROTECTION STRATEGY

CENTRAL TEXAS WATER SUPPLY CORPORATION
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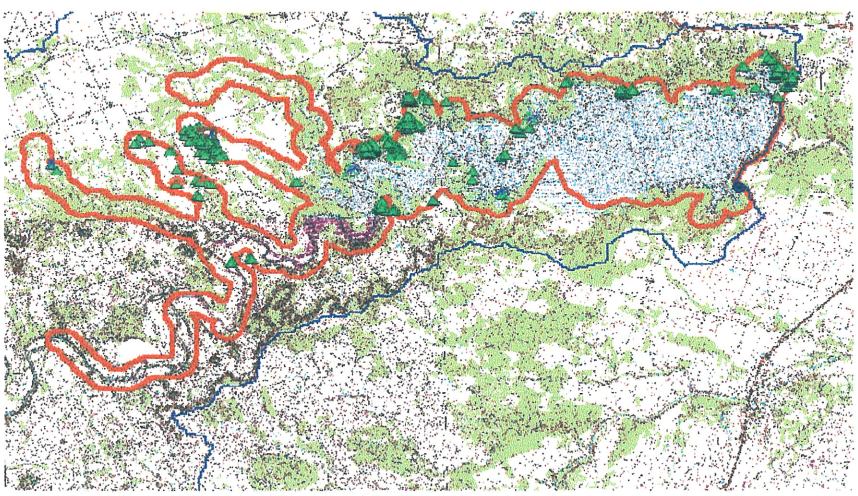

December 2003

TEXAS RURAL WATER ASSOCIATION
1616 RIO GRANDE
AUSTIN, TEXAS 78701-1122

STILLHOUSE HOLLOW LAKE

A PUBLIC WATER SUPPLY PROTECTION STRATEGY

March 2004

TEXAS RURAL WATER ASSOCIATION
1616 RIO GRANDE
AUSTIN, TEXAS 78701-1122

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Delores Goode, *Federal Source Water Protection Specialist*

Disclaimer

This report mainly consists of a compilation of information gathered by Texas Rural Water Association ("TRWA") from the files and reports of various agencies and utilities, including but not limited to the Texas Commission on Environmental Quality and the Texas Water Development Board. TRWA has compiled this information for the purposes of making the same available in a convenient, usable format for communities that are in the process of developing source water supply protection strategies. TRWA relied on readily available informational resources to complete major sections of this report, and TRWA is not therefore responsible for any errors, omissions, or inconsistencies in said information. This report is provided with the understanding that TRWA is not engaged in rendering legal, accounting, engineering or other professional service.

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Texas Rural Water Association
1616 Rio Grande
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Project Overview

The purpose of this project is to provide an organized approach for the effective protection of public drinking water supplies, with highly or moderately susceptible drinking water sources and to reduce or eliminate the potential risks to drinking water supplies through the development of Source Water Protection Plans, while providing assistance to entities for the implementation of contamination preventative measures.

This report contains the following items that provide an in depth analysis and implementation of Stillhouse Hollow Lake's Source Water Protection Plan.

- TCEQ Source Water Susceptibility Assessment
- Inventory of Potential Sources of Contamination
- Best Management Practices
- Contingency Plan
- Maps

The Stillhouse Hollow Lake Steering Committee members addressed on the following page represent their ongoing efforts and efficiency in implementing preventive measures and eliminating possible sources of contamination in there area of primary influence, both now and in the future, making them an asset in reducing and eliminating potential threats to their drinking water supplies.

SOURCE WATER PROTECTION STEERING COMMITTEE

The Stillhouse Hollow Lake Steering Committee has met on several occasions to discuss Source Water Protection measures to help protect Stillhouse Hollow Lake from Possible Contamination occurrences. The following persons comprise the Stillhouse Hollow Lake's Source Water Protection Steering Committee. This committee will meet at a minimum of once a year to review and update the plan, assess its progress, and implement this drinking water protection plan for their community.

Bob Gleason	Chairperson
Kenneth Schoen	Vice Chairperson
John Fisher	Bell County Commissioner Pct. 4
Dewayne Digby	Mayor, City of Belton
Mary Gauer	Mayor, City of Harker Heights
Charlotte Douglass	Mayor, City of Salado
Horace Grace	President, Bell Co. Clearwater Underground Water Conservation District
Judy Parker	Director Pct.4 Bell Co. Clearwater Underground Water Conservation District
Tony Stanukinos	Water Quality Monitoring Team
Berta Stanukinos	Water Quality Monitoring Team
Robert Trudo	Private Property Owner
Charles Brinkimeyer	Private Property Owner
Sam Listi	City Manager, City of Belton
Jimmy Smith	Assistant Mgr., Dog Ridge WSC
Dan Thomasson	Lake Manager, Stillhouse Hollow Lake
Martha Underwood	Killeen Daily Herold
Maurice McNeese	President, Central Texas Water Supply Corporation
Repp Glaettli	Engineer, City of Killeen
John P. Nett	Engineer, City of Killeen Public Works

MANAGEMENT PLAN

The source water protection area referred to in this plan is the area comprised by the Area of Primary Influence (API) Stillhouse Hollow Lake's drinking water sources. The Steering Committee will work with the community to implement the following management measures:

- Continue education and outreach through public education and awareness - Public Education and awareness is the cornerstone of this Source Water Protection Plan because everyone poses a risk to surface and groundwater. Most homeowners and business owners will work to try and protect their local source water if they know how to minimize contamination risks. The Stillhouse Hollow Lake education and outreach campaign will include, but will not necessarily be limited to, the following steps:

- Send "Tex*A*Syst" educational informational booklets to all residents and businesses within the API. Topics will include but are not limited to "Reducing the Risk of Groundwater Contamination by Improving Household Wastewater Treatment (Septic Systems)","Reducing the Risk of Groundwater Contamination by Improving Wellhead Management and Conditions (Domestic Wells)" and "Reducing the Risk of Groundwater Contamination by Improving Pesticide Storage and Handling."

- Continue to post newspaper articles (see attached) to reach the public with educational information about the continuing Source Drinking Water Protection effort.

- Contact A&M University to provide demonstrations on how to cap abandoned wells.

- Promote "Collection Point Household Hazardous Waste Disposal Day" in the City of Killeen allowing residents to dispose of hazardous household waste free of charge.

- Start water monitoring of creeks and rivers influencing Stillhouse Hollow Lake as well as Stillhouse Hollow Lake to catch any possible contamination before it could become a danger.

- Send letter to county commissioners office to encourage reroute of hazardous material trucks from the Stillhouse Hollow Lake Bridge.

- The Stillhouse Hollow Lake will continue to conduct Water Wise Programs to educate school children on water conservation and water contamination.

- Provide handouts and "Splash!" activity books readily available for schools to help educate the children in promotion of "Drinking Water Week".

- Continue to search for funding to help landowners with the expense of capping abandoned wells and other source water protection projects.

- The Corp of Engineers will complete the Aquatic Vegetation Management Plan to identify chemical applications used to control aquatic vegetation in on Stillhouse Lake.

- Review and update current ~~Doubt~~ Drought Contingency Plan

- Try to obtain more input from the County Health Department for inspection of possible contaminants.

- Work on trying to obtain permission from Corp of Engineers to place more protection signs around Stillhouse Hollow Lake within the public park and marina areas.

- Educate and post signs at marina in regards to larger boats dumping commodes overboard.

- Continue to work with Howard Clapp, owner of Stillhouse Hollow Lake Marina in removing possible boat and fuel storage contaminants.

The Stillhouse Hollow Lake has also taken and will continue to take a proactive approach to water conservation by working with the public in the following ways:

- The Stillhouse Hollow Lake will continue to conduct Water Wise Programs to educate children on water conservation and contamination.

- Bell County will continue to provide "Earth Days" to educate the public on water conservation.

- Work on new ordinance for the City of Killeen that would mandate new water and irrigation systems to conserve water.

- The Central Texas Water Supply Corporation has developed a conservation rate structure to force water conservation by making those who use more pay more.

- Promote Pollution Prevention (P2) Program for industrial recycling preventative measures.

- Address future measures for water conservation through public article.

ORGANIZATIONAL MEETING OF THE LAKE STILL HOUSE HOLLOW CLEAN WATER STEERING COMMITTEE

HOSTED BY
CENTRAL TEXAS WATER SUPPLY CORPORATION (CTWSC)
4020 LAKECLIFFE DRIVE
HARKER HEIGHTS, TEXAS 76548-8607
TELEPHONE 254-698-2779

SUBJECT: Minutes of the November 18, 2003, Organizational Meeting of the Lake Stillhouse Hollow Clean Water Steering Committee

ORDER OF BUSINESS:

ANNOUNCEMENTS

I. Mr. Cole **called to order** the Organizational Meeting of the Lake Stillhouse Hollow Clean Water Steering Committee at 2:00 p.m. in the CTWSC Conference Room at 4020 Lakecliffe Drive, Harker Heights, Texas 76548.

II. Mr. Cole stated that the **Notice of meeting** was posted on the Bulletin board of Central Texas Water Supply Corporation, 4020 Lakecliffe Drive, Harker Heights, Texas 76548-8607, at a place readily accessible to the general public at all times; the Bell County Courthouse Annex bulletin board; and with the State of Texas Register, on December 12, 2003, at 1:35 p.m.

III. Mr. Cole introduced himself as the General Manager of CTWSC and spoke briefly of CTWSC and it's history. Mr. Cole also welcomed the guests. He requested that the guests introduce themselves. Guest that were present: Mr. Kenneth Schoen, Ms. Rita Schoen, Mr. Robert Truddo, Ms. Berta Stanukinos, Mr. Tony Stanukinos, Mr. Bob Gleason, Mr. Charles Brinkmeyer, Mr. Weber McNeese, Mr. Andre Sanders, and Ms. Delores Goode. Mr. Cole addressed the guest about the organization of the steering committee. He urged all attending to be sure that they would like to serve on the steering committee to help protect the water. Ms. Judy Parker entered at this point. Ms. Parker is with the Clearwater Underground Conservation District (CWUCD). Mr. Cole informed the guest that Ms. Martha Underwood, with the Killeen Daily Herald was unable to attend. He also informed the guest that Mr. Listi, city manager of the City of Belton along with the Mayor of Belton were unable to attend but did want to participate in these meetings. Mr. Dan Thomasson was unable to attend. Mr. Horace Grace, President of CWUCD was not in attendance. Mayor Douglas was unable to attend.

The meeting was then turned over to Ms. Delores Goode from the Texas Rural Water Association (TRWA). Ms. Goode spoke briefly on what TRWA is and does.
Ms. Goode then went into the Source Water Protection Program and Lake Stillhouse Hollow. She informed the participants that the first step in the program was to delineate the protection area, which is Lake Stillhouse Hollow and 1,000 feet around the lake. She told them that Mr. Sanders had completed that part. She also informed them that researching the points of potential contamination was completed and had also been

done by Mr. Sanders. Mr. Sanders and Mr. Cole had completed the contingency planning and update. Ms. Goode said now they were working on developing a planning team, which is the steering committee, and that is why they were all here. Ms. Goode stated that the biggest part of the whole project is the orientation of best management practices. They would be addressing any problems, such as abandoned wells, that might affect Lake Stillhouse Hollow. She said that they would go into more detail at the next meeting. The biggest point, she explained, would be on EDUCATION. Trying to educate the public on how to keep our water safe. She said that the Source Water Protection Program came about through the Safe Drinking Water Act of 1986. The State Drinking Water Act established the Well Head Protection Program to protect underground water. In 1996 they amended the act to extend to surface and source water. Ms. Goode asked the participants if there were any questions. Ms. Rita Schoen asked about the sewer plant that may possibly empty into the lake. Ms. Goode stated that Texas Commission on Environmental Quality (TCEQ) had put their stamp of approval on that and she could not override TCEQ. Mr. Schoen said that they hadn't yet. Ms. Goode informed the Schoen's that they needed to contact TCEQ with their concerns. The Schoen's brought up the subject sewer versus septic tanks. Ms. Goode asked Mr. Cole to address this question. Mr. Cole stated that both Rita and Kenneth Schoen are on the requested list for the committee and he didn't want to get too sidetracked on some of the issues. Mr. Cole stated that there would be a public meeting on January 28, 2004 in Austin at the TCEQ Headquarters on this issue. Mr. Cole addressed the participants as to what this committee will need to do. Education and Best Management Practices for the lake.

AGENDA ITEMS

I. **An agreement among the participants to establish, organize, and actively participate in the Lake Stillhouse Hollow lean Water Steering Committee (Committee).** By a show of hands, Mr. Cole asked if the participants present were serious in participating in the steering committee. It was unanimous.

II. **Appoint by mutual agreement the chairperson and vice-chairperson of the committee.** Bob Gleason volunteered to be the chairperson of the steering committee. Mr. Kenneth Schoen volunteered to be the vice-chairperson of the steering committee. By a show of hands, they were unanimously appointed.

At this time, Mr. Cole turned the meeting over to the newly appointed chairperson Mr. Bob Gleason.

III. **Discussion and possible action to approve the committee's motto: "CLEAN WATER THROUGH THE PUBLIC'S INVOLVEMENT" or other such motto as determined by the committee.** The motion to change the motto to "CLEAN WATER THROUGH PUBLIC INVOLVEMENT" was made by Judy Parker. Motion passed.

IV. **Discussion and possible action to approve the frequency (Quarterly, semi-annually, or annually) the committee will meet.** It was agreed to meet once a month to start. The frequency could change at a later date. Motion passed by a unanimous show of hands. The meetings are to be held on the last Thursday of the month at 2:00 p.m.

V. Discussion on the suggested agenda items for the next committee meeting.
Mr. Cole agreed to present a summation of the meeting on January 28, 2004 at the TCEQ Headquarters in Austin. The summation being Item IV of the next meetings agenda. Ms. Goode was asked exactly what 'Best Management Practices' meant. After giving a few examples, it was determined that it meant 'the best suggestion on how to fix it'. The length of the meeting, agreed upon, should last no longer than 1 – 11/2 hours long. Judy Parker suggested that some neighboring cities had already finished their storm water watch assessment and someone might look into how it was done. She also stated that CWUCD had several management practices that might by useful. The next possible agenda would be:

1. **Presentation from the 'Friends of Sulfur Creek' and their involvement in the upstreams (source) monitoring for Lake Stillhouse Hollow.**
2. **Discussion and possible action on the findings from the surface water assessment and protection (SWAP) plan on Lake Stillhouse Hollow conducted by CTWSC.**
3. **Discussion and possible action on Best Management Practices (BMP) for each inventory item or inventory category of the SWAP plan listed in item 2. above.**
4. **Possible funding for the committee.**
5. **Summation of the January 28, 2004 meeting at TCEQ in Austin.**

ADJOURN: 3:13

ORGANIZATIONAL MEETING OF THE LAKE STILL HOUSE HOLLOW CLEAN WATER STEERING COMMITTEE

HOSTED BY
CENTRAL TEXAS WATER SUPPLY CORPORATION
(CTWSC)
4020 LAKECLIFFE DRIVE
HARKER HEIGHTS, TEXAS 76548-8607
TELEPHONE 254-698-2779

SUBJECT: Minutes of the January 29, 2004, Lake Stillhouse Hollow Clean Water Steering Committee

ORDER OF BUSINESS:

ANNOUNCEMENTS

I. **Mr. Gleason called to order the meeting of the Lake Stillhouse Hollow Clean Water Steering Committee at 2:00 p.m. in the CTWSC Conference Room at 4020 Lakecliffe Drive, Harker Heights, Texas 76548.**

II. **The Pledge to the United States of America was said by all.**

III. **The Steering Committee approved a motion to establish the term of Office for current and future Officers, as one year. An officer will be able to serve an initial term and three additional terms.**

IV. **Discussion and possible action concerning approval of minutes of the December 18, 2003 meeting**. Minutes of the December 18, 2003 were approved.

V. **Presentation on upstream monitoring by Berta & Tony Stanukinos**. Berta Stanukinos gave a presentation on monitoring history and techniques. The presentation conveyed a sense of urgency, a sense of dedication, and a heartfelt passion for monitoring. Berta identified a source of monitor kits, materials and training. Charles Brinkmeyer will research and obtain kits and materials. He will report to the LSHCWSC at the next meeting. Thank you Berta and Tony.

VI. **DISCUSSION AND ACTION ON:**
a. **INVENTORY REPORT and**
b. **BEST MANAGERMENT PRACTICES.**
Delores Goode, TRWA, presented an extension of her Inventory and Best Management Practices study. Ms. Goode will complete her Inventory Report and Action Phase at the February 26th meeting.

VII. **Funding Sources.** Funding sources was postponed until the Feb. 26th meeting.

ADJOURN: 3:32 pm.

MONTHLY MEETING OF THE LAKE STILL HOUSE HOLLOW CLEAN WATER STEERING COMMITTEE

HOSTED BY
CENTRAL TEXAS WATER SUPPLY CORPORATION (CTWSC)
4020 LAKECLIFFE DRIVE
HARKER HEIGHTS, TEXAS 76548-8607
TELEPHONE 254-698-2779

SUBJECT: Minutes of the February 26, 2004, Lake Stillhouse Hollow Clean Water Steering Committee

ORDER OF BUSINESS:

ANNOUNCEMENTS

I. **Mr. Gleason called to order the meeting of the Lake Stillhouse Hollow Clean Water Steering Committee at 2:00 p.m. in the CTWSC Conference Room at 4020 Lakecliffe Drive, Harker Heights, Texas 76548.**

II. **The Pledge to the United States of America was said by all.**

III. **Discussion and possible action concerning approval of minutes of the January 29, 2004 meeting.** The Steering Committee approved the minutes of the January 29, 2004 meeting.

IV. **Presentation on inventory report/preventative measures**. Delores Goode, TRWA, gave a presentation on BMP, Best Management Practices, and PM, Preventative Measures. A handout on current BMP and PM were given to the Steering Committee and discussed. These are subjects that actions have already been taken and also subjects to be addressed with suggestions on possible action to take.

V. **Discussion concerning funding sources (15 minutes).** Mr. Trudo said that he had come up with an approximate list and cost of items that may be needed. Approximately \$8,000 - \$10,000 Dollars was the figure given.

VI. **Discussion and possible action concerning research of Stan Schlueter's previous directive guiding placement of waste systems (10 minutes).** Mr. Trudo stated that there were misunderstandings as to what the directive was. It did not keep this lake pristine. It was an addendum passed to justify or to let this area have an underground district when and if they wanted it.

VII. **Discussion and possible action concerning recycle programs (10 minutes).** Ms. Parker presented a handout and stated that the Solid Waste Advisory Council was deciding on what cities would get the Household Hazardous Pickups grant money this year. The cities chosen were Killeen, Temple, and Lometa with a backup of Copperas Cove and Rockdale.

VIII. Discussion and possible action concerning monitoring equipment and training (10- minutes). Mr. Brinkmeyer presented a handout to the Steering Committee. He spoke briefly about the contacts he pursued and the results he received. It was suggested to monitor the waterways going into the lake instead of the lake itself. Mr. Cole told the Committee that CTWSC monitors the lake every hour on the hour. It was a consensus of the Committee to get monitoring equipment and volunteers to train to monitor the waterways going into the lake at different locations at least 2 miles apart.

The next meeting is schedule for March 25, 2004.

ADJOURNED 3:14 pm.

MONTHLY MEETING OF THE LAKE STILL HOUSE HOLLOW CLEAN WATER STEERING COMMITTEE

HOSTED BY
CENTRAL TEXAS WATER SUPPLY CORPORATION (CTWSC)
4020 LAKECLIFFE DRIVE
HARKER HEIGHTS, TEXAS 76548-8607
TELEPHONE 254-698-2779

SUBJECT: Minutes of the March 25, 2004, Lake Stillhouse Hollow Clean Water Steering Committee

ORDER OF BUSINESS:

ANNOUNCEMENTS

I. **Mr. Gleason called to order the meeting of the Lake Stillhouse Hollow Clean Water Steering Committee at 2:00 p.m. in the CTWSC Conference Room at 4020 Lakecliffe Drive, Harker Heights, Texas 76548.**

II. **The Pledge to the United States of America was said by all.**

Mr. Gleason introduced Mr. John Nett to the committee. He stated that Mr. Nett was a project engineer for the City of Killeen.

III. **Discussion and possible action concerning approval of minutes of the February 26, 2004 meeting.** The Steering Committee approved the minutes of the February 26, 2004 meeting.

IV. **Presentation on future Best Management Practices (55 minutes).** Delores Goode, TRWA, gave a presentation on BMP. Mrs. Goode briefly went over items that have been done and future practices that still need to be done. Several of the committee members volunteered ideas as well as Mr. Nett.

V. **Discussion concerning funding sources (5 minutes).** Mr. Trudo stated that he didn't have any more information on funding. He stated that he needed to understand what the committee was going to do in order to necessitate what funding would be needed. Mr. Cole brought the question to the attention of the committee as to what organization this committee would fall under. How does this committee need to be organized to be recognized by the state?

VI. **Discussion and possible action concerning monitoring equipment and training (5 minutes).** There was a letter handed out to the committee on monitoring. Mr. Brinkmeyer was not present to steer this agenda item and Mr. Gleason filled in for him. There were several volunteers from the Lakeside Hills area to help with the monitoring as well as John Nett. Mr. Nett stated that they (City of Killeen) have different types of monitoring kits and it might be possible for the committee to use some the kits. The committee set up Wednesday May 12th as a training day. May 13th was designated as an alternative day.

The next meeting is schedule for April 22, 2004.

ADJOURNED 3:09 pm.

INTRODUCTION

"There shall be no man or woman dare to wash nay unclean linen, wash clothes, nor rinse or make clean any kettle, pot, or pan or any suchlike vessel within twenty feet of the old well or new pump. Nor shall anyone aforesaid, within less than a quarter mile of the fort, dare to do the necessities of nature, since by these unmanly, slothful, and loathsome immodesties, the whole fort may be choked and poisoned."

--Governor Gage of Virginia,
Proclamation for Jamestown, Va. (1610)

The water we have today was protected by those that came before us and our job is to continue the process of protecting the resources we have been given by informing and training on what to look for and how to protect water source areas.

Background

The 1996 Amendment to the Safe Drinking Water Act require, for the first time, that each state prepare a source water assessment for all Public Water Supplies. Previously, federal regulations focused on sampling and enforcement with emphasis on the quality of delivered water. These Amendments emphasize the importance of protecting the source water.

States are required to determine the drinking water source, the origin of contaminants monitored or the potential contaminants to be monitored, and the intrinsic susceptibility of the source water. Under the amendments to the Act, States must create Source Water Assessment and Protection programs. The Source Water Assessment and Protection programs must include an individual Source Water Assessment for each Public Water Supply regulated by the state. These assessments will determine whether an individual drinking water source is susceptible to contamination.

During 1997-1999, TCEQ and USGS staff met as subject matter working groups to develop an approach to conducting Source Water Susceptibility Assessments (SWSA) and a draft work plan. The draft work plan was then presented to and reviewed by various stakeholder and technical advisory groups. Comments and suggestions from these groups were considered and a final work plan was submitted to the EPA. After EPA approval, work formally began on the Texas Source Water Assessment and Protection Project. The project has an expected completion date of May 2003. At that time, initial Source Water Susceptibility Assessments of all Texas public water supplies, both ground and surface water systems should be complete.

The Central Texas Water Supply Corporation will receive a Source Water Susceptibility Assessment (SWSA) for their surface water supply, Stillhouse Hollow Lake. All surface water systems are by nature susceptible to contamination from both point and non-point sources of contamination. The degree of susceptibility of a public water supply to contamination can vary and is a function of the environmental setting, water and wastewater management practices, and land use/cover within a water supply's contributing watershed area. For example, a public water supply intake downstream from extensive urban development may be more susceptible to Non Point Source contamination than a public water supply intake downstream from a forested, relatively undeveloped watershed. Surface water supplies are also susceptible to contamination from point sources, which may include permitted discharges as well as accidental spills or other introduction of contaminants.

The development of a scientifically defensible methodology for assessing the susceptibility of the public water supply to contamination, based on the most accurate, readily available hydrologic, hydrogeologic, point source, non point source, water quality and other natural resource and environmental data, will better enable the TCEQ Source Water Assessment and Protection Program to:

- Focus its source water protection efforts on public water sources that are more susceptible to contamination.
- Potentially reduce monitoring costs associated with ensuring safe drinking water.
- Assist the public in developing an improved understanding of the source of their water.
- Support the implementation of best management practices as needed to protect source waters.

This Source Water Assessment and Protection Program is designed to lead to Source Water Protection efforts. These efforts will focus on local participation in locating potential contaminant sources, developing contingency plans, implementing Best Management Practices (BMP), and continuing a level of awareness and communication among public officials and the community in regards to public drinking water.

The newly developed surface water protection strategy was built upon those lessons learned from the state's successful Wellhead Protection program and was created to compliment the Source Water Susceptibility Assessments (SWSA). By addressing potential contaminant concerns, and implementing Best Management Practices the local community has the power to impact their Susceptibility Assessment by providing additional barriers against source water contamination and through contingency planning, establishing a spill response protocol that will minimize the impact should such an event occur.

Purpose and Scope

The purpose of this project is to provide an organized approach for the effective protection of public drinking water supplies from contamination using source water protection techniques. While the Texas Rural Water Association (TRWA) and Texas Commission on Environmental Quality (TCEQ) have been working with groundwater systems under the Wellhead Protection program for years, surface water systems are newly added components of the Source Water Assessment and Protection program.

The project included a study of the general hydrology, topography, land use, and a written report summarizing the preliminary findings.

This report describes a cooperative effort between the Central Texas Water Supply Corporation, Texas Rural Water Association, the Texas Commission on Environmental Quality, and the United States Environmental Protection Agency (U.S. EPA).

Location

Stillhouse Hollow Reservoir is located on the Lampasas River in Bell County, Texas approximately 16 miles upstream of the confluence of the Lampasas and Leon Rivers. Central Texas Water Supply Corporation provides treated water on a wholesale basis to 16 rural water communities totaling a population of approximately 52,191 persons.

Methodology

TRWA representatives met with the Central Texas Water Supply Corporation to discuss the project, its goals and objectives and what benefits would be provided to the project area.

The first step of the project was to establish the project boundaries. The watershed was delineated from a USGS 7 ½ minute topographic map and was superimposed over aerial photographs known as digital photoortho quarter quadrangles (DOQs). A 1,000 - foot buffer from the edge of the lake was created and is referred to as the area of primary influence (API).

An inventory of all Potential Sources of Contamination within the source water protection area (SWPA) was conducted by TRWA staff. All potential sources of contaminants in the API were documented on field maps and information about the site was recorded on a corresponding inventory form..

The data gathered during the project was organized in a geographic information system (GIS) and displayed in the Source Water Protection Area Maps.

Acknowledgments

The TCEQ and TRWA SWP program would like to extend special thanks to David Cole, Fred Noe, and Andre Sanders at Central Texas Water Supply Corporation for agreeing to participate with this project, the Bell County Appraisal District for their information on property ownership, the Texas Department of Transportation for placing of signs, and the Bell County Development Office for information on soil types found within the API of Stillhouse Hollow Lake.

Stillhouse Hollow Reservoir Watershed

Stillhouse Hollow Reservoir is located within the Brazos River Basin in Bell county, on the Lampasas River, 16 miles upstream of the confluence of the Lampasas and Leon Rivers that flow into the Litter River. The reservoir was constructed in 1968 by the Army Corps of Engineers for flood control and now serves as a source of drinking water for several municipalities.

Many characteristics of a watershed influence the degree to which a waterbody may be susceptible to contamination. Geology, soil characteristics, and vegetative cover affect the amount of runoff and the attenuation of contaminants in watersheds. Eroded soil may carry, adsorbed on the surface of the sediment particles, organic chemicals and pesticides, nutrients, and heavy metals. The slope of the land controls the travel time of contaminants in runoff. If the watershed is large, has a low slope, or contains impoundments upstream of the source water, travel time will be longer, dilution will probably be greater, and instream and intra-reservoir processes, including uptake, conversion, and breakdown of the contaminant and volatilization could be greater, than reservoirs with small watersheds, steep slopes and unimpounded inflowing streams. In addition to hydrologic characteristics of the watershed, human activities and land use within the watershed may contribute contaminants to source water. For example, the occurrence of pesticides in runoff has been shown to be greater in agricultural and urban areas than in relatively undeveloped forest and rangeland. Table 2.1 lists properties of Stillhouse Hollow Reservoir and its watershed which may influence the susceptibility of the lake to contamination.

Table 2.1 Properties of Stillhouse Hollow Reservoir and its watershed. Watershed properties were obtained from the 2003 Texas Commission on Environmental Quality Source Water Susceptibility Assessment. Annual precipitation values are from the period 1961-1990.

Surface Area	6,430	feet
Conservation Pool Elevation	622	feet
Watershed Area	1,313	$miles^2$
Area of Primary Influence	27.72	$miles^2$
Watershed Slope	245.46	feet/mile
Main Channel Slope	8.28	feet/mile
Annual Precipitation	27.62	inches
Annual Runoff	1.66	inches
Total Reservoir Storage Capacity	226,063	acre-feet
Maximum Reservoir Depth	107	feet
Mean Soil Erodibility	0.32	
Human Population Density	43.85	$persons/mile^2$
Percent Agricultural Land Use	6.42	%
Percent Urban Land Use	56.40	%

Table 2.2 lists selected soil properties for the Stillhouse Hollow Reservoir watershed, taken from the United States Department of Agriculture, Natural Resource Conservation Service State Soil Geographic Database from the Ellis County Soil Survey. Figure 2.1 illustrates the individual mapping units of soils within the Area of Primary Influence near the dam area of the reservoir. Figure 2.2 illustrates the location of individual mapping units of soils within the API at the inflowing river. Map units are collection of areas defined and named the same in terms of their soil components or miscellaneous areas (gravel pits, quarries) or both.

Table 2.2. Selected soil properties and approximate percentages of soil groupings within the Area of Primary Influence of Stillhouse Hollow Reservoir.

Soil Series	Soil Association	Soil Association Abbreviation	Area within API (%)	Capability Unit	Hydrologic Group	Permeability	Available Water Capacity	Shrink-swell potential
Purves	Purves association, undulating	PVD	20.9	Range	D	0.2 - 0.6	0.12 -	High
Brackett	Brackett association, rolling	BRE	14.6	Range	C	0.2 - 0.6	0.10 -	Low
Real	Real association, hilly	REF	10.1	Range	D	0.6 - 2.0	0.05 -	Moderate
Bosque	Bosque clay loam	Be	7.6	Cropland	B	0.6 - 2.0	0.15 -	Low
Tarrant	Tarrant-Purves association,	TPF	5.9	Range	D	0.2 - 0.6	0.15 -	High
Denton	Denton silty clay, 1 to 3 %	DeB	5.1	Cropland	D	0.06 - 0.20	0.12 -	High
Speck	Speck association, undulating	SPD	5.0	Range	D	0.06 - 0.60	0.15 -	Low to
Frio	Frio silty clay, frequently flooded	Fs	4.9	Pasture	B	0.2 - 0.6	0.15 -	Moderate
Tarrant	Tarrant association, undulating	TAD	4.5	Range	D	0.2 - 0.6	0.15 -	High
San Saba	San Saba clay, 1 to 3 % slopes	SaB	4.1	Cropland	D	< 0.06	0.15 -	Very High
Lewisville	Lewisville silty clay, 1 to 3 %	LeB	3.6	Cropland	B	0.60 - 2.0	0.16 -	High
Lewisville	Lewisville silty clay, 3 to 5 %	LeC	2.9	Cropland	B	0.60 - 2.0	0.16 -	High
Krum	Krum silty clay, 1 to 3 % slopes	KrB	2.1	CroplandC	C	0.20 - 0.60	0.15 -	High
Purves	Purves silty clay, 1 to 4 %	PrB	1.8	Cropland	D	0.20 - 0.60	0.12 -	High
Bosque	Bosque clay loam, frequently	Bf	1.4	Pasture	B	0.60 - 2.0	0.15 -	Low
San Saba	San Saba clay, 0 to 1 % slopes	SaA	1.1	Cropland	D	< 0.06	0.15 -	Very High
Quarry	Quarry	QU	0.8	Quarry	-	———	———	———
Lewisville	Lewisville-Altoga complex, 2 to	LgC	0.7	Cropland	B	0.60 - 2.0	0.16 -	High
Brackett	Brackett clay loam, 1 to 3 %	BkB	0.7	Cropland	C	0.20 - 0.60	0.10 -	Low
Altoga	Altoga silty clay, 2 to 5 % slopes	AlC	0.4	Cropland	C	0.60 - 2.0	0.15 -	Moderate to
Venus	Venus clay loam, 1 to 3 %	VeB	0.3	Cropland	B	0.60 - 2.0	0.15 -	Low
Krum	Krum silty clay, 0 to 1 % slopes	KrA	0.3	Cropland	C	0.20 - 0.60	0.15 -	High
Patrick	Patrick soils, 1 to 8 % slopes	PaD	0.2	Cropland	B	0.6 - > 20	0.02 -	Very Low to
Speck	Speck soils 1 to 3 % slopes	SsB	0.1	Cropland	D	0.06 - 0.60	0.15 -	Low to
Crawford	Crawford clay, 0 to 1 % slopes	CrA	0.1	Cropland	D	< 0.06	0.14 -	Very High
Denton	Denton silty clay, 0 to 1 %	DeA	< 0.1	Cropland	D	0.06 - 0.20	0.12 -	High

Available water capacity (AWC) is the volume of water that should be available to plants and is an important soil property in developing water budgets, predicting drought, designing and operating irrigation systems, designing drainage systems, protecting water resources and predicting yields. Available water capacity ranges from 0 to 70 cm/cm. Table 2.3 describes the four main classifications of hydrologic soil groups.

Table 2.3 Description of the four main hydrologic soil groups. Infiltration rate is the rate at which water enters the soil at the surface and is controlled by surface conditions when soils are thoroughly wetted.. Transmission rate is the rate at which water moves in the soil and is controlled by soil properties.

Hydrologic Soil Group	Runoff Potential	Infiltration Rate	General Soil Description	Transmission Rate
A	Low	High	Deep, well drained to excessively drained sands or gravels	High
B		Moderate	Moderately deep to deep, moderately well drained to well drained soils that have moderately fine to moderately coarse textures	Moderate
C		Slow	Possess a layer that impedes downward movement of water or have moderately fine to fine texture	Slow
D	High	Very Slow	Clay soils that have a high swelling potential, soils that have a high permanent highwater table, soils that have a claypan or clay layer at or near the surface and shallow soils over nearly impervious material	Very Slow

DESIGNATION OF SOURCE WATER PROTECTION AREA

The term "source water protection area" (SWPA) is defined in the Safe Drinking Water Act (SDWA) as the area delineated by the state for a PWS (Public Water Supply) or including numerous PWSs, whether the source is groundwater or surface water or both. The state of Texas has defined surface water protection areas in two parts. First, the entire watershed of a surface water system is delineated and considered while developing a protection strategy. The second component of the surface water protection area is the portion of the watershed within 1,000 feet of the lake. This area is termed the area of primary influence (API) and is where the detailed inventory for potential sources of contaminants (PSOCs) takes place. The precise delineation of the area is not specified in the law, but is a site-specific determination and may vary slightly between systems. These variations may include API determination based on spillway elevation, slope, and/or flood prone areas.

Watershed Delineation

The U.S. Environmental Protection Agency defines a watershed as "a geological area in which water, sediments, and dissolved materials drain into a common outlet." This outlet could be a stream, lake, aquifer, estuary, or ocean. Watersheds are also commonly called drainage basins.

Maps such as the U.S. Geological Survey (USGS) 7 ½ minute topographic maps are useful tools for watershed delineations and are easily acquired. Steps for delineating a watershed are as follows:

1. Acquire the topographic maps for the area of interest. This may require several maps.
2. Locate and mark the downstream outlet of the watershed. For reservoirs this would be the dam. For rivers and streams it would be the intake.
3. Locate and highlight all the streams and lakes that eventually flow into the

outlet. Start with major tributaries, and then add the smaller intermittent streams. It may be helpful to use arrows to mark the direction of flow. With these streams highlighted the topography and boundary of the watershed is easier to visualize.

4. Find and mark the high points (hills, ridges, and saddles) on the map. Then connect these points, following ridges and crossing slopes at right angles to contour lines. This line forms the watershed boundary

Area of Primary Influence (API)

While the watershed of the Stillhouse Hollow Lake is important, it would be too time intensive to inventory all the potential sources of contaminants throughout the entire watershed. Furthermore, the area would be too large for a local municipality to effectively manage. Therefore the area within 1,000 feet of the lake is designated as the area of primary influence. It is assumed that the land activities and potential sources of contaminants that are located in close proximity to the water supply would be more likely to affect the water quality than contaminants originating from more distant parts of the watershed. For this reason, a thorough survey of the potential sources of contaminants located in the API was conducted.

Why 1,000 feet? The API is intended to address the contaminants that pose the greatest threat to the source water based on proximity. Other methods may be used to establish or append the API. These include spillway elevation, flood prone areas, and time of travel.

INVENTORIED POTENTIAL SOURCES OF CONTAMINATION

Human-influenced drinking water quality problems are most commonly related to:

(1) Water-soluble products that are placed on the land surface and in streams.
(2) Substances that are deposited or stored in the ground above the water table.
(3) Materials that are stored, disposed of, or extracted from below the water table.

This report will focus primarily on the inventoried items located during the potential source of contaminant inventory. The following is a summary of the findings by type of source:

Septic Systems

A major cause of groundwater and surface water pollution in the United States is effluent from poorly constructed or failing septic tanks, cesspools, and privies. Individually of little significance, these devices are important in the aggregate because they are abundant and occur in every area of the State not served by municipal or privately owned sewage treatment systems.

Several potentially harmful chemical substances may be present in domestic wastewater, including heavy metals (from pigments in cosmetics), toxic organic chemicals (from cleaners), and nitrates (from human wastes). The nutrients from sewage wastes can enter aquatic systems and cause excessive algae and vascular plant growth. This over production, or eutrophication, of the water body can cause recreational and aesthetic degradation as well as cause an increase in taste and odor complaints from drinking water consumers. In addition to chemical contaminants, septic tank effluent may contain potentially infectious microorganisms, including bacteria, protozoa, and viruses. Septic tanks may contaminate shallow groundwater which may flow to deeper aquifers through hydrologically connected water wells.

A total of 327 septic systems, were identified in the API during the inventory effort. It is also assumed that all the residences in the watershed have on-site septic systems.

Sewage Dump Station

Due to its natural beauty, Stillhouse Hollow Lake is an area that attracts recreational users such as boaters, campers, and golfers. Recreational areas often provide facilities for vehicles to dump their sewage and in some cases campers use external sewage containment devices which they later haul to the dump station. If these stations are not maintained or located appropriately they could contaminant the source water with sewage. Contaminants from sewage dump stations are the same as from the septic system contaminants listed above.

Two sewage dump station was found during the inventory effort.

Marinas / Boat Ramps / Boat Storage / Water Craft Use

Public access to water supplies inherently increase the likelihood of contaminants entering the water body. Whether it be by the accidental spillage of gasoline near marinas selling gas, the intentional purging of fuel or sewage lines, or normal operation of motorized water craft, recreational activities have a potential impact on drinking water supplies. Chemicals from gasoline engines can contribute numerous compounds if leaked into the water. It has been proven that water bodies which allow motorized water craft can have concentrations above the analytical limit of the following volatile compounds: benzene, toluene, ethylbenzene, xylenes, and methyl tertiary butyl ether (MTBE). Other compounds, such as polycyclic aromatic hydrocarbons (PAH) appear directly related to motorized water craft. Of the different types of water craft, it is the two-cycled carbureted engines that pass the largest percent of unburned fuel into the water. These crafts include personal water craft and some outboard motors. Water craft operators may also be inclined to purge their sewage holding tanks (if present) prior to exiting the lake.

There one marina, five public boat ramps and approximately 74 private docks located on Stillhouse Hollow Lake.

Abandoned Wells

Abandoned wells are considered to be one of the largest sources of NPS of groundwater within Texas. Of greatest concern are improperly abandoned high capacity municipal, industrial, and irrigation wells.

Most abandoned wells are old and improperly constructed. In many cases, there is inadequate or a total absence of casing within these holes and most of them have been left uncapped. These wells are various depths, and in many of them hydraulic communication is present between more than one water-bearing unit allowing inter-aquifer exchange and water degradation. These conditions also allow an undetermined amount of contaminants to enter the groundwater during storm related events, and from defective storage tanks, septic systems, etc., via the well's borehole. Additionally, they are a safety hazard to human and animal life.

One unknown well was identified within the Stillhouse Hollow Lake API.

Water Wells

Improperly constructed water wells may either pollute an aquifer or produce polluted water. Dug wells are generally of large diameter, shallow depth, and poorly protected, and are commonly polluted by surface runoff. The contaminated groundwater from shallow wells can enter the public water supply wells through deep abandoned wells or improperly constructed wells. Improperly constructed water wells may also allow contaminants flowing from leaking underground storage tank and septic tank fluids to enter the aquifer.

Four private water wells were identified during the source water inventory.

Surface Storage Tanks

Surface storage tanks are stationary devices designed to store accumulations of waste and non-waste materials. These vessels are primarily used for storage of chemicals generated and/or used in industrial, agricultural, or commercial operations. Additionally, they include those tanks located at private facilities. These vessels can leak and pollute of surface water and groundwater drinking water supplies if they are not properly installed, maintained, and operated.

Releases from surface storage tanks usually result from spills, overflows, operator errors, or leaks. The USEPA reports that expected potential contaminants from these vessels are organic compounds, metal/nonmetallic inorganic compounds, inorganic acids, microorganisms, and radionuclides. High concentrations of these contaminants in raw water supplies can greatly increase the cost of public drinking water treatment and production.

A total of twelve aboveground storage tanks were identified within the Stillhouse Hollow Lake API.

Cemeteries

In the past, little thought was given to cemeteries as a possible source of groundwater contamination. In cases where wooden coffins or non-leakproof caskets are used, it is possible for chemical contaminants from the embalming process and fluids produced by decomposition to leak into underlying groundwaters. Areas of high rainfall and aquifers having shallow water tables are most susceptible to this type of contamination. Potential pollutants from cemeteries are embalming fluids, metals, nonmetals (primarily chlorides, sulfates, and bicarbonates), and microorganisms (U.S. Environmental Protection Agency, 1987 and Bouwer, 1978).

Six cemeteries were identified during the inventory effort.

Infiltration of Polluted Surface Waters

The yield of many wells located close to streams or reservoirs is sustained by infiltration of surface water. If polluted ground water moves to the well, contaminants are diluted or removed by filtration and sorption. This is especially true where the water flows through filtering materials, such as sand and gravel, particularly if these materials contain some soil organic matter. Filtration is less likely to occur if the water flows through large openings, such as those that occur in carbonate aquifers like the Edwards. Many pollutants, for example chloride, nitrate, and many organic compounds, are highly mobile, move freely with the water, and are not removed by filtration.

Stock ponds are usually completed in the shallow soil horizons within 10 feet of the land surface. When a stock pond/tank seeps, contaminants can reach an aquitard or semi-permeable strata then migrate along the angle of ambient flow, which is traditionally toward area streams and/or surface water bodies, thereby contaminating surface waters within relatively short periods of time. Additional abandoned or improperly completed wells can provide a direct channel for contaminants to enter groundwater sources of drinking water.

Seven surface water body (stock ponds) was identified in the API.

Chemical Storage and Handling

This category includes storage barrels, bags, drums, and containers of various sizes storing waste and non-waste products that can be moved with relative ease. Also included are mixing bins, mixing pads, and other sites designated for mixing chemicals which may pose a risk to human health and the environment. Potential contaminants from these practices are wastes from agricultural, residential, municipal, commercial, and industrial sources. Chemical storage, handling, and mixing activities often results in improper disposal activities including "midnight dumping" into rural or urban open dumps, along roadways, and in unattended natural settings. Activities such as this generate the potential for contamination when contaminants leach into the aquifer and pollute drinking water supplies.

Information on chemical storage facilities is limited. In 1981, 3,577 chemical storage facilities regulated under the Resource Conservation and Recovery Act (RCRA) used containers to store approximately 160 million gallons of hazardous waste. Rules and regulations pertaining to the storage and use of chemicals in the workplace are enforced by the Occupational Safety & Health Administration (OSHA) and are provided for employee protection and safety in the workplace. The Code of Federal Regulations (CFR), 29 CFR 1910.120, provides for shared regulatory authority over hazardous chemical and chemical waste storage sites, how chemicals and wastes are handled, and emergencies concerning hazardous materials, by the EPA and OSHA.A total of seven chemical storage locations were identified within the API.

Wastewater Treatment Plants, Water Quality Permit Discharges, and Water Treatment Plants

Wastewater treatment plants (WWTP) play an important role in protecting the waters of the state. Careful regulation, monitoring, and control of water quality permit discharges such as those of WWTPs are essential to protecting the state's water from contamination. Proper treatment of wastewater protects human health, animal health, and drinking water sources. Wastewater treatment plants must have a permit issued by the State of Texas in order to discharge to the waters of the state. Each WWTP permit specifies parameters that are monitored monthly, weekly, daily, and even hourly depending on the plant size and permit requirements. Water quality permit discharges are a type of point source pollution, and can easily be monitored. Discharges are monitored for some or all of the following parameters: dissolved oxygen concentration, pH, chlorine residual, biochemical oxygen demand (BOD), total suspended solids (TSS), ammonia (NH_3-N), as well as other parameters depending upon the individual WWTP permit requirements and the type of waste being treated. Other contaminants which may be contained in WWTP discharges are nutrients (such as nitrogen and phosphorus) which may contribute to drinking water quality problems associated with eutrophication: taste, odor and color.

Water Treatment Plants are also a concern. When raw water enters a treatment plant numerous chemicals are added to the water to begin the treatment process. Some of the common chemicals added to raw water are: Charcoal for taste and odor control, lime to adjust pH, chlorine and ammonia are added to the water to make chloramines, which is used for disinfection, some form of coagulant such as aluminum sulfate, ferrous sulfate, ferric sulfate, ferric chloride, or sodium aluminate are added, these coagulants cause particles in the water to floc together and sink. Some treatment plants add Hydrofluoric acid to increase the amount of fluoride in the drinking water.

Proper disposal of water treatment plant sludge is essential to maintaining a clean environment. By performing routine maintenance on treatment basins, checking for cracks and holes can help maintain a safe environment. Proper disposal is very important to prevent groundwater contamination, soil contamination, and during rainfalls prevent storm water runoff contamination.

Two water treatment plants and two water quality permit discharge were identified within the Stillhouse Hollow Lake watershed.

Graywater Line

The Texas Administrative Code (TAC) §285.81 defines a graywater line as wastewater from residential clothes washing machines, otherwise known as laundry graywater. Graywater may be discharged directly onto the ground surface under the following conditions:

(1) The disposal area shall not create a public health nuisance.

(2) Surface ponding shall not occur in the disposal area.

(3) The disposal area shall support plant growth or be sodded with vegetative cover.

(4) The disposal area shall have limited access and use by residents and pets.

(5) Laundry graywater that has been in contact with human or animal waste shall not be discharged on the ground surface and shall be treated and disposed of according to TAC §285.32 and §285.33.

(6) Laundry graywater shall not be discharged to the area if the soil is wet.

(7) Avoid use of detergents that contain a significant amount of phosphorus, sodium, or boron.

(8) A lint trap shall be required at the end of the discharge line.

Two graywater lines were identified within the API.

Accidental Spills

A large volume of toxic materials are transported throughout the country by truck and rail. Accidental spills of these hazardous materials are not uncommon. There are virtually no methods that can be used to quickly and adequately cleanup an accidental spill or spills caused by explosions or fires. Furthermore, immediately following an accident, the usual procedure is to spray the spill area with water. The resulting fluid may either flow into a stream or infiltrate the ground.

A total of three Highways, FM 1670, FM 2484 and FM 3481 and a few city streets was identified within the Stillhouse Hollow Lake API.

Auto Salvage Yards

One area of possible groundwater pollution which needs to receive more attention is auto junk yards which are generally around population centers. The exact amount of their liquid wastes is not known; however, potential contaminants include battery acids, radiator antifreeze and coolants, transmission fluids, motor oils, gasoline, and diesel fuels. Most of these fluids are hazardous and extremely dangerous if they seep to groundwater.

Three (3) auto salvage yards were identified within the Stillhouse Hollow Lake API.

SUMMARY OF SOURCE WATER PROTECTION SURVEY
STILLHOUSE HOLLOW LAKE PROJECT

Area of Primary Influence (1,000 feet)

Potential Source of Contamination	No. of Sources Inventoried
Septic Systems	327
Outhouses	8
Waist Dumps	2
Boat Ramps	5 Public & 74 Private
Marinas	1
Undefined Domestic Well	1
Operational Domestic Wells	4
Above Ground Storage Tanks	12
Cemeteries	6
Stock Ponds	7
Chemical Storage and Handling	7
Water Treatment Plants	2
Gray Waterlines	2
Water Quality Permit Discharge	2
Auto Salvage Yards	3
Highways	3

SAMPLE

POTENTIAL CONTAMINANT

SOURCE INVENTORY FORM

Potential Contaminant S Inventory Form

Inventory Tracking Information	Inventory Mapping Information
Date: ______ Inventory Person: ______	PWS ID No.: ______ Inventory Form No.: ______
GPS File Name (Write "N/A" if GPS not used): ______	SWP Area No.: ______ Map No.: ______
Landowner/Business Name: ______	City/State/ZIP: ______
Physical Address: ______	Telephone: ______ County: ______

PSOC	QTY	O/A	PSOC	QTY	O/A	PSOC	QTY	O/A	PSOC	QTY	O/A
1 1 AUTO PARTS BUSINESS (NEW, USED)			1 29 SUGAR REFINING			8 9 AUTO REPAIR FLOOR DRAIN			13 3 BOAT RAMP		
1 2 AUTO REPAIR, SALES,SALVAGE, TOWING			2 1 CEMETERY			9 1 GUN RANGE			13 4 HELIPORT		
1 3 COTTON GIN			3 1 PIPELINE			9 2 PUBLIC OR PRIVATE			13 5 HIGHWAY		
1 4 DRY CLEANER			3 2 CRUDE OIL			9 3 MILITARY			13 6 LANDING STRIP		
1 5 FERTILIZER MFG,SALE, APPLICATION			3 3 HIGHLY VOLATILE LIQUIDS			10 1 NATURAL RESOURCE PRODUCTION			13 7 MARINA		
1 6 GOLF COURSE			3 4 NATURAL GAS LIQUIDS			10 2 MINERAL EXPLORATION			13 8 MILITARY AIR BASE		
1 7 GRAIN ELEVATOR			3 5 PRODUCT-GASOLINE,DIESEL,JET FUEL			10 3 OIL OR GAS WELL-ABANDONED			13 9 RAILROAD		
1 8 INORGANIC CHEMICAL INDUSTRY			3 6 NATURAL GAS			10 4 OIL OR GAS WELL-PLUGGED			14 1 WASTE		
1 9 METAL PLATING BUSINESS			3 7 PETROLEUM PUMP STATION			10 5 OIL OR GAS WELL-PRODUCTION			14 3 CONFINED ANIMAL FEEDING OPERATION		
1 10 NUCLEAR POWER PLANT			4 1 CHEMICAL STORGAE			10 6 OIL OR GAS WELL-UNDERGROUND			14 4 CORRECTIVE ACTION SITE - TCEQ		
1 11 ORGANIC CHEMICAL INDUSTRY			4 2 DRUM, SMALL CONTAINERS,BAGS			10 7 WATER WELL			14 5 DOMESTIC TRASH OR BURN PILE		
1 12 PAINT SHOP			4 3 CHEMICAL MIXING SITE			10 8 WATER WELL:ABANDONED			14 6 INDUSTRIAL HAZARDOUS WASTE TSD		
1 13 PESTICIDE MFG, SALE, APPLICATION			4 4 TRANSFORMER			10 9 MINED LAND:ACTIVE OR ABANDONED			14 7 MUNICIPAL SOLID WASTE-		
1 14 PESTICIDE, FERTILIZER MFG,SALE , APPL			5 1 CLASS 1 INJECTION WELL			11 1 WATEWATER			14 8 MUNICIPAL SOLID WASTE - ACTIVE,TCEQ		
1 15 PETROLEUM CHEMICAL INDUSTRY			6 1 CLASS 2 INJECTION WELL			11 2 HOLDING POND			14 9 PERCHLORATE SITE		
1 16 PETROLEUM STORAGE TANK			7 1 CLASS 3 INJECTION WELL			11 3 HOLDING TANK			14 10 SITE DISCOVERY - TCEQ		
1 17 PHOTO PROCESS BUSINESS			7 2 BRINE			11 4 INDUSTRIAL WASTEWATER OUTFALL			14 12 SUPERFUN SITE		
1 18 PLASTIC MFG,SALE			7 3 SODIUM SULPHATE			11 5 LAND APPLICATION SITE			14 13 TOXIC RELEASE INVENTORY - TCEQ		
1 19 PULP OR PAPER MILL			7 4 SULFUR			11 6 LIFTSTATION			14 14 TRANSFER STATION		
1 20 RADIOCHEMICAL SITE			7 5 URANIUM			11 7 PIPELINE			14 15 VOLUNTARY CLEAN UP - TCEQ		
1 21 TIRE SALES, REPAIR BUSINESS			8 1 CLASS 5 INJECTION WELL			11 8 SEPTIC SYSTEM			14 16 WASTE REGISTRATION- TCEQ		
1 22 NEW OR USED OIL SITE			8 2 UNTREATED SEWAGE			11 9 MUNICIPAL WASTEWATER OUTFALL			14 18 OILFIELD SLUDGE DISPOSAL		
1 23 WOOD PRESERVING			8 3 AGRICULTURAL DRAINAGE			11 10 TREATMENT PLANT			14 19 RECYCLING FACILITY		
1 24 BATTERY MFG SALES			8 4 CESSPOOL			11 11 AGRICULTURAL WASTEWATER OUTFALL			14 20 CATTLE DIPPING VAT		
1 25 BOAT STORAGE			8 5 STORM DRAINAGE			11 12 PRIVATE WASTEWATER OUTFALL			14 21 LIVESTOCK OR ANIMAL PENS		
1 26 OIL AND GAS PRODUCTION TANKS			8 6 SEPTIC UNDIFFERENTIATED			11 13 CESSPOOL			14 22 GROUNDWATER CONTAMINATION SITE		
1 27 FIREWORKS BUSINESS (MFG OR RETAIL)			8 7 SEPTIC DRAINFIELD			13 1 TRANSPORTATION			14 23 SALT WATER DISPOSAL PIT		
1 28 MILITARY ARMORY			8 8 TRASH BURNING WELL			13 2 AIRPORT			15 1 CLASS 4 INJECTION WELL		
TCEQ FACILITY ID: ______									☐ ADDITIONAL REMARKS ON BACK		

CONTINGENCY PLANNING

While an Emergency Response Plan (ERP) will have an immediate impact on the environment or the Central Texas Water Supply Corporation and its customers, its value as a component of a Best Management Practices (BMP) Program cannot be overemphasized. Adoption and implementation of an ERP are essential elements of an effective Source Water Protection Program. A successful ERP plan provides the Central Texas Water Supply Corporation with the information necessary to react to a potential contamination event that may affect the water supply. The intent is to minimize the impact of the event on the water supply and its customers. In order to design and implement an effective ERP, the Central Texas Water Supply Corporation has identified the individuals and entities to be notified in the event of a potential contamination incident. Of primary importance is designation of a local authority to act on behalf of the Central Texas Water Supply Corporation during the incident and to identify options available to mitigate the impact of the incident on both a short-term and long-term basis.

Development of an Emergency Response Plan (ERP)

The ERP developed for dealing with an emergency affecting the water supply is well promoted and widely accessible to all water system officials and the operators most directly responsible for the day to day service of the water system. An action plan can only be effective if all procedures are well understood and readily accessible. The Central Texas Water Supply Corporation is informed of the principal features of the ERP, including plans for the acquisition of equipment and resources to mitigate the emergency.

A review of the Stillhouse Hollow Lake source water protection inventory indicates the following potential contamination sources: septic systems, sewage dump stations, above ground storage tanks, water wells, fertilizer and pesticide application sites, boat ramps, and a marina.

In the first phase of the development of an ERP, the Central Texas Water Supply Corporation gathered data on the nature of each of the potential threat to contaminant sources. The responsible employee for each source is recorded. The appropriate state or federal regulatory agency to be notified in the event of a threat of contamination is also identified. The name, telephone number, and address of each of these entities is maintained in a current status. In the event of an incident, both the owner and the regulatory agency are to be notified. The Central Texas Water Supply Corporation has obtained a copy of the TCEQ publication entitled *State of Texas Oil and Hazardous Substances Spill Contingency Plan*. This document contains telephone numbers of various agencies available for the management of events posing a potential threat to public or environmental health, including:

Texas Commission on Environmental Quality

Texas Emergency Response Center (24 hours) .... (512) 463-7727

Public Drinking Water Supply Program .... (512) 239-4691

Air/Source and Mobile Monitoring .... (512) 239-1610

Regional Office (Region 9) .... (254) 751-0335

National Emergency Response Center (24 hours) .... (800) 424-8802

Texas Department of Health

Bureau of Radiation Control .... (512) 458-7460

Railroad Commission of Texas

Pipeline Emergencies .... (512) 463-6788

Liquefied Petroleum Gas Emergencies .... (512) 463-6788

A part of the ERP is the designation of the General Manager to coordinate the Central Texas Water Supply Corporation's efforts during all phases of the threat response activities. During the initial stage of the response, the General Manager will ensure that the appropriate officials, the owner and operator of each property or their representative, and the state and federal regulatory agencies are notified of the threat incident.

The State of Texas Oil and Hazardous Substance Spill Contingency Plan describes the information to be relayed to each entity and the designated local authority should be familiar with its contents. Briefly, the information to be reported should include:

- The name and telephone number of the designated local authority,
- The exact location and nature of the incident,
- The name, address, and telephone number of the party responsible for the activity being reported,
- The extent of actual or potential water pollution, and
- The extent of any personal injuries damages or fire.

Establish the role and powers of the designated local authority. The Central Texas Water Supply Corporation employees are aware of the authority's identity and instructed to assist in the management of the threat incident. Once the Central Texas Water Supply Corporation establishes the infrastructure necessary to respond to an incident involving the public water system, it should be possible to mitigate undesirable effects of the incident on a short-term and long-term basis.

Recent Inspections

The TCEQ conducted a sanitary survey of the Central Texas Water Supply Corporation PWS on 03/25/2004. The survey indicated that the system has a total raw water intake capacity of 27.360 MGD, total treatment capacity of 14.350 MGD, total storage capacity of 10.552 MGD with 10.552 MG as elevated and 6.242 ground storage; total service pump capacity of 13.392 MGD, From 01/01/2003 to 12/31/2003 the Central Texas Water Supply Corporation PWS had an average daily usage of 5.501 MGD and on 08/09/2003 had a maximum daily usage of 10.621 MGD. During the sanitary survey a few alleged violations were found.

Short-Term Response

Any tactics developed for the public water system through routine maintenance or emergency response activities in the past should be documented for use by the designated local authority in the ERP.

Environmental factors may contribute to bacteriological contamination incidents. Seasonal rainfall may produce flooding in parts of the public water system's service area. The ERP has evaluated the ability to maintain pressure throughout the distribution system under emergency conditions. The Central Texas Water Supply Corporation has evaluated its distribution pressure during the summer months when water demand is highest. If the intake on Stillhouse Hollow Lake must be taken off line, the Central Texas Water Supply Corporation has determined their ability to rely on alternate sources, by having an inter-local agreement with the City of Belton to provide water, on an availability basis, from Lake Belton to the distribution system.

Since the Central Texas Water Supply Corporation derives their water from the Stillhouse Hollow Lake, they are dependent on fluctuations in the quality and/or quantity of the water produced. In the event of decreased productivity or increased contamination of the surface body, possible short-term responses include:

(1) removal of the intakes and reliance on another source (ground or surface) and stored water
(2) Utilization of an alternate source of supply through an interconnection with the City of Belton.
(3) Utilization of point-of-use treatment devices
(4) Reduction of contaminant concentration by blending and/or treatment
(5) Provision of bottled water
(6) Water conservation measures (Note: H.B. 3338 passed in the recently concluded 78th Regular Session of the Texas Legislature directs the Texas Water Development Board to develop methodologies for public water systems to utilize in

conducting water loss surveys. These surveys will be required every five years. Additional water conservation practices may be mandated by legislation or agency rulemaking H.B. 2660 passed in the same recent Session requires water conservation plans to include quantifiable 5 year and 10 year targets for water use reductions. Each public water system should keep apprised of current and developing statutory and regulatory requirements in the arena of water conservation.) Central Texas Water Supply Corporation yearly-average water loss is less than 10%

Part of the Drought Contingency Plan establishes a means of reducing consumption on either a voluntary or a compulsory basis. A successful conservation program should include public notification and enforcement provisions to ensure compliance. The Central Texas Water Supply Corporation has developed data regarding the average and peak consumption rates for their customers. This data was necessary to develop an effective Drought Contingency Policy and Plan.

Reducing the concentration of a contaminant entering the distribution system may be accomplished by blending water produced by a contaminated surface body with water from other contaminant-free sources. This action may dilute a contaminant to a concentration that poses a minimal health risk or even to a level that is below current laboratory detection limits. If an
acceptable risk level cannot be maintained, the water produced by the affected surface body must be treated or the surface body's intake must be isolated from the public supply. If treatment is considered, the technology employed will be determined by the nature of the contaminant and its concentration. Any required treatment is likely to be costly to install and maintain.

In addition to the action taken to ensure the public has an immediate source of potable water, the short-term response includes all reasonable measures to contain the incident and minimize the extent of any contaminant migration toward the public water supply. The Central Texas Water Supply Corporation has developed a public relations policy with emphasis on the importance of credibility and rapid accurate transmittal of information to the electronic news media.

Long-Term Response

Long-term resolution of a contamination incident must also be planned. Measures taken as part of the short-term response and the degree and persistence of contamination will influence the long-term response to an incident.

An engineering study to determine the possible alternatives and the costs associated with procuring an alternate source of water should be implemented. The Central Texas Water Supply Corporation's long-term options include eliminating the affected water supply from the system and relying on an alternate source of supply, and developing a new source of supply. Remediation of the source water contamination would be investigated. As noted previously, the presence of existing contamination of the public water supply must be accounted for in contingency planning.

Nitrate removal processes have been studied extensively. At present the manual *Water Treatment Principles and Design* by J.M. Montgomery, Consulting Engineers, Inc. indicates that the most economical advanced treatment process is ion exchange with strong-base anionic resins. Removal efficiency of the nitrate ion is affected by the presence of sulfate, bicarbonate, and chloride in the water supply. The amount of anion exchange resin needed is contingent upon not only the nitrate concentration of the water but also the sulfate and total dissolved solids concentrations. These factors will determine to a large degree the cost of ion exchange for a given system.

Design parameters must include determination of the flow rate necessary to supply the system. Consideration may be given to the blending of untreated water with treated water in order to reduce the overall cost. It is imperative that the system design includes provisions for measuring the effluent concentration of nitrate. Ion exchange equipment is available as complete skid-mounted packages. These plants will include vessels, piping, valves, regeneration pumps, brine tanks, controls and other appurtenances as needed. Additional consideration must be given to the management of waste for any proposed treatment system.

Waste disposal may represent a significant cost of treatment and thus must be considered at the planning stage. Reverse osmosis, electrodialysis, and biological denitrification may also be investigated.

The U.S. Environmental Protection Agency has established packed-tower aeration and granular activated carbon adsorption as the best available technologies for the treatment of volatile or synthetic organic contaminants, such as gasoline and other refined petroleum products. Several corporations may provide leases on air stripping towers. Some of these corporations may also offer short-term leases on activated carbon filters.

Central Texas Water Supply Corporation has initiated the Lake Stillhouse Hollow Clean Water Steering Committee (LSHCWSC) that will initiate a customer relations program designed to educate the public about water conservation as part of their Best Management Practices (BMP's). Emphasis should be placed on the need to reduce the wastage of water by eliminating excessive lawn irrigation and surface run-off. The water conservation program should focus on the use of water-saving fixtures such as toilet dams, reduced-flow showerheads and faucets, and moisture sensors for lawn irrigation systems. Dissemination of information on the use of Water Wise practices to reduce the consumption of potable water is also recommended. Further information on Water Wise practices may be obtained by contacting the Water Wise Council at (713) 486-1105.

Vulnerability Assessments

This document is a public water supply protection strategy for the Central Texas Water Supply Corporation. It is the protection component of the state's Source Water Assessment and Protection (SWAP) program. The source water assessment component was completed by the TCEQ in May 2003. The source assessment reports were then mailed out to all public water systems by the TCEQ.

These documents should not be confused with the vulnerability assessments required by Federal law. The SWAP program addresses accidental contamination that may arise from environmental or other sources, not the intentional threats of terrorism or sabotage assessed under federal law. Nevertheless, the two assessments may overlap in some places, especially when the element of emergency response planning comes into play.

Summary

The ERP included in this report addresses the subject in a specific manner. The following actions have been taken:

(1) Conduct a feasibility study to determine the best options for either treating the existing water, purchasing water from an alternate source, or developing a new source free of contamination.

(2) Review the potential contamination sources identified herein and identify any other known sanitary hazards.

(3) Develop a calling list to alert the appropriate parties in the event of a contamination incident.

(4) Designate a local authority and first alternate, and make certain the appropriate officials know their identities.

(5) Document the procedures used to cope with any previous emergencies as well as the procedures used to conduct routine maintenance activities.

(6) Evaluate the distribution piping system and locate areas that may require modifications or improvements for the implementation of the contingency plan. Special emphasis should be placed on changes that may be required in the event that blending of source water is required.

(7) Evaluate and update the short-term response procedures and correct any distribution piping system deficiencies that may hinder the implementation of the contingency plan.

(8) Document any improvements necessary to upgrade the water system infrastructure should an alternate water supply be developed. Prepare preliminary plans and cost estimates for the proposed long-term options.

(9) Study the possible costs associated with a contamination incident and advise the designated authority of funds that may be readily accessible.

(10) Educate the public on both, the identification of potential sources of contamination and water conservation practices.

(11) Determine which elements of the specific contingency plan should be protected from public disclosure in order to safeguard public health and safety.

Implementation of these measures prior to the occurrence of contamination will help ensure that a continuous source of potable water can be secured.

Development of a Drought Contingency Plan

Recurring drought is a natural part of the highly variable Texas climate. In response to this, the 75th Texas Legislature set forth in Senate Bill 1, statutory requirements for all public water supplies "*...to develop drought contingency plans...to be implemented during periods of water shortages and drought.*" The 78th Texas Legislature has now required that these drought contingency plans contain specific, quantifiable targets for water use reductions during periods of drought. State law also provides that water conservation and drought contingency plans are to be submitted to the TCEQ in support of applications for new or amended permits to use surface waters of the state. The Texas Water Development Board (TWDB) also requires most state financial assistance applicants to develop water conservation and drought contingency plans.

The TCEQ rules require public water suppliers to develop drought contingency plans that address the following situations:

- Reduction in available water supply up to a repeat of the drought of record;
- Water protection or distribution system limitations;
- Supply source contamination; or
- System outage due to the failure or damage of major water system components (e.g. pumps).

Central Texas has developed and submitted the Drought Contingency Policy and Plan to the TCEQ.

CONCLUSIONS AND STRATEGY RECOMMENDATIONS

The Central Texas Water Supply Corporation is aware that there are potential contaminant sources within Stillhouse Hollow's Area of Primary Influence. The API is comprised primarily of septic systems, sewage dump station/holding tank, water wells, fertilizer/pesticide applications, dump, boat ramps/watercraft use and mining. While there may be potential sources of contaminants that went undetected during the inventory, every effort was made to investigate the areas within the Area of Primary Influence.

The Area of Primary Influence for Stillhouse Hollow Lake is primarily residential. The majority of these areas are not connected to a sewer system so the residents rely on septic systems.

The septic systems around the Stillhouse Hollow Lake are located in soils rated as "severe" due to their slow percability and are considered unsuitable for standard soil absorption systems. Septic systems should be constructed, maintained, and operated in accordance with applicable laws. The public water supply systems should contact septic system operators and advise them of their responsibilities in maintaining their systems. Inactive systems should be properly closed. Should municipal sewage service become available, establishments should be required to connect and close their own systems.

Septic systems improperly maintained can contaminate ground water and surface water with nutrients and pathogens. Septic system owners shall follow the following recommendations:

- Inspect the septic system annually.
- Pump out the septic regularly. (Pumping out every three to five years is recommended for a three-bedroom house with a 2,000-gallon tank; smaller tanks should be pumped more often).

- Do not use septic system additives. There is no scientific evidence that biological and chemical additives aid or accelerate decomposition in septic tanks; some additives may in fact be detrimental to the septic system or contaminate ground water.
- Do not divert storm drains or basement pumps into septic systems.
- Avoid or reduce the use of your garbage disposal. (Garbage disposals contribute unnecessary solids to your septic system and can also increase the frequency your tank needs to be pumped.)
- Don't use toilets as trashcans! Excess solids may clog the drain field and necessitate more frequent pumping.

Lake Stillhouse Hollow Clean Water Steering Committee and the Central Texas Water Supply Corporation will be working cooperatively with the County Health Office as part of their Best Management Practices to disseminate septic system maintenance brochures targeting residences near the Stillhouse Hollow Lake. Information on septic system renovation could be sent to residences that may be interested in alternatives to standard septic systems, which are not designed for the soils near the Stillhouse Hollow Lake.

Sewage dump stations and holding tanks should be properly maintained and located appropriately. They should be inspected and pumped out regularly.

Active water wells within the API should be inspected to ensure that they are properly constructed, properly serviced and maintained, and meet the state's minimum requirements. Improperly constructed water wells should be plugged or reconstructed to meet minimum requirements. Wells that are no longer in use and have been abandoned should be properly plugged.

Lake Stillhouse Hollow Clean Water Steering Committee and the Central Texas Water Supply Corporation will notify farmers, ranchers and agricultural product applicators within the source water protection area that the protection areas exist and that care should be exercised within these areas. A Public Education Program will be established to inform farmers, ranchers and agricultural product applicators of the importance of fertilizing according to soil test, proper nutrient placement, and timing of fertilizer applications to maximize nutrient use efficiency and minimize the environmental impact on groundwater. Educational materials on pesticide and herbicide application to reduce leaching or other adverse environmental effects should be provided. Lake Stillhouse Hollow Clean Water Steering Committee and the Central Texas Water Supply Corporation will be working cooperatively to monitor nearby water wells periodically for any contamination from infiltration of agricultural products or runoff as part of the Lake Stillhouse Hollow Clean Water Steering Committee Best Management Practices. A Citizens' Monitoring Program is being established to monitor nearby surface water bodies to aid in monitoring quality. An Agricultural Chemical Collection Program should also be established. Lake Stillhouse Hollow Clean Water Steering Committee and the Central Texas Water Supply Corporation will encourage farmers, ranchers and agricultural product applicators to contact the Texas Soil and Water Conservation Board's Conservation Reserve Program on possible best management practices they may implement.

Boat ramps and watercraft use should be regulated according to Texas Water Code 321.1 – 321.18 and Title 30 Chapter 290 Rules & Regulations. The system will ensure the raw water intakes are not located within 2,000 feet of boat launching ramps, marinas, and docks or floating fishing piers which are accessible by the public. The water system has a restricted zone of 200 feet radius from the raw water intake and all recreational activities and trespassing are prohibited in this area.

Law enforcement or code enforcement officials should be authorized to patrol the API for illegal dumping and prosecute violators. The Central Texas Water Supply Corporation should render inaccessible frequent dumping sites and post no dumping signs. An emergency telephone number should be established for citizens to report violations.

Mining and other mineral extraction activities should be monitored for violations. Violations should be reported to the RCT. The Central Texas Water Supply Corporation should include mining activities in spill response and contingency planning.

Central Texas Water Supply Corporation has developed an adequate ERP. Lake Stillhouse Hollow Clean Water Steering Committee and the Central Texas Water Supply Corporation are holding public meetings and working closely with the general public. By doing so, information is disseminated more accurately, to a greater extent, and is helping to build a cooperative working relationship between the Central Texas Water Supply Corporation and the citizens of the community.

The Central Texas Water Supply Corporation is encouraged to formally designate the proposed SWPA delineated in this report. Special ordinances, permits, and prohibition of certain activities should be considered for the protection areas.

Lake Stillhouse Hollow Clean Water Steering Committee and the Central Texas Water Supply Corporation will be working cooperatively may wish to contact their local service organizations, such as the Retired and Senior Volunteer Program, to help with implementation of best management practices such as; future inventories, to help prepare road-side markers designating the SWPA, conducting research on management practices used to protect groundwater, and/or public education and outreach activities. Inventories of potential contamination sources will be conducted every two to five years.

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BEST MANAGEMENT PRACTICES
&
PREVENTATIVE MEASURES

This report will focus primarily on the preventative measures that have been completed by the Central Texas Water Supply Corporation. The summary of preventative measures are as follows:

Septic Systems

A major cause of groundwater and surface water pollution in the United States is effluent from poorly constructed or failing septic tanks, cesspools, and privies. Individually of little significance, these devices are important in the aggregate because they are abundant and occur in every area of the State not served by municipal or privately owned sewage treatment systems.

Several potentially harmful chemical substances may be present in domestic wastewater, including heavy metals (from pigments in cosmetics), toxic organic chemicals (from cleaners), and nitrates (from human wastes). The nutrients from sewage wastes can enter aquatic systems and cause excessive algae and vascular plant growth. This over production, or eutrophication, of the water body can cause recreational and aesthetic degradation as well as cause an increase in taste and odor complaints from drinking water consumers. In addition to chemical contaminants, septic tank effluent may contain potentially infectious microorganisms, including bacteria, protozoa, and viruses. Septic tanks may contaminate shallow groundwater which may flow to deeper aquifers through hydrologically connected water wells.

Three hundred twenty seven (327) septic systems, were identified within the Stillhouse Hollow Lake API.. It is also assumed that all the residences in the watershed have on-site septic systems.

***Action taken**: Bell County has enforced a state code making it mandatory that all new structures have aerobic septic systems in place.*

The County Health and County Commissioners are monitoring areas around the Lampasas River to include creeks feeding into the Lampasas River, and Lake Stillhouse Hollow to see if a particular area is being contaminated. This is being done to help identify a problem before it reaches their drinking water intakes.

All landowners within the protection areas were given handout "Reducing the Risk of Groundwater Contamination by Improving Household Wastewater Treatment"

All landowners with conventional septic systems are encouraged to pump out their septic systems regularly.

Septic Systems	**Structural:** Septic systems should be constructed, maintained and operated in accordance with applicable laws. Inactive systems should be properly closed and failing systems should be renovated or removed and placed on a sewage treatment plant. **Non-structural:** Contact septic system operators and advise them of their responsibilities in maintaining their systems. Provide them with a telephone number in case of emergencies. Require establishments to connect and close their systems should municipal sewage service become available. **Education/Outreach:** Provide and disseminate information on the proper maintenance of septic systems. **Rule: Rules & Regulations for Public Water Systems 30 TAC, Chapter 290.41 (e)(1)(C), 290.41 (e)(3)(A) and 290.41 (c)(1)(A)**

Sewage Dump Station

Due to its natural beauty, Stillhouse Hollow Lake is an area that attracts recreational users such as boaters, campers, and golfers. Recreational areas often provide facilities for vehicles to dump their sewage and in some cases campers use external sewage containment devices which they later haul to the dump station. If these stations are not maintained or located appropriately they could contaminant the source water with sewage. Contaminants from sewage dump stations are the same as from the septic system contaminants listed above.

Two (2) sewage dump stations were identified within the Stillhouse Hollow Lake API.

Action Taken: The two sewage dump stations identified are located on Corp of Engineers property. The Corp of Engineers does regular testing and cleaning to protect Stillhouse Hollow Lake from contamination.

Marinas / Boat Ramps / Boat Storage / Water Craft Use

Public access to water supplies inherently increase the likelihood of contaminants entering the water body. Whether it is by the accidental spillage of gasoline near marinas selling gas, the intentional purging of fuel or sewage lines, or normal operation of motorized water craft, recreational activities have a potential impact on drinking water supplies. Chemicals from gasoline engines can contribute numerous compounds if leaked into the water. It has been proven that water bodies which allow motorized water craft can have concentrations above the analytical limit of the following volatile compounds: benzene, toluene, ethylbenzene, xylenes, and methyl tertiary butyl ether (MTBE). Other compounds, such as polycyclic aromatic hydrocarbons (PAH) appear directly related to motorized water craft. Of the different types of water craft, it is the two-cycled carbureted engines that pass the largest percent of unburned fuel into the water. These crafts include personal water craft and some outboard motors. Water craft operators may also be inclined to purge their sewage holding tanks (if present) prior to exiting the lake.

Five (5) public boat ramps and approximately 74 private docks located on Stillhouse Hollow Lake.

Action taken: *The Central Texas Water Supply Corporation has 200 feet restriction zone signs and bouys in place at both of their intake structures. (Rule 30 TAC Chapter 290 Subchapter D § 290.41(e (2))*

Howard Clapper, owner of Stillhouse Hollow Lake Marina has been very proactive with his goals and plans to protect our Public Water Supply (PWS) by allowing Clean Drinking Water Signs to be posted at the marina informing the public to clean up after pets..

Stillhouse Hollow Lake marina is also active in the Sail Boat Sailing Club clean up day. Divers are sent to the bottom of the lake to clean out the bottom of the lake while other members of the club work diligently to clean around the outside parameter of Stillhouse Hollow Lake.

Abandoned Wells

Abandoned wells are considered to be one of the largest sources of NPS of groundwater within Texas. Of greatest concern are improperly abandoned high capacity municipal, industrial, and irrigation wells.

Most abandoned wells are old and improperly constructed. In many cases, there is inadequate or a total absence of casing within these holes and most of them have been left uncapped. These wells are various depths, and in many of them hydraulic communication is present between more than one water-bearing unit allowing inter-aquifer exchange and water degradation. These conditions also allow an undetermined amount of contaminants to enter the groundwater during storm related events, and from defective storage tanks, septic systems, etc., via the well's borehole. Additionally, they are a safety hazard to human and animal life.

One (1) unknown well was identified within the Stillhouse Hollow Lake API.

***Action taken**: A letter from Central Texas Water Supply Corporation (Corporation) and the Clearwater Underground Water Conservation District (District) was sent requesting coordination and assistance in the location of water wells within the area of possible influence. Since that letter, David Cole, General Manager of the Corporation is serving on the Public Advisory Committee of the District, and a Director of the District is serving on the Lake Stillhouse Hollow Steering Committee. Through the efforts of both entities, all underground wells that have been registered and not registered within the District have been identified.*

Several articles were published in the local newspaper to make the public aware of contaminants and their potential effect on water quality within the lake.

Water Wells

Improperly constructed water wells may either pollute an aquifer or produce polluted water. Dug wells are generally of large diameter, shallow depth, and poorly protected, and are commonly polluted by surface runoff. The contaminated groundwater from shallow wells can enter the public water supply wells through deep abandoned wells or improperly constructed wells. Improperly constructed water wells may also allow contaminants flowing from leaking underground storage tank and septic tank fluids to enter the aquifer.

Four (4) private water wells were identified within the Stillhouse Hollow Lake API..

Action taken: *Landowners with water wells within the API have been notified of the importance of proper maintenance to domestic wells. Hand out "Reducing the Risk of Groundwater Contamination by Improving Wellhead Management and Conditions" was given to all domestic well owners.*

Water fairs are being provided to educate the public on how contaminants enter into the lake and are then pumped into public water supply

The Central Texas Water Supply Corporation has an active Cross Connection Control Program and through Customer Service Investigations is requiring appropriate backflow/backpressure devices to be installed to protect the public water system.

"You are entering water protection area" signs at all road crossings were erected with phone numbers of who to notify if a contamination event should occur.

Water Wells	**<u>Structural</u>:** Water wells should be constructed in compliance with state's minimum requirements and reconstructed if necessary. **<u>Non-structural</u>:** Inspect domestic wells to ensure that they are properly constructed. Develop protection areas around wellheads and erect signs designating the protection area. **<u>Education/Outreach</u>:** Establish a Public Education Program to inform landowners of the hazards of abandoned wells and their responsibilities in plugging them. **Rule: 30 TAC Chapter 290 Subchapter D**

Surface Storage Tanks

Surface storage tanks are stationary devices designed to store accumulations of waste and non-waste materials. These vessels are primarily used for storage of chemicals generated and/or used in industrial, agricultural, or commercial operations. Additionally, they include those tanks located at private facilities. These vessels can leak and pollute of surface water and groundwater drinking water supplies if they are not properly installed, maintained, and operated.

Releases from surface storage tanks usually result from spills, overflows, operator errors, or leaks. The USEPA reports that expected potential contaminants from these vessels are organic compounds, metal/nonmetallic inorganic compounds, inorganic acids, microorganisms, and radionuclides. High concentrations of these contaminants in raw water supplies can greatly increase the cost of public drinking water treatment and production.

A total of twelve aboveground storage tanks were identified within the Stillhouse Hollow Lake API.

Action taken: *Landowners were encouraged to erect a 'retaining wall' at the base of the storage tank to contain possible spillage (Rule 30 TAC Chapter 280.43 & AWWA Standard D103).*

Surface Storage Tanks	**<u>Structural</u>:** Surface storage tanks should be constructed of non-corrodible materials, and be placed on impermeable surfaces or raised above the ground. Containment structures should be constructed around the facilities to contain spills. **<u>Non-structural</u>**: Require that surface storage tank operators immediately notify water system official in the event of leaks. Include operators in spill response and contingency planning. Education/Outreach: Disseminate information on the proper construction and maintenance of surface storage tanks to appropriate parties. **<u>Monitoring</u>**: Possible leaks may also be monitored by periodic inventory of contents. **Rule 40 CFR Chapter 112 TCEQ subchapter F**

Cemeteries

In the past, little thought was given to cemeteries as a possible source of groundwater contamination. In cases where wooden coffins or non-leak proof caskets are used, it is possible for chemical contaminants from the embalming process and fluids produced by decomposition to leak into underlying groundwater's. Areas of high rainfall and aquifers having shallow water tables are most susceptible to this type of contamination. Potential pollutants from cemeteries are embalming fluids, metals, nonmetals (primarily chlorides, sulfates, and bicarbonates), and microorganisms (U.S. Environmental Protection Agency, 1987 and Bouwer, 1978).

Six (6) cemeteries were identified within the Stillhouse Hollow Lake API..

Action taken: *You are entering a "Source Water Protection Area" signs near cemeteries that are within the area of possible influence were erected with a phone number of who to notify if a potential contamination should occur.*

Several articles were published in the local newspaper to make the public aware of contaminants and their potential effect on water quality within the lake.

Infiltration of Polluted Surface Waters

The yield of many wells located close to streams or reservoirs is sustained by infiltration of surface water. If polluted ground water moves to the well, contaminants are diluted or removed by filtration and sorption. This is especially true where the water flows through filtering materials, such as sand and gravel, particularly if these materials contain some soil organic matter. Filtration is less likely to occur if the water flows through large openings, such as those that occur in carbonate aquifers like the Edwards. Many pollutants, for example chloride, nitrate, and many organic compounds, are highly

Stock ponds are usually completed in the shallow soil horizons within 10 feet of the land surface. When a stock pond/tank seeps, contaminants can reach an aquitard or semi-permeable strata then migrate along the angle of ambient flow, which is traditionally toward area streams and/or surface water bodies, thereby contaminating surface waters within relatively short periods of time. Additional abandoned or improperly completed wells can provide a direct channel for contaminants to enter groundwater sources of drinking water.

Seven (7) surface water bodies (stock ponds) were identified within the Stillhouse Hollow Lake API.

Action taken: *You are entering a "Source Water Protection Area" signs at all road crossings near rural areas and at watershed bridges were erected with a phone number of who to notify of potential contamination if animal waste event should occur.*

Several articles were published in the local newspaper to make the public aware of contaminants and their potential effect on water quality within the lake.

Chemical Storage and Handling

This category includes storage barrels, bags, drums, and containers of various sizes storing waste and non-waste products that can be moved with relative ease. Also included are mixing bins, mixing pads, and other sites designated for mixing chemicals which may pose a risk to human health and the environment. Potential contaminants from these practices are wastes from agricultural, residential, municipal, commercial, and industrial sources. Chemical storage, handling, and mixing often results in improper disposal activities including "midnight dumping" into rural or urban open dumps, along roadways, and in unattended natural settings. Activities such as this generate the potential for contamination when contaminants leach into the aquifer and pollute drinking water supplies.

Information on chemical storage facilities is limited. In 1981, 3,577 chemical storage facilities regulated under the Resource Conservation and Recovery Act (RCRA) used containers to store approximately 160 million gallons of hazardous waste. Rules and regulations pertaining to the storage and use of chemicals in the workplace are enforced by the Occupational Safety & Health Administration (OSHA) and are provided for employee protection and safety in the workplace. The Code of Federal Regulations (CFR), 29 CFR 1910.120, provides for shared regulatory authority over hazardous chemical and chemical waste storage sites, how chemicals and wastes are handled, and emergencies concerning hazardous materials, by the EPA and OSHA.
A total of seven chemical storage locations were identified within the API.

Action Taken: *The Corporation's current Emergency Response Plan (ERP) details actions to be taken in a chemical emergency.*

As part of the completed Vulnerability Assessment, the Corporation has a draft of the ERP that will incorporate the existing ERP and other information to meet the new EPA standard.

The Corporation's Safety Policy includes:

- The Corporation's Safety Officer conducts monthly mandatory-attendance safety classes.
- The Corporation's Safety Officer conducts annual training in Self-Contained-Breathing-Apparatus (SCBA) equipment and two-man teams in changing one-ton chlorine containers.
- The Corporation's Safety Officer conducts a safety orientation of its facilities to all new employee(s) prior to starting employment.
- Part of this Corporation's Safety Plan in the area of Chemical Safety is modeled after the OSHA standard of HAZCOM (29 CFR 1910.1200)

- All chemicals stored within the Corporation facilities are in accordance with Rule 30 TAC Chapter 290 Sub-Chapter D.

Chemical Storage & Handling	**Structural:** Containers should be placed on impermeable surfaces with containment structures. **Non-structural:** Chemicals should be stored and transported in accordance with applicable laws. Require facilities to be secured from unauthorized access. Prohibit chemical storage near water wells or in 100-year flood plains. Include chemical storage facilities in spill response and contingency planning. **Rule: Rules & Regulations for Public Water Systems, 30 TAC Chapter 290 Subchapter D, 290.42 (d) (6)**

Wastewater Treatment Plants, Water Quality Permit Discharges, and Water Treatment Plants

Wastewater treatment plants (WWTP) play an important role in protecting the waters of the state. Careful regulation, monitoring, and control of water quality permit discharges such as those of WWTPs are essential to protecting the state's water from contamination. Proper treatment of wastewater protects human health, animal health, and drinking water sources. Wastewater treatment plants must have a permit issued by the State of Texas in order to discharge to the waters of the state. Each WWTP permit specifies parameters that are monitored monthly, weekly, daily, and even hourly depending on the plant size and permit requirements. Water quality permit discharges are a type of point source pollution, and can easily be monitored. Discharges are monitored for some or all of the following parameters: dissolved oxygen concentration, pH, chlorine residual, biochemical oxygen demand (BOD), total suspended solids (TSS), ammonia (NH_3-N), as well as other parameters depending upon the individual WWTP permit requirements and the type of waste being treated. Other contaminants which may be contained in WWTP discharges are nutrients (such as nitrogen and phosphorus) which may contribute to drinking water quality problems associated with eutrophication: taste, odor and color.

Water Treatment Plants are also a concern. When raw water enters a treatment plant numerous chemicals are added to the water to begin the treatment process. Some of the common chemicals added to raw water are: Charcoal for taste and odor control, lime to adjust pH, chlorine and ammonia are added to the water to make chloramines, which is used for disinfection, some form of coagulant such as aluminum sulfate, ferrous sulfate, ferric sulfate, ferric chloride, or sodium aluminate are added, these coagulants cause particles in the water to floc together and sink. Some treatment plants add Hydrofluoric acid to increase the amount of fluoride in the drinking water.

Proper disposal of water treatment plant sludge is essential to maintaining a clean environment. By performing routine maintenance on treatment basins, checking for cracks and holes can help maintain a safe environment. Proper disposal is very important to prevent groundwater contamination, soil contamination, and during rainfalls prevent storm water runoff contamination.

Two (2) water treatment plants and two water quality permit discharges were identified within the Stillhouse Hollow Lake API.

Graywater Line

The Texas Administrative Code (TAC) §285.81 defines a greywater line as wastewater from residential clothes washing machines, otherwise known as laundry greywater. Graywater may be discharged directly onto the ground surface under the following conditions:

(1) The disposal area shall not create a public health nuisance.
(2) Surface ponding shall not occur in the disposal area.
(3) The disposal area shall support plant growth or be sodded with vegetative cover.
(4) The disposal area shall have limited access and use by residents and pets.
(5) Laundry graywater that has been in contact with human or animal waste shall not be discharged on the ground surface and shall be treated and disposed of according to TAC §285.32 and §285.33.
(6) Laundry graywater shall not be discharged to the area if the soil is wet.
(7) Avoid use of detergents that contain a significant amount of phosphorus, sodium, or boron.
(8) A lint trap shall be required at the end of the discharge line.

Two graywater lines were identified within the Stillhouse Hollow Lake API.

Action taken: *You are entering a "Source Water Protection Area" signs at all road crossings near rural areas and at watershed bridges were erected with a phone number of who to notify of potential contamination if animal waste event should occur.*

Several articles were published in the local newspaper to make the public aware of contaminants and their potential effect on water quality within the lake.

Accidental Spills

A large volume of toxic materials are transported throughout the country by truck and rail. Accidental spills of these hazardous materials are not uncommon. There are virtually no methods that can be used to quickly and adequately cleanup an accidental spill or spills caused by explosions or fires. Furthermore, immediately following an accident, the usual procedure is to spray the spill area with water. The resulting fluid may either flow into a stream or infiltrate the ground.

A total of two (3) Highways, FM 1670, FM 2484 and FM 3481 and a few city streets was identified within the Stillhouse Hollow Lake API.

Action taken: *The Central Texas Water Supply Corporation posted signs on their highways stating that motorists are entering into "source water protection area."*

Emergency Response plan indicates the Texas Dept of Transportation inform Central Texas WSC be informed immediately of any spills.

The Central Texas Water Supply Corporation stocks "Spill Response Kits" for quick emergency response.

Non-structural: Accidental spills should be properly and promptly contained to prevent migration of chemicals into waterways and nearby wells. Hazardous material carriers should be rerouted around source water protection areas, if possible. Include accidental spills in spill response and contingency planning. Designate **ONE** local authority to oversee and coordinate emergency response activities.

Waste Oil Dumping

Management of used motor oil is a serious, but little-recognized, environmental problem. Every year, privately owned automobiles and light trucks generate over 300 million gallons of used crankcase oils. The majority of this oil, about 200 million gallons per year, is generated by individual consumers who change their own oil.

All automotive oil can be recycled safely and productively, saving energy and avoiding environmental pollution. Unfortunately, many people that change their own automotive oil on their autos do not properly dispose of the used oil. Improper disposal of oil includes placing it into sewers which may disrupt water treatment operations, disposing directly into waterways, or onto the surface of the ground to kill weeds or to suppress dust on dirt roads. Millions of gallons are thrown away as trash, often ending up in landfills, from which the oil can contaminate ground and surface waters. Only 10% of used oil is properly collected and recycled. Used oil from a single oil change can ruin a million gallons of freshwater - a year's supply for fifty people. Used oil is insoluble, persistent, and can contain toxic chemicals and heavy metals.

There were no sites of documented waste oil dumping; however, it is likely that there are residents in the watershed that are unaware of the contaminating potential of improperly disposed waste oil.

Action taken: *Annual water fairs are being conducted as well as in school demonstrations for kids on the importance of using designated recycle centers.*

Waste Oil Dumping	**<u>Structural</u>:** Provide a waste oil collection facility. **<u>Non-structural</u>:** Establish a public education program to encourage citizens to recycle used oil at automotive parts stores or other collection centers. Citizens may call the TCEQ's Environmental Information Line at 1-800-CLEANUP for the nearest recycling center. Citizens may also view the TCEQ Calendar of Events on the agency web site located at: <u>www.TCEQ.state.tx.us</u>

<u>Underground Storage Tank</u>

This major category covers all underground storage tanks and consists of buried tanks and their associated piping systems, which are used to store not only petroleum products, but a wide range of other products such as acids, metals, industrial solvents, technical grade chemicals, and their wastes.

Underground storage tanks are usually completed in the shallow soil horizons within 10 feet of the land surface. Although relatively impermeable clay units help protect the deeper aquifer, these tanks can be hydrologically connected to the aquifer by improperly completed or abandoned wells. Therefore, when the tanks leak, abandoned or improperly completed wells can provide a direct channel for contaminants to enter deeper underground sources of drinking water. Additionally, when these contaminants reach an aquitard or semi-permeable strata they migrate along the angle of ambient flow, which is traditionally toward area streams and/or surface water bodies, thereby contaminating surface waters within relatively short periods of time.

One (1) underground storage tank was identified within the Stillhouse Hollow Lake API.

Underground Storage Tanks	**<u>Structural</u>**: Leaking tanks should be removed and the sites should be remediated immediately. **<u>Non-structural</u>:** Underground storage tanks must be registered with the TCEQ's Petroleum Storage Tank (PST) Program. Require that underground storage tank operators immediately notify water system official in the event of leaks. Include PWS operators in spill response and contingency planning.

Auto Salvage Yards

One area of possible groundwater pollution which needs to receive more attention is auto junk yards which are generally around population centers. The exact amount of their liquid wastes is not known; however, potential contaminants include battery acids, radiator antifreeze and coolants, transmission fluids, motor oils, gasoline, and diesel fuels. Most of these fluids are hazardous and extremely dangerous if they seep to groundwater.

Three (3) auto salvage yards were identified within the Stillhouse Hollow Lake API..

Action taken: *Regulated by County Commissioners and TCEQ offices.*

Auto Salvage Yards	**Non-structural**: Automotive fluids should be properly collected, contained and disposed of in accordance with applicable laws. Ensure that automotive fluids are not being disposed of down abandoned wells. Require that all abandoned wells be plugged. **Education/Outreach**: Establish a Public Education Program to inform auto salvage yard operators of their responsibilities in disposing of automotive fluids.

Water Conservation

The Central Texas Water Supply Corporation is very proactive in their water conservation measures. According to the Texas State Water Plan, Texas existing water sources will meet only 75% of the projected water demands by 2050. We must use our precious water resources more efficiently or we will have more frequent and more severe water shortages, especially during droughts and hot Texas summers when water use is 1.5 to 3 times greater than winter use. Using water more efficiently will also save energy and money, and protect the quality of life for future generations.

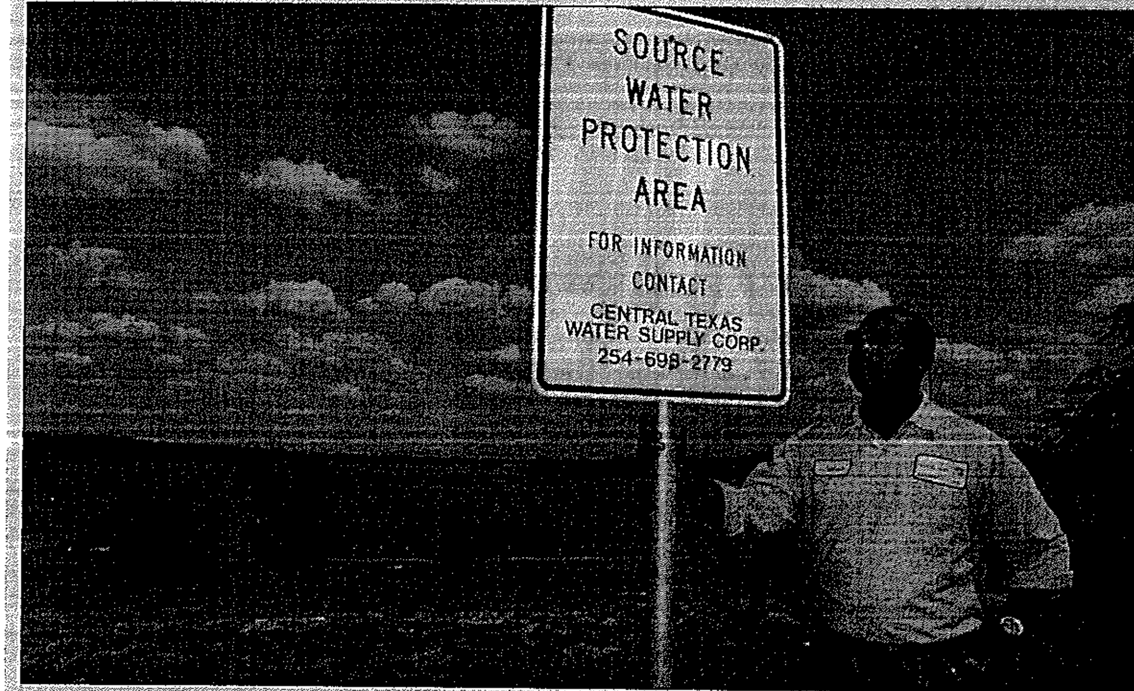
Action taken: *The Central Texas Water Supply Corporation has conducted annual water fairs to educate the public on water conservation.*

The Central Texas Water Supply Corporation developed a conservation rate structure to force water conservation by making those who use more pay more.

The Water Wise Program is being taught to children in Killeen, Holland, and Salado Schools.

The Corporation uses the USEPA's Water Conservation Plan Guidelines, AWWA Manual 36, Water Audits and Leaks, and the TCEQ's Title 30, TAC, Chapter 288 as guidelines for their very through Water Conservation Plan.

NEWSPAPER ARTICLES



Herald/STACEY COOPER

Andre Sanders, special project coordinator for the Central Texas Water Supply Corp., holds a sign that designates the Source Water Protection Area at Stillhouse Hollow Reservoir.

Group examines water quality in Stillhouse Hollow Reservoir

By Martha Underwood
Killeen Daily Herald

Everyone who turns on a water faucet in America expects clean, safe drinking water.

But water quality in Stillhouse Hollow Reservoir, one of the cleanest in Texas, has declined in the last two or three years, said David Cole, general manager of Central Texas Water Supply Corp.

CTWSC treats and distributes this water to 15 municipalities and retail distributors for drinking water.

"People pay their bills and drink the water, but do not realize we are also stewards of the water source," he said.

Through federal funding, the initial steps of the Source Water Assessment and Protection, or SWAP, program were recently conducted by CTWSC.

By completing a walking survey and inventory of Stillhouse Hollow Reservoir, ... nation were cataloged and a plan for managing these issues is being developed.

"People don't understand that what they are doing, like pouring used oil down an abandoned well, will contaminate drinking water," said Delores Goode, of the Texas Rural Water Association. "When people know about contaminants, they generally take care of it themselves."

Goode will facilitate the coalition of community, government regulators and water users forming in October to address water quality issues and educate the public to their responsibilities.

The reservoir inventory was conducted by Andre Sanders and Fred Noe of CTWSC. They identified all streams, groundwater wells, and other water sources entering the lake on maps.

Then, by exploring the lakeshore within 1,000 feet of the lake, Sanders said, they inspected all existing poten- ... such as septic systems, domestic wells, and chemical contaminants such as motor oil or paint on the ground.

Problem situations, such as cemeteries, broken septic tanks, abandoned wells and trash points, were precisely mapped with Global Positioning System for future action.

Source Water Protection Area signs are being installed this month around Stillhouse Hollow to remind the public to prevent drinking water contamination.

"Stillhouse Hollow has consistently been one of the three cleanest lakes in Texas," Cole said, "but we need the public looking out for the lake to make it work."

Contact Martha Underwood at marthau@kdhnews.com

Keeping emphasis on water quality

STILLHOUSE HOLLOW — Keeping drinking water pure is everybody's business, said **Andre Sanders**, of Central Texas Water Supply. He helps citizens around Stillhouse Hollow Reservoir understand their stewardship.

Water quality signs on major roadways around the lake were recently installed as a reminder to protect the water purity. They are from the Environmental Protection Agency and Texas Rural Water Association.

Stillhouse Hollow Reservoir was rated third best in Texas for water clarity during a technical analysis, said **Terry Clawson**, spokesperson for Texas Commission for Environmental Quality.

This lake provides drinking water to 50,000 Central Texans. "Water is a precious commodity," said **David Cole**, general manager of CTWSC. "When the purity deteriorates, it costs more to treat it for drinking."

Before installing the signs, Sanders completed a lake inventory of potential contamination causes, like stock ponds for animal feed operations, auto and junkyards, and old gas and oil tanks.

The number of unused wells left uncapped and open stands out in his mind. "They can create cross-contamination of the aquifer," Sanders said.

Also memorable during his lake inventory were the couple of times landowners asked police to check on what he was doing. "The police were very understanding," Sanders said. Though he was not on private property, residents were watchful and protective.

As part of coordinating lake stewardship, Sanders will disseminate articles on water issues, participate in community outreach on residential water conservation and organize an advisory board.

"We want the community to be aware that water is second to the air we breathe," Sanders said.

"Water is a basic necessity that we should not take for granted."

— Martha Underwood

LETTER FROM TX DOT

&

SIGN SPECIFICATIONS

Texas Department of Transportation

DEWITT C. GREER STATE HIGHWAY BLDG. • 125 E. 11TH STREET • AUSTIN, TEXAS 78701-2483 • (512) 463-8585

August 24, 1995

Mr. James Kowis
Texas Natural Resource Conservation Commission
Agriculture and Rural Assistance Division
P.O. Box 13087
Austin, Texas 78711-3087

Dear Mr. Kowis:

We have reviewed your request for the installation of signs indicating wellhead protection areas in specific communities throughout the state.

The installations are approved, provided the following guidelines are followed:

- The Texas Natural Resource Conservation Commission shall provide all signs with installation performed by the Texas Department of Transportation (TxDOT) for locations within TxDOT right-of-way.
- The signs are positioned as close to the right-of-way line as possible.
- Signs shall conform to the attached sign detail.

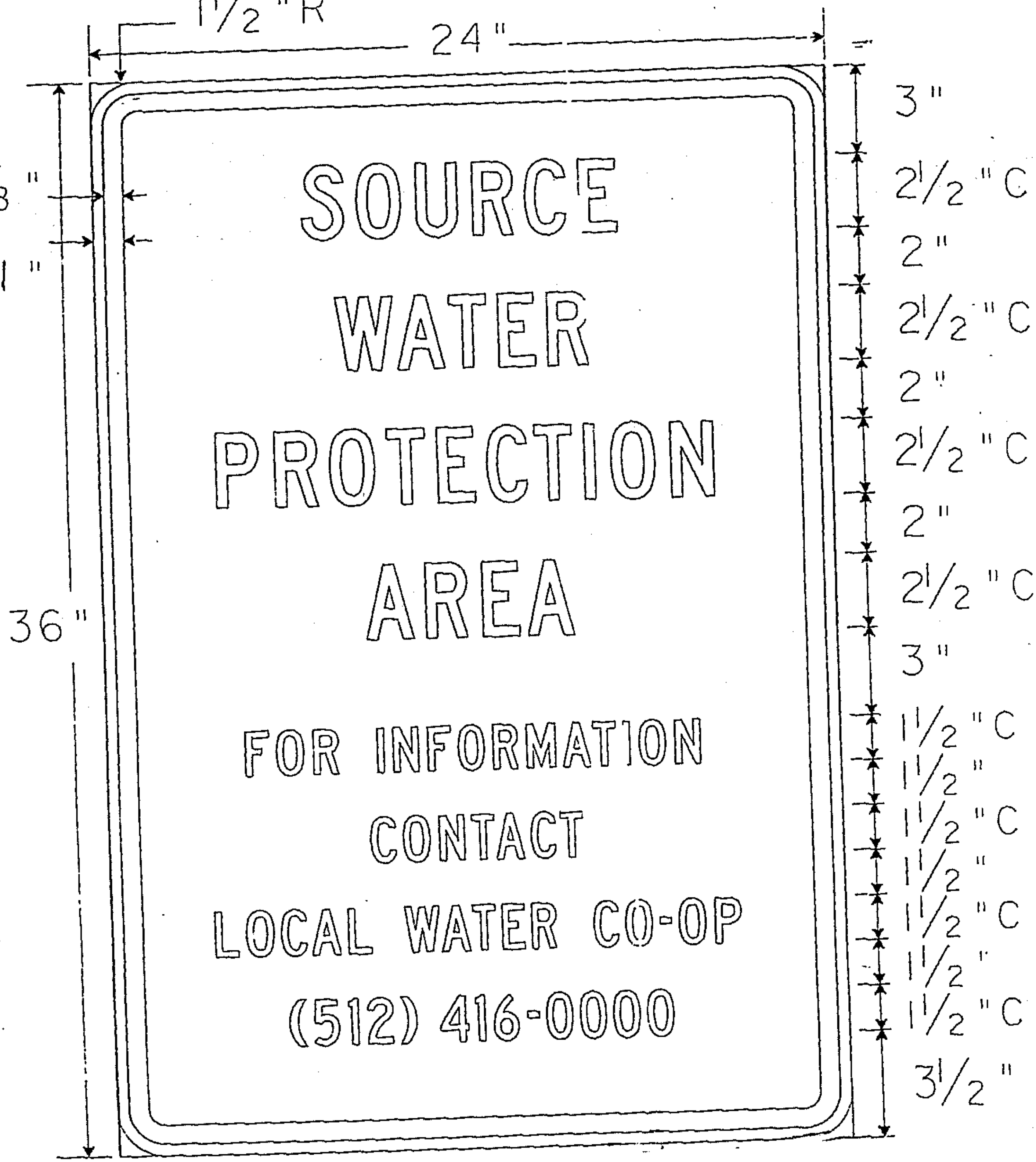
If you have any questions concerning these guidelines, please contact Greg Brinkmeyer at (512) 416-3120.

Sincerely,

Carlos A. Lopez, P.E.

Carlos A. Lopez, P.E.
Engineer of Traffic
Traffic Operations Division

GB:gh
Attachment



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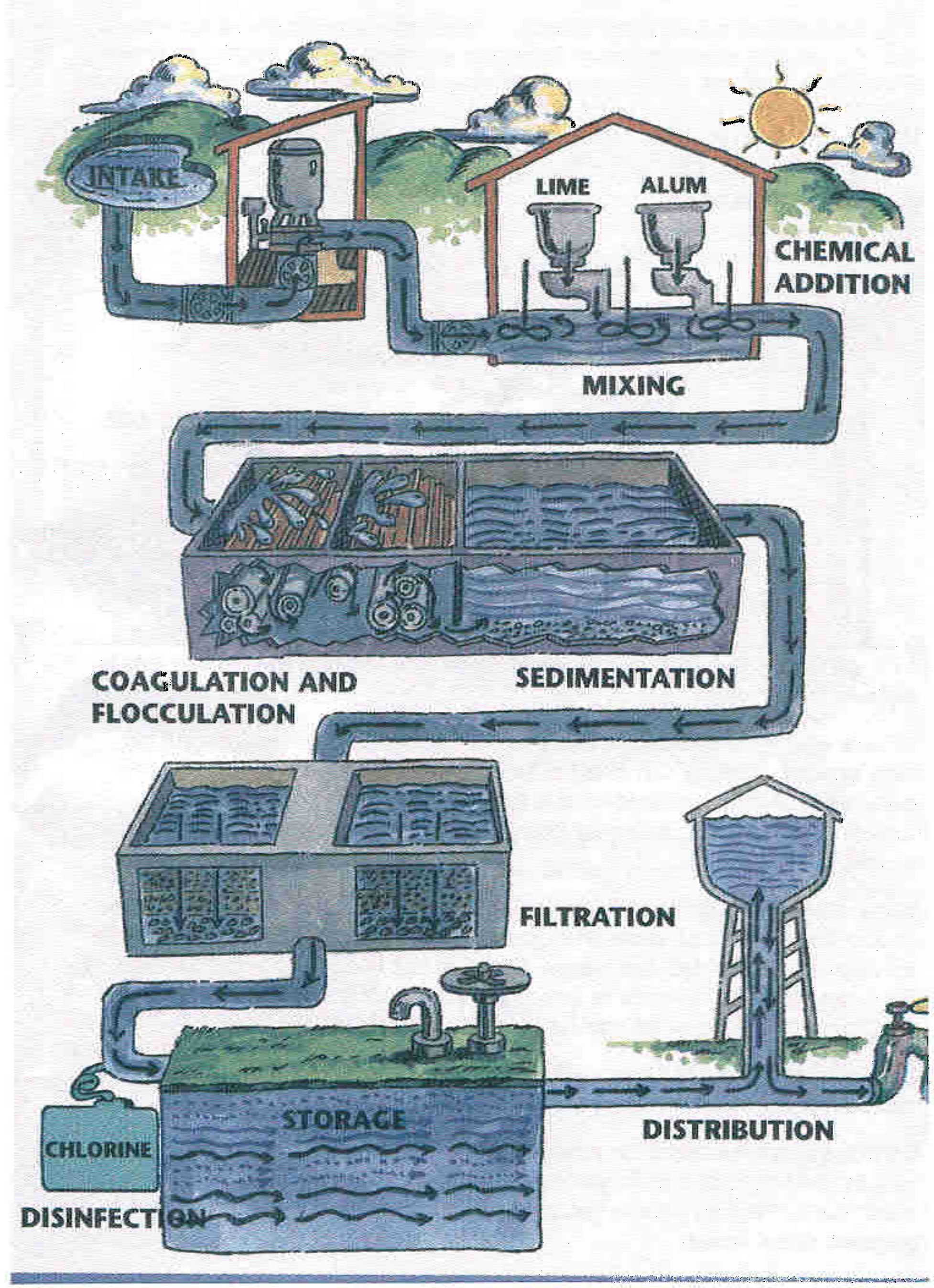
PICTURES


SOURCE
WATER
PROTECTION
AREA
FOR INFORMATION
CONTACT
CENTRAL TEXAS
WATER SUPPLY CORP.
254-698-2779


INTAKE
LIME
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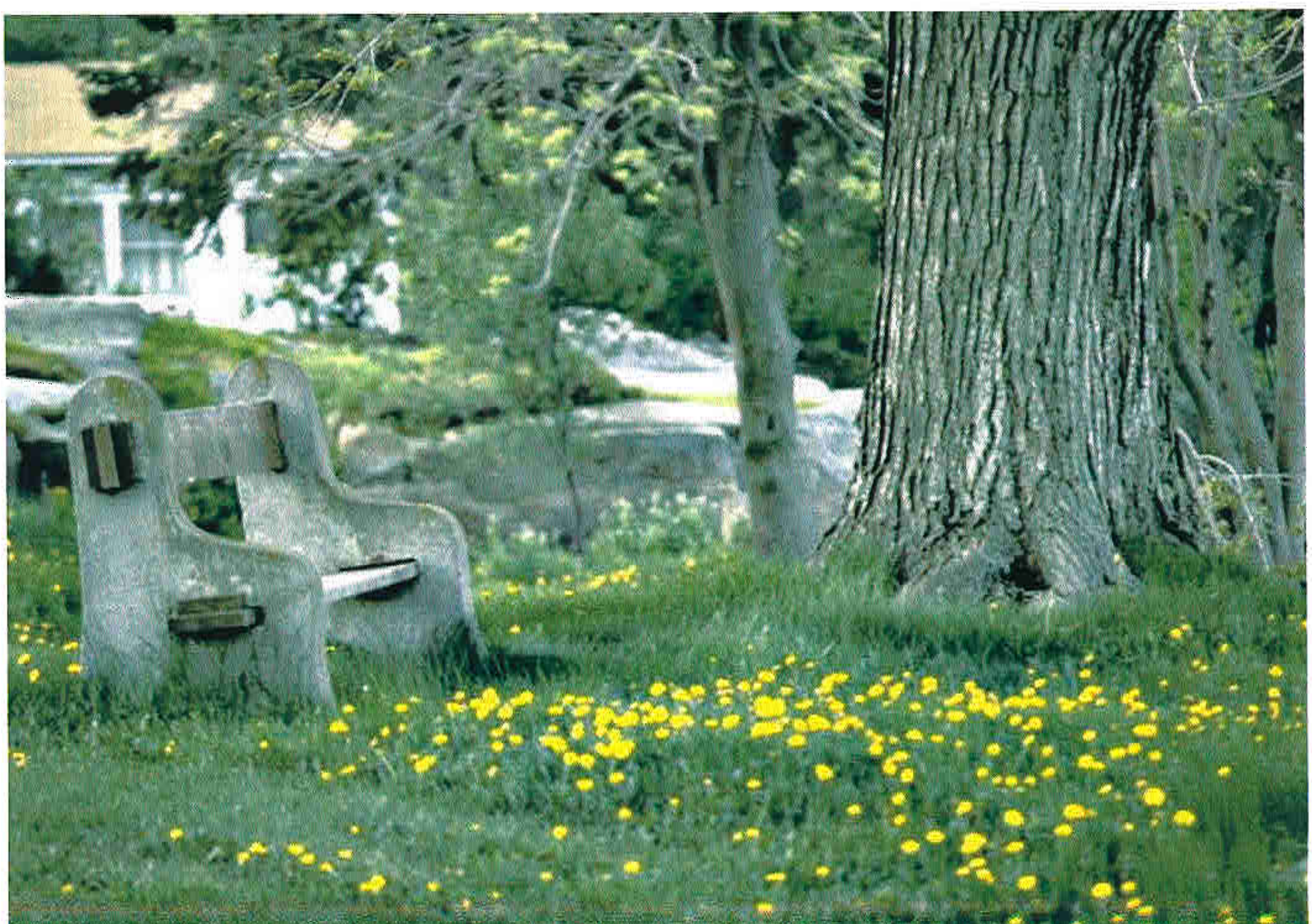
CHEMICAL ADDITION
MIXING
COAGULATION AND FLOCCULATION
SEDIMENTATION
FILTRATION
CHLORINE
DISINFECTION
STORAGE
DISTRIBUTION


No Firearms
Fireworks Prohibited
No Off-Road Vehicles
Pets on Leash



Potential Sources of Contamination

Naturally Occurring Sources	
Rocks and soils	Aesthetic Contaminants: Iron and iron bacteria; manganese; calcium and magnesium (hardness) Health and Environmental Contaminants: Arsenic; asbestos; metals; chlorides; fluorides; sulfates; sulfate-reducing bacteria and other microorganisms
Contaminated Water	Excessive sodium; bacteria; viruses; low pH (acid) water
Decaying Organic Matter	Bacteria
Geological radioactive gas	Radionuclide (radon, etc.)
Natural hydro geological events and formations	Salt-water/brackish water intrusion (or intrusion of other poor quality water); contamination by a variety of substances through sink-hole infiltration in limestone terrains.

Agricultural Sources	
Animal feedlots and burial areas	Livestock sewage wastes; nitrates; phosphates; chloride; chemical sprays and dips for controlling insect, bacterial, viral, and fungal pests on livestock; coli form and noncoliform bacteria; viruses.
Manure spreading areas and storage pits	Livestock sewage wastes; nitrates
Livestock waste disposal areas	Livestock sewage wastes; nitrates
Crop areas and irrigation sites	Pesticides; fertilizers; gasoline and motor oils from chemical applicators
Chemical storage areas and containers	Pesticides; fertilizers residues
Farm Machinery areas	Automotive wastes; welding wastes
Agricultural drainage wells and canals	Pesticides; fertilizers; bacteria; salt water (in areas where the fresh-saltwater interface lies at shallow depths and where the water table is lowered by channelization, pumping, or other causes.

Residential Sources	
Common Household maintenance and hobbies	*Common Household Products:* Household cleaners; oven cleaners; drain cleaners; toilet cleaners; disinfectants; metal polishes; jewelry cleaners; shoe polishes; synthetic detergents; bleach; laundry soil and stain removers; spot removers and dry cleaning fluid; solvents; lye or caustic soda; household pesticides, photochemical; printing ink other common products. *Wall and Furniture Treatments*: Paints; varnishes; stains; dyes; wood preservatives (creosote); paint and lacquer thinners; paint and varnish removers and deglossers; paint brush cleaners; floor and furniture strippers *Mechanical Repair and Other Maintence Products*: Automotive wastes; waste oils; diesel fuel; kerosene; #2 heating oil; grease; degreasers for driveways and garages; metal degreasers; asphalt and roofing tar; tar removers; lubricants; rustproofers; car wash detergents; car waxes and polishes; rock salt; refrigerants
Lawn and gardens	Fertilizers; herbicides and other pesticides used for lawn and garden maintence.
Swimming Pools	Swimming pool and maintence chemicals
Septic systems, cesspools, and sewer lines	Septage; coliform and noncoliform bacteria; viruses; nitrates; heavy metals; synthetic detergents; cooking and motor oils; bleach; pesticides;

	paints; paint thinner; photographic chemicals; swimming pool chemicals; septic tank/cesspool cleaner chemicals; elevated levels of chloride, sulfate, calcium, magnesium, potassium, and phosphate
Underground storage tanks	Home heating oil
Apartments and condominiums	Swimming pool maintence chemical; pesticides for lawn and garden maintenance and cockroach, termite, ant, rodent, and other pest control; wastes from onsite sewage treatment plants; household hazardous wastes
Municipal Sources	
Schools and government offices and grounds	Solvents; pesticides; acids; alkalis; waste oils; machinery/vehicle servicing wastes; gasoline and heating oil from storage tanks; general building wastes
Park lands	Fertilizers; herbicides, insecticides
Public and residential areas infested with mosquitoes, gypsy moths, ticks, ants, or other pests	Pesticides
Highways, road maintenance depots, and deicing operations	Herbicides in highway rights-of-way; road salt (sodium and calcium chloride); road salt anticaking additives (ferric ferrocyanide, sodium ferrocyanide); automotive wastes
Municipal sewage treatment plants and sewer lines	Municipal wastewater; sludge; 14 treatment chemicals
Storage, treatment, and disposal ponds, lagoons and other surface impoundments	Sewage wastewater; nitrates; other liquid wastes; microbiological contaminants
Land areas applied with wastewater or wastewater by products	Organic matter; nitrate; inorganic salts; heavy metals; coliform and noncoliform bacteria; viruses; nitrates; sludge; nonhazardous wastes
Storm water drains and basins	Urban runoff; gasoline; oil; other petroleum products; road salt; microbiological contaminants
Combined sewer overflows (municipal sewers and storm water drains)	Municipal wastewater; sludge treatment chemicals; urban runoff; gasoline; oil; other petroleum products; road salt ; microbial contaminants
Recycling/ reduction facilities	Residential and commercial solid waste residues
Municipal waste landfills	Leachate; organic and inorganic chemical contaminants; wastes from households and businesses; nitrates; oils; metals
Open dumping and burning sites, closed dumps	Organic and inorganic chemicals; metals; oils; wastes from households and businesses
Municipal incinerators	Heavy metals; hydrocarbons; formaldehyde; methane; ethane; ethylene; acetylene; sulfur and nitrogen compounds
Water Supply wells, monitoring wells, older wells , domestic and livestock wells, unsealed and abandoned wells, and test hole wells	Surface runoff; effluents from barnyards, feedlots, septic tanks, or cesspools; gasoline; used motor oil; road salt
Sumps and dry wells	Storm water runoff; spilled liquids; used oil; antifreeze; gasoline; other petroleum products; road salt; pesticides; and a wide variety of other substances
Drainage wells	Pesticides; bacteria
Well pumping that causes inter-aquifer leakage, induced filtration, landward migration of sea water in coastal areas; etc.	Saltwater; excessively mineralized water

Artificial ground water recharge	Storm water runoff; excess irrigation water; stream flow; cooling water; treated sewage effluent; other substances that may contain contaminants, such as nitrates, metals detergents, synthetic organic compounds, bacteria, and viruses

Commercial Sources	
Airports, abandoned airfields	Jet fuels; deicers; diesel fuel; chlorinated solvents; automotive wastes; heating oil; building wastes
Auto repair shops	Waste oils; solvents; acids; paints; automotive wastes; miscellaneous cutting oils
Barber and Beauty shops	Perm solutions; dyes miscellaneous chemicals contained in hair rinses
Boat yards and marinas	Diesel fuels; oil; seepage from boat waste disposal areas; wood preservative and treatment chemicals; paints; waxes; varnishes; automotive wastes
Bowling alleys	Epoxy; urethane-based floor finish
Car Dealerships (especially those with service departments)	Automotive wastes; waste oils; solvents; miscellaneous wastes
Car Washes	Soaps; detergents; waxes; miscellaneous chemicals
Camp grounds	Septage; gasoline; diesel fuel from boats; pesticides for controlling mosquitoes, ants, ticks, gypsy moths, and other pests; household hazardous wastes from recreational vehicles (RVs)
Carpet stores	Glues and other adhesives; fuel from storage tanks if forklifts are used
Cemeteries	Leachate; lawn and garden maintenance chemicals
Construction trade areas and materials (plumbing, heating and air conditioning, painting, paper hanging, decorating, drywall and plastering, acoustical insulation, carpentry, flooring, roofing and sheet metal, wrecking and demolition, etc.)	Solvents; asbestos; paints; glues and other adhesives; waste insulation; lacquers; tars; sealants; epoxy waste; miscellaneous chemical wastes
Country clubs	Fertilizers; herbicides; pesticides for controlling mosquitoes, ticks, ants, gypsy moths, and other pests, swimming pool chemicals; automotive wastes
Dry cleaners	Solvents (perchloroethylene, petroleum solvents, Freon); spotting chemicals (trichlorethane, methylchloroform, ammonia, peroxides, hydrochloric acid, rust removers, amyl acetate)
Funeral services and crematories	Formaldehyde; wetting agents; fumigants; solvents
Furniture repair and finishing shops	Paints; solvents; degreasing and solvent recovery sludges
Gasoline services stations	Oils; solvents; miscellaneous wastes
Golf courses	Fertilizers; herbicides; pesticides for controlling mosquitoes, ticks ants, gypsy moths, and other pests
Hardware/lumber/parts stores	Hazardous chemical products in inventories; heating oil and fork lift fuel from storage tanks; wood-staining and treating products such as creosote
Heating oil companies, underground storage tanks	Heating oil; wastes from truck maintenance areas
Horticultural practices, garden nurseries, florists	Herbicides, insecticides, fungicides, and other pesticides
Jewelry/ metal plating shops	Sodium and hydrogen cyanide; metallic salts; hydrochloric acid; sulfuric

	acid; chromic acid
Laundromats	Detergents; bleaches; fabric dyes
Medical institutions	x-ray developers and fixers; infectious wastes; radiological wastes; biological wastes; disinfectants; asbestos; beryllium; dental acids; miscellaneous chemicals
Office buildings and office complexes	Building wastes; lawn and garden maintenance chemicals; gasoline; motor oil
Paint stores	Paints; paint thinners; lacquers; varnishes; other wood treatments
Pharmacies	Spilled and returned products
Photography shops, photo processing laboratories	Biosludges; silver sludges; cyanides; miscellaneous sludges
Print shops	Solvents; inks ;dyes; oils ; photographic chemicals
Railroad tracks and yards	Diesel fuel; herbicides for rights-of-way; creosote for preserving wood ties
Research laboratories	X-ray developers and fixers; infectious wastes; radiological wastes; biological wastes; disinfectants; asbestos; beryllium; solvents; infectious materials; drugs; disinfectants (quaternary ammonia, hexachlorophene, perocides, chlornexade, bleach); miscellaneous chemicals
Scrap and junk yards	Any wastes from businesses and households; oils
Sports and hobby shops	Gunpowder and ammunition; rocket engine fuel; model airplane glue
Above-ground and underground storage tanks	Heating oil; diesel fuel; gasoline; other petroleum products; other commercially used chemicals
Transportation services for passenger transit (local and interurban)	Waste oil; solvents; gasoline and diesel fuel from vehicles and storage tanks; fuel oil; other automotive wastes
Veterinary services	Solvents; infectious materials; vaccines; drugs; disinfectants (quaternary ammonia, hexachlorophene, perocides, chlornecade, bleach); x-ray developers and fixers

Industrial Sources	
Material stockpiles (coal, metallic ores, phosphates, gypsum)	Acid drainage; other hazardous and nonhazardous wastes
Waste tailing ponds (commonly for the disposal of mining wastes)	Acids; metals; dissolved solids; radioactive ores; other hazardous and nonhazardous wastes
Transport and transfer stations (trucking terminals and rail yards)	Fuel tanks ; repair shop wastes; other hazardous and nonhazardous wastes
Above-ground and underground storage tanks and containers	Heating oil; diesel fuel; gasoline; other petroleum products; hazardous and nonhazardous wastes
Storage, treatment, and disposal ponds, lagoons, and other surface impoundments	Hazardous and nonhazardous liquid wastes; septage; sludge
Chemical landfills	Leachate; hazardous and nonhazardous wastes; nitrates
Radioactive waste disposal sites	Radioactive wastes from medical facilities, power plants, and defense operations; radonuclides (uranium, plutonium)
Unattended wet and dry excavation sites (unregulated dumps)	A wide range of substances; solid and liquid wastes; oil-field brines; spent acids form steel mill operations; snow removal piles containing large amounts of salt
Operating and abandoned production and exploratory wells (for gas, oil, coal, geothermal, and heat recovery	Metals; acids; minerals; sulfides; other hazardous and nonhazardous chemicals

Dry wells	Saline water from wells pumped to keep them dry
Injection wells	Highly toxic wastes; hazardous and nonhazardous industrial wastes; oil-field brines
Well drilling operations	Brines associated with oil and gas operations

Industrial Processes	(Presently operated or torn-down facilities)
Asphalt plants	Petroleum derivatives
Communications equipment manufacturers	Nitric, hydrochloric, and sulfuric acid wastes; heavy metal sludges; copper-contaminated etchant (e.g. ammonium persulfate); cutting oil and degreasing solvent (trichloroethane, Frenon, or trichloroethylene); waste oils; corrosive soldering flux; paint sludge; waste plating solution
Electric and electronic equipment manufacturers and storage facilities	Cyanides; metal sludge: caustics (chromic acid); solvents; oils; alkalis; acids; paints and paint sludges; calcium fluoride sludge; methylene chloride; perchlorethylene; trichloroethane; acetone; methanol; toluene; PCBS
Electroplaters	Boric, hydrochloric, hydrofluoric, and sulfuric acids; sodium an potassium hydroxide; chromic acid; sodium and hydrogen cyanide; metallic salts
Foundries and metal fabricators	Paint wastes; acids; heavy metals; metal sludges; plating wastes; oils; solvents; explosive wastes
Furniture and fixtures manufacturers	Paints; solvents; degreasing
Machine and metalworking shops	Solvents; metals; miscellaneous organics; sludges; oily metal shavings; lubricant and cutting oils; degreasers (tetrachlorethylene); metal marking fluids; mold-release agents
Mining operations (surface and underground), underground storage mines	Mine spoils or tailings that often contain metals; acids; highly corrosive mineralized waters; metal sulfides
Unsealed abandoned mines used as waste pits	Metals; acids; minerals; sulfides; other hazardous; and non hazardous chemicals
Paper mills	Metals; acids; minerals; sulfides; other hazardous and nonhazardous chemicals; organic sludges; sodium hydroxide; chlorine; hypochlorite; chlorine dioxide; hydrogen peroxide
Petroleum production and storage companies, secondary recovery of petroleum	Hydrocarbons; oil-field brines (highly mineralized salt solutions)
Industrial pipelines	Corrosive fluids; hydrocarbons; other hazardous and nonhazardous materials and wastes
Photo processing laboratories	Cyanides; biosludges; silver sludges; miscellaneous sludges
Plastics materials and synthetics producers	Solvents; oils; miscellaneous organics and inorganics (phenols, resins); paint wastes; cyanides; acids; alkalis; wastewater treatment sludges; cellulose esters; surfactant; glycois; phenoisl formaldehyde; peroxides; etc.
Primary metal industries (blast furnaces, steel works, and rolling mills)	Heavy metal wastewater treatment sludge; pickling liquor; waste oil; ammonia; scrubber liquor; acid tar sludge; alkaline cleaners; degreasing solvents; slag; metal dust
Publishers, printers, and allied industries	Solvents; inks; dyes; oils; miscellaneous organics; photographic chemicals
Public utilities (phone, electric power, gas)	PCBs from transformers and capacitors; oils; solvents; sludges; acid solution; metal plating solutions (chromium, nickel, cadmium); herbicides from utility rights-of-way
Sawmills and planers	Treated wood residue (copper quinolate, mercury, sodium bazide); tanner gas; paint sludges; solvents; creosote; coating and gluing wastes
Stone, clay and glass	Solvents; oils and grease; alkalis; acetic wastes; asbestos; heavy metal

manufacturers	sludges; phenolic solids or sludges; metal-finishing sludge
Welders	Oxygen, axetylene
Wood preserving facilities	Wood preservatives, creosote

Background and Definitions

- This table lists the most common wastes, but not all potential wastes. For example, it is not possible to list all potential contaminants contained in storm water runoff or research laboratory wastes.
- This table lists potential ground water contaminants from many common industries, but it does not address all industries

Ground water contamination

- In general, ground water contamination stems from the *misuse and improper disposal of* liquid and solid wastes; the *illegal dumping or abandonment* of household, commercial, or industrial chemicals; the *accidental spilling* of chemicals from trucks, railways, aircraft, handling facilities, and storage tanks; or the *improper siring, design, construction, operation, or maintenance* of agricultural, residential, municipal, commercial, and industrial drinking water wells and liquid and solid waste disposal facilities. Contaminants also can stem from *atmospheric pollutants,* such as airborne sulfur and nitrogen compounds, which are created by smoke, flue dust, aerosols, and automobile emissions, fall as acid rain, and percolate through the soil. When the sources listed in this table are used and managed properly, ground water contamination is not likely to occur.
- Contaminants can reach ground water from activities occurring on the land surface, such as industrial waste storage; from sources below the land surface but above the water table, such as septic systems; from structures beneath the water table, such as wells; or from contaminated recharge water.
- Coliform bacteria can indicate the presence of pathogenic (disease-causing) microorganisms that may be transmitted in human feces. Diseases such as typhoid fever, hepatitis, diarrhea, and dysentery can result from sewage contamination of water supplies.

Lawn Care

- The EPA National Pesticides Survey found that the use of fertilizers correlates to nitrate contamination of ground water supplies.
- Pesticides include herbicides, insecticides, rodenticides, fungicides, and avicides. EPA has registered approximately 50,000 different pesticide products for use in the United States. Many are highly toxic and quite mobile in the subsurface. An EPA survey found that the most common pesticides found in drinking water wells were DCPA (dacthal) and atrazine, which EPA classifies as *moderately toxic* (class 3) and *slightly toxic* (class 4) materials, respectively.

- Common pesticides used for lawn and garden maintenance (i.e., weed killers, and mite, grub, and aphid controls) include such chemicals as 2,4-0; chlorpyrifos; diazinon; benomyl; captan; dicofol; and methoxychlor.

Hazardous Waste

- The Resource Conservation and Recovery Act (RCRA) defines a hazardous waste as a solid waste that may cause an increase in mortality or serious illness or pose a substantial threat to human health and the environment when improperly treated, stored, transported, disposed of, or otherwise managed. A waste is hazardous if it exhibits characteristics of ignitability, corrosivity, reactivity, and/or toxicity. Not covered by RCRA regulations are domestic sewage; irrigation waters or industrial discharges allowed by the Clean Water Act; certain nuclear and mining wastes; household wastes; agricultural wastes (excluding some pesticides); and small quantity hazardous wastes (i.e., less than 220 pounds per month) generated by businesses.

Household Hazardous Waste

- Common household pesticides for controlling pests such as ants, termites, bees, wasps, flies, cockroaches, silverfish, mites, ticks, fleas, worms, rats, and mice can contain active ingredients including napthalene, phosphorus, xylene, chloroform, heavy metals, chlorinated hydrocarbons, arsenic, strychnine, kerosene, nitrosamines, and dioxin.
- Automotive wastes can include gasoline; antifreeze; automatic transmission fluid; battery acid; engine and radiator flushes; engine and metal degreasers; hydraulic (brake) fluid; and motor oils.
- Swimming pool chemicals can contain free and combined chlorine; bromine; iodine; mercury-based, copper-based, and quaternary algicides; cyanuric acid; calcium or sodium hypochlorite; muriatic acid; sodium carbonate.
- Septic tank/cesspool cleaners include synthetic organic chemicals such as 1,1,1 trichloroethane, tetrachloroethylene, carbon tetrachloride, and methylene chloride.

Commercial and Municipal Wastes

- Common wastes from public and commercial buildings include automotive wastes; rock salt; and residues from cleaning products that may contain chemicals such as xylenols, glycol esters, isopropanol, 1,1,1-trichloroethane, sulfonates, chlorinated phenolys, and cresols.
- Municipal wastewater treatment sludge can contain organic matter; nitrates; inorganic salts; heavy metals; coliform and noncoliform bacteria; and viruses.

- Municipal wastewater treatment chemicals include calcium oxide; alum; activated alum, carbon, and silica; polymers; ion exchange resins; sodium hydroxide; chlorine; ozone; and corrosion inhibitors.
- X-ray developers and fixers may contain reclaimable silver, glutaldehyde, hydroquinone, phenedone, potassium bromide, sodium sulfite, sodium carbonate, thiosulfates, and potassium alum.

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BEST MANAGEMENT PRACTICE IMPLEMENTATION TABLE

POTENTIAL SOURCE	RECOMMENDED ACTIVITIES
Abandoned Wells	**Structural**: Abandoned wells should be properly plugged by landowners. **Non-structural**: Conduct frequent inventories to locate any abandoned wells that have been overlooked. Enact and enforce ordinances requiring well plugging. **Education/Outreach**: Develop education materials explaining the potential impact of abandoned wells and encouraging citizens to have them plugged. **Rules: Texas Department of Licensing and Regulation, 16 Texas Administrative Code, Chapter 76.10 (1)Abandoned well; (6) Capped Wells; Landowners Guide to Plugging Abandoned Water Wells; 30 TAC Chapter 290.36 (u)**
Water Wells	**Structural:** Water wells should be constructed in compliance with state's minimum requirements and reconstructed if necessary. **Non-structural:** Inspect domestic wells to ensure that they are properly constructed. Develop protection areas around wellheads and erect signs designating the protection area. **Education/Outreach:** Establish a Public Education Program to inform landowners of the hazards of abandoned wells and their responsibilities in plugging them. **Rule: 30 TAC Chapter 290 Subchapter D**
Service Station Disposal Wells	**Structural:** Remediate. Service station disposal wells are illegal, and must be properly closed. All disposal activities should cease immediately. **These wells are one of the most serious threats to groundwater quality!** **Non-structural**: The TCEQ should be notified. Reinspect service station disposal wells to ensure that all disposal activities have ceased. Should any continued disposal activity be identified, order the operator to cease such activity and contact the TCEQ for guidance and assistance in taking corrective actions. **Education/Outreach:** Disseminate information about this environmentally damaging practice. **Monitoring:** Nearby water wells may be sampled to determine the scope of any contamination. Prosecute violators.
Shallow Injection Wells	**Non-structural:** Shallow injection wells require authorization from the TCEQ. Ensure a letter of authorization has been issued by the TCEQ for each shallow injection well, and that all injection activities are being properly implemented. Unauthorized injection activities should cease immediately. Prosecute violators and contact the TCEQ for assistance. **Education/Outreach:** Disseminate information about this environmentally damaging practice to involved parties.
Underground Storage Tanks	**Structural**: Leaking tanks should be removed and the sites should be remediated immediately. **Non-structural:** Underground storage tanks must be registered with the TCEQ's Petroleum Storage Tank (PST) Program. Require that underground storage tank operators immediately notify water system official in the event of leaks. Include PWS operators in spill response and contingency planning.

POTENTIAL SOURCE	RECOMMENDED ACTIVITIES
Surface Storage Tanks	**Structural:** Surface storage tanks should be constructed of non-corrodible materials, and be placed on impermeable surfaces or raised above the ground. Containment structures should be constructed around the facilities to contain spills. **Non-structural**: Require that surface storage tank operators immediately notify water system official in the event of leaks. Include operators in spill response and contingency planning. Education/Outreach: Disseminate information on the proper construction and maintenance of surface storage tanks to appropriate parties. **Monitoring**: Possible leaks may also be monitored by periodic inventory of contents.
Chemical Storage & Handling	**Structural:** Containers should be placed on impermeable surfaces with containment structures. **Non-structural:** Chemicals should be stored and transported in accordance with applicable laws. Require facilities to be secured from unauthorized access. Prohibit chemical storage near water wells or in 100-year flood plains. Include chemical storage facilities in spill response and contingency planning. **Rule: Rules & Regulations for Public Water Systems, 30 TAC Chapter 290 Subchapter D, 290.42 (d) (6)**
Industrial Facilities	**Non-structural:** Industrial facilities should be operated under strict site safety and health plans. These should be on file with the local fire marshal. Insure that site safety plans and health plans are on file, and that the PWS official is to be contacted in the event of an emergency.
Septic Systems	**Structural:** Septic systems should be constructed, maintained and operated in accordance with applicable laws. Inactive systems should be properly closed and failing systems should be renovated or removed and placed on a sewage treatment plant. **Non-structural:** Contact septic system operators and advise them of their responsibilities in maintaining their systems. Provide them with a telephone number in case of emergencies. Require establishments to connect and close their systems should municipal sewage service become available. **Education/Outreach:** Provide and disseminate information on the proper maintenance of septic systems. **Rule: Rules & Regulations for Public Water Systems 30 TAC, Chapter 290.41 (e)(1)(C), 290.41 (e)(3)(A) and 290.41 (c)(1)(A)**
Municipal Sewage Pipelines	**Structural:** Faulty lines should be repaired or replaced as soon as possible. New methods exist which allow pipelines to be repaired without excavation or unreasonable expense. **Monitoring:** Municipal sewage pipelines should be tested regularly to ensure that they do not allow for infiltration/ exfiltration, especially those in close proximity to drinking water supplies.

POTENTIAL SOURCE	RECOMMENDED ACTIVITIES
Underground Pipelines	**Structural:** Pipeline breaks should be repaired immediately by the pipeline company. **Non-structural:** PWS representatives should check to see the pipeline company has a spill response plan in place and is aware they are in a drinking water protection area. Include underground pipelines in spill response and contingency planning and know the chemicals in the line. **Monitoring:** Underground pipelines should be closely monitored for leaks.
Oil & Gas Activities	**Non-structural:** PWS representatives should check to see the oil & gas company has a spill response plan in place and is aware they are in a drinking water protection area. Include these activities in spill response and contingency planning. **Monitoring:** Oil and gas activities should be closely monitored for leaks or spills. Violations should be reported to the Railroad Commission of Texas. **Rule: Railroad Commission of Texas, Texas Administrative Code (TAC) Title 16 Part 1 Chapter 3, Water Protection**
Auto Salvage Yards	**Non-structural:** Automotive fluids should be properly collected, contained and disposed of in accordance with applicable laws. Ensure that automotive fluids are not being disposed of down abandoned wells. Require that all abandoned wells be plugged. **Education/Outreach:** Establish a Public Education Program to inform auto salvage yard operators of their responsibilities in disposing of automotive fluids.
Car Washes	**Structural:** Wastewater from car washes should be discharged into appropriate sewage facilities or retention ponds. Backflow prevention devices should be installed and should be in good operating condition. **Non-structural:** Ensure that wastewater from car washes is not being disposed of down abandoned wells. Close down and retrofit any car wash that is not in compliance.
Agricultural Waste Pesticide Dumping	**Structural:** Remediate. **Non-structural:** Participate in and educate citizens about the TCEQ's Texas Country Cleanup & Ag. Waste Pesticide Collection Program. This program collects waste pesticides and pesticide containers in events held throughout the state. Contact TCEQ's Small Business Assistance Program at (800) 447-2827 for information.

POTENTIAL SOURCE	RECOMMENDED ACTIVITIES
Fertilizer/Pesticide Application	**Structural**: Contour cropping, filter strips, furrow baffles, and other conservation methods are effective tools to minimize fertilizer and pesticide contamination. **Non-structural:** Fertilizers and pesticides should be applied according to label instructions to minimize leaching and runoff. Applicators should carefully calibrate application equipment. **Education/Outreach:** Establish a Public Education Program to inform farmers, ranchers and agricultural product applicators of the importance of fertilizing according to soil test, proper nutrient placement, and timing of fertilizer applications to maximize nutrient use efficiency and minimize the environmental impact on source water. Encourage applicators to contact the Texas State Soil and Water Conservation Board's County Extension Agent on possible best management practices they may implement, and/or programs available to agricultural producers. **Monitoring:** These contaminants could be monitored to determine the location of high priority areas and determine the effectiveness of the structural best management practices. **Rule: 30 TAC Chapter 290.41(e)(1)(E)**
Animal Feedlots	**Structural:** Feedlots should follow the Waste Management Plans and all the structural requirements found in Chapter 321 Subchapter B of the Texas Administrative Code. **Non-structural:** Invite operators to manure management programs and ensure manure is being disposed of properly. It may be necessary to prohibit or limit additional animal feedlots inside source water protection areas. **Monitoring**: Nutrient monitoring may be helpful in targeting troubled areas and determining if there is nutrient loading. **Rule: Title 30, Chapter 321 Subchapter B, Rule 321.40**
Illegal Dumping	**Non-structural:** Law enforcement or code enforcement officials should be authorized to patrol source water protection areas for illegal dumping and prosecute violators. Render inaccessible frequent dumping sites and post no dumping signs. Establish a hotline for citizens to report violations.
Waste Oil Dumping	**Structural:** Provide a waste oil collection facility. **Non-structural:** Establish a public education program to encourage citizens to recycle used oil at service stations or other collection centers. Citizens may call the TCEQ's Environmental Information Line at 1-800-CLEANUP for the nearest recycling center. Citizens may also view the TCEQ Calendar of Events on the agency web site located at: www.TCEQ.state.tx.us
Airports	**Non-structural:** Where applicable, insure that a Non Point Discharge Elimination System Permit is on file with the TCEQ, and that the Surface Water Pollution Protection Plan is up to date and in place. It is recommended that area public water suppliers acquire copies of these plans to insure coordination of them, and to include them in emergency response and contingency planning
Accidental Spills	**Non-structural:** Accidental spills should be properly and promptly contained to prevent migration of chemicals into waterways and nearby wells. Hazardous material carriers should be rerouted around source water protection areas, if possible. Include accidental spills in spill response and contingency planning. Designate **ONE** local authority to oversee and coordinate emergency response activities.

POTENTIAL SOURCE	RECOMMENDED ACTIVITIES
Surface Waters	Public water supply and domestic wells should be properly cased and sealed to guard against inundation. Infiltration of surface waters or runoff should be monitored. Ensure that public water supply well casing extends to 2 feet above the 100-year flood level. Restrict or prohibit development of new wells and storage of hazardous materials in 100-year floodplains
Artificial Recharge	**Non-structural:** Only clean water should Ensure that water meets state drinking water standards when injected into recharge wells. Plug all other dry wells used for artificial recharge.
Particulate Airborne Sources	**Non-structural:** Airborne sources must be in compliance with applicable laws. Require that air permitted industries immediately notify water system official of any potentially threatening discharge.
Radium/Radon Gas	Radium/radon gas removing technology should be installed if determined to be necessary for treatment. Effective technologies, ranging from simple aeration to more expensive methods, exist to safely remove radium/radon gas from water.
Auto Repair Shops	**Non-structural:** The municipality should insure that the city monitors auto repair shops for compliance with applicable laws. City inspectors should pay particular attention to possible dumping of automotive fluids, paints, and solvents. They should also insure that these chemicals are not being discharged into wells, septic systems, municipal sewage, or storm sewage systems.
Municipal Storm Water Drainage	**Structural:** Municipal sewers and drainage canals should be properly maintained to eliminate clogging and overflow during storm water events. Municipal Storm Water Drainage System should be properly sited, constructed, and operated to insure a safe means of waste disposal. **Non-structural:** Ensure existing systems with dry wells, and/or utility disposal wells meet Underground Injection Control rules and regulations. Identify and participate in designated local Municipal Solid Waste Planning Area meetings. The local community should coordinate with the local Council of Government to participate in, and/or development of, the area Municipal Solid Waste Plan, and to establish Solid Waste Assistance Partnerships provided through the state.
Cemeteries	**Non-structural**: Existing cemeteries should be developed in a direction away from public water supply wells. New public water supply wells should not be located in close proximity to existing graveyards. Monitoring: Monitor nearby water wells periodically for any contamination.
Dry Cleaners	**Non-structural:** Owners and/or operators of dry cleaners should follow manufacturers' instructions for the proper operation and maintenance of machines and control devices. Owners and operators should insure that any onsite chemicals are stored, handled, and disposed of according to state and federal law. The city should verify that these laws are being followed. The local entity should insure all inventoried owners and operators of dry cleaning facilities maintain a copy of the manufacturers' specifications or standard operating and maintenance manuals onsite.

POTENTIAL SOURCE	RECOMMENDED ACTIVITIES
Superfund Sites	**Non-structural:** Superfund sites should be remediated as soon as possible. Because the prompt disposition of Superfund sites is rare due to legal and financial complications, new wells should not be developed such that any existing Superfund site would be inside a source water protection area. Include Superfund site in spill response and contingency planning.
Mining Activities	**Non-structural:** Mining and other mineral extraction activities should be monitored for violations. Violations should be reported to the Include mining operations in spill response and contingency planning.

DEFINITIONS OF TERMS

For convenience and clarification, certain technical terms used in this report are defined as follows:

Acre-foot – A volume of water that covers one acre to depth of one foot, or 43,560 cubic feet (1233.5 cubic meters).

Absorption – The process by which chemicals are held on the surface of a mineral or soil particle.

Alluvium – Sediments deposited by flowing rivers.

Alternate drinking water supplies – Drinking water supplies that are able to supply public water systems in cases where the aquifers or intakes usually supplying such systems become inoperable or contaminated.

Anthropogenic sources – Any activity performed by or caused by human actions, that is or can potentially be a source of contamination to ground or surface water including human actions affecting natural contaminants.

Aquifer – A rock unit that will yield water in a usable quantity to a well or spring.

Aquitard – A semi-permeable, semi-confining geologic formation adjacent to or between aquifers that partially restricts the movement of groundwater.

Area of Primary Influence (API) – The area within 1,000 feet of a reservoir, and for all streams discharging directly to the reservoir, the area within 1,000 feet of the center of the stream channel for an estimated 2 hour time-of-travel immediately upstream of the reservoir. For intakes on streams, the area of primary influence is the area within 1,000 feet of the estimated 2 hour time-of-travel upstream from the intake. Contaminants located within the area of primary influence are those that the PWS may be most susceptible to due to their proximity to the intake.

Artesian aquifer, or confined aquifer – Artesian (confined) water occurs where an aquifer is overlain by rock of lower permeability (such as clay) that confines the water under pressure greater than atmospheric. The water level in an artesian well will rise above the top of the aquifer even without pumping.

Available Water Content (AWC) – The available water content of a soil, a function of total pore space and pore size distribution. Available water content is an attribute in the Source Water Susceptibility Assessment (SWSA) ground water intrinsic component and is expressed as a volume fraction in inches per inch of soil, for example, if the available water content has a value of 0.20, a 10 inch zone then contains 2 inches of available water.

Best Management Practices (BMP's) – The most effective practice or combinations of practices to control point or nonpoint source pollution. Best management practices (BMP's) may either be structural or nonstructural. Structural BMP's are designed to capture surface runoff and remove pollutants through settling or other processes including, but not limited to, water diversions, retention devices, detention basins, or filter systems. Nonstructural BMP's take advantage of land's natural features to remove pollutants, nonstructural BMP's might include wetlands, grassed waterways and buffer zones.

Capture Zone – The delineated ground water contributing area characterized such that only the horizontal movement of water to the well is approximated assuming the contributing area to the well in an unconfined aquifer is the area directly above the flowpaths for a specified time of travel (2, 5, 10, 20 and 100 years). In a confined aquifer, the contributing area is that area within the aforementioned times of travel or terminating at the outcrop of the aquifer.

Chemical Abstracts Service (CAS) Registration Number – A number assigned by the Chemical Abstracts Service to identify a chemical.

Chloramines – Compounds formed by the reaction of hypochlorous acid (or aqueous chlorine) with ammonia.

Clay – One type of soil particle with a diameter of approximately one ten-thousandth of an inch.

Confining bed - One which, because of its position and its impermeability or low permeability relative to that of the aquifer, keeps the water in the aquifer under artesian pressure.

Coliform Organism – Microorganisms found in the intestinal tract of humans and animals, their presence in water indicates fecal pollution and potentially dangerous contamination by disease-causing microorganisms.

Community water System – A public water system which has a potential to serve at least 15 residential service connections on a year-round basis or serves at least 25 residents on a year-round basis.

Confined Aquifer – An aquifer overlain by a confining bed and under pressure that is significantly greater than atmospheric pressure. Also known as an artesian aquifer.

Confining Bed – A rock unit having a very low hydraulic conductivity that restricts the movement of ground water either into or out of adjacent aquifers.

Connection – A single family residential unit or each commercial or industrial establishment to which drinking water is supplied from the system. See §290.38(9) of TCEQ's Rules and Regulations for Public Water Systems 30 TAC Chapter 290 Subchapter D for a more detailed definition. The rules and regulations may be obtained by contacting the Public Drinking Water Section of TCEQ or viewed over the internet from the Texas Administrative Code Website: http://info.sos.state.tx.us/pub/plsql/readtac$ext.viewtac by navigating to Title 30,.Part 1, Chapter 290, Subchapter D.

Contaminant – Any physical, chemical, biological, or radiological substance or matter that has an adverse effect on air, water, or soil.

Contingency Plan – A design for the location and provision of alternate drinking water supplies for each public water system in the event of well or wellfield contamination which, to be effective, should consider short-term and long-term alternate water supplies, coordination mechanisms, and financial considerations such as the purchase and delivery of alternate water supplies.

Contributing Watershed Area – The watershed for the reservoir on which a surface water intake is located or the watershed upstream of a surface water intake located on a stream excluding all non-PWS reservoirs with normal storage capacity greater than 1,000 acre-feet.

Discharge – Refers to water withdrawn, either naturally or artificially, from the zone of saturation (see definition of groundwater).

Drawdown – The lowering of the water table or potentiometric surface caused by pumping (or artesian flow). In most instances, it is the difference, in fact, between the static level and pumping level.

Driller's log – A log kept by the driller during the construction of a new well containing: owner information, well location, type of well, proposed use, date started, date finished, borehole completion technique, diameter of hole, casing and blank pipe data, well screen type and size, cementing data, pump data, well tests data, surface completion data, water level, water quality, and the name and license number of the driller performing the work.

Drinking Water – All water distributed by any agency or individual, public or private, for the purpose of human consumption or which may be used in the preparation of foods or beverages or for the cleaning of any utensil or article used in the course of preparation or consumption of food or beverages for human beings. The term "Drinking Water" shall also include all water supplied for human consumption or used by any institution catering to the public.

Drainage Basin – This is another term commonly used to describe a watershed.

Effluent – Water or some other liquid – raw, partially or completely treated – flowing from a reservoir, basin, treatment process or treatment plant.

Entry Point (EP) – An entry point to the distribution of a public water supply, it is any point where freshly treated water enters the distribution system. Entry points to the distribution system may include points where chlorinated well water, treated surface water, rechlorinated water from storage, or water purchased from another supplier enters the distribution system.

Formation – A body of rock that is sufficiently homogeneous or distinctive to be regarded as a mappable unit, usually named from a locality where the formation is typical.

Geographic Information System (GIS) – An organized collection of computer hardware, software, geographic data and personnel designed to efficiently capture, store, update, manipulate, analyze, and display all forms of geographically referenced information.

Groundwater – Refers to water in that area below land surface in which all pore spaces and voids are filled with water (called the zone of saturation) and from which wells, springs, and seeps are supplied.

Head, or hydrostatic pressure – The pressure exerted by the water at any given point in a body of water at rest reported in pounds per square inch or in feet of water.

Heavy Metals – Metallic elements with high atomic weights, e.g., mercury, chromium, cadmium, arsenic, and lead can damage living organisms at low concentrations and tend to accumulate in the food chain.

Herbicide – A compound, usually a man-made organic chemical, used to kill or control plant growth.

Hydraulic Conductivity – A coefficient of proportionality describing the rate at which water can move through a permeable medium. Clay usually has a hydraulic conductivity of less than .00005 cm/sec while the hydraulic conductivity of gravel may range from 1 to 100 cm/sec.

Hydrology – The study of the occurrence, distribution, and chemistry of waters of the Earth.

Hydrogeology – The geology of ground water, with particular emphasis on the chemistry and movement of water.

Hydrologic Region – The largest hydrologic unit classification, identified by a two digit hydrologic unit code (HUC). The code identifies one of twenty one major geographic areas, or regions that contain either the drainage of a major river or series of rivers. Texas falls within three hydrologic regions, region 11 (Arkansas-White-Red Region) including the drainage of the Red River basin in Texas, region 12 (Texas Gulf Region) includes the drainage that discharges into the Gulf of Mexico from Sabine Pass to the Rio Grande Basin boundary, and region 13 (Rio Grande Region) which includes the Rio Grande River drainage. (Seaber, Kapinos, & Knapp. 1987)

Hydrologic Unit Code (HUC) – A two to eight digit unique code based on four levels of classification within the hydrologic unit system (divisions and subdivisions of the United States into successively smaller hydrologic units: regions, sub-regions, accounting units, and cataloging units). An eight-digit code uniquely identifies each of the four levels of classification within four two-digit fields. The first two digits identify the region; the first four digits identify the sub-region; the first six digits identify the accounting unit, and the addition of two more digits for the cataloging unit completes the eight-digit code. (Seaber, Kapinos, & Knapp, 1987)

Impermeable – Impervious or having a texture that does not permit water to move through it perceptibly under the head differences ordinarily found in subsurface water.

Inorganic – Material such as sand, salt, iron, calcium salts and other mineral materials. Inorganic substances are of mineral origin, whereas organic substances are usually of animal or plant origin. See Organic.

Insecticide – Any substance or chemical formulated to kill or control insects.

Inter-aquifer exchange – Occurs when one water-bearing until is in hydraulic communication with another water-bearing zone. This is most common in wells, which penetrate more than one water-bearing unit to provide an increased yield. When the well is not being pumped, water will move from the formation with lesser potential. If the formation with the greater potential contains contaminated or poor quality water, the water in the other unit can be degraded.

Karst – A region made up of porous limestone containing deep fissures and sinkholes and characterized by underground caves and streams.

Leakance – Ratio of soil permeability to soil thickness.

Maximum Contaminant Level (MCL) – In the Safe Drinking Water Act, MCL is defined as the "maximum permissible level of a contaminant in water which is delivered to any user of a public water system."

Non-community Water System – Any public water system which is not a community system.

Non-point Source – Pollution sources without a specific point of origin, usually due to storm water runoff from urban areas or agriculture/rangeland.

Non-transient Non-community Water System – A public water system that is not a community water system and regularly serves at least 25 of the same persons at least six months out of the year.

Operational Status Code – A code assigned to each PWS water source indicating its use or status by the system. Water source operational status codes are: A(abandoned source), C (capped water well), D (demand, source used only for peak demand periods), E (emergency, used only for emergencies), F (former PWS source, not used by the system), N (well used for non-drinking water uses), O (operational), P (plugged water well), T (test, well in development).

Organic – Substances that come from animal or plant sources or man-made chemical compounds containing carbon. Organic substances always contain carbon.

Outcrop – That part of a rock layer, which appears at the land surface.

Pathogen – Any organism able to cause a disease such as bacteria, viruses and the protozoans *Cryptosporidium parvum and Giardia lamblia.*

Permeable – Pervious or having a texture that permits water to move through it perceptibly under the head differences ordinarily found in subsurface water. A permeable rock has communicating interstices of capillary or supercapillary size.

Pesticide – Any substance or chemical designed or formulated to kill or control weeds or animal pests. Also see herbicide, insecticide.

Point source – A stationery location or fixed facility from which pollutants might be discharged or emitted.

Pollution – The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any water in the State that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property or to public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.

Porosity – The ratio of openings (voids) to the total volume of a soil or rock. Porosity is an indication of the capacity of the material to hold water. Expressed as percentages, clays have a porosity of 50% while gravel has a porosity of 20%.

Potential Source of Contamination (PSOC) – A point source from which contaminants may leak or be discharged.

Potentiometric Surface - A surface that represents the level to which water will rise in tightly cased wells in a confined aquifer. In an unconfined aquifer, the potentiometric surface is the water table.

Precipitation – 1) The process by which atmospheric moisture falls onto a land or water surface as rain, snow, hail, or other forms of moisture. 2) The chemical transformation of a substance in solution into an insoluble form (precipitate).

Public Water System (PWS) – A system for the provision to the public of water for human consumption through pipes or other constructed conveyances, which includes all uses described under the definition of drinking water. Such a system must have at least 15 service connections or serve at least 25 individuals at least 60 days out of the year. This term includes: any collection, treatment, storage, and distribution facilities under the control of the operator of such system, and any collection of pretreatment storage facilities not under such control which are used primarily in connection with such system. Two or more systems with each having a potential to serve less than 15 connections or less than 25 individuals but owned by the same person, firm, or corporation and located on adjacent land will be considered a public water system when the total potential service connections in the combined systems are 15 or greater or if the total number of individuals served by the combined systems total 25 or greater at least 60 days out of the year. Without excluding other means of the terms "individual" or "served," an individual shall be deemed to be served by a water system if he lives in, uses as his place of employment, or works in a place to which drinking water is supplied from the system.

Public Water System Identification Number (PWS ID) – A unique seven digit identification number assigned to each public water supply system in Texas.

Radionuclide – Any man-made or natural element that emits radiation in the form of alpha or beta particles, or as gamma rays.

Recharge of groundwater – The process by which water is absorbed and is added to the zone of saturation. Also used to designate the quantity of water that is added to the zone of saturation, usually given in acre-feet per year or in million gallons per day.

Reservoir – Any natural or artificial holding area used to store, regulate or control water.

Reservoir Depth : Mean Annual Runoff Ratio – An attribute used in calculating surface water intrinsic susceptibility to contamination. Contaminant movement in an aqueous environment will be higher when reservoir depth : annual runoff ratios are low since the potential for resuspension of contaminants is higher in shallow reservoirs and time of travel of a contaminant through the reservoir would be shorter.

River Basin – The entire land area drained by a river, also known as a watershed.

Runoff – That part of precipitation, snow melt, or irrigation water that runs off the land into streams or other surface water. It can carry pollutants from the air and land into surface waters.

Runoff : Precipitation Ratio – An attribute used in calculating surface water intrinsic susceptibility to contamination. Contaminant movement in an aqueous environment will be higher when runoff : precipitation ratios are high. For example, when runoff is high in relation to the amount of precipitation falling on the watershed, contaminants will be more likely to be carried to the receiving water body than when runoff is low in relation to precipitation.

Safe Drinking Water Act (SDWA) – A statute enacted by the U.S. Congress in 1974. The Act establishes a cooperative program among local, State and Federal agencies to insure safe drinking water for customers.

Saturated Zone – The zone in a soil profile or geologic formation in which all pore spaces are filled with water.

Saturated Thickness – The height or thickness of the saturated zone.

Screened Interval - That part of a completed water well with openings which allow water to enter the well bore. The screened interval includes the zone completed as an open hole in a competent geologic unit such as limestone or dolomite.

Slope – The inclination of the land surface from the horizontal. The percentage of slope is the vertical distance divided by the horizontal distance, for example, a slope of 20% is a drop of 20 feet in 100 feet of horizontal distance. Percent land surface slope is an attribute used to determine susceptibility under the ground water intrinsic component. A low percent slope indicates water is more likely to recharge into ground water rather than becoming runoff.

Soil Bulk Density – A ratio of the mass of soil to its total volume (solids and pores together). Mean soil bulk density is an attribute used in determining the susceptibility in the ground water intrinsic component.

Soil Clay Content – Percent of clays in soil. Mean soil clay content is an attribute used to determine susceptibility in the ground water intrinsic component. Water does not move easily through clay deposits, therefore, the higher the percentage of clay, the less likely contaminants will be able to move through the aquifer matrix.

Soil Erodibility – A measure of the soil's susceptibility to raindrop impact, runoff and other erosional processes. Soil erodibility is an attribute used in calculating surface water intrinsic susceptibility to contamination. Contaminants may absorb to soils, where soil erodibility is high, contaminants absorbed soils may be transported into receiving waters during rainfall events.

Soil Hydrologic Group (HSG) – A classification of soils based on similarities in runoff potential under similar storm and cover conditions. Soils within the United States are placed into four groups (A, B, C and D) and three dual classes (A/D, B/D, and C/D). Class A soils have a high infiltration rate (rate at which water moves in the soil) and therefore a low runoff potential; Class B soils have a moderate infiltration rate of water transmission; Class D soils have a very slow infiltration rate and water transmission and therefore a high runoff potential. Dual hydrologic groups are given for certain wet soils that can be adequately drained; the first letter applies to the drained condition, the second to the undrained. The mean soil hydrologic group is an attribute in the ground water intrinsic component; soil hydrologic groups were classified using the Natural Resource Conservation Service's Curve Number Method where class placement is based on the minimum annual steady ponded infiltration rate for a bare ground surface.

Source Water – The raw water supply, surface or subsurface, from which the public water system acquires its raw drinking water.

Source Water Protection Area (SWPA) – The area delineated by the state for a PWS, or including numerous PWSs, whether the source is groundwater or surface water or both, as part of the state Source Water Assessment Program approved by EPA under section 1453 of the Safe Drinking Water Act.

Water level – Depth to water, in feet below the land surface, where the water occurs under water table conditions (or depth to the top of the zone of saturation). Under artesian conditions, the water level is a measure of the pressure of the aquifer, and the water level may be at, below, or above the land surface.

Water level, pumping – The water level during pumping, measured in feet below the land surface.

Water level, static – The water level in an unpumped or nonflowing well, measured in feet above or below the land surface.

Water Table – The upper surface of a zone of saturation except where the surface is formed by an impermeable body of rock.

Water Table Aquifer, or Unconfined Aquifer – An aquifer in which the water is unconfined; the upper surface of the zone of saturation is under atmospheric pressure only and the water is free to rise or fall in response to the changes in the volume of water in storage. A well penetrating an aquifer under water table conditions becomes filled with water to the level of the water table.

Well – Any bored, drilled, or driven shaft, or dug hole, whose depth is greater than the largest surface dimension.

Wellfield – An area containing two or more wells supplying a public water supply system.

Wellhead – The physical structure, facility or device at the land surface from or through which groundwater flows or is pumped from subsurface, water-bearing formations.

Wellhead Protection Area (WHPA) – The surface and subsurface area surrounding a water well or wellfield, supplying a public water supply system, through which contaminants are reasonably likely to move toward and reach such water well or wellfield.

Yield of a well – The rate of discharge, commonly expressed as gallons per minute, gallons per day, or gallons per hour.

APPENDIX 1

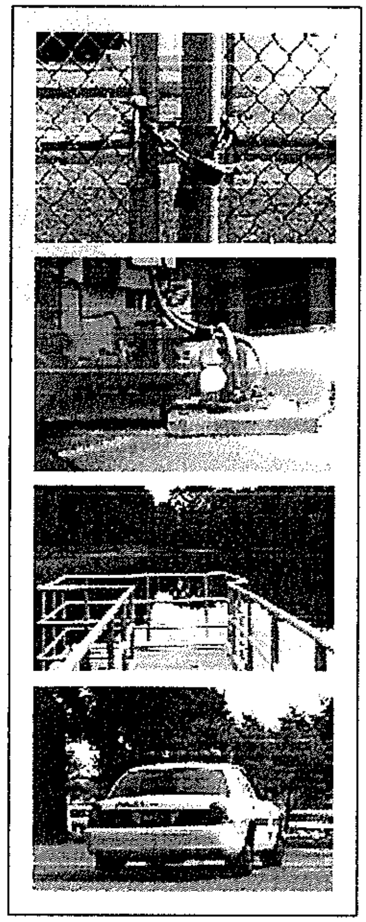
EMERGENCY RESPONSE PLAN

Securing America's Drinking Water

A Report Outlining our Security & Emergency Management Systems

Emergency Response Plan

Based on Our Vulnerability Assessment



Includes

- Emergency Contact Information
- Inventory of Critical Equipment and Customers
- Chain of Command
- Response Procedures, Plans & Actions
- Coordination Activities
- Notification List
- Local Emergency Planning Committee

Central Texas Water Supply Corporation

Completed By:

R. David Cole

254-698-2779

ctwscorp@wmconnect.com

April 01, 2004

technical assistance software made possible by

this report was generated using the software SEMS

Contact Information

System Information

PWS ID: TX 0140161
Water Station Name: Central Texas Water Supply Corporation
Town Served: Harker Heights
Population: 45,078
Number of Service Connections: 16,365
System Owner: The Corporation is membership owned and governed.

Person Responsible for Maintaining Contact List

Name: Cally Prockl
Title: Office Manager
Phone: 254-698-2779

Telephone and Contact

Contact Name: R. David Cole, General Manager
Daytime Phone: 254-698-2779
Emergency Phone: 254-698-2779
Cell Phone: 254-681-6819
Fax Number: 254-698-4105
Emergency Email: ctwscorp@wmconnect.com

Notification List

For Central Texas Water Supply Corporation

Notification / Contact Information

Title	Name	Day Phone	Night Phone	Email
Fire Department	Harker Heights Fire Dept	254-699-2688	911	NA
Police Department	Harker Heights Police Dept	254-699-7600	911	NA
FBI Field Office	Ed Waigand, FBI Agent	254-772-1627	210-225-6741	NA
Emergency Medical Service	Harker Heights EMS	254-699-2688	911	NA
Local Health Department	Texas Department of Health	512-834-6700	512-834-6700	No Email Provided
National Spill Response Center	National Response Center	1-800-424-8802	1-800-424-8802	NA
State Spill Hotline	Texas Commission on Environmental Quality	1-800-832-8224	512-239-2507	NA
Local Hazmat Team (if any)	Texas Commission on Environmental Quality	1-800-832-8224	512-239-2507	NA
Local / Regional Laboratory	Rick Howard-Mt Carmel Lab	254-750-1664	254-750-5471	NA
Water System Operators	Robert Cooper, Operations Manager	254-698-3583	254-698-3583	ctwscorp@wmconnect.com
Water System Operators	Alfredo Rios, Maint Mgr	254-702-2474	254-780-2195	ctwscorp@wmconnect.com

Notification List

For Central Texas Water Supply Corporation

Local Notification

Title	Name	Day Phone	Night Phone	Email
Government Officials	Mary Guauer, Mayor, City of Harker Heights	254-953-5600	254-699-0606	cell:254-290-1025
Government Officials	Steve Carpenter, City Manager, City of Harker Heights	254-953-5600	NA	NA
Government Officials	Dan Thomasson, CoE, Lake Stillhouse Hollow	254-939-1829	254-939-2461	NA
Emergency Planning Committee	Steve Casey, LEPC	254-933-5589	254-933-5589	NA
Hospitals	Scott & White Hospital	254-690-2618	254-699-1133	NA
Hospitals	Metro-Plex Hospital	254-526-7523	254-526-7523	NA
Pharmacy	Scott & White Pharmacy	254-690-2618	254-699-1133	NA
Nursing Homes	Cedar Crest Retirement Hm	254-939-2100	254-939-2100	NA
Nursing Homes	The Rosewood	254-680-5020	NA	NA
Schools	Killeen Independent School District	254-501-0000	254-501-0006	NA
Schools	Belton Independent School District	254-939-1881	NA	NA
Prisons	Bell County Detention Facility	911	254-933-5410	NA
Local Hazmat Team (if any)	Texas Commission on Environmental Quality	512-239-2507	NA	NA
Local / Regional Laboratory	Environmental Laboratory Services	512-356-6022	NA	NA
Water System Operators	Robert Cooper, Operations Manager	254-698-2779	254-681-6819	ctwscorp@wmconnect.com
Water System Operators	Alfredo Rios, Maintenance/Distributiojn Manager	254-702-2474	254-780-2195	ctwscorp@wmconnect.com

Notification List

For Central Texas Water Supply Corporation

Service / Repair Notification

Title	Name	Day Phone	Night Phone	Email
Electrician	Robert Dumbeck CEI	512-426-7539	512-285-3385	NA
Electric Utility Company	Bartlett Electric Company	254-634-1274	254-527-3551	NA
Gas Utility Company	TXU Gas	1-800-817-8090	1-800-817-8090	NA
Sewer Utility Company	Harker Heights Sewer Dept	254-953-5600	254-953-5600	NA
Telephone Utility Company	Sprint Telephone	1-800-901-9675	1-800-788-3600	NA
Plumber	Connell Plumbing	254-628-1476	NA	NA
Pump Specialist	Smith Pump Company	1-887-776-0377	1-887-776-0377	NA
"Dig Safe" or Local Equivalent	Texas One Call	1-800-545-6005	1-800-545-6005	NA
Soil Excavator / Backhoe Operator	Mario Martinez, Dist Foreman	254-698-3583	254-698-1274	NA
Power Generator Rentals	Holt-CAT	1-800-627-4911	254-662-4911	NA
Chlorinator Rentals	Lone Star	254-857-9711	NA	NA
Portable Fencing Rentals	Ace Fence Rentals	254-698-7220	254-681-1478	NA
Equipment Repairman	Alfredo Rios, Maintenance/Distribution Manager	254-698-3583	254-698-3583	ctwscorp@wmconnect.com
Chlorinator Repairman	Lonestar Maint & Service, Inc	254-772-3303	1-800-234-0214	NA
Radio / Telemetry Repair Service	Richard Coleman, PMT	254-698-3583	254-690-6178	NA
Bottled Water Service	Ozarka	1-800-759-6145	NA	NA
Bulk Water Hauler	Fort Hood	254-287-2506	254-287-2520	NA
Pump Supplier	Smith Pump Company	1-800-299-8909	254-776-0377	NA
Well Driller	Killeen Drilling & Pump Service	254-526-2151	NA	NA

Notification List

For Central Texas Water Supply Corporation

Pipe Supplier	Fuson Water Utilities	254-526-4925	1-800-249-5860	254-780-3336
Chemical Supplier	Harcros Chemical Inc.	214-638-8034	1-800-229-8034	NA

Notification List

For Central Texas Water Supply Corporation

State Notification

Title	Name	Day Phone	Night Phone	Email
Drinking Water Primary Agency	Texas Commission on Environmental Quality	512-239-1000	254-761-3003	NA
Dept. of Env. Protection	EPA Region 6	1-800-887-6063	1-800-887-6063	NA
Department of Health	Texas Dept of Health	512-458-7111	1-888-963-7111	NA
Emergency Mgmt. Agency	Cpt Meshburn, EMC	254-759-7160	254-759-7165	NA
Hazmat Hotline	Texas Commission on Environmental Quality	512-239-2507	NA	NA

Notification List

For Central Texas Water Supply Corporation

Media Notification

Title	Name	Day Phone	Night Phone	Email
Water System Spokesperson	R. David Cole, GM, CTWSC	254-698-2779	254-681-6819	ctwscgm@wmconnect.com
Newpaper - Local	Martha Underwood, Killeen Daily Herald	254-501-7556	254-501-7556	marthau@kdhnews.com
Newpaper - Local	Belton Journal	254-939-5754	NA	NA
Newspaper - Regional / State	Carla Daws, State Media	512-463-8176	512-463-8176	Carla.Daws@twdb.state.tx.us
Radio	KTEM	254-773-5252	254-771-1400	NA
Radio	KNCT	254-526-1176	NA	NA
Radio	US 105	1-877-447-1055	NA	NA
Television	KWTX-TV	254-699-4420	Ext 224	NA
Television	KCEN-TV	254-526-4912	NA	NA
Television	KNCT-TV	254-526-1176	NA	NA

Notification List

For Central Texas Water Supply Corporation

Other Notification

Title	Name	Day Phone	Night Phone	Email
CTWSC Office Mgr	Cally Prockl	254-698-2779	254-986-1170	NA
CTWSC Office Sec	Donnette Davis	254-698-2779	254-690-3902	NA
President,CTWSC	Maurice W, McNeese	254-982-4828	254-657-2429	NA
Vice President, CTWSC	Robert Whitson	254-634-1727	254-698-6727	NA
Secretary/Treasurer	Bill McCoy	254-718-3864	254-938-7404	NA
Bell Co WCID#5	Elias Bigon	254-697-4016	254-773-6300	NA
City of Rosebud	Diane Bolan	254-583-7926	254-583-7704	NA
Westphalia WSC	Larry J. Frei	254-298-5753	254-584-5616	NA
O&B WSC	Tommy Frei	254-985-2243	254-985-2243	NA
East Bell WSC	Marvin Green	254-985-2331	254-760-6226	NA
BMF WSC	Dwayne Jekel	254-697-1097	254-697-4016	NA
City of Lott	Wayne Newby	254-584-2681	254-694-7644	NA

Notification List

For Central Texas Water Supply Corporation

Employees Notification

Title	Name	Day Phone	Night Phone	Email
CTWSC Operator	James Chadwick	254-698-3583	254-699-3688	NA
CTWSC Operator	Robert Cooper	254-698-3583	254-680-5371	NA
CTWSC Operator	Dean Linebaugh	254-698-3583	254-698-3641	NA
CTWSC Operator	Keith Gramkow	254-698-3583	254-865-7414	NA
CTWSC Operator	Jim Lilley	254-698-3583	254-702-2545	NA
CTWSC Dist Tech	Andrew French	254-698-3583	254-690-4954	NA
CTWSC Dist Foreman	Mario Martinez	254-698-3583	254-698-1274	NA
CTWSC Dist Tech	Fred Noe	254-698-3583	254-699-7592	NA
CTWSC PMTTech	Marc Mohney	254-698-3583	254-680-5136	NA
CTWSC PMT Foreman	Richard Coleman	254-698-3583	254-690-6178	NA
CTWSC Dist Spv	Alfredo Rios	254-698-3583	254-780-2195	NA
CTWSC Dist Tech	Travis Moon	254-698-3583	254-698-4514	NA

Chain of Command

For Central Texas Water Supply Corporation

Internal Chain of Command

Order	Name	Day Phone	Night Phone	Email
1	R. David Cole, General Manager			
2	Alfredo Rios, Maint. Manager			
3	Robert Cooper, Operations Manager	254-698-2779	254-681-6819	ctwscorp@wmconnect.com
4	Cally Prockl, Office Manager			
5	James Chadwick, Senior Operator			
6	Mario Martinez, Distribution Foreman			
7	Richard Coleman, PMT Foreman			
8	Fred Noe, Senior Operator			
9	Dean Linebaugh, Operator			

Chain of Command

For Central Texas Water Supply Corporation

10	Jason Oakden, Operator			
11	Andre Sanders, Special Project Coord.			
12	Fred Noe, Operator			
13	Marc Mohney, PMT Technician			

Securing America's Drinking Water

A Report Outlining our Security & Emergency Management Systems

Chain of Command

For Central Texas Water Supply Corporation

External Chain of Command

Order	Name	Day Phone	Night Phone	Email
1	R. David Cole, GM, CTWSC	254-698-2779	254-681-6819	ctwscgm@wmconnect.com
2	Harker Heights Police Dept	254-699-7600	911	NA
3	Harker Heights Fire Dept	254-699-2688	911	NA
4	Ed Waigand, FBI Agent	254-772-1627	210-225-6741	NA
5	Steve Casey, LEPC	254-933-5589	254-933-5589	NA
6	Texas Commison on Environmental Quality, Region 9	254-761-3003	NA	NA
7	National Response Center	1-800-424-8802	1-800-424-8802	NA
8	EPA Region 6	1-800-887-6063	1-800-887-6063	NA

Coordination Activities

Has all water system staff been trained on their roles and responsibilities in the event of an emergency?

Yes

Has the system contacted the local police department?

Yes

Has the system contacted the local health department?

Yes

Has the system contacted the local fire department?

Yes

Has the system contacted the local emergency medical responders (e.g. Ambulances)?

Yes

Has the system contacted the State Rural Water Association?

Yes

Has the system contacted the State Primacy Agency?

Yes

Has the system contacted the FBI Field Office in your area?

Yes

Has the system contacted the top locally elected official (e.g. Mayor)?

Yes

Has the system communicated and ensured that all of the above entities know their responsibilities in the event of an emergency?

Yes

Does the system have a plan to notify its customers of any "Boil Water" or "Do Not Use" situations?

Yes

Notification Plan: Letters to System Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Local Emergency Planning Committee

As required under the 2002 BioTerrorism Act, has your water system, to the extent possible, coordinated with the Local Emergency Planning Committee when preparing or revising an Emergency Response Plan?

Yes

Date of Contact: 30 Spetember 2003

Name: Steve Casey

Phone Number: 254-933-5589

24 Hour Contact Number: 254-933-5589

Cell Phone Number: NA

Location: Belton Texas

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If a Vandal contaminates your Stillhouse Hollow Lake, the system could continue supplying water for 10 hours and would initate the following response, recovery and communication procedures:

Procedures

Person In Charge in the Event of an Emergency: General Manager.

Public Notification Plan: Letters to System Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Designated Media Person: R. David Cole, GM, CTWSC
Day Phone: 254-698-2779
Night Phone: 254-681-6819
Email: ctwscgm@wmconnect.com

Alternative Source of Water: Agreement with neighboring water system in case of emergency:
Name: Sam Listi, City Manager, City of Belton
Phone: 254-933-5819

Plans and Actions

STEP 1: Notify - Call General Manager, or the next senior employee.

STEP 2: Determine if this is a crime scene - Call General Manager, or the next senior, who will confirm and verify if the event was vandalism or a terrorist.

STEP 3: If this is determined to be a crime scene, contact Call General Manager, or the next senior employee

STEP 4: Notify the person who will control the water system and make decisions in the event of an emergency - General Manager.

STEP 5: Initiate the Internal and External Chain of Command (See Attached Sheet)

STEP 6: Access damage to Stillhouse Hollow Lake: Verify the contamination. Implement the Emergency Response Plan with Staff.

Person(s) Responsible: General Manager

Available Equipment: Portable Water Sample Kit. Staff call-list. Telephones. Radiios. Pagers.

STEP 7: Isolate and fix the damage to Stillhouse Hollow Lake: Initiate the Spill Response Protocol. Implement the Emergency Shut-Off to Treatment Plant. If the problem is wihin the transmission system. Isolate the area with appropriate valving. Possibly inititate a boil-water notice based upon the extent of

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

contaminatiion. Maintain service in unaffected areas if possible to minimize effects. Consider initiating a declaration in water rationing.

Person(s) Responsible: Maintenance Manager

Available Equipment: Spill Resonse Kits. Trucks. Valve wrenches. Computers. Telephones. Radios.

STEP 8: Monitor damaged Stillhouse Hollow Lake: Continue sampling at the source, treatment plant and system.

Person(s) Responsible: General Manager

Available Equipment: Sample Kits. Laboratory equipment. Computers. Trucks. Telephones. Radios.

STEP 9: Restore damaged Stillhouse Hollow Lake to normal: Remove source of contamination by flushing. Verify by water sampling the absence of the contamination. Conduct the normal start-up of the treatment plants and transmission system. Prioritize the filling of the storage tanks. Verify the sequence, then open the valves as outlined. Release the water rationing when applicable.

Person(s) Responsible: Maintenance Manager, Operations Manager, Office Manager

Available Equipment: Trucks. Computers. Radios. Telephones. Valve wrenches. Flush valves.

STEP 10: Return system to safety: Verify safe water by results from the laboratory. Follow outline of sequence to operate treatment plants and vavles in tranmission system.

Person(s) Responsible: General Manager, Maintenance Manager, Operations Manager, Office Manager

Available Equipment: Computers. Facsimile machine. Telephones. Radios.Trucks. Valve wrenches.

STEP 11: Report the findings to the State: Phone. Fax, Email, and Letter in that order. Use the Notification List.

Person(s) Responsible: General Manager, Office Manager

Available Equipment: Telephone. Facsimile machine. Computers. Office building.

If water service is needed by your critical customers for longer than 10 hours, then the system will continue to providing safe and affordable water for potable use by implementing the following procedure:

By implementing this Plan that would allow the responsible managers, supervisors, and employees to do their responsibilies with authority as they have been trained to do, as authorized by the General Manager. The General Manager will provide in-direct supervision.

If Vandal destroys or disables your redundant items, the system will respond with the following procedure:

Operate the system at the alternate location that already has the capabilities of operating the

system even with an alternate electrical back-up power supply or trailer-mounted generator.

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If a Vandal disabled your Raw Water Intake. High Service Pumps. Maintenance. Chlorine. Operations. Chemical. Corporate., the system could continue supplying water for 10 hours and would initate the following response, recovery and communication procedures:

Procedures

Person In Charge in the Event of an Emergency: General Manager.

Public Notification Plan: Letters to System Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Designated Media Person: R. David Cole, GM, CTWSC
Day Phone: 254-698-2779
Night Phone: 254-681-6819
Email: ctwscgm@wmconnect.com

Alternative Source of Water: Agreement with neighboring water system in case of emergency:
Name: Sam Listi, City Manager, City of Belton
Phone: 254-933-5819

Plans and Actions

STEP 1: Notify - Call General Manager, or the next senior employee.

STEP 2: Determine if this is a crime scene - Call General Manager, or the next senior, who will confirm and verify if the event was vandalism or a terrorist.

STEP 3: If this is determined to be a crime scene, contact Call General Manager, or the next senior employee

STEP 4: Notify the person who will control the water system and make decisions in the event of an emergency - General Manager.

STEP 5: Initiate the Internal and External Chain of Command (See Attached Sheet)

STEP 6: Access damage to Raw Water Intake. High Service Pumps. Maintenance. Chlorine. Operations. Chemical. Corporate.: Notify General Manager, or the next senior employee, who will determine if it is a terrorist event or a crime scene. Upon determination, initiate the Notification list. Notify appropriate repair personnel.

Person(s) Responsible: Maintenance Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Computers. Office building. Trucks. ERP.

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

STEP 7: Isolate and fix the damage to Raw Water Intake. High Service Pumps. Maintenance. Chlorine. Operations. Chemical. Corporate.: Use caution tape to deny access to the scenes until the proper authorities have arrived. Once the scene is checked by authorities, allow repair crews in to return the equipment back to temporary and/or normal condition.

Person(s) Responsible: Maintenance Manager

Available Equipment: Caution tape. Trucks. Telephones. Radios. Pagers. Computers.

STEP 8: Monitor damaged Raw Water Intake. High Service Pumps. Maintenance. Chlorine. Operations. Chemical. Corporate.: Act as the Point-of-Contact/PR and stay engaged with the events taking place at the scenes.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Notification list.

STEP 9: Restore damaged Raw Water Intake. High Service Pumps. Maintenance. Chlorine. Operations. Chemical. Corporate. to normal: Allow and monitor maintenance repair crews to restore system back to normal. Act as approving authority for expenses incurred. Keep the President of the Corporation abreast of the events.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Computers. Office building. Radios.

STEP 10: Return system to safety: Obtain clearance

Person(s) Responsible: General Manager

Available Equipment: Radio, truck and telephone

STEP 11: Report the findings to the State: Phone, fax email, and letter in that order

Person(s) Responsible: Office Manager

Available Equipment: Telephone, fax machine, computer, internet connection

If water service is needed by your critical customers for longer than 10 hours, then the system will continue to providing safe and affordable water for potable use by implementing the following procedure:

Immediate notify the City of Belton of the emergency. That the General Manager is opening the valves for them to supply water to the system. Notify CEI, Inc. personnel that require emergency assistance in replacing, temporary, then permanent the electronics and electrical equipment so that I can resume normal operation. Notify Bartlett Electric Co-op of the emergency and to

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

restore the electrical service back to normal. Increase water sampling as a precaution. Send the maintenance crews to the pre-determined strategic locations to manually monitor the system.

If Vandal destroys or disables your redundant items, the system will respond with the following procedure:

Immediate notify the City of Belton that the General Manager is opening the valves for the City of Belton to supply water to the system. Notify CEI, Inc. personnel that require emergency assistance in replacing, temporary, then permanent the electronics and electrical equipment so that I can resume normal operation. Notify Bartlett Electric Co-op of the emergency and to restore the electrical service back to normal. Increase water sampling as a precaution. Send the maintenance crews to the pre-determined strategic locations to manually monitor the system.

Securing America's Drinking Water

A Report Outlining our Security & Emergency Management Systems

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If a Vandal disabled your Raw water. High Service. Booster. Supernate., the system could continue supplying water for 10 hours and would initate the following response, recovery and communication procedures:

Procedures

Person In Charge in the Event of an Emergency: General Manager.

Public Notification Plan: Letters to System Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Designated Media Person: R. David Cole, GM, CTWSC
Day Phone: 254-698-2779
Night Phone: 254-681-6819
Email: ctwscgm@wmconnect.com

Alternative Source of Water: Agreement with neighboring water system in case of emergency:
Name: Sam Listi, City Manager, City of Belton
Phone: 254-933-5819

Plans and Actions

STEP 1: Notify - Call General Manager, or the next senior employee.

STEP 2: Determine if this is a crime scene - Call General Manager, or the next senior, who will confirm and verify if the event was vandalism or a terrorist.

STEP 3: If this is determined to be a crime scene, contact Call General Manager, or the next senior employee

STEP 4: Notify the person who will control the water system and make decisions in the event of an emergency - General Manager.

STEP 5: Initiate the Internal and External Chain of Command (See Attached Sheet)

STEP 6: Access damage to Raw water. High Service. Booster. Supernate.: Notify General Manager, or the next senior employee, who will determine if it is a terrorist event or a crime scene. Upon determination, initiate the Notification list. Notify appropriate repair personnel.

- *Person(s) Responsible: Maintenance Manager*

  Available Equipment: Telephones. Radios. Pagers. Dispatchers. Computers. Office building. Trucks. ERP.

STEP 7: Isolate and fix the damage to Raw water. High Service. Booster. Supernate.: Use caution tape to deny access to the scenes until the proper authorities have arrived. Once the scene is checked by

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

authorities, allow repair crews in to return the equipment back to temporary and/or normal condition.

Person(s) Responsible: Maintenance Manager

Available Equipment: Caution tape. Trucks. Telephones. Radios. Pagers. Computers. Crane.

STEP 8: Monitor damaged Raw water. High Service. Booster. Supernate.: Act as the Point-of-Contact/PR and stay engaged with the events. Keep the President of the Corporation abreast of the events.taking place at the scenes.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Notification list.

STEP 9: Restore damaged Raw water. High Service. Booster. Supernate. to normal: Allow and monitor maintenance repair crews to restore system back to normal. Act as approving authority for expenses incurred.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Computers. Office building. Radios.

STEP 10: Return system to safety: Initiate pre-established sequence to insure safety of system. Dispatch crews to pre-determined locations within system to monitor.

Person(s) Responsible: General Manager

Available Equipment: Radio, truck and telephone

STEP 11: Report the findings to the State: Phone, fax email, and letter in that order

Person(s) Responsible: Office Manager

Available Equipment: Telephone, fax machine, computer, internet connection

If water service is needed by your critical customers for longer than 10 hours, then the system will continue to providing safe and affordable water for potable use by implementing the following procedure:

Notify the predetermined Pump Service Company of the emergency and that raw water pumps are in need of repair or replaced. Determine which and how many existing Booster Pumps within the system can replace the High Service Pumps that were disabled. Determine if a crane is needed and notify the primary and alterenate crane service of an emergency, if required. Notify the alternate source of water of the emergency and to standby for assistance in providing water to the system.

If Vandal destroys or disables your redundant items, the system will respond with the following procedure:

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

Notify the primary electrical supply company of the emergency. Rent generators from vendors identified on notification list while we restore main power supply.

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If a Vandal disabled your Surface Water Treatment Facilities. Chemical Feed Pumps. Chemical Feed Generator., the system could continue supplying water for 10 hours and would initate the following response, recovery and communication procedures:

Procedures

Person In Charge in the Event of an Emergency: General Manager.

Public Notification Plan: Letters to System Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Designated Media Person: R. David Cole, GM, CTWSC
Day Phone: 254-698-2779
Night Phone: 254-681-6819
Email: ctwscgm@wmconnect.com

Alternative Source of Water: Agreement with neighboring water system in case of emergency:
Name: Sam Listi, City Manager, City of Belton
Phone: 254-933-5819

Plans and Actions

STEP 1: Notify - Call General Manager, or the next senior employee.

STEP 2: Determine if this is a crime scene - Call General Manager, or the next senior, who will confirm and verify if the event was vandalism or a terrorist.

STEP 3: If this is determined to be a crime scene, contact Call General Manager, or the next senior employee

STEP 4: Notify the person who will control the water system and make decisions in the event of an emergency - General Manager.

STEP 5: Initiate the Internal and External Chain of Command (See Attached Sheet)

STEP 6: Access damage to Surface Water Treatment Facilities. Chemical Feed Pumps. Chemical Feed Generator.: Notify General Manager, or the next senior employee, who will determine if it is a terrorist event or a crime scene. Upon determination, initiate the Notification list. Notify appropriate repair personnel.

Person(s) Responsible: Maintenance Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Computers. Office building. Trucks. ERP.

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

STEP 7: Isolate and fix the damage to Surface Water Treatment Facilities. Chemical Feed Pumps. Chemical Feed Generator.: Use caution tape to deny access to the scenes until the proper authorities have arrived. Once the scene is checked by authorities, allow repair crews in to return the equipment back to temporary and/or normal condition.

Person(s) Responsible: Maintenance Manager

Available Equipment: Caution tape. Trucks. Telephones. Radios. Pagers. Computers. Crane.

STEP 8: Monitor damaged Surface Water Treatment Facilities. Chemical Feed Pumps. Chemical Feed Generator.: Act as the Point-of-Contact/PR and stay engaged with the events. Keep the President of the Corporation abreast of the events.taking place at the scenes.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Notification list.

STEP 9: Restore damaged Surface Water Treatment Facilities. Chemical Feed Pumps. Chemical Feed Generator. to normal: Allow and monitor maintenance repair crews to restore system back to normal. Act as approving authority for expenses incurred.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Computers. Office building. Radios.

STEP 10: Return system to safety: Initiate pre-established sequence to insure safety of system. Dispatch crews to pre-determined locations within system to monitor.

Person(s) Responsible: General Manager

Available Equipment: Radio, truck and telephone

STEP 11: Report the findings to the State: Phone, fax email, and letter in that order

Person(s) Responsible: Office Manager

Available Equipment: Telephone, fax machine, computer, internet connection

If water service is needed by your critical customers for longer than 10 hours, then the system will continue to providing safe and affordable water for potable use by implementing the following procedure:

Notify by alternate source of safe drinking water that the General Manager has established an emergency condition and is opening the valves to provide water to his system.

If Vandal destroys or disables your redundant items, the system will respond with the following procedure:

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

Rental of generators from vendor identified on the notifiaction list while maintenance crews restore main power supply and existing generators.

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If a Vandal disabled your Computer. Monitoring Equipment. Laboratory Equipment., the system could continue supplying water for 10 hours and would initate the following response, recovery and communication procedures:

Procedures

Person In Charge in the Event of an Emergency: General Manager.

Public Notification Plan: Letters to System Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Designated Media Person: R. David Cole, GM, CTWSC
Day Phone: 254-698-2779
Night Phone: 254-681-6819
Email: ctwscgm@wmconnect.com

Alternative Source of Water: Agreement with neighboring water system in case of emergency:
Name: Sam Listi, City Manager, City of Belton
Phone: 254-933-5819

Plans and Actions

STEP 1: Notify - Call General Manager, or the next senior employee.

STEP 2: Determine if this is a crime scene - Call General Manager, or the next senior, who will confirm and verify if the event was vandalism or a terrorist.

STEP 3: If this is determined to be a crime scene, contact Call General Manager, or the next senior employee

STEP 4: Notify the person who will control the water system and make decisions in the event of an emergency - General Manager.

STEP 5: Initiate the Internal and External Chain of Command (See Attached Sheet)

STEP 6: Access damage to Computer. Monitoring Equipment. Laboratory Equipment.: Notify General Manager, or the next senior employee, who will determine if it is a terrorist event or a crime scene. Upon determination, initiate the Notification list. Notify appropriate repair personnel.

Person(s) Responsible: Maintenance Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Computers. Office building. Trucks. ERP.

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

STEP 7: Isolate and fix the damage to Computer. Monitoring Equipment. Laboratory Equipment.: Use caution tape to deny access to the scenes until the proper authorities have arrived. Once the scene is checked by authorities, allow repair crews in to return the equipment back to temporary and/or normal condition.

Person(s) Responsible: Maintenance Manager

Available Equipment: Caution tape. Trucks. Telephones. Radios. Pagers. Computers. Crane.

STEP 8: Monitor damaged Computer. Monitoring Equipment. Laboratory Equipment.: Act as the Point-of-Contact/PR and stay engaged with the events. Keep the President of the Corporation abreast of the events.taking place at the scenes.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Notification list.

STEP 9: Restore damaged Computer. Monitoring Equipment. Laboratory Equipment. to normal: Allow and monitor maintenance repair crews to restore system back to normal. Act as approving authority for expenses incurred.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Computers. Office building. Radios.

STEP 10: Return system to safety: Initiate pre-established sequence to insure safety of system. Dispatch crews to pre-determined locations within system to monitor.

Person(s) Responsible: General Manager

Available Equipment: Radio, truck and telephone

STEP 11: Report the findings to the State: Phone, fax email, and letter in that order

Person(s) Responsible: Office Manager

Available Equipment: Telephone, fax machine, computer, internet connection

If water service is needed by your critical customers for longer than 10 hours, then the system will continue to providing safe and affordable water for potable use by implementing the following procedure:

Notify the Alternate Source for potable water that the General Manager has declared an emergency and he is opening the valves to supply water to the system.

If Vandal destroys or disables your redundant items, the system will respond with the following procedure:

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

STEP 7: Isolate and fix the damage to Chlorine. Chlorine Dioxide. Liquid Aluminum Sulfate. Liquid Aluminum. Liquid Polymer.: Use caution tape to deny access to the scenes until the proper authorities have arrived. Once the scene is checked by authorities, allow repair crews in to return the equipment back to temporary and/or normal condition.

Person(s) Responsible: Maintenance Manager

Available Equipment: Caution tape. Trucks. Telephones. Radios. Pagers. Computers. Crane.

STEP 8: Monitor damaged Chlorine. Chlorine Dioxide. Liquid Aluminum Sulfate. Liquid Aluminum. Liquid Polymer.: Act as the Point-of-Contact/PR and stay engaged with the events. Keep the President of the Corporation abreast of the events.taking place at the scenes.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Notification list.

STEP 9: Restore damaged Chlorine. Chlorine Dioxide. Liquid Aluminum Sulfate. Liquid Aluminum. Liquid Polymer. to normal: Allow and monitor maintenance repair crews to restore system back to normal. Act as approving authority for expenses incurred.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Computers. Office building. Radios.

STEP 10: Return system to safety: Initiate pre-established sequence to insure safety of system. Dispatch crews to pre-determined locations within system to monitor.

Person(s) Responsible: General Manager

Available Equipment: Radio, truck and telephone

STEP 11: Report the findings to the State: Phone, fax email, and letter in that order

Person(s) Responsible: Office Manager

Available Equipment: Telephone, fax machine, computer, internet connection

If water service is needed by your critical customers for longer than 10 hours, then the system will continue to providing safe and affordable water for potable use by implementing the following procedure:

Notifiy the alternate source of postable water that the General Manager has declared an emergency and he is opening the valves to allow water in the system.

If Vandal destroys or disables your redundant items, the system will respond with the following procedure:

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

Rental of generators from vendors identified on notification list while we restore main power supply

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If a Vandal disabled your Sulfrice acid, potassium iodide, buffer powder citrate, sodium periodate, derro ver, phenolphthalein, sodium & potassium ionic, bromcresol green, man ver2, cal ver2, sulfa ver4, chloride 2 indicator, hydrochloric acid and sodium hydroxide., the system could continue supplying water for 24 hours and would initate the following response, recovery and communication procedures:

Procedures

Person In Charge in the Event of an Emergency: General Manager.

Public Notification Plan: Letters to System Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Designated Media Person: R. David Cole, GM, CTWSC
Day Phone: 254-698-2779
Night Phone: 254-681-6819
Email: ctwscgm@wmconnect.com

Alternative Source of Water: Agreement with neighboring water system in case of emergency:
Name: Sam Listi, City Manager, City of Belton
Phone: 254-933-5819

Plans and Actions

STEP 1: Notify - Call General Manager, or the next senior employee.

STEP 2: Determine if this is a crime scene - Call General Manager, or the next senior, who will confirm and verify if the event was vandalism or a terrorist.

STEP 3: If this is determined to be a crime scene, contact Call General Manager, or the next senior employee

STEP 4: Notify the person who will control the water system and make decisions in the event of an emergency - General Manager.

STEP 5: Initiate the Internal and External Chain of Command (See Attached Sheet)

STEP 6: Access damage to Sulfrice acid, potassium iodide, buffer powder citrate, sodium periodate, derro ver, phenolphthalein, sodium & potassium ionic, bromcresol green, man ver2, cal ver2, sulfa ver4, chloride 2 indicator, hydrochloric acid and sodium hydroxide.: Notify General Manager, or the next senior employee, who will determine if it is a terrorist event or a crime scene. Upon determination, initiate the Notification list. Notify appropriate repair personnel.

Person(s) Responsible: Maintenance Manager

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Computers. Office building. Trucks. ERP.

STEP 7: Isolate and fix the damage to Sulfrice acid, potassium iodide, buffer powder citrate, sodium periodate, derro ver, phenolphthalein, sodium & potassium ionic, bromcresol green, man ver2, cal ver2, sulfa ver4, chloride 2 indicator, hydrochloric acid and sodium hydroxide.: Use caution tape to deny access to the scenes until the proper authorities have arrived. Once the scene is checked by authorities, allow repair crews in to return the equipment back to temporary and/or normal condition.

Person(s) Responsible: Maintenance Manager

Available Equipment: Caution tape. Trucks. Telephones. Radios. Pagers. Computers. Crane.

STEP 8: Monitor damaged Sulfrice acid, potassium iodide, buffer powder citrate, sodium periodate, derro ver, phenolphthalein, sodium & potassium ionic, bromcresol green, man ver2, cal ver2, sulfa ver4, chloride 2 indicator, hydrochloric acid and sodium hydroxide.: Act as the Point-of-Contact/PR and stay engaged with the events. Keep the President of the Corporation abreast of the events.taking place at the scenes.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Notification list.

STEP 9: Restore damaged Sulfrice acid, potassium iodide, buffer powder citrate, sodium periodate, derro ver, phenolphthalein, sodium & potassium ionic, bromcresol green, man ver2, cal ver2, sulfa ver4, chloride 2 indicator, hydrochloric acid and sodium hydroxide. to normal: Allow and monitor maintenance repair crews to restore system back to normal. Act as approving authority for expenses incurred.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Computers. Office building. Radios.

STEP 10: Return system to safety: Initiate pre-established sequence to insure safety of system. Dispatch crews to pre-determined locations within system to monitor.

Person(s) Responsible: General Manager

Available Equipment: Radio, truck and telephone

STEP 11: Report the findings to the State: Phone, fax email, and letter in that order

Person(s) Responsible: Office Manager

Available Equipment: Telephone, fax machine, computer, internet connection

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If water service is needed by your critical customers for longer than 24 hours, then the system will continue to providing safe and affordable water for potable use by implementing the following procedure:

Reorder overnight new supply of chemicals to run lab test

If Vandal destroys or disables your redundant items, the system will respond with the following procedure:

Rental of generators from vendors identified on notification list while we restore power

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If a Vandal disabled your Clear-Well Tanks. 195-PS Tank. Ivy Mountain Tank. Dog Ridge Tank. System Split Tank. Knob Hill Tank. North Pump Station Tanks. O&B Tank. Lott Tank., the system could continue supplying water for 10 hours and would initate the following response, recovery and communication procedures:

Procedures

Person In Charge in the Event of an Emergency: General Manager.

Public Notification Plan: Letters to System Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Designated Media Person: R. David Cole, GM, CTWSC
Day Phone: 254-698-2779
Night Phone: 254-681-6819
Email: ctwscgm@wmconnect.com

Alternative Source of Water: Agreement with neighboring water system in case of emergency:
Name: Sam Listi, City Manager, City of Belton
Phone: 254-933-5819

Plans and Actions

STEP 1: Notify - Call General Manager, or the next senior employee.

STEP 2: Determine if this is a crime scene - Call General Manager, or the next senior, who will confirm and verify if the event was vandalism or a terrorist.

STEP 3: If this is determined to be a crime scene, contact Call General Manager, or the next senior employee

STEP 4: Notify the person who will control the water system and make decisions in the event of an emergency - General Manager.

STEP 5: Initiate the Internal and External Chain of Command (See Attached Sheet)

STEP 6: Access damage to Clear-Well Tanks. 195-PS Tank. Ivy Mountain Tank. Dog Ridge Tank. System Split Tank. Knob Hill Tank. North Pump Station Tanks. O&B Tank. Lott Tank.: Notify General Manager, or the next senior employee, who will determine if it is a terrorist event or a crime scene. Upon determination, initiate the Notification list. Notify appropriate repair personnel.

Person(s) Responsible: Maintenance Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Computers. Office building. Trucks.

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

ERP.

STEP 7: Isolate and fix the damage to Clear-Well Tanks. 195-PS Tank. Ivy Mountain Tank. Dog Ridge Tank. System Split Tank. Knob Hill Tank. North Pump Station Tanks. O&B Tank. Lott Tank.: Use caution tape to deny access to the scenes until the proper authorities have arrived. Once the scene is checked by authorities, allow repair crews in to return the equipment back to temporary and/or normal condition.

Person(s) Responsible: Maintenance Manager

Available Equipment: Caution tape. Trucks. Telephones. Radios. Pagers. Computers. Crane.

STEP 8: Monitor damaged Clear-Well Tanks. 195-PS Tank. Ivy Mountain Tank. Dog Ridge Tank. System Split Tank. Knob Hill Tank. North Pump Station Tanks. O&B Tank. Lott Tank.: Act as the Point-of-Contact/PR and stay engaged with the events. Keep the President of the Corporation abreast of the events.taking place at the scenes.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Notification list.

STEP 9: Restore damaged Clear-Well Tanks. 195-PS Tank. Ivy Mountain Tank. Dog Ridge Tank. System Split Tank. Knob Hill Tank. North Pump Station Tanks. O&B Tank. Lott Tank. to normal: Allow and monitor maintenance repair crews to restore system back to normal. Act as approving authority for expenses incurred.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Computers. Office building. Radios.

STEP 10: Return system to safety: Initiate pre-established sequence to insure safety of system. Dispatch crews to pre-determined locations within system to monitor.

Person(s) Responsible: General Manager

Available Equipment: Radio, truck and telephone

STEP 11: Report the findings to the State: Phone, fax email, and letter in that order

Person(s) Responsible: Office Manager

Available Equipment: Telephone, fax machine, computer, internet connection

If water service is needed by your critical customers for longer than 10 hours, then the system will continue to providing safe and affordable water for potable use by implementing the following procedure:

Open by-pass around disabled tanks.

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If Vandal destroys or disables your redundant items, the system will respond with the following procedure:

Rental of generators to use as backup to move water to customers

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If a Vandal disabled your Barlett Electric Co-op.Bell-Falls Electric Co-op. TXU Electric Company., the system could continue supplying water for 10 hours and would initate the following response, recovery and communication procedures:

Procedures

Person In Charge in the Event of an Emergency: General Manager.

Public Notification Plan: Letters to System Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Designated Media Person: R. David Cole, GM, CTWSC
Day Phone: 254-698-2779
Night Phone: 254-681-6819
Email: ctwscgm@wmconnect.com

Alternative Source of Water: Agreement with neighboring water system in case of emergency:
Name: Sam Listi, City Manager, City of Belton
Phone: 254-933-5819

Plans and Actions

STEP 1: Notify - Call General Manager, or the next senior employee.

STEP 2: Determine if this is a crime scene - Call General Manager, or the next senior, who will confirm and verify if the event was vandalism or a terrorist.

STEP 3: If this is determined to be a crime scene, contact Call General Manager, or the next senior employee

STEP 4: Notify the person who will control the water system and make decisions in the event of an emergency - General Manager.

STEP 5: Initiate the Internal and External Chain of Command (See Attached Sheet)

STEP 6: Access damage to Barlett Electric Co-op.Bell-Falls Electric Co-op. TXU Electric Company.: Notify General Manager, or the next senior employee, who will determine if it is a terrorist event or a crime scene. Upon determination, initiate the Notification list. Notify appropriate repair personnel.

Person(s) Responsible: Maintenance Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Computers. Office building. Trucks. ERP.

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

STEP 7: Isolate and fix the damage to Barlett Electric Co-op.Bell-Falls Electric Co-op. TXU Electric Company.: Use caution tape to deny access to the scenes until the proper authorities have arrived. Once the scene is checked by authorities, allow repair crews in to return the equipment back to temporary and/or normal condition.

Person(s) Responsible: Maintenance Manager

Available Equipment: Caution tape. Trucks. Telephones. Radios. Pagers. Computers. Crane.

STEP 8: Monitor damaged Barlett Electric Co-op.Bell-Falls Electric Co-op. TXU Electric Company.: Act as the Point-of-Contact/PR and stay engaged with the events. Keep the President of the Corporation abreast of the events.taking place at the scenes.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Notification list.

STEP 9: Restore damaged Barlett Electric Co-op.Bell-Falls Electric Co-op. TXU Electric Company. to normal: Allow and monitor maintenance repair crews to restore system back to normal. Act as approving authority for expenses incurred.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Computers. Office building. Radios.

STEP 10: Return system to safety: Initiate pre-established sequence to insure safety of system. Dispatch crews to pre-determined locations within system to monitor.

Person(s) Responsible: General Manager

Available Equipment: Radio, truck and telephone

STEP 11: Report the findings to the State: Phone, fax email, and letter in that order

Person(s) Responsible: Office Manager

Available Equipment: Telephone, fax machine, computer, internet connection

If water service is needed by your critical customers for longer than 10 hours, then the system will continue to providing safe and affordable water for potable use by implementing the following procedure:

Back up generator power and gravity feed of water to system.

If Vandal destroys or disables your redundant items, the system will respond with the following procedure:

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

Rental of generators from vendors identified on notification list while we restore main power supply and new equpment

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If a Vandal disabled your Chlorine. Chlorine Dioxide. Liquid Aluminum Sulfate. Liquid Aluminum. Liquid Polymer., the system could continue supplying water for 10 hours and would initate the following response, recovery and communication procedures:

Procedures

Person In Charge in the Event of an Emergency: General Manager.

Public Notification Plan: Letters to System Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Designated Media Person: R. David Cole, GM, CTWSC
Day Phone: 254-698-2779
Night Phone: 254-681-6819
Email: ctwscgm@wmconnect.com

Alternative Source of Water: Agreement with neighboring water system in case of emergency:
Name: Sam Listi, City Manager, City of Belton
Phone: 254-933-5819

Plans and Actions

STEP 1: Notify - Call General Manager, or the next senior employee.

STEP 2: Determine if this is a crime scene - Call General Manager, or the next senior, who will confirm and verify if the event was vandalism or a terrorist.

STEP 3: If this is determined to be a crime scene, contact Call General Manager, or the next senior employee

STEP 4: Notify the person who will control the water system and make decisions in the event of an emergency - General Manager.

STEP 5: Initiate the Internal and External Chain of Command (See Attached Sheet)

STEP 6: Access damage to Chlorine. Chlorine Dioxide. Liquid Aluminum Sulfate. Liquid Aluminum. Liquid Polymer.: Notify General Manager, or the next senior employee, who will determine if it is a terrorist event or a crime scene. Upon determination, initiate the Notification list. Notify appropriate repair personnel.

Person(s) Responsible: Maintenance Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Computers. Office building. Trucks. ERP.

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

Rental of equipment needed to do the job

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If a Vandal disabled your Raw Water Intake. High Service. 195-PS. 2410-PS. Dog Ridge. System Split. North Pump. Knob Hill. O&B., the system could continue supplying water for 10 hours and would initate the following response, recovery and communication procedures:

Procedures

Person In Charge in the Event of an Emergency: General Manager.

Public Notification Plan: Letters to System Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Designated Media Person: R. David Cole, GM, CTWSC
Day Phone: 254-698-2779
Night Phone: 254-681-6819
Email: ctwscgm@wmconnect.com

Alternative Source of Water: Agreement with neighboring water system in case of emergency:
Name: Sam Listi, City Manager, City of Belton
Phone: 254-933-5819

Plans and Actions

STEP 1: Notify - Call General Manager, or the next senior employee.

STEP 2: Determine if this is a crime scene - Call General Manager, or the next senior, who will confirm and verify if the event was vandalism or a terrorist.

STEP 3: If this is determined to be a crime scene, contact Call General Manager, or the next senior employee

STEP 4: Notify the person who will control the water system and make decisions in the event of an emergency - General Manager.

STEP 5: Initiate the Internal and External Chain of Command (See Attached Sheet)

STEP 6: Access damage to Raw Water Intake. High Service. 195-PS. 2410-PS. Dog Ridge. System Split. North Pump. Knob Hill. O&B.: Notify General Manager, or the next senior employee, who will determine if it is a terrorist event or a crime scene. Upon determination, initiate the Notification list. Notify appropriate repair personnel.

Person(s) Responsible: Maintenance Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Computers. Office building. Trucks. ERP.

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If a Vandal disabled your Raw Water Intake. High Service. 195-PS. 2410-PS. Dog Ridge. System Split. North Pump. Knob Hill. O&B., the system could continue supplying water for 10 hours and would initate the following response, recovery and communication procedures:

Procedures

Person In Charge in the Event of an Emergency: General Manager.

Public Notification Plan: Letters to Syste Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Designated Media Person: R. David Cole, GM, CTWSC
Day Phone: 254-698-2779
Night Phone: 254-681-6819
Email: ctwscgm@wmconnect.com

Alternative Source of Water: Agreement with neighboring water system in case of emergency:
Name: Sam Listi, City Manager, City of Belton
Phone: 254-933-5819

Plans and Actions

STEP 1: Notify - Call General Manager, or the next senior employee.

STEP 2: Determine if this is a crime scene - Call General Manager, or the next senior, who will confirm and verify if the event was vandalism or a terrorist.

STEP 3: If this is determined to be a crime scene, contact Call General Manager, or the next senior employee

STEP 4: Notify the person who will control the water system and make decisions in the event of an emergency - General Manager.

STEP 5: Initiate the Internal and External Chain of Command (See Attached Sheet)

STEP 6: Access damage to Raw Water Intake. High Service. 195-PS. 2410-PS. Dog Ridge. System Split. North Pump. Knob Hill. O&B.: Notify General Manager, or the next senior employee, who will determine if it is a terrorist event or a crime scene. Upon determination, initiate the Notification list. Notify appropriate repair personnel.

Person(s) Responsible: Maintenance Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Computers. Office building. Trucks. ERP.

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

STEP 7: Isolate and fix the damage to Raw Water Intake. High Service. 195-PS. 2410-PS. Dog Ridge. System Split. North Pump. Knob Hill. O&B.: Use caution tape to deny access to the scenes until the proper authorities have arrived. Once the scene is checked by authorities, allow repair crews in to return the equipment back to temporary and/or normal condition.

Person(s) Responsible: Maintenance Manager

Available Equipment: Caution tape. Trucks. Telephones. Radios. Pagers. Computers. Crane.

STEP 8: Monitor damaged Raw Water Intake. High Service. 195-PS. 2410-PS. Dog Ridge. System Split. North Pump. Knob Hill. O&B.: Act as the Point-of-Contact/PR and stay engaged with the events. Keep the President of the Corporation abreast of the events.taking place at the scenes.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Notification list.

STEP 9: Restore damaged Raw Water Intake. High Service. 195-PS. 2410-PS. Dog Ridge. System Split. North Pump. Knob Hill. O&B. to normal: Allow and monitor maintenance repair crews to restore system back to normal. Act as approving authority for expenses incurred.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Computers. Office building. Radios.

STEP 10: Return system to safety: Initiate pre-established sequence to insure safety of system. Dispatch crews to pre-determined locations within system to monitor.

Person(s) Responsible: General Manager

Available Equipment: Radio, truck and telephone

STEP 11: Report the findings to the State: Phone, fax email, and letter in that order

Person(s) Responsible: Office Manager

Available Equipment: Telephone, fax machine, computer, internet connection

If water service is needed by your critical customers for longer than 10 hours, then the system will continue to providing safe and affordable water for potable use by implementing the following procedure:

Gravity feed to customers

If Vandal destroys or disables your redundant items, the system will respond with the following procedure:

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

Purchase new pumps for each pump station if needed and make any repairs necessary

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If a Vandal disabled your Over 300 miles of underground pipes. Sizes ranges from 6" to 30" inches in diameter., the system could continue supplying water for 10 hours and would initate the following response, recovery and communication procedures:

Procedures

Person In Charge in the Event of an Emergency: General Manager.

Public Notification Plan: Letters to System Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Designated Media Person: R. David Cole, GM, CTWSC
Day Phone: 254-698-2779
Night Phone: 254-681-6819
Email: ctwscgm@wmconnect.com

Alternative Source of Water: Agreement with neighboring water system in case of emergency:
Name: Sam Listi, City Manager, City of Belton
Phone: 254-933-5819

Plans and Actions

STEP 1: Notify - Call General Manager, or the next senior employee.

STEP 2: Determine if this is a crime scene - Call General Manager, or the next senior, who will confirm and verify if the event was vandalism or a terrorist.

STEP 3: If this is determined to be a crime scene, contact Call General Manager, or the next senior employee

STEP 4: Notify the person who will control the water system and make decisions in the event of an emergency - General Manager.

STEP 5: Initiate the Internal and External Chain of Command (See Attached Sheet)

STEP 6: Access damage to Over 300 miles of underground pipes. Sizes ranges from 6" to 30" inches in diameter.: Notify General Manager, or the next senior employee, who will determine if it is a terrorist event or a crime scene. Upon determination, initiate the Notification list. Notify appropriate repair personnel.

Person(s) Responsible: Maintenance Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Computers. Office building. Trucks. ERP.

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

STEP 7: Isolate and fix the damage to Over 300 miles of underground pipes. Sizes ranges from 6" to 30" inches in diameter.: Use caution tape to deny access to the scenes until the proper authorities have arrived. Once the scene is checked by authorities, allow repair crews in to return the equipment back to temporary and/or normal condition.

Person(s) Responsible: Maintenance Manager

Available Equipment: Caution tape. Trucks. Telephones. Radios. Pagers. Computers. Crane.

STEP 8: Monitor damaged Over 300 miles of underground pipes. Sizes ranges from 6" to 30" inches in diameter.: Act as the Point-of-Contact/PR and stay engaged with the events. Keep the President of the Corporation abreast of the events.taking place at the scenes.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Notification list.

STEP 9: Restore damaged Over 300 miles of underground pipes. Sizes ranges from 6" to 30" inches in diameter. to normal: Allow and monitor maintenance repair crews to restore system back to normal. Act as approving authority for expenses incurred.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Computers. Office building. Radios.

STEP 10: Return system to safety: Initiate pre-established sequence to insure safety of system. Dispatch crews to pre-determined locations within system to monitor.

Person(s) Responsible: General Manager

Available Equipment: Radio, truck and telephone

STEP 11: Report the findings to the State: Phone, fax email, and letter in that order

Person(s) Responsible: Office Manager

Available Equipment: Telephone, fax machine, computer, internet connection

If water service is needed by your critical customers for longer than 10 hours, then the system will continue to providing safe and affordable water for potable use by implementing the following procedure:

Repair and replace damaged portion of water line as soon as possible

If Vandal destroys or disables your redundant items, the system will respond with the following procedure:

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

Use items necessary for repair and purchase items needed to complete job. And rental of generators from vendors identified on notification list

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If a Vandal disabled your Approximately (80) valves throughout system., the system could continue supplying water for 10 hours and would initate the following response, recovery and communication procedures:

Procedures

Person In Charge in the Event of an Emergency: General Manager.

Public Notification Plan: Letters to System Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Designated Media Person: R. David Cole, GM, CTWSC
Day Phone: 254-698-2779
Night Phone: 254-681-6819
Email: ctwscgm@wmconnect.com

Alternative Source of Water: Agreement with neighboring water system in case of emergency:
Name: Sam Listi, City Manager, City of Belton
Phone: 254-933-5819

Plans and Actions

STEP 1: Notify - Call General Manager, or the next senior employee.

STEP 2: Determine if this is a crime scene - Call General Manager, or the next senior, who will confirm and verify if the event was vandalism or a terrorist.

STEP 3: If this is determined to be a crime scene, contact Call General Manager, or the next senior employee

STEP 4: Notify the person who will control the water system and make decisions in the event of an emergency - General Manager.

STEP 5: Initiate the Internal and External Chain of Command (See Attached Sheet)

STEP 6: Access damage to Approximately (80) valves throughout system.: Notify General Manager, or the next senior employee, who will determine if it is a terrorist event or a crime scene. Upon determination, initiate the Notification list. Notify appropriate repair personnel.

Person(s) Responsible: Maintenance Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Computers. Office building. Trucks. ERP.

STEP 7: Isolate and fix the damage to Approximately (80) valves throughout system.: Use caution tape to deny access to the scenes until the proper authorities have arrived. Once the scene is checked by

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

authorities, allow repair crews in to return the equipment back to temporary and/or normal condition.

Person(s) Responsible: Maintenance Manager

Available Equipment: Caution tape. Trucks. Telephones. Radios. Pagers. Computers. Crane.

STEP 8: Monitor damaged Approximately (80) valves throughout system.: Act as the Point-of-Contact/PR and stay engaged with the events. Keep the President of the Corporation abreast of the events.taking place at the scenes.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Notification list.

STEP 9: Restore damaged Approximately (80) valves throughout system. to normal: Allow and monitor maintenance repair crews to restore system back to normal. Act as approving authority for expenses incurred.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Computers. Office building. Radios.

STEP 10: Return system to safety: Initiate pre-established sequence to insure safety of system. Dispatch crews to pre-determined locations within system to monitor.

Person(s) Responsible: General Manager

Available Equipment: Radio, truck and telephone

STEP 11: Report the findings to the State: Phone, fax email, and letter in that order

Person(s) Responsible: Office Manager

Available Equipment: Telephone, fax machine, computer, internet connection

If water service is needed by your critical customers for longer than 10 hours, then the system will continue to providing safe and affordable water for potable use by implementing the following procedure:

Repair, Replace and Restore

If Vandal destroys or disables your redundant items, the system will respond with the following procedure:

Purchase new items needed to do the job

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If a Vandal disabled your Series of Flushes and (4) Fire Hydrants., the system could continue supplying water for 10 Hours and would initate the following response, recovery and communication procedures:

Procedures

Person In Charge in the Event of an Emergency: General Manager.

Public Notification Plan: Letters to System Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Designated Media Person: R. David Cole, GM, CTWSC
Day Phone: 254-698-2779
Night Phone: 254-681-6819
Email: ctwscgm@wmconnect.com

Alternative Source of Water: Agreement with neighboring water system in case of emergency:
Name: Sam Listi, City Manager, City of Belton
Phone: 254-933-5819

Plans and Actions

STEP 1: Notify - Call General Manager, or the next senior employee.

STEP 2: Determine if this is a crime scene - Call General Manager, or the next senior, who will confirm and verify if the event was vandalism or a terrorist.

STEP 3: If this is determined to be a crime scene, contact Call General Manager, or the next senior employee

STEP 4: Notify the person who will control the water system and make decisions in the event of an emergency - General Manager.

STEP 5: Initiate the Internal and External Chain of Command (See Attached Sheet)

STEP 6: Access damage to Series of Flushes and (4) Fire Hydrants.: Notify General Manager, or the next senior employee, who will determine if it is a terrorist event or a crime scene. Upon determination, initiate the Notification list. Notify appropriate repair personnel.

Person(s) Responsible: Maintenance Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Computers. Office building. Trucks. ERP.

STEP 7: Isolate and fix the damage to Series of Flushes and (4) Fire Hydrants.: Use caution tape to deny access to the scenes until the proper authorities have arrived. Once the scene is checked by authorities,

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

allow repair crews in to return the equipment back to temporary and/or normal condition.

Person(s) Responsible: Maintenance Manager

Available Equipment: Caution tape. Trucks. Telephones. Radios. Pagers. Computers. Crane.

STEP 8: Monitor damaged Series of Flushes and (4) Fire Hydrants.: Act as the Point-of-Contact/PR and stay engaged with the events. Keep the President of the Corporation abreast of the events.taking place at the scenes.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Notification list.

STEP 9: Restore damaged Series of Flushes and (4) Fire Hydrants. to normal: Allow and monitor maintenance repair crews to restore system back to normal. Act as approving authority for expenses incurred.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Computers. Office building. Radios.

STEP 10: Return system to safety: Initiate pre-established sequence to insure safety of system. Dispatch crews to pre-determined locations within system to monitor.

Person(s) Responsible: General Manager

Available Equipment: Radio, truck and telephone

STEP 11: Report the findings to the State: Phone, fax email, and letter in that order

Person(s) Responsible: Office Manager

Available Equipment: Telephone, fax machine, computer, internet connection

If water service is needed by your critical customers for longer than 10 Hours, then the system will continue to providing safe and affordable water for potable use by implementing the following procedure:

Replace, Repair and Restore

If Vandal destroys or disables your redundant items, the system will respond with the following procedure:

Purchase or rent items needed to do the job

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If a Vandal disabled your , the system could continue supplying water for 10 Hours and would initate the following response, recovery and communication procedures:

Procedures

Person In Charge in the Event of an Emergency: General Manager.

Public Notification Plan: Letters to System Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Designated Media Person: R. David Cole, GM, CTWSC
Day Phone: 254-698-2779
Night Phone: 254-681-6819
Email: ctwscgm@wmconnect.com

Alternative Source of Water: Agreement with neighboring water system in case of emergency:
Name: Sam Listi, City Manager, City of Belton
Phone: 254-933-5819

Plans and Actions

STEP 1: Notify - Call General Manager, or the next senior employee.

STEP 2: Determine if this is a crime scene - Call General Manager, or the next senior, who will confirm and verify if the event was vandalism or a terrorist.

STEP 3: If this is determined to be a crime scene, contact Call General Manager, or the next senior employee

STEP 4: Notify the person who will control the water system and make decisions in the event of an emergency - General Manager.

STEP 5: Initiate the Internal and External Chain of Command (See Attached Sheet)

STEP 6: Access damage to : Notify General Manager, or the next senior employee, who will determine if it is a terrorist event or a crime scene. Upon determination, initiate the Notification list. Notify appropriate repair personnel.

Person(s) Responsible: Maintenance Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Computers. Office building. Trucks. ERP.

STEP 7: Isolate and fix the damage to : Use caution tape to deny access to the scenes until the proper authorities have arrived. Once the scene is checked by authorities, allow repair crews in to return the

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

equipment back to temporary and/or normal condition.

Person(s) Responsible: Maintenance Manager

Available Equipment: Caution tape. Trucks. Telephones. Radios. Pagers. Computers. Crane.

STEP 8: Monitor damaged : Act as the Point-of-Contact/PR and stay engaged with the events. Keep the President of the Corporation abreast of the events.taking place at the scenes.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Notification list.

STEP 9: Restore damaged to normal: Allow and monitor maintenance repair crews to restore system back to normal. Act as approving authority for expenses incurred.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Computers. Office building. Radios.

STEP 10: Return system to safety: Initiate pre-established sequence to insure safety of system. Dispatch crews to pre-determined locations within system to monitor.

Person(s) Responsible: General Manager

Available Equipment: Radio, truck and telephone

STEP 11: Report the findings to the State: Phone, fax email, and letter in that order

Person(s) Responsible: Office Manager

Available Equipment: Telephone, fax machine, computer, internet connection

If water service is needed by your critical customers for longer than 10 Hours, then the system will continue to providing safe and affordable water for potable use by implementing the following procedure:

Isolate pump stations and distribute water supply from main line. Open by-pass.

If Vandal destroys or disables your redundant items, the system will respond with the following procedure:

Purchase or rent items needed to do the job

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If a Vandal disabled your Administration. Operation. Maintenance., the system could continue supplying water for 10 Hours and would initate the following response, recovery and communication procedures:

Procedures

Person In Charge in the Event of an Emergency: General Manager.

Public Notification Plan: Letters to System Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Designated Media Person: R. David Cole, GM, CTWSC
Day Phone: 254-698-2779
Night Phone: 254-681-6819
Email: ctwscgm@wmconnect.com

Alternative Source of Water: Agreement with neighboring water system in case of emergency:
Name: Sam Listi, City Manager, City of Belton
Phone: 254-933-5819

Plans and Actions

STEP 1: Notify - Call General Manager, or the next senior employee.

STEP 2: Determine if this is a crime scene - Call General Manager, or the next senior, who will confirm and verify if the event was vandalism or a terrorist.

STEP 3: If this is determined to be a crime scene, contact Call General Manager, or the next senior employee

STEP 4: Notify the person who will control the water system and make decisions in the event of an emergency - General Manager.

STEP 5: Initiate the Internal and External Chain of Command (See Attached Sheet)

STEP 6: Access damage to Administration. Operation. Maintenance.: Notify General Manager, or the next senior employee, who will determine if it is a terrorist event or a crime scene. Upon determination, initiate the Notification list. Notify appropriate repair personnel.

Person(s) Responsible: Maintenance Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Computers. Office building. Trucks. ERP.

STEP 7: Isolate and fix the damage to Administration. Operation. Maintenance.: Use caution tape to deny access to the scenes until the proper authorities have arrived. Once the scene is checked by authorities,

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

allow repair crews in to return the equipment back to temporary and/or normal condition.

Person(s) Responsible: Maintenance Manager

Available Equipment: Caution tape. Trucks. Telephones. Radios. Pagers. Computers. Crane.

STEP 8: Monitor damaged Administration. Operation. Maintenance.: Act as the Point-of-Contact/PR and stay engaged with the events. Keep the President of the Corporation abreast of the events.taking place at the scenes.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Notification list.

STEP 9: Restore damaged Administration. Operation. Maintenance. to normal: Allow and monitor maintenance repair crews to restore system back to normal. Act as approving authority for expenses incurred.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Computers. Office building. Radios.

STEP 10: Return system to safety: Initiate pre-established sequence to insure safety of system. Dispatch crews to pre-determined locations within system to monitor.

Person(s) Responsible: General Manager

Available Equipment: Radio, truck and telephone

STEP 11: Report the findings to the State: Phone, fax email, and letter in that order

Person(s) Responsible: Office Manager

Available Equipment: Telephone, fax machine, computer, internet connection

If water service is needed by your critical customers for longer than 10 Hours, then the system will continue to providing safe and affordable water for potable use by implementing the following procedure:

We will move to an established secondary location for administration, operation, and maintenance. We will set up portable chemical treatment operation on or near both plants.

If Vandal destroys or disables your redundant items, the system will respond with the following procedure:

Purchase or rent items to do the job

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If a Vandal disabled your Corporate. Operations. Maintenance., the system could continue supplying water for 10 Hours and would initate the following response, recovery and communication procedures:

Procedures

Person In Charge in the Event of an Emergency: General Manager.

Public Notification Plan: Letters to System Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Designated Media Person: R. David Cole, GM, CTWSC
Day Phone: 254-698-2779
Night Phone: 254-681-6819
Email: ctwscgm@wmconnect.com

Alternative Source of Water: Agreement with neighboring water system in case of emergency:
Name: Sam Listi, City Manager, City of Belton
Phone: 254-933-5819

Plans and Actions

STEP 1: Notify - Call General Manager, or the next senior employee.

STEP 2: Determine if this is a crime scene - Call General Manager, or the next senior, who will confirm and verify if the event was vandalism or a terrorist.

STEP 3: If this is determined to be a crime scene, contact Call General Manager, or the next senior employee

STEP 4: Notify the person who will control the water system and make decisions in the event of an emergency - General Manager.

STEP 5: Initiate the Internal and External Chain of Command (See Attached Sheet)

STEP 6: Access damage to Corporate. Operations. Maintenance.: Notify General Manager, or the next senior employee, who will determine if it is a terrorist event or a crime scene. Upon determination, initiate the Notification list. Notify appropriate repair personnel.

Person(s) Responsible: Maintenance Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Computers. Office building. Trucks. ERP.

STEP 7: Isolate and fix the damage to Corporate. Operations. Maintenance.: Use caution tape to deny access to the scenes until the proper authorities have arrived. Once the scene is checked by authorities,

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

allow repair crews in to return the equipment back to temporary and/or normal condition.

Person(s) Responsible: Maintenance Manager

Available Equipment: Caution tape. Trucks. Telephones. Radios. Pagers. Computers. Crane.

STEP 8: Monitor damaged Corporate. Operations. Maintenance.: Act as the Point-of-Contact/PR and stay engaged with the events. Keep the President of the Corporation abreast of the events.taking place at the scenes.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Notification list.

STEP 9: Restore damaged Corporate. Operations. Maintenance. to normal: Allow and monitor maintenance repair crews to restore system back to normal. Act as approving authority for expenses incurred.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Computers. Office building. Radios.

STEP 10: Return system to safety: Initiate pre-established sequence to insure safety of system. Dispatch crews to pre-determined locations within system to monitor.

Person(s) Responsible: General Manager

Available Equipment: Radio, truck and telephone

STEP 11: Report the findings to the State: Phone, fax email, and letter in that order

Person(s) Responsible: Office Manager

Available Equipment: Telephone, fax machine, computer, internet connection

If water service is needed by your critical customers for longer than 10 Hours, then the system will continue to providing safe and affordable water for potable use by implementing the following procedure:

We will set up back up computers and lap-tops.

If Vandal destroys or disables your redundant items, the system will respond with the following procedure:

Purchase or rent items to do the job

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

If a Vandal disabled your Computers., the system could continue supplying water for No disruption of service to system. and would initate the following response, recovery and communication procedures:

Procedures

Person In Charge in the Event of an Emergency: General Manager.

Public Notification Plan: Letters to System Customers. General Manager will issue a Public Release Statement to the designated Television, Radio and News Papers.

Designated Media Person: R. David Cole, GM, CTWSC
Day Phone: 254-698-2779
Night Phone: 254-681-6819
Email: ctwscgm@wmconnect.com

Alternative Source of Water: Agreement with neighboring water system in case of emergency:
Name: Sam Listi, City Manager, City of Belton
Phone: 254-933-5819

Plans and Actions

STEP 1: Notify - Call General Manager, or the next senior employee.

STEP 2: Determine if this is a crime scene - Call General Manager, or the next senior, who will confirm and verify if the event was vandalism or a terrorist.

STEP 3: If this is determined to be a crime scene, contact Call General Manager, or the next senior employee

STEP 4: Notify the person who will control the water system and make decisions in the event of an emergency - General Manager.

STEP 5: Initiate the Internal and External Chain of Command (See Attached Sheet)

STEP 6: Access damage to Computers.: Notify General Manager, or the next senior employee, who will determine if it is a terrorist event or a crime scene. Upon determination, initiate the Notification list. Notify appropriate repair personnel.

Person(s) Responsible: Maintenance Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Computers. Office building. Trucks. ERP.

STEP 7: Isolate and fix the damage to Computers.: Use caution tape to deny access to the scenes until the proper authorities have arrived. Once the scene is checked by authorities, allow repair crews in to return

Plans / Actions / Procedures

For Central Texas Water Supply Corporation

the equipment back to temporary and/or normal condition.

Person(s) Responsible: Maintenance Manager

Available Equipment: Caution tape. Trucks. Telephones. Radios. Pagers. Computers. Crane.

STEP 8: Monitor damaged Computers.: Act as the Point-of-Contact/PR and stay engaged with the events. Keep the President of the Corporation abreast of the events.taking place at the scenes.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Notification list.

STEP 9: Restore damaged Computers. to normal: Allow and monitor maintenance repair crews to restore system back to normal. Act as approving authority for expenses incurred.

Person(s) Responsible: General Manager

Available Equipment: Telephones. Radios. Pagers. Dispatchers. Trucks. Computers. Office building. Radios.

STEP 10: Return system to safety: Initiate pre-established sequence to insure safety of system. Dispatch crews to pre-determined locations within system to monitor.

Person(s) Responsible: General Manager

Available Equipment: Radio, truck and telephone

STEP 11: Report the findings to the State: Phone, fax email, and letter in that order

Person(s) Responsible: Office Manager

Available Equipment: Telephone, fax machine, computer, internet connection

If water service is needed by your critical customers for longer than No disruption of service to system., then the system will continue to providing safe and affordable water for potable use by implementing the following procedure:

Replace primary and secondary computer with laptop computer designed especially for this.

If Vandal destroys or disables your redundant items, the system will respond with the following procedure:

Use designated laptop if primary and secondary computer fail

Inventory

For Central Texas Water Supply Corporation

The inventory listed below itemizes all critical equipment and customers.

Component	Name / Identification	Description / Location	Priority
Surface Water	Stillhouse Hollow Lake	On the Lampasas River in Bell County, Texas	High
Buildings	Raw Water Intake. High Service Pumps. Maintenance. Chlorine. Operations. Chemical. Corporate.	Raw Water Intake building that is made of concrete block located near the lake. High Service Pump building is made of metal located near the treatment plants. Maintenance building is made of metal located between the Corporate building and the Operations building. Chlorine buildings are made of concrete block located near the treatment plants. Operations building is made of concrete block located between the Treatment Plants and the Maintenance building. Chemical building is made of concrete block located between the Treatment Plants and the Operations building. Corporate building is made of brick located near the Maintenance building.	High
Pumps	Raw water. High Service. Booster. Supernate.	Raw water pumps are submersible in the lake. High Service pumps are vertical turbine located near the High Service building. Booster pumps are vertical turbines located in buildings throughout the system. Supernate pump is a submersible pump located near the Supernate ponds.	High
Treatment Equipment	Surface Water Treatment Facilities. Chemical Feed Pumps. Chemical Feed Generator.	Surface Water Treatment faciilities are made of concrete located near the Operations building. Chemical Feed pumps are located in the Chemical buildings. Chemical Feed Generator is located in the Chemical building.	High
Process Controls	Computer. Monitoring Equipment. Laboratory Equipment.	Computer is located in the Operations building. Monitoring Equipment is located in the Operations and Chemical buildings. Laboratory Equipment is located in the Operations building.	High
Chemicals and Storage	Chlorine. Chlorine Dioxide. Liquid Aluminum Sulfate. Liquid Aluminum. Liquid Polymer.	Liquid Aluminum Sulfate is located in a chemical building behind the treatment plant. Liquid Aluminum is located in front of the treatment plant. Liquid Polymer is located in the Chemical building next to the Operations building.	High

Inventory

For Central Texas Water Supply Corporation

The inventory listed below itemizes all critical equipment and customers.

Component	Name / Identification	Description / Location	Priority
Lab Chemicals	Sulfrice acid, potassium iodide, buffer powder citrate, sodium periodate, derro ver, phenolphthalein, sodium & potassium ionic, bromcresol green, man ver2, cal ver2, sulfa ver4, chloride 2 indicator, hydrochloric acid and sodium hydroxide.	Laboratory chemicals are located inside of the Operations building.	High
Storage Tanks	Clear-Well Tanks. 195-PS Tank. Ivy Mountain Tank. Dog Ridge Tank. System Split Tank. Knob Hill Tank. North Pump Station Tanks. O&B Tank. Lott Tank.	Clear-Well Tanks are Ground Storage tanks located near the Treatment Plants in Harker Heights, TX. 195-PS Tank located near SH195 & Chapparral Road in Killeen, TX.. Ivy Mountain Tank is a Standpipe tank located on Fort Hood, TX. Dog Ridge tank is a Standpipe tank located on FM2410 & Simmons Rd in Belton, TX. System Split Tank is a Ground Storage tank located 5 miles East of Academy on FM436. Knob Hill Tank is a Standpipe tank located 3 miles Southwest of City of Rogers on SH190 & SH36.North Pump Station tanks are Standpipe tanks located on FM53 & Mockingbird Rd. East of the City of Temple. O&B Tank is a Standpipe located 4 miles North of Oenaville on FM438. Lott Tank is a Ground Storage tank located in the City of Lott.	High
Pressure Tanks	RWP Air Compressor Dayton Speedaire	Electrical 100 psi Compressor Air Storage tank located at the Raw Water Intake Platform on the lake.	Low
Primary Power	Barlett Electric Co-op.Bell-Falls Electric Co-op. TXU Electric Company.	Commercial Power for System located in Bell, Coryell, Milam, and Falls County, TX.	High
Auxiliary Power	(3) Stewart & Stevenson Desiel Generators.	Located in the Raw Water Intake building, High Service Pumps building. 195-PS next to the building.	Medium
Pumps	Raw Water Intake. High Service. 195-PS. 2410-PS. Dog Ridge. System Split. North Pump. Knob Hill. O&B.	Pumps are located throughout the System.	High
Pipes	Over 300 miles of underground pipes. Sizes ranges from 6" to 30" inches in diameter.	Transmission pipes are located throughout the System.	High
Valves	Approximately (80) valves throughout	Valves are located throught the System.	High

Inventory

For Central Texas Water Supply Corporation

The inventory listed below itemizes all critical equipment and customers.

Component	Name / Identification	Description / Location	Priority
	system.		
Appurtenances (e.g. Flush Hydrants)	Series of Flushes and (4) Fire Hydrants.	Flushes and Fire Hydrants are located throughout the System.	High
Buildings	Administration. Operation. Maintenance.	Buildings are located at the Treatment Facilities near the lake.	High
Computers	Corporate. Operations. Maintenance.	Computers are located at the Treatment Facilities near the lake.	High
Files	Operations. Maintenance. Administrative. Accounting. Personnel. Staff Health.	Files are located at the Treatment Facilities near the lake.	Low
Transportation Work Vehicles	Trucks..	General Manager. Operations. Maintenance. Located at the Treatment Facilities near the lake.	Medium
Telephones	Commercial Phones.	General Manager, Office Manager/HR. Secretary. Operations. Maintenance. PMT. Located at the Treatment Facilities near the lake.	Medium
Cell Phones	Cell Phones.	General Manager. Secretary. Operations. Maintenance. PMT. Located at the Treatment Facilities near the lake.	Medium
Radio	Commercial Radios.	General Manager. Operations. Maintenance.	Medium
Computer Control Systems (SCADA)	Computers.	Primary and Alternate located in the Operations building. Alternate Lap-top located in the Corporate Office.	High
Schools	Little River Academy Middle and High School. Rosebud-Lott High School. Westphelia Middle School. Holland Middle and High School. Rogers Middle and High School. Lampasas Elementary, Middle & High School. .	Located in Little River, between the cities of Rosebud and Lott, in the Town of Westphalia, located in the City of Holland, located in the City of Rogers, & located in the City of Lampasas, TX.	Low
Waste Water Treatment Plants	City of Lampasas. City of Lott. City of Rosebud.	Located in the Cities of Lampasas, Lott, and Rosebud, TX.	Medium

Inventory

For Central Texas Water Supply Corporation

The inventory listed below itemizes all critical equipment and customers.

Component	Name / Identification	Description / Location	Priority
Food/Beverage Processing Plants	Brand Foods.	Food Processing Plant located in the City of Lampasas, Texas.	Medium

APPENDIX 2

DROUGHT CONTINGENCY PLAN

CENTRAL TEXAS WATER SUPPLY CORPORATION

DROUGHT CONTINGENCY POLICY

DROUGHT CONTINGENCY PLAN

DROUGHT CONTINGENCY POLICY

CENTRAL TEXAS WATER SUPPLY CORPORATION
Harker Heights, Texas

February 26, 2002

<u>DROUGHT CONTINGENCY POLICY</u>

It is the policy of the Central Texas Water Supply Corporation (Corporation) to manage the water resources under its control to maximize the beneficial uses thereof. Responsible water resource management includes contingency plans for those times when water supply is low. This policy sets forth the actions to take in stages of a drought condition, coordination with the Brazos River Authority (Authority) in determining water supplies, and provides trigger points at which specific plans suited to the conditions then being experienced will be developed.

The system of reservoirs operated by the Brazos River Authority (Authority) is divided into two classes for operating rules: 1) local-use reservoirs and, 2) system-use reservoirs. **Lake Stillhouse Hollow is designated as a system-use reservoir.** See the Authority's Policy Memorandum Number 86 dated January 17, 1989 and subsequently modified on August 23, 1993. Copy of the Policy Memorandum is included on Attachment.

Three (3) levels of potential drought severity have been identified at which specific actions may be conducted, including the development of specific drought plans tailored to conditions as they exist at that time.

- A Drought **<u>Watch</u>** may be declared if the total storage in Lake Stillhouse Hollow reservoir is at or below 75% of its total active water supply capacity.

  Reasonable estimates of current annual demands, coupled with inflows and evaporation representative of the drought-of-record, indicate that the amount of water supply in storage could be reduced during the next succeeding 12-month period of 60% or less of its total active water supply capacity.

  The Corporation will call the Authority for their determination <u>prior</u> to declaring the <u>Watch</u> condition.

- A Drought **Warning** may be declared if the total storage in Lake Stillhouse Hollow reservoir is at or below 60% of its total active water supply capacity.

  Reasonable estimates of current annual demands, coupled with inflows and evaporation representative of the drought-of-record, indicate that the amount of water storage could be reduced during the next succeeding 12-month period to 30% or less of its total active water supply capacity.

  The Corporation will call the Authority for their determination prior to declaring the Warning condition.

- A Drought **Emergency** may be declared if the total storage in Lake Stillhouse Hollow reservoir is at or below 30% of its active water supply capacity.

  The Corporation will call the Authority for their determination prior to declaring the Emergency condition.

A drought declaration of **any** severity may trigger the following activities as appropriate:

1. The Corporation will call the Authority to see if they have:
   a. re-calculated the 'active water supply' capacity,
   b. activated any additional water supply storage space that may be available but not yet activated in Lake Stillhouse Hollow reservoir.
   c. contacted the Texas Natural Resource Conservation Committee (TNRCC) and the Corps of Engineers (CofE) informing them of the situation and requesting appropriate actions from each such as: closer monitoring to protect releases, more frequent gage inspections, to more accurately reflect actual flow conditions, making a greater effort to meet exact release requests, or activating water user conservation plans.

2. If the Corporation determines that the 'active water supply' capacity from the Authority still falls within the range of drought declaration, the Drought Contingency Plan will be initiated for managing the Corporation's water commitments within Lake Stillhouse Hollow.

3. Notify the Corporation's entire water treatment contract holders dependent to any extent on the Authority's or Corporation's declaration and actions to be taken and may urge activation by each of appropriate water conservation measures.

Determination of water supply storage percentages will follow these definitions:

Conservation storage capacity is that storage space below the flood pool of Lake Stillhouse Hollow reservoir, or that part of such space that has been activated. This definition includes the sediment storage and inactive pools.

The active water supply capacity is that is that portion of the conservation capacity currently activated, excluding filled sediment storage and the inactive pool.

The active water supply capacity and alarm conditions in Lake Stillhouse Hollow are as follows:

Elevation (msl) BRA	**CTWSC**	**Acre Feet** (est.)	**%**	**Condition**
622.00		239,800	100	(Normal)
612.15	**613.00**	169,545	**75**	**WATCH**
604.95	**605.00**	135,636	**60**	**WARNING**
599.30		113,030	50	
592.72		90,424	40	
584.93	**600.00**	67,818	**30**	**EMERGENCY**

532.00 3,000 The Authority will call the Corps of Engineer for approval. No down stream release if all reservoirs are at 30% or below.

Approved by the Corporation Board of Directors this 26th day of February, 2002

Maurice W. McNeese
Maurice W. McNeese
President, Central Texas WSC

DROUGHT CONTINGENCY PLAN

DROUGHT CONTINGENCY PLAN
FOR THE
CENTRAL TEXAS WATER SUPPLY CORPORATION

The Central Texas Water Supply Corporation is a Wholesale Water Supplier. Therefore, the following Drought Contingency Plan is provided pursuant to Title 30 of the Texas Administrative Code, Chapter 288, Subchapter B, Subchapter 21 and Subchapter 22 (30 TAC 288 B).

Section I: Declaration of Policy, Purpose, and Intent

In order to conserve the available water supply and/or to protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions, the Central Texas Water Supply Corporation (Corporation) adopted and approved the following Drought Contingency Plan (the Plan) effective February 26, 2002.

Section II: Public Involvement (288.22(a)(1)/

Opportunity for the public, Corporation members, and the Corporation Board of Directors, to provide input into the preparation of the Plan was provided by Central Texas Water Supply Corporation by means of scheduling a public meeting as part of regular monthly of the Corporation's Board of Directors, on February 26, 2002, at the Corporation Office to accept input on the Policy and Plan. A copy of the Board of Directors regular monthly meeting agenda and a sample of the Customer Notification letter are attached at the end of this document.

Section III: Corporation Members Education

The Corporation will periodically provide members and with information about the Plan, including information about the conditions under which each stage of the Plan is to be initiated or terminated and the drought response measures which could be implemented. This information will be provided by means of telephone and mail. The news media may also be informed.

Section IV: Coordination with Regional Water Planning Groups (288.22(a)(2)/

The water service area of the Corporation is located within the Region G of the Brazos River Authority and will provide a copy of the Plan to Region G upon approval by the Corporation Board of Directors.

Section V: Authorization

The General Manager, or his/her designee, is hereby authorized and directed to implement the applicable provisions of this Plan upon determination that such implementation is necessary to protect public health, safety, and welfare. The General Manager, or his/her designee, shall have the authority to initiate or terminate drought or other water supply emergency response measures as described in this Plan.

Section VI: Application

The provisions of this Plan shall apply to all Corporation members utilizing water provided by the Central Texas Water Supply Corporation.

Section VII: Triggering Criteria for Initiation and Termination of Drought Response Stages (288.22 (a)(3),(4),(5), and 288.22 (b)/

The General Manager, or his/her designee, shall monitor water supply and demand conditions on a monthly basis and shall determine when conditions warrant initiation or termination of each stage of the Plan. Corporation member notification of the initiation or termination of drought response stages will be made by telephone and mail. The news media may also be informed.

The triggering criteria described below are based on the Central Texas Water Supply Corporation Drought Contingency Policy, approved by the Board of Directors at the February 26, 2002 Regular Monthly Meeting.

(a) Stage 1 - Drought Watch Conditions

Requirements for initiation – The Corporation will recognize that a Drought Watch Condition exists when the Lake Stillhouse Hollow reservoir is at or below 75% of its total active water supply capacity.

Requirements for termination - Stage 1 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of **90** consecutive days. The Corporation will notify its members, and as needed, the media of the termination of Stage 1 in the same manner as the notification of initiation of Stage 1 of the Plan.

(b) Stage 2 - Drought Warning Conditions

Requirements for initiation – The Corporation will recognize that a Drought Warning Condition exists when the Lake Stillhouse Hollow reservoir is at or below 60% of its total active water supply capacity.

Requirements for termination - Stage 2 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of **90** consecutive days. Upon termination of Stage 2, Stage 1 becomes operative if any of its triggering criteria are met. The Corporation will notify its members, and as needed, the media of the termination of Stage 2 in the same manner as the notification of initiation of Stage 2 of the Plan.

(c) Stage 3 - Drought Emergency Conditions

Requirements for initiation – The Corporation will recognize that a severe water shortage condition exists when the Lake Stillhouse Hollow reservoir is at or below 30% of its total active water supply capacity.

Requirements for termination - Stage 3 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of **90** consecutive days. Upon termination of Stage 3, State 1 or Stage 2 becomes operative depending on conditions at the time. The Corporation will its members, and as needed, the media of the termination of Stage 3 in the same manner as the notification of initiation of Stage 3 of the Plan.

(d) Stage 4 – Emergency Water Shortage Conditions

Requirements for initiation - The Corporation will recognize that an emergency water shortage condition exists when major water line breaks, or pump or system failures occur, which cause unprecedented loss of capability to provide water service; or natural or man-made contamination of the water supply source.

Requirements for termination - Stage 4 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of **90** consecutive days. The Corporation will notify its members, and as needed, the media of the termination of Stage 4.

Section VIII: Drought Response Stages /(288.22 (a)(7)/

The General Manager, or his/her designee, shall monitor water supply and demand conditions and, in accordance with the triggering criteria set forth in Section VI, shall determine that watch, warning, or emergency drought conditions or emergency water shortage condition exists, may implement the Drought Contingency Plan and Policy. If mandatory provisions of the Plan is enacted, the General Manager of the Corporation will notify the Executive Director of the Texas Natural Resource Conservation Commission within five (5) days of implementation of any mandatory provisions of the plan.

Section IX: Pro Rata Water Allocation (288.22 (a)(7)(A)/

In the event that the triggering criteria specified in Section VII of the Plan for Stage 3 – Emergency Drought Conditions have been met, the General Manager is hereby authorized initiate allocation of water supplies on a pro rata basis in accordance with Texas Water Code Section 11.039 and according to the following water allocation policies and procedures:

(a) The Corporation member's monthly allocation shall be a percentage of the member's water usage baseline. The percentage will be set by resolution of the Board of Directors of the Corporation based on the General Manager's assessment of the severity of the water shortage condition and the need to curtail water diversions and/or deliveries and may be adjusted periodically by resolution of the Board of Directors of the Corporation as conditions warrant. Once pro rata allocation is in effect, water diversions by, or deliveries to each Corporation member shall be limited to the allocation established for each month.

(b) Once pro rata water allocations are established, the Corporation Board of Directors shall establish enforcement provisions relating to those allocations as indicated in Section X of the Plan.

(c) The Corporation member's water usage baseline will be computed on the average water usage by **month for a period not to exceed five (5) years previous to the time of the declaration of Emergency Drought conditions**. As shown in the example given below. If the Corporation member's billing history is less than 5 years, the monthly average for the period for which there is a record shall be used for any monthly period for which no billing history exists.

Example Calculation of Monthly Allocation for a Hypothetical Corporation member.

	1997	1998	1999	2000	2001	SUM	AVE	ALLOCATION PERCENTAGE	MONTHLY ALLOCATION
Jan	133	137	146	148	156	719	144	75%	108
Feb	115	122	133	133	147	650	130	75%	98
March	130	150	146	149	159	734	147	75%	110
April	130	167	168	157	187	808	162	75%	122
May	160	152	179	183	171	845	169	75%	127
June	226	184	172	205	249	1,035	207	75%	155
July	235	274	232	314	246	1,301	260	75%	195
Aug	222	203	206	337	309	1,277	255	75%	191
Sept	199	160	196	229	198	982	196	75%	147
Oct	165	172	197	165	185	884	177	75%	133
Nov	139	142	149	153	162	745	149	75%	112
Dec	142	143	150	156	165	755	151	75%	113
Total	1,995	2,006	2,072	2,330	2,333		2,333		

*UNITS IN ACRE-FEET

(b) The General Manager shall provide notice, **by certified mail**, to each Corporation member informing them of their monthly water usage allocations, may notify the news media, and shall notify the executive director of the Texas Natural Resource Conservation Commission upon initiation of pro rata water allocation.

(c) Upon request of the customer or at the initiative of the General Manager, the allocation may be reduced or increased if, (1) the designated period does not accurately reflect the Corporation member's normal water usage; (2) the Corporation member agrees to transfer part of its allocation to another Corporation member; or (3) other objective evidence demonstrates that the designated allocation is inaccurate under present conditions. A Corporation member may appeal an allocation established hereunder to the Board of Directors of the Corporation.

Section X: Enforcement (288.22 (a)(10)/

During any period when pro rata allocation of available water supplies is in effect, Corporation members shall pay the following surcharges on excess water diversions and/or deliveries:

(a) 12.5% times the normal water charge per acre-foot for water diversions and/or deliveries in excess of the monthly allocation up through 5 percent above the monthly allocation.

(b) 25% times the normal water charge per acre-foot for water diversions and/or deliveries in excess of the monthly allocation from 5 percent through 10 percent above the monthly allocation.

(c) 37.5% times the normal water charge per acre-foot for water diversions and/or deliveries in excess of the monthly allocation from 10 percent through 15 percent above the monthly allocation.

(d) 50% times the normal water charge per acre-foor for water diversions and/or deliveries more than 15 percent above the monthly allocation.

(e) The above surcharges shall be cumulative.

Section XI: Variances (288.22 (a)(9)/

The General Manager, or his/her designee, may, in writing, grant a temporary variance to the pro rata water allocation policies provided by this Plan if it is determined that failure to grant such variance would cause an emergency condition adversely affecting the public health, welfare, or safety and if one or more of the following conditions are met:

(a) Compliance with this Plan cannot be technically accomplished during the duration of the water supply shortage or other condition for which the Plan is in effect.

(b) Alternative methods can be implemented which will achieve the same level of reduction in water use.

Persons requesting an exemption from the provisions of this Plan shall file a petition for variance with the General Manager within 5 days after pro rata allocation has been invoked. All petitions for variances shall be reviewed by the Board of Directors of the Corporation, and shall include the following:

(a) Name and address of the petitioner(s).
(b) Detailed statement with supporting data and information as to how the pro rata allocation of water under the policies and procedures established in the Plan adversely affects the petitioner or what damage or harm will occur to the petitioner or others if petitioner complies with this Ordinance.
(c) Description of the relief requested.
(d) Period of time for which the variance is sought.
(e). Alternative measures the petitioner is taking or proposes to take to meet the intent of this Plan and the compliance date.
(f) Other pertinent information.

Variances granted by the Board of Directors of the Corporation shall be subject to the following conditions, unless waived or modified by the Board of Directors of the Corporation, or its designee:

(a) Variances granted shall include a timetable for compliance.
(b) Variances granted shall expire when the Plan is no longer in effect, unless the petitioner has failed to meet specified requirements.

No variance shall be retroactive or otherwise justify any violation of this Plan occurring prior to the issuance of the variance.

Section XII: Severability

It is hereby declared to be the intention of the Board of Directors of the Corporation that the sections, paragraphs, sentences, clauses, and phrases of this Plan are severable and, if any phrase, clause, sentence, paragraph, or section of this Plan shall be declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs, and sections of this Plan, since the same would not have been enacted by the Board of Directors of the Corporation without the incorporation into this Plan of any such unconstitutional phrase, clause, sentence, paragraph, or section.

Section XIII: Contract Provisions (288.22 (a)(8)/

In accordance with Title 30 TAC, Chapter 288.22 (a)(8), the Corporation shall provide two clauses in every contract addressing water conservation and availability of water during shortages that will read as follows:

"CONSERVATION OF WATER. It is the intent of the parties to this Agreement to provide to the maximum extent practicable for the conservation of water, and Purchaser agrees that it is a condition of this Agreement that it shall maintain and operate its facilities in a manner that will prevent unnecessary waste of water. Corporation, in accordance with applicable law and regulation, may from time to time adopt reasonable rules and regulations relating to water conservation. Purchaser agrees to abide by the "Central Texas Water Supply Corporation Drought Contingency Plan" adopted by the Board of Directors on April 25, 2000 or any subsequent Policy and Plan developed under the Drought Contingency Policy. If required by applicable law or regulation or by Corporation. Purchaser agrees to implement a water conservation and drought management program in accordance with a water conservation plan and that the water diverted by Purchaser pursuant to this Agreement will be used in accordance with such conservation plan."

"AVAILABILITY OF WATER AND SHORTAGES. Corporation makes no guarantee that water will be available at any particular time or place or that Lake Stillhouse Hollow (lake) will be maintained at any specific level at any particular time. For diversions made downstream of Lake, Purchaser bears all transportation losses. It is fully understood by the parties hereto that the level of Lake will vary as a result of weather conditions beyond the control of Corporation, the use of water from Lake by other members of Corporation and, for Federal Reservoirs (Lake), as a result of releases made by the U.S. Army Corps of Engineers and that this instrument is merely an agreement to require Corporation to make available water when and if water is present in said Lake, and to allow Purchaser to make withdrawals of the water subject to the general law on distribution and allocation of water during shortages of supply and in conformity with Corporation's water rights."

Section XIV: Plan Update (288,22 (c)/

The General Manager, or his/her designee, shall review and update, as appropriate, this Drought Contingency Plan, at least every five (5) years, if conditions, such as revision of the Region G Water Plan or any new or updated information, warrants it.

Approved by the Corporation
Board of Directors this 26th
day of February, 2002

Maurice W. McNeese
Maurice W. McNeese
President, Central Texas WSC

RESOLUTION FOR ADOPTION OF THE REVISED AND UPDATED CENTRAL TEXAS WATER SUPPLY CORPORATION DROUGHT CONTINGENCY PLAN

RESOLUTION 2002 - 02

A RESOLUTION OF THE BOARD OF DIRECTORS ADOPTING
THE DROUGHT CONTINGENCY POLICY AND PLAN FOR
THE CENTRAL TEXAS WATER SUPPLY CORPORATION

WHEREAS, the Board recognizes that the amount of water available to the Central Texas Water Supply Corporation and to its wholesale water customers is limited and subject to depletion during periods of extended drought;

WHEREAS, the Central Texas Water Supply Corporation recognizes that natural limitations due to drought conditions and other acts of God cannot guarantee and uninterrupted water supply for all purposes;

WHEREAS, Section 12.1272 of the Texas Water Code and applicable rules of the Texas Natural Resource Conservation Commission require all public water supply systems in Texas to prepare a drought contingency plan;

WHEREAS, Section 11.039 of the Texas Water Code authorizes water suppliers to distribute available water supplies on a pro rata basis during times of water supply shortage, and

WHEREAS, as authorized under law, and in the best interests of the customers of the Central Texas Water Supply Corporation, the Board deems it expedient and necessary to establish certain rules and policies for the orderly and efficient management of limited water supplies during drought and other water supply emergencies;

NOW THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE CENTRAL TEXAS WATER SUPPLY CORPORATION:

SECTION 1. That the Drought Contingency Policy and Plan attached here as Exhibit "A" and hereby adopted as the official policy of the Central Texas Water Supply Corporation.

SECTION 2. That the General Manager is hereby directed to implement, administer, and enforce the Drought Contingency Policy and Plan.

SECTION 3. That this resolution shall take effect immediately upon its passage and supersedes all previous policies and plans.

DULY PASSED BY THE BOARD OF DIRECTORS OF CENTRAL TEXAS WATER SUPPLY CORPORATION ON THIS 26TH DAY OF FEBRUARY, 2002.

Maurice W. McNeese

President, Board of Directors

ATTESTED TO:

Bill McCoy

Secretary, Board of Directors

APPENDIX 3

SPILL RESPONSE PROTOCOL

CENTRAL TEXAS WATER SUPPLY CORPORATION

SPILL RESPONSE PROTOCOL

INITIAL ASSESSMENT

1. **Any person detecting or suspecting a spill alerts all personnel in the area to immediately evacuate the building. Personnel exit by the closest door and assemble in an area up-wind of the spill.**
2. **Notify the General Manager of the Central Texas Water Supply Corporation (Corporation).**
3. **The General Manager will determine the severity of the incident and will initiate the Notification List within the Emergency Response Plan (ERP).**
4. **Corporation will assist the Emergency Response personnel to the spill location.**

POPULATION WELFARE

1. **No personnel will be allowed to enter the spill area until the Emergency Response personnel deems the area safe.**

PROTECTION OF PROPERTY

1. **The area may be required to be decontaminated before personnel can enter the spill area or down-wind of the spill area.**

RECOVERY

1. **Once the spill area is deemed safe, personnel will be allowed to enter the spill area.**
2. **An investigation will be conducted by the responsible personnel to determine the cause of the spill.**
3. **Reports will be distributed as required by the Incident Notification Plan.**
4. **The General Manager will make public and media announcements as needed.**

APPENDIX 4

PUBLIC RELATIONS POLICY

CENTRAL TEXAS WATER SUPPLY CORPORATION

PUBLIC RELATIONS POLICY

Policy

It is the policy of the Central Texas Water Supply Corporation (Corporation) to provide accurate and consistent information to the public and media.

Purpose

The purpose is to assure that information about the Corporation and its policies, practices, and programs is communicated properly and reported accurately to the public and in the media.

Guidelines and Procedures

RESPONDING TO PUBLIC OR MEDIA INQUIRIES FOR INFORMATION
The General Manager of the Corporation is the primary public and media contact. If you receive an inquiry from someone of the public, in the print, or broadcast media for you to do an interview, provide statistics, or write an article on behalf of the Corporation, get the person's name, phone number, deadline (if applicable), and an idea of his/her area of interest. Then, BEFORE responding, refer the inquiry to the General Manager.

This enables the General Manager to determine which individual in the Corporation can best respond to the inquiry, to make certain that consistent information is being disseminated, as well as to stay abreast of areas of public or media interest and prepare for future inquiries.

A public or media inquiry should not be ignored. It is in the Corporation's best interest to become a reliable public and media source. Therefore, if a person of the public or in the media calls you, always contact the General Manager.

RESPONDING TO INACCURATE OR INCOMPLETE PUBLIC OR MEDIA COVERAGE
All responses to media coverage on behalf of the Corporation will be approved by the President or Vice President of the Corporation prior to being released.

INITIATING COMMUNICATIONS WITH THE PUBLIC AND MEDIA.

Only accurate, timely, and newsworthy information should be communicated to the public and media. This is necessary to maintain the credibility of the Corporation and profession.

Information should be directed only to the appropriate person within the public or media. This can be determined by previewing the person and/or media directories.

Statements on behalf of the Corporation will be consistent with official policy.

Responsibility

The General Manager of the Corporation is responsible for all aspects of the public and media relations, under the direction of the Corporation's Board of Directors.

APPENDIX 5

HAZARDOUS MATERIALS AND OIL SPILL RESPONSE

Annex Q

HAZARDOUS MATERIALS AND OIL SPILL RESPONSE

STATE OF TEXAS

EMERGENCY MANAGEMENT PLAN

STATE OF TEXAS

EMERGENCY MANAGEMENT PLAN

ANNEX Q

Hazardous Materials and Oil Spill Response

APPROVAL AND IMPLEMENTATION

This annex is hereby accepted for implementation and supersedes all previous editions.

February 19, 1999
Date

Signed
Jeffrey A. Saitas
Executive Director
Texas Natural Resources Conservation Commission

RECORD OF CHANGES

CHANGE NUMBER	DATE OF CHANGE	INITIALS AND DATE ENTERED

Table of Contents

ANNEX Q

HAZARDOUS MATERIALS AND OIL SPILL RESPONSE

ANNEX Q

Hazardous Materials and Oil Spill Response

I. AUTHORITY AND REFERENCES

See Basic Plans, Section 1

II. PURPOSE

The purpose of this annex is to define the organization, operational concepts, responsibilities, and procedures to accomplish hazardous materials and oil spill requirement in Texas.

This annex is applicable to all locations and to all agencies, organizations, and personnel with hazardous materials and oil spill response emergency support function (ESF) responsibilities.

III. SITUATION AND ASSUMPTIONS

See Basic Plan, Section III

IV. CONCEPT OF OPERATIONS

A. STATE SUPPORT AND ASSISTANCE POLICY

In accordance with this plan, state emergency support and assistance, if required, will be provided as quickly and efficiently as feasible. Consistent with the priority of need, attempts to provide assistance, when practical, will be as outlined in Section IV.G of Annex N (Direction and Control). This will provide the State with an effective means to provide emergency assistance in a timely and cost-effective manner. The decision to expend state funds to provide support and assistance will be made only after consideration of both priority of need and cost to the State. However, in situations where lives and property are immediately threatened, the most rapid means of response will be taken.

B. STAFFING REQUIREMENTS

Based on situational requirements, Council member agencies may provide staff to the State emergency operating center (EOC), Disaster Field Office (DFO), affected Disaster District Committee (DDC) EOCs, and field-deployed incident command posts. Representatives may serve in both a primary and/or support agency role for several ESF groups. To facilitate accomplishment of assigned responsibilities, the number of agency personnel operating from each location will be based on operational requirements and coordinated with the appropriate primary agency.

Agency representatives must be knowledgeable of the resource request, deployment, and accountability methodology for committing assets or services that may be at their disposal.

C. Hazardous Materials and Oil Spill Response Objectives

Emergency Support Function (ESF) member agencies are responsible for coordinating and conducting a council response to threatened or actual releases or discharges or hazardous materials and oil spills. The Texas Natural Resources Conservation Commission (TNRCC) as the state's "primary" agency for this ESF will serve as the coordinating agency to accomplish functions which may include assisting a "lead" agency, as designated by statues, during a response in accordance with the State of Texas Emergency Management Plan and application local, state, or federal statues as they apply to an agency's rules and regulations. The overall efforts of this ESF protects public health, safety, and the environment by reducing the release of pollutants and contaminants, ensuring that waste, including low-level radioactive waste, is property managed and safely disposed of, and expediting the cleanup of contaminated sites.

D. Response to Hazardous Materials and Oil Spill Incidents

The Texas Natural Resources Conservation Commission (TNRCC) staff will coordinate with the Railroad Commission (RRC) and the General Land Office (GLO) staff to identify and respond to spills. RNRCC may also be involved in aiding the return of water and wastewater treatment plans to normal operating following discharges or spills. Further, TNRCC will provide advice and aid on the disposal of hazardous and non-hazardous debris associated with spills resulting from disasters. All coastal discharge response and cleanup operations resulting from unauthorized discharges of oil are administered and directed by the GLO pursuant to the Oil Spill Prevention and Response Act of 1991 (OSPRA), *Texas Natural Resources Code* §40.001 *et seq.* As a co-trustee of the states natural resources, GLO also has a state-wide responsibility for Natural Resource Damage Assessment (NRDA). Spills or discharges from brine mining or surface mining are also under the jurisdiction of the RRC *(Texas Revised civil Statutes Ann.* Art. 5920-11 (Vernon) and Chapter 131 of the *Texas Natural Resource Code*). Any spill or discharge, including spills or discharges of hazardous substances, refined products, crude oil, that emanates from an oil, gas, or geothermal resource exploration, development, or production facility or brine mine or surface mine is under the jurisdiction of the RRC.

E. Impact Assessments & Cleanup Operations

TNRCC will coordinate and manage the overall state effort to detect, identify, contain, clean-up, or dispose of or minimize releases of oil or hazardous materials including assessment impacts and cleanup needs or priorities, advising and assisting others where the source of the spill is known. Where the source is unknown, or responsible party is not responding or unable to respond, TNRCC will coordinate with other governmental authorities including the local and federal authorities to respond to the spill's impacts.

TNRCC will be responsible for coordinating with the General Land Office and the Railroad Commission in response to its jurisdictional spills and in coordinating the information gathering and sharing effort of the other agencies. The agencies may develop some priority ranking of the spills and discharges for monitoring response of the responsible parties and for cleanup of the spills where the source is unknown or the responsible party is unwilling or unable to cleanup.

F. Technical Assistance

The TNRCC will provide the State Council with information and advise on matters pertaining to oil and hazardous substances emergency responses, climatology, air quality, public water supply, dam safety, flood-hazard areas, floodplain management, ground-water geology, solid waste management including hazardous waste and radioactive waste, hydrology, meteorology, special water districts, water quality, and water use and rights. Meteorological and climatological data will be obtained and analyzed for forecasts in emergency situations. The TNRCC will provide spill response maps and maps relating to flood hazard areas as needed. Personnel will be provided to assist in damage assessment, rehabilitation and planning; and to aid in returning public water systems, dams, reservoirs, water and wastewater treatment plants to normal operating when requested. Further, TNRCC staff will provide advice and aid in the disposal of hazardous and non-hazardous debris resulting from disasters. The Texas Department of Transportation (TxDOT) and the Texas Natural Resource Conservation Commission (TNRCC), in accordance with Subsection (F) of Section 26.264, Texas Water Code, as amended, have entered an agreement that provides for the use of TxDOT resources for certain State Sponsored spill and discharge cleanups. Cleanup and removal of such substances for which TxDOT personnel are not adequately trained or that require protective clothing or equipment, as determined by the TNRCC on scene coordinator, are excluded and not considered as services that may be performed under this agreement. The Texas Parks and Wildlife Department (TPWD) has primary responsibility for protecting Texas' fish and Wildlife (Chapter 12, Texas Parks and Wildlife Code). By designation of the Governor, TPWD is a state natural resource trustee and has the obligation to protect and preserve all trust resources of the State of Texas.

G. Advice on Emergency Protective Measures

ESF member agencies will provide technical advice and emergency public information on the protective actions necessary to preserve health and protect property. The agencies will coordinate state efforts to prevent, mitigate, or minimize the threat of potential releases and provide technical advise and public information on the protective actions necessary to preserve health and protect property.

H. Coordination with Federal Agencies

In addition to coordinating a state level response. TNRCC, RRC and GLO staff will coordinate with federal agencies any hazardous materials and oil spill response in accordance with federal statutes applicable to the respective state agencies.

I. State of Texas Oil and Hazardous Substances Spill Contingency Plan

The *State of Texas Oil and Hazardous Substances Spill Contingency Plan* serves as a guide to strengthen and improve the response mechanisms for discharges or spills or oil and hazardous materials within the territorial limits of the state. This plan reflects state procedures, guidance and identifies those policies and requirement's set forth in statues and rules. TNRCC, RRC and GLO staff will serve as primary incident coordinators and State On-Scene Coordinators (SOSCs) and other parties involved are expected to cooperate in incidents related to this ESF dealing with spills of oil, hazardous materials, or other substances for the entire State of Texas, including all inland areas, waters, and coastal water to the three-league state boundary. The plan is a document developed and maintained under separate cover by TNRCC.

J. Cost Recovery & Mitigation

The three agencies will be responsible for coordinating state efforts to recover response costs through any federal reimbursement options or direct from responsible parties. Also, where action may be taken to mitigate the potential spills or the potential effects of future spills the three agencies will work together with regards to mitigative action.

K. Multiple ESF Operations

This plan provides for employment of appropriate resources from multiple ESFs during response and recovery operations as a standard practice. Requests for Hazardous Materials and Oil Spill Response support may occur during significant emergency response and recovery operations regardless of the initial type of incident, hazard, and/or other ESFs involved.

V. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

A. Organization

All ESF groups identified in the Basic Plan are composed of personnel and resources of several state agencies/organizations. Each group is directed by a primary agency selected on the basis of its authority and capability in that particular functional areas. The other agencies and organizations within the group are designated as support agencies and organizations based on their ability to provide equipment, personnel and/or expertise in support of functional tasks. The agencies/ organizations that comprise this ESF group are listed in Appendix 1 of this Annex.

B. Assignment of Responsibilities

1. General

All agencies/organizations assigned to the Hazardous Materials and Oil Spill Response EFS are responsible for the following:

a. Designating and training representatives of their agency to serve as group members and ensuring that appropriate Action Guides and standard operating procedures (SOPs) are developed and maintained.

b. Identifying staffing requirements and maintaining current notification procedures to ensure appropriate training agency personnel are available for extended emergency duty in the State and DDC EOCs, and as needed, the DFO and field command post.

c. Developing and maintaining procedures to ensure that current inventory of agency resource and contact lists are available.

d. Developing and maintaining procedures for identification, location, commitment, deployment, and accountability of agency support resources.

e. Providing within capabilities, personnel, equipment, and other assistance to support emergency response and recovery operations.

f. Providing situational and operational status reports in accordance with existing procedures and/or requested by the primary agency.

2. PRIMARY AGENCY

The Texas Natural Resource Conservation Commission (TNRCC) is the primary agency for hazardous materials and oil spill response. The primary agency is responsible for state-level coordination of assets and services and will accomplish the following:

a. Identify and coordinate ESF staffing requirements appropriate to the emergency situation to include investigative assignments amongst the primary and support agencies. Where jurisdiction over a spill is known the agency with jurisdiction either TNRCC, GLO, or RRC will be responsible for state follow-up.

b. Process requests for state hazardous materials and oil spill response assistance with the supporting roles of others being assigned on an incident-by-incident basis or based on activities of the State Emergency Response Team (SERT) and other field teams. Coordinate the development of support recommendations by appropriate support agencies and present most feasible recommendations to designated direction and control authority for possible mission assignment to include:

(1) Assistance to federal agencies and others in collecting data on spills and in assessment of damages in the disaster areas to include information on spill impacts and cleanup costs;

(2) Assist local officials in identifying and preparing emergency sites for waste and debris staging/disposal;

(3) Assist in preparation of reports for determination of funds needed to alleviate damages and develop priorities as necessary for allocation of state resources for the data collection and cleanup activities;

(4) Assist in coordinating State-funded cleanups and monitor cleanups as required by funded entities.

c. Collect information from support agencies and provide reports concerning emergency support operations in accordance with applicable procedures; and

d. Develop, maintain and distribute this Annex, the *State of Texas Oil and Hazardous Substances Spill Contingency Plan* and appropriate SOPs;

e. Consult the *State of Texas Oil and Hazardous Substances Spill Contingency Plan* and databases as available in the EOC or through the TNRCC Emergency Response Unit (ERU).

f. Serve as a Natural Resource Trustee for assessment of natural resource damages in Texas.

3. SUPPORT AGENCIES/ORGANIZATIONS

a. General

All Hazardous Materials and Oil Spill Response ESF members shall be aware of their organizations capabilities in providing assistance and support and shall be prepared to provide support recommendations to the Primary Agency representative and respond to mission assignments from designated direction and control authority for the deployment and use of agency-owned/leased or otherwise unique assets to support the response and recovery effort. Some agencies will provide agency personnel and/or equipment, while the support from other agencies will be through their knowledge and expertise in working with response agencies, the vendor community or commercial organizations/ associations in supplying services, or n restoration of disrupted services.

b. General Land Office

Serves as the lead agency for spills or discharges that enter or threaten to enter coastal waters. Serves as state level responders to discharge and cleanup operations resulting from unauthorized discharges of oil that enter or threaten to enter coastal waters pursuant to the *Oil Spill Prevention and Response Act* of 1991 (OSPRA) and *Texas Natural Resources Code* §40.001 et seq.

c. Railroad Commission of Texas (RRC)

Serves as the lead agency for spills or discharges from all activities associated with the exploration, development, or production, including storage or transportation, of oil, gas, and geothermal resources (*Texas Natural Resources Code* §85.042, 91.101, and 91.601).

d. Texas Department of Transportation (TxDOT)

Mobilize personnel, materials, and equipment for the containment, cleanup and mitigation of spills or discharges of oil or other hazardous substances, designated by the EPA or by TNRCC, pursuant to Subchapter G of the Texas Water Code.

e. Texas Parks and Wildlife Department (TPWD)

Conduct protection activities to include investigating fish kills and any type of pollution that may cause loss of fish and wildlife in accordance with Chapter 26 of Texas Water Code and Section 12.0011 of the Texas Parks and Wildlife Code.

f. Texas Department of Insurance

Through the Office of the State Fire Marshall, will provide as needed support in the assessment of associated arson investigations, business license and inspections, public information and education, as arson laboratory, Texas Fire Incident Reporting System (TEXFIRS) and engineering assistance.

g. Texas Department of Health (TDH)

(1) Provide support in the training of:

(a) Hazmat training for emergency services providers and Public Safety personnel (EMS, Fire, Police, etc.)

(b) EMS Level I and Level II Hazmat training

(c) Hazmat for Hospital personnel

(d) Incident Command Systems (ICS) training, geared toward emergency service providers and hospital personnel

(2) Provide expertise through:

(a) In-house expertise of health affects of Hazmat exposure/ contamination

(b) In-house expertise on the environmental impacts of Hazmat events

(c) TDH laboratories can provide assistance with analysis and determination of contamination and possible health and/or medical impacts

(d) Access to information and Hazmat experts outside of TDH and/or outside of State resources

h. Texas Engineering Extension Service (TEEX)

(1) Provides training and technical expertise in the following areas:

(a) Hazardous Materials

(b) Public Works

(c) Center for Marine Training and Safety

(d) Occupational & Environmental Safety

(e) Water & Wastewater

(2) Provides specialized programs and technical expertise to train students and local governments for responses, management, planning, and mitigation of:

(a) Hazardous Materials

(b) Oil Spills

i. Texas Department of Public Safety

(1) Upon notification of a hazardous materials or oil spill transportation related spill, make proper notification to TNRCC and other applicable agencies as appropriate.

(2) Communicate hazardous material placard numbers to responders and involved agencies.

(3) Secure incident site.

(4) Coordinate with local jurisdictions to ensure proper state notification of hazardous materials responses in transportation incidents.

(5) Assist in the dissemination of information to the public on health and property protective actions necessary following a transportation incident involving hazardous materials and oil spills.

j. Texas Commission on Fire Protection (TCFP)

Administers programs related to certification of eligible local fire departments and other public fire-fighting organizations that include hazardous materials response training.

VI. DIRECTION AND CONTROL

Direction and control of emergency response and recovery operations within Texas will be exercised in accordance with Sections IV-F, V-B, and VI of the Basic Plan.

The TNRCC Emergency Response Team Leader will serve as the primary agency representative and will coordinate Hazardous Materials and Oil Spill Response ESF activities within the State EOC. Within each Disaster District, the DDC Chairperson will forward questions and requests for assistance to the TNRCC representative in the Disaster District EOC.

VII. EMERGENCY RESPONSE LEVEL/ACTION GUIDES

See Basic Plan, Section VII, for a list of the different emergency response levels and the kinds of activities that characterize each level. Appendix 2 to Annex N (Direction and Control), maintained by DEM, addresses all hazards, functions, agencies, and response levels. Appendix 2 to this annex contains a supplement Action Guide that outlines any additional actions the ESF groups members need to take at each emergency response level to ensure the group is prepared to respond and support emergency operations.

VIII. CONTINUITY OF GOVERNMENT

Lines of succession for personnel with emergency management responsibilities will be in accordance with existing policies and required emergency management standard operating procedures (SOPs) of each agency/organization.

Primary and support agencies will ensure their respective personnel are trained and prepared to operate in the event regular agency members are absent. They will identify alternate or backup personnel, ensure these individuals understand the lines of succession, pre-delegated authorities, and task responsibilities of their individual agencies, and ensure appropriate procedures and action guides contain sufficient detail so that alternate/backup personnel can use them in performing their responsibilities.

Primary and support agencies will ensure tall records necessary for emergency management operations can be easily obtained from each member agency in an emergency, and that if needed, these records are also duplicated at another location(s) in the event the primary records are destroyed.

IX. ADMINISTRATION AND SUPPORT

A. SUPPORT

Requests for emergency assistance will be resolved at the lowest level direction and control facility with appropriate respond resources capabilities. Unresolved assistance requests will normally flow upward from cities t the county, and if unresolved at the county level, continues upward to the responsible Disaster District, to the State Council, and, if needed, to other stets or the federal government for assistance support.

ESF member agencies also maintain lists of private contractors and other commercial resources that may be available for emergency operations.

B. AGREEMENTS AND UNDERSTANDINGS

All agreements and understandings entered into for the purchase, lease, or otherwise use of equipment and services will be in accordance with the provision of state law and procedures. The Proclamation of a State Disaster issued by the Governor, may suspend selected rules and regulations that affect support operations. The specific impact of the situation will be determined by each agency and ESF group members will be advised accordingly of administrative and/or procedural changes that may affect emergency operations.

C. Status Reports

The primary agency will maintain status of all outstanding assistance requests and unresolved ESF-related issues. This information will be summarized into periodic status reports and submitted in accordance with applicable operating procedures.

D. Expenditures and Record Keeping

Each state agency is responsible for establishing administrative controls necessary to manage the expenditure of funds and to provide reasonable accountability and justification for federal reimbursement in accordance with the established guidelines.

The first source of funds for expenditures by state agencies in response to an emergency, imminent disaster, or recovery from a catastrophic incident, is to be from funds regularly appropriated by the Legislature.

In accordance with established procedures, state agencies may seek financial assistance from the Disaster Contingency Fund.

E. Critiques

Following the conclusion of any significant emergency event/incident or exercise, the Primary Agency representative will conduct a critique of the group activities during the event/incident/exercise. Support agencies will provide written and/or oral inputs for this critique and the Primary Agency representative will consolidate all inputs into a final report and submit it to the State Coordinator.

X. DEVELOPMENT AND MAINTENANCE

The Executive Director and TNRCC is the approving authority for this annex and the person responsible for its approval and implementation.

The designated Emergency Response Team Leader (ERL) for TNRCC is responsible for development, maintenance and distribution of this annex.

The TNRCC ERL, in conjunction with the State Coordinator, is also responsible for conducting an annual review, coordinating all review and revision efforts and incorporating information learned from exercises and actual events into this annex.

APPENDIX 1 TO ANNEX Q

HAZARDOUS MATERIALS AND OIL SPILL RESPONSE ESF ORGANIZATION

PRIMARY AGENCY: *TEXAS NATURAL RESOURCES CONSERVATION COMMISSION*

SUPPORT AGENCY:

General Land Office
Railroad Commission of Texas
Texas Commission on Fire Protection
Texas Department of Health
Texas Department of Public Safety
Texas Department of Transportation
Texas Engineering Extension Service
Texas Parks and Wildlife Department
Texas Department of Insurance

APPENDIX 2 TO ANNEX A

HAZARDOUS MATERIALS AND OIL SPILL RESPONSE ESF ACTION GUIDE

RESPONSE LEVEL HAZARD	AGENCY	ACTION

(To Be Developed)

APPENDIX 3 TO ANNEX Q

HAZARDOUS MATERIALS AND OIL SPILL RESPONSE ESF RESOURCE SUMMARY

(to be developed, if needed)

APPENDIX 6

TCEQ SOURCE WATER SUSCEPTIBILITY ASSESSMENT

PWS ID 0140161 CO

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

CENTRAL TEXAS WSC

4/8/2004

4020 LAKECLIFF DR
HARKER HEIGHTS TX 765488607

Dear Water System Manager:

As required by the 1996 Safe Drinking Water Act Amendments, the Texas Commission on Environmental Quality has completed a source water susceptibility assessment (SWSA) for your public water supply (PWS) system. The SWSA methods were produced in a cooperative effort with the United States Geological Survey (USGS) and input from members of the public through regularly held forum discussions. The attached report includes a delineation of areas providing water for each of your PWS system's sources, an inventory of the regulated and unregulated drinking water contaminants within this delineated area, and a determination of the PWS system's relative susceptibility to contamination.

The results of the assessment may provide new insights into the activities near your water source(s) and should be used as a guideline for implementing source water protection. We encourage you to develop measures that can help prevent contamination of your water supply and investigate the source water protection program via the internet at http://www.tceq.state.tx.us/permitting/waterperm/pdw/swap/swp.html where you will find helpful tools, forms and guidance for starting a source water protection program. If you do not have internet access, send your request for information to the address below.

Please read the methodology section of the report and then review the appendices that contain specific results for your water system. If there are any errors or questions you have regarding the report, please provide comments in writing to the address below. We will respond to all written comments once assessments are completed for all PWS in the state.

Sincerely,

Greg Rogers, Team Leader
Source Water Assessment and Protection Program
Public Drinking Water Section, MC 155

Enclosures: Source Water Assessment Report
cc: Region 9 without enclosures

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
SOURCE WATER ASSESSMENT REPORT

Prepared for

PWS # 0140161

CENTRAL TEXAS WSC

HARKER HEIGHTS , Texas

TCEQ

Prepared by

TCEQ's Source Water Assessment and Protection Program

in cooperation with the United States Geological Survey
and the United States Environmental Protection Agency

4/8/2004

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Appendices

1. Introduction

1.1 Introduction

Source water assessments are designed to provide information unique to each public water system (PWS) regarding the susceptibility of their source waters to contamination. Public water systems should review their assessment report thoroughly, paying close attention to any contaminants that the PWS has received a high and medium susceptibility rating. By using the information on contaminant susceptibility contained within this source water assessment report, the PWS can target source water protection efforts toward specific potential sources of contamination (PSOC). Information on how to obtain source water assessment reports and a system susceptibility summary may be made available to the public through consumer confidence reports to assist communities in understanding the source of their water, potential chemical and/or microbiological impacts to the source water, and support best management practices (BMPs) needed to protect source waters. In addition, the results of the source water assessments may be used to adjust chemical and microbiological monitoring sample schedules, potentially reducing monitoring costs by identifying contaminants of concern.

Note: **A high susceptibility does not mean there is a health threat or a maximum contaminant level (MCL) violation.** The assessments are designed to identify the activities and the related contaminants that may affect the water system. A MCL violation will result in a high susceptibility score because that contaminant has already been found in the drinking water and the public will have already been made aware through required reporting procedures.

1.2 Background

Source water assessments are mandated through Section 1453 of the 1996 Amendments to the Safe Drinking Water Act (SDWA). The 1996 SDWA Amendments require each state to develop Source Water Assessment and Protection (SWAP) Programs to:

! Delineate boundaries of areas providing source waters for all public drinking water systems.
! Inventory origins of regulated and unregulated drinking water contaminants within the delineated area.
! Determine the public water system's susceptibility to contamination.
! Inform the public of the results of the assessment.

The draft State program document, "The State of Texas Source Water Assessment and Protection Program Strategy", was submitted to EPA in February 1999 and was created through a series of Public Forum and Technical Steering Committee meetings. After incorporation of public comment, EPA approved the TCEQ SWAP strategy on November 6, 1999.

1.3 Approach

In a cooperative effort with the United States Geological Survey (USGS), the Texas Commission on Environmental Quality (TCEQ) produced a scientifically defensible method for assessing the susceptibility of Texas' 6700 public water systems to 227 drinking water contaminants. The source water assessments are based on six major components: (1) identification of the source of water (and structural integrity of ground water wells), (2) delineation of the contributing area, (3) determination of the degree to which naturally occurring aquifer / watershed properties of the delineated area contribute to source water susceptibility, (4) evaluation of non-point source contaminant susceptibility, (5) evaluation of point source susceptibility (and for ground waters, the attenuation of susceptibility related to longer contaminant transport rates and selected properties of aquifers), (6) evaluation of the activities within 1000 feet of a surface water body, called the Area of Primary Influence, and (7) incorporation of contaminant detections above TCEQ threshold concentrations from water quality monitoring activities. Component susceptibility ratings from each water source, for each contaminant, are combined into an overall susceptibility rating for each contaminant for the PWS system.

Under each of the assessment components (with the exception of the delineation component), a relative susceptibility rating of high, medium, and low is produced. The rating scale under each component is derived from observed statistical breaks in the frequency distribution of statewide attributes or by best professional judgement. A component-based approach using software developed specifically for the assessments was used given the large number of public water systems, sources, data sets, attributes, and decision rules required to produce a comprehensive susceptibility assessment for a PWS. The software also enables TCEQ staff to re-run assessments in the future as data sets are updated or data accuracy improved. A more detailed explanation of the methodology used to assess source waters for their potential to become contaminated may be found in Section 3.

1.4 Purpose of Report

The purpose of this document is to present the results of the source water assessment to the public water system. This assessment report includes:

! An introduction and overview of the source water assessment methodology.
! Information on the public drinking water system and its drinking water source(s).
! A brief summary of the assessment results listing the contaminants for which the system has been determined to have a high or medium susceptibility rating.
! Detailed results of the assessments including component scores for contaminants with high or medium susceptibility ratings for each source of drinking water for the system.
! Maps of drinking water sources and potential sources of contaminants (PSOCs) identified within and around the delineated assessment areas.
! A list of the 227 identified drinking water contaminants used within this assessment.
! Count of PSOCs located within the assessment area.
! Information on how to use the assessment results through the TCEQ's Source Water Protection Program.

The results of the report can serve a number of purposes:

! The TCEQ may be able to use the assessment results to reduce or modify the chemical and/or bacteriological samples.
! The water system may take this information and develop a better understanding of the environmental factors that may be affecting their source waters. This can then lead to targeted source water protection activities to address areas of greatest concern.
! This detailed report is intended for use by the water system, however, a condensed summary of the results will be required by the Consumer Confidence Reports (CCR) and may be part of the 2004 template. There will be no specific source location information required in the CCRs, only a reference to source aquifer or water body.

2. Overview of Methodology

Susceptibility, in this report, is defined as the potential for a public water supply to withdraw water which has been exposed to a listed contaminant at a concentration that could pose a public health concern. Susceptibility of a water supply to contamination is related to 1) the physical integrity of the ground water well or surface water intake, 2) the physical, geologic, hydrologic, chemical and biological characteristics of the contributing area to the well or intake, 3) the type and number of potential sources of contamination (PSOCs) and land use within the contributing area, and 4) the nature and quantity of contaminants that have been or potentially could be released within the source area.

The TCEQ SWAP program has assembled over 100 data sets of potential sources of contamination (PSOCs) from existing TCEQ databases such as the industrial hazardous waste, municipal solid waste, and wastewater permitting program areas; from source water protection inventories and PWS set-back inspections, and databases from other state and federal agencies. Each PSOC is associated with chemical or biological contaminants from the list of 227 drinking water contaminants (Appendix A). Contaminants were assigned to each PSOC based on site-specific information contained within agency documents or from information on contaminants historically associated with various types of activities or processes using references such as Shineldecker (1992).

Using Geographic Information Systems (GIS) supported software and extensive databases, source water assessments integrate the results of six assessment components into one susceptibility summary component that produces a susceptibility rating for 227 identified contaminants for the public drinking water system. This process is completed through a software system designed in partnership with the USGS. The identification and delineation components are concerned with assembling data for use in other components. Five of the components (Intrinsic Susceptibility, Non-point Source, Point Source, Area of Primary Influence for surface water only, and Contaminant Occurrence) result in susceptibility ratings that are used in the Susceptibility Summary component to calculate the overall susceptibility assessment ratings.

In addition to compiling PSOC data sets, the SWAP program has assembled information on each water well and intake operated by a PWS systems. Information gathered by TCEQ PWS inspections, well log review, file research, and chemical and microbiological sampling was entered into a database. The assessment software relies upon detailed water well and surface water intake locations, water well construction details, site-specific geology, and well production information.

Comprehensive spatial data sets assembled by the USGS in support of the SWSA include: major and minor aquifers and their hydrologic properties; land use; soil type; climate; slope; elevation; surface water flow analysis; TCEQ, USGS and Texas Water Development Board (TWDB) chemical and microbiological monitoring analysis; non-point source statistical analysis for specific chemical constituents for surface water and ground waters; automated watershed delineation; and automated ground water capture zone delineation.

2.1 Identification

Only water wells and surface water intakes with a status of operational, demand, emergency or test (wells under development) are assessed. The first step in the assessment process is the identification of the location and structural integrity information for each water source (either water well or surface water intake) and its associated hydrographic data. Structural integrity refers to those mandatory properties for groundwater wells or surface water intakes defined in the Rules and Regulations for Public Water Systems 30 TAC Chapter 290 Subchapter D §290.41. If data on location or structural integrity is lacking, the system may receive a high susceptibility to all contaminants since default conservative assumptions are used. Every effort was made by TCEQ staff to obtain missing locational and integrity data from the public water supply prior to commencement of assessments.

Hydrogeologic data collected for groundwater wells includes the major aquifer the well screen is in as well as properties of that aquifer for later use in the delineation and intrinsic characteristics components. Aquifer properties include the three-dimensional extent of the aquifer, hydraulic conductivity, porosity, regional potentiometric surface, saturated thickness, and transmissivity. Hydrographic data collected for surface water intakes includes major river basin name, hydrologic region, and hydrologic unit. Under the identification component, a susceptibility rating is produced for ground water sources only and is based on well structural integrity.

2.2 Delineation

Once the location and hydrologic properties are obtained in the identification component of the assessments, the area that contributes water to the well or intake is delineated. For wells, delineation of a capture zone will determine the time-of-travel of water to the well. Time-of-travel is the time (in years) that it would take a molecule of water (and therefore any associated contaminant) in a specific location to travel to the water well. Time-of-travel capture zones are expressed in increments of 2, 5, 10, 20 and 100 years (these-time-of travel zones can be found in appendix I). In some cases, such as in unconfined aquifers, capture zones may not extend to 100 years. Delineations of water wells are produced in one of four ways, depending on aquifer type. The five major aquifer categories used in the source water susceptibility assessments include unconfined isotropic aquifers, confined isotropic aquifers, alluvial aquifers along rivers, anisotropic karst aquifers, and a final category of "unknown" for water wells that do not obtain water from the mapped major and minor aquifer systems, or that obtain water where an aquifer determination cannot be made. If no aquifer type is available, a fixed radius of one half mile is applied. This will be shown in the appendix I maps as a violet circle around the well without any time-of-travel zones. Since stream flow is an over-riding influence on alluvial aquifers, water wells located within these alluvial aquifers are assessed using a surface water approach. A watershed is generated for each alluvial well.

Flow-net analysis was used to delineate capture zones for unconfined and confined aquifers. Using specially-developed GIS software, the portion of the flow net that defines the contributing area for the water supply well was identified and a determination of the time-of-travel to the well for all aquifer categories was made (with the exception of the Edwards Aquifer where data from the USGS flowpath investigations for the Edwards Aquifer were used). Using this approach, the characterization of the aquifer is such that the vertical movement of water to the water table is not approximated; only the horizontal movement. The assumption is that the contributing area to a well in an unconfined system is the area directly above the flowpaths for a specified end time (2, 5, 10, 20, and 100 years). In a confined system, the contributing area is that area within specified end times or terminating in the outcrop of the aquifer for similarly specified end times.

Travel times for potential contaminants vary greatly in Karst systems such as the Edwards aquifer. As water levels rise or fall in the Edwards aquifer there are potentially more or fewer conduits to transmit the flow; therefore travel times for potential contaminants may vary for a given area depending on the water levels in the aquifer. Travel times in the Edwards aquifer can potentially be much shorter in many areas than for a typical aquifer composed of sand and gravel. For these reasons, the time-of-travel approach was not used for assessing the Edwards aquifer. A more conservative approach using flowpath information was selected. The USGS has conducted numerous investigations on the Edwards aquifer and has delineated flowpaths within the system using hydrologic, geologic, geochemical, and numerical information. The assessment for a well is conducted by first determining the corresponding aquifer flowpath for the well. The flowpath is then delineated upgradient from the well back to the area where recharge enters the aquifer from the surface. Along this flowpath, where the aquifer is confined, a confined assessment is conducted; where the aquifer is unconfined, an unconfined assessment is conducted. Most of the recharge to the Edwards aquifer is by streams that cross the outcrop area (recharge zone); therefore, where the flowpath for the assessed well intersects the outcrop area, a surface water assessment is conducted for the corresponding stream(s).

The assessments require the delineation of the contributing areas for surface water intakes, each intake receives a delineation of three watershed types:

- Total Watershed Area – the entire watershed upstream from the PWS intake on a stream or the entire watershed for the reservoir on which the PWS intake is located.
- Contributing Watershed Area – the watershed for the reservoir on which the surface water intake is located or the watershed upstream of a surface water intake located on a stream excluding all non-PWS reservoirs with normal storage capacity greater than 1,000 acre-feet.
- Area of Primary Influence – the area within 1,000 feet of a reservoir, and for all streams discharging directly to the reservoir, the area within 1,000 feet of the center of the stream channel for an estimated 2 hour time-of-travel immediately upstream of the reservoir. For intakes on streams, the area of primary influence is the area within 1,000 feet of the estimated 2 hour time-of-travel upstream from the intake. Contaminants located within the area of primary influence are those that the PWS may be most susceptible to due to their proximity to the intake.

Watersheds were delineated using specially developed software using a statewide, seamless 30 meter digital elevation model re-sampled to a 60 meter resolution by the USGS; flow accumulation and flow direction datasets; and hydrography datasets (stream and reservoir boundaries). The delineation of watersheds for intakes on canals lacking flow data was accomplished by generating a one half mile buffer around the intake location. In addition, watersheds were delineated for all monitoring stations and were used in the development of equations for the non-point source component.

2.3 Intrinsic Characteristics, Aquifer / Watershed Properties

Intrinsic characteristics are those natural features of the landscape and climate that contribute to the contamination susceptibility of ground or surface water. Intrinsic characteristics include land surface slope, soil characteristics (erodibility of soil, clay content, leakance), precipitation, runoff, reservoir depth, reservoir storage and watershed area.

Intrinsic characteristics for ground water sources are mainly related to unconfined aquifers. Higher leakance values for unconfined aquifers indicate the source is more susceptible to contamination due to increased contaminant transport rates through soil. A low land surface slope value indicates a source in an unconfined aquifer is more susceptible since runoff has longer residence times on low land surface slopes, allowing higher recharge.

Surface waters are susceptible to the following area-weighted intrinsic characteristics: high runoff to precipitation ratios (increases contaminant transport rates), high soil erodibility values (erodible soils carry contaminants adsorbed to their surface), low mean reservoir depth to mean annual runoff ratios (contaminant is likely to travel through reservoir in a short amount of time or may be easily re-suspended into the water column from the sediments), low total reservoir storage to mean annual runoff ratios (contaminant is likely to travel through reservoir in a short amount of time), and low watershed area to slope ratios (increases contaminant transport rates by lowering the time of travel of the contaminant).

2.4 Non-point Source

For surface water assessment, equations were developed for 63 of the 227 contaminants using logistic regression statistical analysis to predict the probability of detection of a contaminant above TCEQ established thresholds (see Appendix A) by basin characteristics including land use class, soil type, population density, agricultural chemical use, manure production and land and stream physiography. During the assessment, the delineated assessment area for the water source was overlaid on a land use spatial data layer and percentages of each basin characteristic within that area were tallied. Using the developed predictive equations, the probability of detecting selected contaminants above the threshold value was calculated. A non-point source susceptibility rating was then assigned to those contaminants based on probability of detection. For groundwater, the non-point source component statistical models were able to be developed for Aluminum, Manganese, Nitrate, Nitrite, Nitrate+Nitrite and Sulfate. For the 164 contaminants that were not statistically modeled due to lack of sufficient monitoring data, a statewide probability of occurrence from non-point sources was assigned to each based on the relative frequency of detection based on sample data.

When an unconfined well is assessed and there is a high percentage of land uses that have contaminants associated with them (e.g. urban and agricultural) or there is a high density of transportation and/or pipelines, sources may be highly susceptible to many different contaminants.

2.5 Point Source

In order to determine a susceptibility rating to contamination from potential sources of contamination (PSOC) that are point sources, SWAP staff developed a database of over 800,000 PSOC locations and their associated contaminants for the state of Texas. Potential sources of contamination (Table 2.1) are categorized by type and subtype. Contaminants were assigned to each PSOC using two techniques: 1) contaminants were assigned based on known sampling or reporting of contaminants at a specific site or 2) contaminants were assigned based on established contaminant relationships to PSOC subtype (Shineldecker, 1992).

An important factor in determining the susceptibility to point sources for ground water is if the PSOC is known to penetrate the confining unit or if the PSOC is located at a depth below the confining unit or the soils zone. Potential sources of contamination occurring at the ground surface that overly a confined aquifer protected by at least 30 feet of clay or shale, are not assumed to present a contamination threat to a water well. If the PSOC penetrates the confining unit (clay layer) of the aquifer, then the contaminants associated with that PSOC are assumed to enter the aquifer with no vertical attenuation. However, since contaminants released from point sources entering ground water as solutes may undergo physical, chemical, and biochemical processes that lower their concentrations, an attenuation factor for those contaminants is applied depending on contaminant occurrence in the soil zone, vadose zone or aquifer matrix and time of travel from contaminant source to the water well. The attenuation factor is based on a model of physical contaminant attenuation using first order decay equations (the rate of decrease of the contaminant is proportional to the concentration of the contaminant) and selected aquifer properties related to the physical processes of sorption, decay, volatilization, advection, dispersion or dilution. Once applied, the attenuation factor may reduce the ground water point source susceptibility rating from a high to a medium or low susceptibility rating.

The proximity of a surface water intake to PSOCs, point source discharges, potentially threatening land usages, major transportation corridors or pipelines can result in the source water being susceptible to contamination. The relatively short time of travel of a chemical spill, continuous release, or runoff to the intake minimizes the opportunity for reducing a contaminant's concentration or converting or degrading a contaminant to a less threatening form. Point source susceptibility ratings are applied for a surface water source based on (1) the presence and density of contaminants associated to PSOCs and potentially threatening land usage areas within the area-of-primary influence (API) and (2) point sources from permitted dischargers upstream of the intake. An API-based point source susceptibility rating is determined by calculating the density of PSOCs and potentially threatening land use activities within the API. For contaminants from permitted dischargers, a point source susceptibility rating is determined using the mean two-year flood velocity time of travel to the PWS intake and an estimated in-stream contaminant decay rate.

2.6 Area of Primary Influence

The Area Of Primary Influence (API) component applies to surface water systems. This procedure determines the density or count of threatening activities and associated contaminants within the 2 hour upstream time of travel and 1000 foot buffer area around the water source. The API watershed is delineated using regional equations to predict time of travel at the estimated 2-year flood velocity along the main channel based on observations at USGS gaging stations. The relative susceptibility of the PWS to contaminants associated with activities within the API is determined based on human and domestic animal population density, pipeline density, oil/gas well density, transportation density, the count of permitted effluent discharge sites, and the density of PSOCs.

The proximity of a surface-water intake to a point source discharge, threatening land usage, transportation corridor, or pipeline can result in the source water being susceptible to contamination. The relatively short time-of-travel of a chemical spill, continuous release, or runoff to the intake minimizes the opportunity for reducing a contaminant's concentration or converting or degrading a contaminant to a less threatening form. Activity density or counts are used to determine the rating for associated contaminants under this component. Higher density or counts indicate increased susceptibility to activity-associated contaminants.

2.7 Contaminant Occurrence

Any detection above threshold values (see appendix A or the list of contaminants and the threshold values) from chemical monitoring stations located at or near the PWS source indicates the PWS is susceptible to that contaminant. Water quality data from monitoring wells within the well's capture zone and screened within the same unit as the assessed PWS' water well or water quality data from monitoring stations within the contributing watershed area of a surface water intake are checked to determine if contaminants have been detected above threshold values (see Appendix A). If the contaminant has been detected, then the well or surface water source is susceptible to the contaminant regardless of the results of other assessment components. This analysis is critical in the evaluation of susceptibility since many natural, historical, or undocumented sources of contamination may not exist in the PSOC data sets.

Table 2.1 Potential Sources of Contamination (PSOCs) are classified as a general type and a specific subtype. A list of chemicals assigned to each subtype is too extensive to be included in this report.

Table 2.1 Potential Sources of Contamination	
PSOC TYPE	**PSOC SUBTYPE**
BUSINESS	AUTO PARTS BUSINESS; AUTO REPAIR, SALES, SALVAGE, TOWING; BATTERY MFG., SALES; BOAT STORAGE; COTTON GIN; DRY CLEANER; FERTILIZER MFG, SALE, APPLICATION; FIREWORKS BUSINESS; GOLF COURSE; GRAIN ELEVATOR; INORGANIC CHEMICAL INDUSTRY; METAL PLATING BUSINESS; MILITARY ARMORY; NEW OR USED OIL SITE; NUCLEAR POWER PLANT; OIL AND GAS PRODUCTION TANKS; ORGANIC CHEMICAL INDUSTRY; PAINT SHOP; PESTICIDE MFG, SALE, APPLICATION; PESTICIDE, FERTILIZER MFG, SALE, APPLICATION; PETROLEUM CHEMICAL INDUSTRY; PETROLEUM STORAGE TANK; PHOTO PROCESS BUSINESS; PLASTIC MFG, SALE; PULP OR PAPER MILL; RADIOCHEMICAL SITE; SUGAR REFINING; TIRE SALES, REPAIR BUSINESS; WOOD PRESERVING
CEMETERY	CEMETERY
CHEMICAL PIPELINE	CRUDE OIL; HIGHLY VOLATILE LIQUIDS; NATURAL GAS LIQUIDS; PETROLEUM PUMP STATION; PIPELINE; PRODUCT - GASOLINE, DIESEL, JET FUEL
CHEMICAL STORAGE	CHEMICAL MIXING SITE; CHEMICAL STORAGE; DRUM, SMALL CONTAINERS, BAGS; TRANSFORMER
CLASS I INJECTION WELL	CLASS 1 INJECTION WELL
CLASS II INJECTION WELL	CLASS 2 INJECTION WELL
CLASS III INJECTION WELL	BRINE; CLASS 3 INJECTION WELL; SODIUM SULPHATE; SULFUR; URANIUM
CLASS V INJECTION WELL	AGRICULTURAL DRAINAGE; AUTO REPAIR FLOOR DRAIN; CESSPOOL; CLASS 5 INJECTION WELL; SEPTIC DRAIN FIELD; SEPTIC UNDIFFERENTIATED; STORM DRAINAGE; TRASH BURNING WELL; UNTREATED SEWAGE
GUN RANGE	GUN RANGE; MILITARY; PUBLIC OR PRIVATE
NATURAL RESOURCE PRODUCTION	MINED LAND: ACTIVE OR ABANDONED; MINERAL EXPLORATION HOLE; ABANDONED; NATURAL RESOURCE PRODUCTION; OIL OR GAS WELL - ABANDONED; OIL OR GAS WELL - PLUGGED; OIL OR GAS WELL - PRODUCTION; OIL OR GAS WELL - UNDERGROUND STORAGE; WATER WELL; WATER WELL: ABANDONED
TRANSPORTATION	AIRPORT; BOAT RAMP; HELIPORT; HIGHWAY; LANDING STRIP; MARINA; MILITARY AIR BASE; RAILROAD; TRANSPORTATION
WASTE	CARBAMATE SITE; CATTLE DIPPING VAT; COKING TAR SLUDGE SITE; CONFINED ANIMAL FEEDING OPERATION; CORRECTIVE ACTION SITE - TCEQ; DOMESTIC TRASH OR BURN PILE; GROUNDWATER CONTAMINATION SITE; INDUSTRIAL HAZARDOUS WASTE TSD; LIVESTOCK OR ANIMAL PENS; MUNICIPAL SOLID WASTE - ABANDONED OR ACTIVE; OILFIELD SLUDGE DISPOSAL; PERCHLORATE SITE; RECYCLING FACILITY; SALT WATER DISPOSAL PIT; SITE DISCOVERY - TCEQ; SOLVENT SITE; SUPERFUND SITE - TCEQ; TOXIC RELEASE INVENTORY; TRANSFER STATION; VOLUNTARY CLEANUP - TCEQ; WASTE: WASTE REGISTRATION - TCEQ
WASTEWATER	AGRICULTURAL WASTEWATER OUTFALL; CESSPOOL; HOLDING POND; HOLDING TANK; INDUSTRIAL WASTEWATER OUTFALL; LAND APPLICATION SLUDGE; LIFT STATION; MUNICIPAL WASTEWATER OUTFALL; PIPELINE; PRIVATE WASTEWATER OUTFALL; SEPTIC SYSTEM; TREATMENT PLANT; WASTEWATER

2.8 Susceptibility Summary

The source water susceptibility assessments (SWSA) produce both a source susceptibility summary and a system susceptibility summary. For PWS systems with one source, the source and system susceptibility summary results are identical. Numerical susceptibility ratings are generated for each contaminant under each of the assessment components. Refer to Sections 2.1 - 2.6 for more detailed information on each of the assessment components. Numerical susceptibility ratings range from 0 to 3 and are interpreted as follows: low if rating is ≤1.66; medium if rating is > 1.66 and < 2.33; and high if rating is ≥2.33. Raw scores for each of the assessment components are not presented within this report.

For PWS systems with multiple sources, individual water source scores (with the exception of the contaminant occurrence component) are weighted by the capacity (pumpage) of each source and then summed to obtain the numerical susceptibility ratings for the entire system. This capacity weighting for multiple sources takes into account the relative contribution to the system from each water source. When no capacity is available for water sources, individual component scores for each source are averaged to obtain the system component susceptibility ratings. In this case, each source carries equal weight.

Components are included in the summary rating only if applicable. The structural integrity component requires compliance with 30 TAC Chapter 290 Subchapter D §290.41 rules, a cemented casing for a well, and no PSOCs penetrating the ground surface within the capture zone. For sources that meet the structural integrity requirements, the structural integrity column in the source summary will not include susceptibility ratings for any contaminant. For wells screened within confined aquifers, the intrinsic and non-point source components are not applicable since it is assumed the well is isolated from the influence of surface contaminants by the very nature of the aquifer. Components may also lack ratings when a contaminant is not associated with the component or there is insufficient information about a contaminant's susceptibility for that component.

Both the source and system susceptibility summary ratings are calculated by taking the maximum susceptibility rating from each applicable component. Because some components are not applicable in certain situations, several equations are used to determine susceptibility summary (SS) ratings.

Note that if a contaminant has been detected under the source contaminant occurrence component, then the source will be rated highly susceptible to that contaminant, regardless of any other component susceptibility rating.

Source Susceptibility Summary Equations

For groundwater sources screened within an unconfined or unknown aquifer, where structural integrity requirements are not met, and where there is no contaminant occurrence, then the source susceptibility summary (SS) rating for each contaminant is equal to the highest value of the following two equations:

SS Rating = (Structural Integrity Rating + Intrinsic Rating + Non-point Source Rating) / 2 OR

SS Rating = (Structural Integrity Rating + Intrinsic Rating + Point Source Rating) / 2

For groundwater sources screened within an unconfined or unknown aquifer, where structural integrity requirements are not met, and where there is no contaminant occurrence, then the source susceptibility summary (SS) rating for each contaminant is equal to the highest value of the following two equations:

SS Rating = (Intrinsic Rating + Non-point Source Rating) / 2 OR

SS Rating = (Intrinsic Rating + Point Source Rating) / 2

For groundwater sources screened within a confined aquifer setting and where there is no contaminant occurrence, only the structural integrity and point source components are applicable. The source susceptibility summary (SS) rating is:

SS Rating = Structural Integrity Rating + Point Source Rating

For surface water sources, where intake integrity requirements are not met and where there is no contaminant occurrence, then the source susceptibility summary (SS) rating for each contaminant is equal to the highest value of the following three equations:

SS Rating = (Intake Integrity Rating + Intrinsic Rating + Non-point Source Rating) / 2 OR

SS Rating = (Intake Integrity Rating + Intrinsic Rating + Point Source Rating) / 2 OR

SS Rating = (Intake Integrity + Intrinsic Rating + Area of Primary Influence Rating) / 2

For surface water sources, where intake integrity requirements are met and where there is no contaminant occurrence, then the source susceptibility summary (SS) rating is equal to the highest value of the following three equations:

SS Rating = (Intrinsic Rating + Non-point Source Rating) / 2 OR

SS Rating = (Intrinsic Rating + Point Source Rating) / 2 OR

SS Rating = (Intrinsic Rating + Area of Primary Influence Rating) / 2

System Susceptibility Summary Equations

The system susceptibility summary component determines the system susceptibility to contamination, based on the ratings from all assessed sources. The system susceptibility summary is calculated by weighting each assessment component, with the exception of the contaminant occurrence component, by a capacity or pumpage factor (in gallons per minute). This methodology allows the system to account for the relative proportion of water from each source. Where the capacity (pumpage) is unknown, then the system susceptibility summary is calculated by averaging the individual source component ratings, with the exception of the contaminant occurrence component.

Note that if a contaminant has been detected under the contaminant occurrence component of any source, then the system susceptibility summary rating will always default to high, regardless of any other system component susceptibility rating.

The capacity factor (CF) is calculated as follows:

$$CF = \frac{\text{Individual source capacity (pumpage) in gallons per minute (GPM)}}{\text{Overall capacity of system (GPM)}}$$

Weighted source component rating = (source component numerical rating)(CF)

For example, in a system with two sources: Well A with a capacity of 80 GPM and Well B with a capacity of 20 GPM, the capacity factors are 0.80 and 0.20, respectively:

$$CF_{Well\ A} = 80/100 = 0.80$$

$$CF_{Well\ B} = 20/100 = 0.20$$

The weighted component susceptibility ratings are then summed for system component ratings. The summary is then determined as the maximum value among all applicable components.

3. Assessment Results

First, a high susceptibility does not mean there is a health threat or a maximum contaminant level (MCL) violation. The assessments are designed to identify the activities and the related contaminants that may affect the water system. A MCL violation will result in a high susceptibility score because that contaminant has already been found in the drinking water and the public should have already been made aware through required reporting procedures and the CCRs.

A description of all the 227 contaminants and the threshold values used by the assessment can be found in Appendix A. Some of these contaminants are identified as being related to the treatment process or distribution system. Appendix A is standard for all water systems receiving an assessment.

A description of the specific PWS system and water sources is given in Appendix B. Water wells require certain information in order to be accurately assessed. If one or more critical elements (well location, screened interval, or pump rate) is lacking, wells are assessed using conservative assumptions and the well may receive a high susceptibility rating for each contaminant. Refer to §290.41 of TCEQ's Rules and Regulations for Public Water Systems 30 TAC Chapter 290 Subchapter D for ground water source requirements. The rules and regulations may be obtained by contacting the Public Drinking Water Section of TCEQ or viewed over the internet from the Texas Administrative Code website: http://info.sos.state.tx.us/pub/plsql/readtac$ext.viewtac by navigating to Title 30, Part 1, Chapter 290, Subchapter D.

The results of the source water susceptibility assessments are contained within Appendices C through I. Listed within Appendices C and D are contaminants for which the PWS system has received an overall susceptibility rating of high and medium, respectively, along with values of low, medium and high for each assessment component. The overall susceptibility rating is an average of the susceptibility ratings for all water sources for a system and is given for each of the 227 drinking water contaminants listed in Appendix A. Refer to Section 2.7 for the equation used to calculate summary susceptibility ratings from component susceptibility ratings. Appendices E and F include raw scores for component and summary susceptibility ratings for each of the PWS system's water sources for high (Appendix E) and medium (Appendix F) susceptibility rated contaminants. These appendices may be used to identify which of the water sources may be more susceptible to identified contaminants. If there is no rating under an assessment component heading within appendices C through F, the component was not used in the assessment and therefore no data was generated. Susceptibility ratings are not generated for the intrinsic (aquifer / watershed properties) and non-point source components for confined aquifers since the confining unit (clay layer) presents a barrier to the transport of contaminants. A high susceptibility rating for a contaminant means that there is a contaminant source located in close proximity to the water source and that the intrinsic characteristics of the watershed or ground water capture zone are such that if the contaminant were released into the environment, there is a high potential for the water source to become contaminated. A high susceptibility rating does not, however, imply there is an immediate threat to the water system.

Contaminants identified as having a high, medium or low susceptibility within this assessment were generated based on the presence of PSOCs within the assessment area or a detection of contaminants above threshold concentrations (see appendix A, for threshold values) under the contaminant occurrence component. The number of each PSOC type located within the various times of travel zones for water wells or located within the API and watershed of surface water sources are listed within Appendix G. Each of the 227 contaminants listed in Appendix A may be associated with multiple PSOC types. By referring to Appendix I, which includes maps of each source and PSOCs located within the assessment area, the approximate source of the high or medium rated contaminant may be identified (refer to Appendix H for map legend and topographic map symbology). For ground water sources, the various times of travel may assist in identifying the PSOCs that generated the high or medium susceptibility, keeping in mind that the closer a PSOC is to a source, the shorter the time of travel of a contaminant. Due to the properties of ground water systems that may attenuate contaminants, many of the contaminants associated with PSOCs will be attenuated. The shorter the distance between source and PSOC, the less likely attenuation will be effective in lowering the concentration of the contaminant to below TCEQ threshold levels.

If no PSOCs or potentially threatening land uses associated with high or medium susceptibility rated contaminants are located within the assessment area, the contaminant received a high or medium susceptibility rating from the contaminant occurrence component. The presence of a contaminant and lack of an associated PSOC within the assessment area may indicate one of three possibilities: 1) the contaminant is naturally occurring in the assessment area; 2) there is a PSOC within the assessment area that is unidentified within the database used in the assessments; or 3) the contaminant resulted as a part of the water treatment process (as may be the case for Aluminum in Aluminum-lined storage tanks).

3.1 Purchase Water Assessments

It should be noted that any purchased treated water contracts that a system may have are not part of this source water assessment. The assessments are based solely on the raw water sources that the public water system maintains as part of their regular water supply. The assessments are based on sources owned and operated by the system identified as operational, demand, emergency, or test. Any treated water purchased from another water system is not included in this assessment. Contact the system from which the treated water is purchased in order to receive the results of their assessment or contact the TCEQ Source Water Assessment & Protection program to receive a copy of the results from the system selling the treated water.

There has been an effort, however, to include raw water purchases in the source water assessments. In cases where a water system takes water from a canal, an assessment will be calculated at the point water enters the canal system even though the pumps at this location is not directly owned by the water system.

4. How to Use Assessment Information

The source water assessments are designed to assist water systems manage their source water resources and inform the system and the public of activities near their source waters that may affect drinking water quality. Results of the assessments may help the system make treatment decisions or plan for new treatment options for the future. Some systems have already independently developed local ordinances or other activities to better protect their source waters. With this new source water assessment information, these protective measures will be more informed and better applied to the potential concerns.

Some ideas for interpreting and prioritizing the results are:

1. Determine which contaminants are not potential health concerns such as TDS and inorganic compounds such as sulfate. These contaminants may be related to naturally occurring compounds and there may be very little a system can do other than modify treatment or use different sources.
2. Determine the contaminants that received a high susceptibility score based on the Point Source component. Water systems should verify the locations of these point sources and determine their operational status (i.e. is an oil well operational or is it plugged). If the location or the status is different than reflected in the report, notify the SWAP program in writing, of the changes.
3. Determine if the highly susceptible contaminants associated with the Point Source component have also been detected in the Contaminant Occurrence component of the report. This indicates that there are point sources that could be contributing a contaminant and there has been a detect of that contaminant in the source water. This scenario should be considered a strong candidate for additional research of the point sources and possible source water protection measures.
4. Determine which contaminants originate from the Nonpoint Source (NPS) component. These are important possible contaminants but the nature of this component can lead to a larger number of highly susceptible contaminants than the Point Source component. When possible the NPS component uses statistical equations to determine susceptibility. When there is insufficient data for equations, statewide probability of occurrence from non-point sources was assigned to each based on the relative frequency of detection based on sample data.

Additional tools and ideas for source water protection are available through the TCEQ. This is a voluntary program with many resources available for interested water systems and communities. Some of these resources include more detail relating to the results of the assessments that could not be included in this report. Many PWS systems are already enrolled in TCEQ's source water protection (SWP) program, which provides water systems with the tools necessary to effectively protect their source water from contamination. Visit our website for current information and additional protection ideas and best management practices (BMPs) [illegible].

Historically, there were four steps to complete in order to become enrolled members of the source water protection program: 1) delineation of the source water protection zone, 2) a physical inventory of the protection zone for PSOCs, 3) production of a source water protection report (reporting the results of the delineation and the inventory) and 4) documentation of possible best management practices within the source water protection zone for identified PSOCs.

With the completion of the source water assessments, all public water systems have a delineated source water protection area and a list of potential sources of contaminants. All that is required of the system to participate in the source water protection program now consists of determining the accuracy of PSOC locations, documenting existing protection measures or best management practices (BMPs), and locating new PSOCs which may not have been included in the source water assessment. All of this is done through a ground inventory of the capture zone or watershed/API which are also the source water protection areas.

In order for a PWS system to protect their source waters and complete the requirements to become a member of source water protection, the SWAP program must be contacted. The SWAP program will provide the Source Water Protection guidance document to assist in the inventory, report writing and BMP establishment portions of the project. Once the PWS has submitted all required documents to the SWAP program, the PWS is considered a member of the SWP program and will be eligible for Drinking Water State Revolving Funds for implementation of protective measures known as best management practices (BMPs).

Best management practices are established for most of the PSOCs and threatening land uses identified, and are included in the source water protection guidance document. In order to facilitate BMP implementation, funds are available through the Drinking Water State Revolving Fund (DWSRF). The DWSRF funds are available as low-interest loans and may be used to implement BMPs within the protection zone, make land purchases, and/or modify or improve PWS infrastructure.

Incentives for a PWS to establish a source water protection program and have a current membership in the TCEQ SWP program include:

! **Prevention of increased treatment costs associated with source water contamination.** Contamination of source waters is a serious matter that may affect public health. Once a source water is contaminated it is difficult or impossible to remediate. Prevention of source water contamination is far easier and less expensive than acquiring specialized treatment equipment or new sources of water that will increase costs for the PWS.

! **Public relations.** Systems who have completed all the requirements for membership in the SWP program may advertise their membership by posting signs along roadways and in printed text on the consumer confidence reports (CCRs).

! **Best management practices implemented may modify the susceptibility rating of the PWS.** Future assessments may incorporate data obtained in source water protection efforts. Future assessments may consider the positive effects of BMPs for the PSOCs identified in initial assessments, potentially lowering the susceptibility ratings for many of the contaminants. PWS systems must first identify or implement BMPs for PSOCs identified within their protection zones.

! **Ground truth data used in the SWSA.** Systems who choose to participate in the SWP program conduct an inventory of the assessment area and in the process may find additional sources of contaminants, and verify or correct the locations of PSOCs or water source locations (water wells or surface water intakes) identified in this source water assessment. Improving the quality of data will improve the quality of future source water susceptibility assessments.

! **Access to funds to implement best management practices, acquire land, and modify infrastructure.** As mentioned previously, funds are available through the Drinking Water State Revolving Fund (DWSRF) for land acquisitions or construction of BMPs within source water contributing areas or to make PWS infrastructure improvements. In addition, grant monies are also available through state and federal programs, particularly for non-point source pollutant management (For example, Clean Water Act Section 319(h) funds are provided only to designated state and tribal agencies to implement their approved non-point source management programs).

4.1 Consumer Confidence Reports (CCR)

As required by rule, requirements for reporting the results of the source water assessments in the Consumer Confidence Reports will be included in the CCR template and guidance beginning in the spring/summer of 2004. The requirement for 2003 will consist of notifying consumers that a source water assessment has been completed and provided to the system in May 2003. Additional guidance on how to summarize the information in the assessments will follow in 2004. Through open records requests, consumers will have access to the full information of the source water assessments except for the detailed locations of well or intake locations in order to protect drinking water sources from malicious intent.

As mentioned before, using the CCRs to report the assessment results is ideal because consumers can compare the results of the assessments with the monitoring results of the system. The water system should be familiar with the results of the source water assessment and be able to provide additional information to consumers. Systems involved in source water protection activities should also be prepared to share with consumers the efforts that are planned, or are in place, to protect the source waters of the system.

Source Water Protection Contact Information:

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Source Water Assessment and Protection Program

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5. Acknowledgments

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7. Definitions

Acre-foot

A volume of water that covers one acre to a depth of one foot, or 43,560 cubic feet (1233.5 cubic meters).

Adsorption

The process by which chemicals are held on the surface of a mineral or soil particle.

Alluvium

Sediments deposited by flowing rivers.

Aquifer

A rock unit that will yield water in a usable quantity to a well or spring.

Area of Primary Influence

The area within 1,000 feet of a reservoir, and for all streams discharging directly to the reservoir, the area within 1,000 feet of the center of the stream channel for an estimated 2 hour time-of-travel immediately upstream of the reservoir. For intakes on streams, the area of primary influence is the area within 1,000 feet of the estimated 2 hour time-of-travel upstream from the intake. Contaminants located within the area of primary influence are those that the PWS may be most susceptible to due to their proximity to the intake.

Available Water Content (AWC)

The available water content of a soil, a function of total pore space and pore size distribution. Available water content is an attribute in the SWSA ground water intrinsic component and is expressed as a volume fraction in inches per inch of soil, for example, if the available water content has a value of 0.20, a 10 inch zone then contains 2 inches of available water.

Best Management Practices (BMPs)

The most effective practice or combinations of practices to control point or nonpoint source pollution. Best management practices (BMPs) may either be structural or nonstructural. Structural BMPs are designed to capture surface runoff and remove pollutants through settling or other processes including, but not limited to, water diversions, retention devices, detention basins, or filter systems. Nonstructural BMPs take advantage of land's natural features to remove pollutants, nonstructural BMPs might include wetlands, grassed waterways and buffer zones.

Capture Zone

The delineated ground water contributing area characterized such that only the horizontal movement of water to the well is approximated assuming the contributing area to the well in an unconfined aquifer is the area directly above the flowpaths for a specified time of travel (2, 5, 10, 20 and 100 years). In a confined aquifer, the contributing area is that area within the aforementioned times of travel or terminating at the outcrop of the aquifer.

Chemical Abstracts Service (CAS) Registration Number

A number assigned by the Chemical Abstracts Service to identify a chemical.

Chloramines

Compounds formed by the reaction of hypochlorous acid (or aqueous chlorine) with ammonia.

Clay

One type of soil particle with a diameter of approximately one ten-thousandth of an inch.

Coliform Organism

Microorganisms found in the intestinal tract of humans and animals, their presence in water indicates fecal pollution and potentially dangerous contamination by disease-causing microorganisms.

Community Water System

A public water system which has a potential to serve at least 15 residential service connections on a year-round basis or serves at least 25 residents on a year-round basis.

Confined Aquifer

An aquifer overlain by a confining bed and under pressure that is significantly greater than atmospheric pressure. Also known as an artesian aquifer.

Confining Bed

A rock unit having a very low hydraulic conductivity that restricts the movement of ground water either into or out of adjacent aquifers.

Connection

A single family residential unit or each commercial or industrial establishment to which drinking water is supplied from the system. See §290.38(9) of TCEQ's Rules and Regulations for Public Water Systems 30 TAC Chapter 290 Subchapter D for a more detailed definition. The rules and regulations may be obtained by contacting the Public Drinking Water Section of TCEQ or viewed over the internet from the Texas Administrative Code website: http://info.sos.state.tx.us/pub/plsql/readtac$ext.viewtac by navigating to Title 30, Part 1, Chapter 290, Subchapter D.

Contaminant

Any physical, chemical, biological, or radiological substance or matter that has an adverse effect on air, water, or soil. For TCEQ susceptibility assessment purposes a contaminant is any of the 227 substances listed in Appendix A that may pollute drinking water sources.

Contributing Watershed Area

The watershed for the reservoir on which a surface water intake is located or the watershed upstream of a surface water intake located on a stream excluding all non-PWS reservoirs with normal storage capacity greater than 1,000 acre-feet.

Drinking Water

All water distributed by any agency or individual, public or private, for the purpose of human consumption or which may be used in the preparation of foods or beverages or for the cleaning of any utensil or article used in the course of preparation or consumption of food or beverages for human beings. The term "Drinking Water" shall also include all water supplied for human consumption or used by any institution catering to the public.

Drainage Basin

This is another term commonly used to describe a watershed.

Effluent

Water or some other liquid – raw, partially or completely treated – flowing from a reservoir, basin, treatment process or treatment plant.

Entry Point (EP)

An entry point to the distribution of a public water supply, it is any point where freshly treated water enters the distribution system. Entry points to the the distribution system may include points where chlorinated well water, treated surface water, rechlorinated water from storage, or water purchased from another supplier enters the distribution system.

Geographic Information System (GIS)

An organized collection of computer hardware, software, geographic data and personnel designed to efficiently capture, store, update, manipulate, analyze, and display all forms of geographically referenced information.

Ground Water

Water in that area below land surface in which all pore spaces and voids are filled with water (called the zone of saturation) and from which wells, springs, and seeps are supplied.

Heavy Metals

Metallic elements with high atomic weights, e.g., mercury, chromium, cadmium, arsenic, and lead. They can damage living organisms at low concentrations and tend to accumulate in the food chain.

Herbicide

A compound, usually a man-made organic chemical, used to kill or control plant growth.

Hydraulic Conductivity

A coefficient of proportionality describing the rate at which water can move through a permeable medium. Clay usually has a hydraulic conductivity of less than .00005 cm/sec while the hydraulic conductivity of gravel may range from 1 to 100 cm/sec.

Hydrology

The study of the occurrence, distribution, and chemistry of waters of the Earth.

Hydrogeology

The geology of ground water, with particular emphasis on the chemistry and movement of water.

Hydrologic Region

The largest hydrologic unit classification, identified by a two digit hydrologic unit code (HUC). The code identifies one of twenty one major geographic areas, or regions that contain either the drainage of a major river or series of rivers. Texas falls within three hydrologic regions, region 11 (Arkansas-White-Red Region) including the drainage of the Red River basin in Texas, region 12 (Texas Gulf Region) includes the drainage that discharges into the Gulf of Mexico from Sabine Pass to the Rio Grande Basin boundary, and region 13 (Rio Grande Region) which includes the Rio Grande River drainage. (Seaber, Kapinos, & Knapp, 1987)

Hydrologic Unit Code (HUC)

A two to eight digit unique code based on four levels of classification within the hydrologic unit system (divisions and subdivisions of the United States into successively smaller hydrologic units: regions, sub-regions, accounting units, and cataloging units). An eight-digit code uniquely identifies each of the four levels of classification within four two-digit fields. The first two digits identify the region; the first four digits identify the sub-region; the first six digits identify the accounting unit, and the addition of two more digits for the cataloging unit completes the eight-digit code. (Seaber, Kapinos, & Knapp, 1987)

Insecticide

Any substance or chemical formulated to kill or control insects.

Inorganic

Material such as sand, salt, iron, calcium salts and other mineral materials. Inorganic substances are of mineral origin, whereas organic substances are usually of animal or plant origin. See Organic.

Karst

A region made up of porous limestone containing deep fissures and sinkholes and characterized by underground caves and streams.

Leakance

Ratio of soil permeability to soil thickness.

Maximum Contaminant Level (MCL)

The maximum permissible level of a contaminant in water which is delivered to any user of a public water system.

Noncommunity Water System

Any public water system which is not a community system.

Non-point Source

Pollution sources without a specific point of origin, usually due to storm water runoff from urban areas or agriculture/rangeland.

Nontransient Noncommunity Water System

A public water system that is not a community water system and regularly serves at least 25 of the same persons at least six months out of the year.

Operational Status Code

A code assigned to each PWS water source indicating its use or status by the system. Water source operational statuses codes are: A (abandoned source), C (capped water well), D (demand, source used only for peak demand periods), E (emergency, used only for emergencies), F (former PWS source, not used by the system), N (well used for non-drinking water uses), O (Operational), P (plugged water well), T (test, well in development).

Organic

Substances that come from animal or plant sources or man-made chemical compounds containing carbon. Organic substances always contain carbon.

Pathogen

Any organism able to cause a disease such as bacteria, viruses and the protozoans *Cryptosporidium parvum* and *Giardia lamblia.*

Pesticide

Any substance or chemical designed or formulated to kill or control weeds or animal pests. Also see herbicide, insecticide.

Point Source

A stationery location or fixed facility from which pollutants might be discharged or emitted.

Porosity

The ratio of openings (voids) to the total volume of a soil or rock. Porosity is an indication of the capacity of the material to hold water. Expressed as percentages, clays have a porosity of 50% while gravels have a porosity of 20%

Potential Source of Contamination (PSOC)

A point source from which contaminants may leak or be discharged.

Potentiometric Surface

A surface that represents the level to which water will rise in tightly cased wells in a confined aquifer. In an unconfined aquifer, the potentiometric surface is the water table.

Precipitation

1) The process by which atmospheric moisture falls onto a land or water surface as rain, snow, hail, or other forms of moisture. 2) The chemical transformation of a substance in solution into an insoluble form (precipitate).

Public Water System (PWS)

A system for the provision to the public of water for human consumption through pipes or other constructed conveyances, which includes all uses described under the definition for drinking water. Such a system must have at least 15 service connections or serve at least 25 individuals at least 60 days out of the year. This term includes: any collection, treatment, storage, and distribution facilities under the control of the operator of such system and used primarily in connection with such system, and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. Two or more systems with each having a potential to serve less than 15 connections or less than 25 individuals but owned by the same person, firm, or corporation and located on adjacent land will be considered a public water system when the total potential service connections in the combined systems are 15 or greater or if the total number of individuals served by the combined systems total 25 or greater at least 60 days out of the year. Without excluding other means of the terms "individual" or "served," an individual shall be deemed to be served by a water system if he lives in, uses as his place of employment, or works in a place to which drinking water is supplied from the system.

Public Water System Identification Number (PWS ID)

A unique seven digit identification number assigned to each public water supply system in Texas.

Radionuclide

Any man-made or natural element that emits radiation in the form of alpha or beta particles, or as gamma rays.

Reservoir

Any natural or artificial holding area used to store, regulate or control water.

Reservoir Depth : Mean Annual Runoff Ratio

An attribute used in calculating surface water intrinsic susceptibility to contamination. Contaminant movement in an aqueous environment will be higher when reservoir depth : annual runoff ratios are low since the potential for resuspension of contaminants is higher in shallow reservoirs and time of travel of a contaminant through the reservoir would be shorter.

River Basin

The entire land area drained by a river, also known as a watershed.

Runoff

That part of precipitation, snow melt, or irrigation water that runs off the land into streams or other surface water. It can carry pollutants from the air and land into surface waters.

Runoff : Precipitation Ratio

An attribute used in calculating surface water intrinsic susceptibility to contamination. Contaminant movement in an aqueous environment will be higher when runoff : precipitation ratios are high. For example, when runoff is high in relation to the amount of precipitation falling on the watershed, contaminants will be more likely to be carried to the receiving water body than when runoff is low in relation to precipitation.

Safe Drinking Water Act (SDWA)

A statute enacted by the U.S. Congress in 1974. The Act establishes a cooperative program among local, State and Federal agencies to insure safe drinking water for consumers.

Saturated Zone

The zone in a soil profile or geologic formation in which all pore spaces are filled with water.

Saturated Thickness

The height or thickness of the saturated zone.

Screened Interval

That part of a completed water well with openings which allow water to enter the well bore. The screened interval includes the zone completed as an open hole in a competent geologic unit such as limestone or dolomite.

Slope

The inclination of the land surface from the horizontal. The percentage of slope is the vertical distance divided by the horizontal distance, for example, a slope of 20 % is a drop of 20 feet in 100 feet of horizontal distance. Percent land surface slope is an attribute used to determine susceptibility under the ground water intrinsic component. A low percent slope indicates water is more likely to recharge into ground water rather than becoming runoff.

Soil Bulk Density

A ratio of the mass of soil to its total volume (solids and pores together). Mean soil bulk density is an attribute used in determining the susceptibility in the ground water intrinsic component.

Soil Clay Content

Percent of clays in soil. Mean soil clay content is an attribute used to determine susceptibility in the ground water intrinsic component. Water does not move easily through clay deposits, therefore, the higher the percentage of clay, the less likely contaminants will be able move through the aquifer matrix.

Soil Erodibility

A measure of the soil's susceptibility to raindrop impact, runoff and other erosional processes. Soil erodibility is an attribute used in calculating surface water intrinsic susceptibility to contamination. Contaminants may adsorb to soils, where soil erodibility is high, contaminants-adsorbed soils may be transported into receiving waters during rainfall events.

Soil Hydrologic Group (HSG)

A classification of soils based on similarities in runoff potential under similar storm and cover conditions. Soils within the United States are placed into four groups (A, B, C and D) and three dual classes (A/D, B/D, and C/D). Class A soils have a high infiltration rate (rate at which water enters the soil) and high rate of transmission (rate at which water moves in the soil) and therefore a low runoff potential; Class B soils have a moderate infiltration rate and rate of water transmission; Class C soils have a slow infiltration rate and rate of water transmission; Class D soils have a very slow infiltration rate and water transmission and therefore a high runoff potential. Dual hydrologic groups are given for certain wet soils that can be adequately drained, the first letter applies to the drained condition, the second to the undrained. The mean soil hydrologic group is an attribute in the ground water intrinsic component, soil hydrologic groups were classified using the Natural Resource Conservation Service's Curve Number Method where class placement is based on the minimum annual steady ponded infiltration rate for a bare ground surface.

Soil Total Organic Materials

Percent organic matter (plant and animal residue in various stages of decomposition) contained within soils. Organic matter adsorbs most chemicals, therefore the higher the organic matter of the soil, the less mobile contaminants would be. Mean soil total organic materials is an attribute used in determining susceptibility under the ground water intrinsic component.

Soil Zone

Extends from the land surface to a maximum depth of a meter or two and is the zone that supports plant growth. The porosity and permeability of the soils zone tends to be higher than those of the underlying materials.

Source Water Assessment and Protection (SWAP)

Established in 1997 after the TCEQ's Wellhead Protection and Vulnerability Assessment Programs were merged. SWAP assists local communities in developing drinking water protection programs and assesses susceptibility of the state's public drinking water supply sources.

Spring

A surface water body created by the natural emergence of ground water to the Earth's surface.

Surface Water

Water which remains on the land surface and contributes to lakes, streams and reservoirs.

Susceptibility

The quality or state of being easily affected or influenced. For assessment purposes, susceptibility is defined as the potential for a PWS to withdraw water which has been exposed to a listed contaminant(s) at a concentration that would pose a health concern.

Time of Travel

The distance a molecule of water (and therefore any associated contaminant) could travel within a specified time period or the time a molecule of water would travel within a particular distance. For surface water sources, a 2 hour time of travel is the distance a molecule of water would travel within 2 hours under the average flow conditions of the stream. Ground water capture zones include time of travel zones, each specifying a distance a molecule of water may travel in 2, 5, 10, 20 and 100 years.

Total Reservoir Storage : Mean Annual Runoff Ratio

An attribute used in calculating surface water intrinsic susceptibility to contamination. Contaminant movement in an aqueous environment will be higher when total reservoir storage : mean annual runoff ratios are low since the travel time of the contaminant to the surface water intake would be shorter and natural attenuation rates (biological, chemical or sedimentary) would be lower as well.

Toxic

A substance that is poisonous to an organism.

Transmissivity

A measure of the rate at which water will move through an aquifer. Transmissivity incorporates the hydraulic conductivity of the aquifer, aquifer thickness, water temperature and fluid properties to describe water movement.

Transient Noncommunity Water System

A public water system that is not a community water system and serves at least 25 persons at least 60 days out of the year, yet by its characteristics, does not meet the definition of a nontransient noncommunity water system.

Trihalomethane (THM)

One of a family of organic compounds named as derivatives of methane. THMs are generally the by-product from chlorination of drinking water that contains organic material. The resulting compounds (THMs) are suspected of causing cancer.

Unconfined Aquifer

Where water only partly fills an aquifer, the upper surface of the saturated zone is free to rise and decline. Unconfined aquifers are also referred to as water-table aquifers.

Vadose Zone

The unsaturated zone between the ground surface and the fully saturated zone.

Volatile

Readily vaporizable at a relatively low temperature.

Water Source Code

A unique code that TCEQ uses to distinguish between sources of drinking water. The first letter of the TCEQ source identification number specifies the type of source, the letter "G" indicates a groundwater well while the letter "S" is used to indicate a surface water intake, the following 7 digits are the PWS system identification number, while the last one or two letters of the water source code specifies the order the well or intake came online or was entered into the TCEQ database. Example: G0150018AC.

Water Table

Level of ground water; the upper surface of the zone of saturation of ground water above an impermeable layer of soil or rock (through which water cannot move) as in an unconfined aquifer. This level can be very near the surface of the ground or far below it. Mean seasonal high water table depth is an attribute within the ground water intrinsic component of the SWSA.

Watershed

The land area that drains into a stream. An area of land that contributes runoff to one specific delivery point.

Watershed Slope : Watershed Area Ratio

An attribute used in calculating surface water intrinsic susceptibility to contamination. Contaminant movement will be higher when watershed slope : watershed area ratios are low since the time of travel of a contaminant through a larger watershed with a low slope is longer than a similarly sized watershed with a higher slope. The longer time of travel allows for natural attenuation of the contaminant before reaching the surface water intake.

8. Acronyms

API	Area of Primary Influence
BMP	Best Management Practice
CAS	Chemical Abstracts Service
CCR	Consumer Confidence Report
DEM	Digital Elevation Model
GIS	Geographic Information System
GPM	Gallons Per Minute
HUC	Hydrologic Unit Code
MCL	Maximum Contaminant Level
NPS	Non-Point Source
PAH	Polycyclic Aromatic Hydrocarbons
PDW	Public Drinking Water
PSOC	Potential Source of Contamination
PWS	Public Water Supply
SDWA	Safe Drinking Water Act
SOC	Synthetic Organic Chemicals
SWAP	Source Water Assessment and Protection
SWSA	Source Water Susceptibility Assessment
TAMU	Texas A&M University
TEEX	Texas Engineering Extension Service
TCEQ	Texas Commission on Environmental Quality
TWDB	Texas Water Development Board
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VOC	Volatile Organic Compound

Appendix A Contaminant List

List of regulated and unregulated assessed contaminants grouped by contaminant class. TCEQ Chapter 290 Subchapter F rules are cited for each drinking water standard (secondary drinking water standards are italicized). The TCEQ threshold limit is the concentration used within the contaminant occurrence component to determine if a detection of the chemical was found during water quality monitoring activities. The chemical abstract service (CAS) number is a unique identifier for each chemical. Numbers above contaminants indicate the general uses of each contaminant: 1 Agricultural cropland; 2 Agricultural (livestock, feedlots); 3 Industrial; 4 Domestic Effluent; 5 Pipeline Associated; 6 Transportation; 7 Human density; 8 Water Contaminant; 9 No Longer Produced.

Inorganics: Regulated

Contaminant	Drinking Water Standard	PWS Rule	TCEQ Threshold	CAS Number
3,4,7 ALUMINUM	*0.05* MG/L	§290.105	0.05 MG/L	14903-36-7
3 ANTIMONY	0.006 MG/L	§290.106	0.003 MG/L	64924-52-3
3 ARSENIC	0.05 MG/L	§290.106	0.01 MG/L	15584-04-0
4,7 ASBESTOS	7 MF/L	§290.106	7 MF/L	1332-21-4
3,5 BARIUM	2 MG/L	§290.106	1 MG/L	16541-35-8
3 BERYLLIUM	0.004 MG/L	§290.106	0.002 MG/L	14701-08-7
3 CADMIUM	0.005 MG/L	§290.106	0.0025 MG/L	22537-48-0
3 CHLORIDE	*300* MG/L	§290.105	150 MG/L	16887-00-6
3 CHROMIUM	0.1 MG/L	§290.106	0.05 MG/L	11104-59-9
3,6,7 COPPER	*1* MG/L	§290.117	0.5 MG/L	17493-86-6
3 CYANIDE	0.2 MG/L	§290.106	0.00001 MG/L	57-12-5
7 FLUORIDE	2 MG/L	§290.105	2 MG/L	16984-48-8
7 HYDROGEN SULFIDE	*0.05* MG/L	§290.105	0.05 MG/L	15035-72-0
3 IRON	*0.3* MG/L	§290.105	0.3 MG/L	15438-31-0
3,7 LEAD		§290.117	0.0075 MG/L	14701-27-0
3,7 MANGANESE	*0.05* MG/L	§290.105	0.05 MG/L	14333-14-3
3,7 MERCURY	0.002 MG/L	§290.106	0.001 MG/L	14302-87-5
1 NITRATE	10 MG/L	§290.106	5 MG/L	14797-55-8

NITRATE+NITRITE [1,7]	10 MG/L	§290.106	5 MG/L	
NITRITE [7]	1 MG/L	§290.106	0.5 MG/L	14797-65-0
SELENIUM [3,7]	0.05 MG/L	§290.106	0.025 MG/L	7782-49-2
SILVER [3,4,7]	*0.1* MG/L	§290.105	0.05 MG/L	14701-21-4
SULFATE [3,7]	*300* MG/L	§290.105	150 MG/L	14808-79-8
TDS	*1000* MG/L	§290.105	500 MG/L	
THALLIUM [3]	0.002 MG/L	§290.106	0.001 MG/L	7440-28-0
ZINC [3,7]	*5* MG/L	§290.105	2.5 MG/L	15176-26-8

Inorganics: Un-Regulated

Contaminant	Drinking Water Standard	PWS Rule	TCEQ Threshold	CAS Number
ALKALINITY				
BICARBONATE			1000 MG/L	71-52-3
BORON [3]			0.01 MG/L	11113-50-1
BROMIDE [3]			50 MG/L	
CALCIUM [3]			1000 MG/L	14102-48-8
CARBONATE			1000 MG/L	3812-32-6
MAGNESIUM [3,7]			1000 MG/L	14581-92-1
NICKEL [3]			0.001 MG/L	14701-22-5
PERCHLORATE [3]			0.001 MG/L	14797-73-0
SODIUM [3]			1000 MG/L	17341-25-2

Radiochemical: Regulated

Contaminant	Drinking Water Standard	PWS Rule	TCEQ Threshold	CAS Number
GROSS ALPHA	15 PCI/L	§290.108	7.5 PCI/L	
GROSS BETA	4 MREM	§290.108	50 PCI/L	
RADIUM-226 [3,7]	5 PCI/L	§290.108	2.5 PCI/L	13982-63-3

3,7 RADIUM-228	5 PCI/L	§290.108	2.5 PCI/L	15262-20-1
3 STRONTIUM-90	4 MREM	§290.108	0.5 PCI/L	10098-97-2
3 TRITIUM	4 MREM	§290.108	1 PCI/L	15086-10-9

Radiochemical: Un-Regulated

Contaminant	Drinking Water Standard	PWS Rule	TCEQ Threshold	CAS Number
3 RADON			0.5 PCI/L	10043-92-2
3 STRONTIUM-89		§290.108	0.5 PCI/L	14701-18-9
3,7 TOTAL ALPHA EMITTING RADIUM		§290.108	5 PCI/L	
3 URANIUM		§290.108	0.001 MG/L	

Volatile Organic Contaminant: Regulated

Contaminant	Drinking Water Standard	PWS Rule	TCEQ Threshold	CAS Number
1,2,7 1,1,1-TRICHLOROETHANE	0.2 MG/L	§290.107(b)(2)	0.0001 MG/L	71-55-6
1,2,7 1,1,2-TRICHLOROETHANE	0.005 MG/L	§290.107(b)(2)	0.0001 MG/L	79-00-5
1,3 1,1-DICHLOROETHYLENE	0.007 MG/L	§290.107(b)(2)	0.0001 MG/L	75-35-4
1,3,4,7,8 1,2,4-TRICHLOROBENZENE	0.07 MG/L	§290.107(b)(2)	0.0001 MG/L	120-82-1
1,3 1,2-DICHLOROETHANE	0.005 MG/L	§290.107(b)(2)	0.0001 MG/L	107-06-2
3,5 1,2-DICHLOROPROPANE	0.005 MG/L	§290.107(b)(2)	0.0001 MG/L	78-87-5
3,5,6,7 BENZENE	0.005 MG/L	§290.107(b)(2)	0.0001 MG/L	71-43-2
1,5 CARBON TETRACHLORIDE	0.005 MG/L	§290.107(b)(2)	0.0001 MG/L	56-23-5
3 CIS-1,2-DICHLOROETHYLENE	0.07 MG/L	§290.107(b)(2)	0.0001 MG/L	156-59-2
3 DICHLOROMETHANE	0.005 MG/L	§290.107(b)(2)	0.0001 MG/L	75-09-2
3,4,5,7 ETHYLBENZENE	0.7 MG/L	§290.107(b)(2)	0.0001 MG/L	100-41-4
3 MONOCHLOROBENZENE (CHLOROBENZENE)	0.1 MG/L	§290.107(b)(2)	0.0001 MG/L	108-90-7
3,7 ORTHO-1,2-DICHLOROBENZENE	0.6 MG/L	§290.107(b)(2)	0.0001 MG/L	95-50-1
3,4,7 PARA-1,4-DICHLOROBENZENE	0.075 MG/L	§290.107(b)(2)	0.0001 MG/L	106-46-7

STYRENE [3,7]	0.1 MG/L	§290.107(b)(2)	0.0001 MG/L	100-42-5
TETRACHLOROETHYLENE [3,7]	0.005 MG/L	§290.107(b)(2)	0.0001 MG/L	127-18-4
TOLUENE [3,5,6,7]	1 MG/L	§290.107(b)(2)	0.0001 MG/L	108-88-3
TRANS-1,2-DICHLOROETHYLENE [3]	0.1 MG/L	§290.107(b)(2)	0.0001 MG/L	156-60-5
TRICHLOROETHYLENE [3,7]	0.005 MG/L		0.0001 MG/L	79-01-6
VINYL CHLORIDE [3]	0.002 MG/L	§290.107(b)(2)	0.0001 MG/L	75-01-4
XYLENES (TOTAL) [3,5,6,7]	10 MG/L	§290.107(b)(2)	0.0001 MG/L	

Volatile Organic Contaminant: Un-Regulated

Contaminant	Drinking Water Standard	PWS Rule	TCEQ Threshold	CAS Number
1,1,1,2-TETRACHLOROETHANE [4,7]			0.0001 MG/L	630-20-6
1,1,2,2-TETRACHLOROETHANE [4,7]			0.0001 MG/L	79-34-5
1,1-DICHLOROETHANE [3]			0.0001 MG/L	75-34-3
1,1-DICHLOROPROPENE [2,3]			0.0001 MG/L	563-58-6
1,2,3-TRICHLOROBENZENE [3]			0.0001 MG/L	87-61-6
1,2,3-TRICHLOROPROPANE [3]			0.0001 MG/L	96-18-4
1,2,4-TRIMETHYLBENZENE [3,4,5]			0.0001 MG/L	95-63-6
1,2-DIPHENYLHYDRAZINE [3]			0.0001 MG/L	122-66-7
1,3,5-TRIMETHYLBENZENE [3,4]			0.0001 MG/L	108-67-8
1,3-DICHLOROBENZENE [3,4,7]			0.0001 MG/L	541-73-1
1,3-DICHLOROPROPANE [1]			0.0001 MG/L	142-28-9
1,3-DICHLOROPROPENE [1,3]			0.0001 MG/L	542-75-6
2,2-DICHLOROPROPANE			0.0001 MG/L	594-20-7
2,4,6-TRICHLOROPHENOL [3]			0.02 MG/L	88-06-2
2,4-DICHLOROPHENOL [1,3]			0.02 MG/L	120-83-2
2,4-DINITROPHENOL [1]			0.02 MG/L	51-28-5

3 2,4-DINITROTOLUENE	0.005	MG/L	121-14-2
3 2,6-DINITROTOLUENE	0.005	MG/L	606-20-2
3 2-CHLOROTOLUENE	0.0001	MG/L	95-49-8
3 2-HEXANONE	0.0001	MG/L	591-78-6
3,4 2-METHYLPHENOL	0.005	MG/L	95-48-7
3 4-CHLOROTOLUENE	0.0001	MG/L	106-43-4
3,5,7 4-ISOPROPYLTOLUENE	0.0001	MG/L	99-87-6
3,4,7 4-METHYL-2-PENTANONE (MIBK)	0.0001	MG/L	108-10-1
1 ACETOCHLOR	0.00001	MG/L	34256-82-1
3,4,7 ACETONE	0.7	MG/L	67-64-1
3,4 ACRYLONITRILE	0.0001	MG/L	107-13-1
BROMOBENZENE	0.0001	MG/L	108-86-1
1,3,4,7 CARBON DISULFIDE	0.0001	MG/L	75-15-0
3,4,7 CHLOROETHANE	0.0001	MG/L	75-00-3
3 CHLOROMETHANE	0.0001	MG/L	74-87-3
1,3 CIS-1,3-DICHLOROPROPENE	0.0001	MG/L	10061-01-5
3,7 DIBROMOMETHANE	0.0001	MG/L	74-95-3
3 DICHLORODIFLUOROMETHANE	0.0001	MG/L	75-71-8
3 ETHYL METHACRYLATE	0.0001	MG/L	97-63-2
3,7 HEXACHLOROBUTADIENE	0.0001	MG/L	87-68-3
3 ISOPROPYLBENZENE	0.0001	MG/L	98-82-8
3,4,5,6,7 M + P XYLENE	0.0001	MG/L	106-42-3
3,7 METHYL ETHYL KETONE	0.0001	MG/L	78-93-3
1 METHYL IODIDE (IODOMETHANE)	0.0001	MG/L	74-88-4
3 METHYL METHACRYLATE	0.0001	MG/L	80-62-6

[3,5,7] METHYL-T-BUTYL ETHER	0.0001 MG/L	1634-04-4
[3,5,7] M-XYLENE	0.0001 MG/L	108-38-3
[3,5,6,7] NAPHTHALENE	0.0001 MG/L	91-20-3
N-BUTYLBENZENE	0.0001 MG/L	104-51-8
[3,5,7] NITROBENZENE	0.0001 MG/L	98-95-3
[5] N-PROPYLBENZENE	0.0001 MG/L	103-65-1
[3] ORGANOTINS	0 MG/L	
[3,5,6,7] O-XYLENE	0.0001 MG/L	95-47-6
[3,5,6,7] P-XYLENE	0.0001 MG/L	106-42-3
[3,5,6,7] S-BUTYLBENZENE	0.0001 MG/L	135-98-8
[5] T-BUTYLBENZENE	0.0001 MG/L	98-06-6
[3] TETRAHYDROFURAN	0.0001 MG/L	109-99-9
[1,3] TRANS-1,3-DICHLOROPROPENE	0.0001 MG/L	10061-02-6
[3,7] TRICHLOROFLUOROMETHANE	0.0001 MG/L	75-69-4
[3] VINYL ACETATE	0.0001 MG/L	108-05-4

Synthetic Organic Contaminant: Regulated

Contaminant	Drinking Water Standard	PWS Rule	TCEQ Threshold	CAS Number
[6] 2,3,7,8-TCDD	3E-08 MG/L	§290.107(b)(1)	0.0001 MG/L	1746-01-6
[1,8] 2,4,5-TP	0.05 MG/L	§290.107(b)(1)	0.00005 MG/L	93-72-1
[1,6] 2,4-D	0.07 MG/L	§290.107(b)(1)	0.00015 MG/L	94-75-7
[1] ALACHLOR	0.002 MG/L	§290.107(b)(1)	0.00001 MG/L	15972-60-8
[1] ATRAZINE	0.003 MG/L	§290.107(b)(1)	0.00001 MG/L	1912-24-9
[3,6] BENZO(A)PYRENE	0.0002 MG/L	§290.107(b)(1)	0.0002 MG/L	50-32-8
[1] CARBOFURAN	0.04 MG/L	§290.107(b)(1)	0.00001 MG/L	1563-66-2
[1,7] CHLORDANE	0.002 MG/L	§290.107(b)(1)	0.0001 MG/L	57-74-9

[1,7] DALAPON	0.2 MG/L	§290.107(b)(1)	0.00005 MG/L	75-99-0
[3] DI-(2-ETHYLHEXYL)ADIPATE	0.4 MG/L	§290.107(b)(1)	0.005 MG/L	103-23-1
[3] DI-(2-ETHYLHEXYL)PHTHALATE	0.006 MG/L	§290.107(b)(1)	0.005 MG/L	117-81-7
[1] DIBROMOCHLOROPROPANE	0.0002 MG/L	§290.107(b)(1)	0.0001 MG/L	67708-83-2
[1] DINOSEB	0.007 MG/L	§290.107(b)(1)	0.00005 MG/L	88-85-7
[1] DIQUAT	0.02 MG/L	§290.107(b)(1)	0.00005 MG/L	2764-72-9
[1] ENDOTHALL	0.1 MG/L	§290.107(b)(1)	0.00005 MG/L	145-73-3
[1] ENDRIN	0.002 MG/L	§290.107(b)(1)	0.00005 MG/L	72-20-8
[5,6,7] ETHYLENE DIBROMIDE	0.00005 MG/L	§290.107(b)(1)	0.00005 MG/L	106-93-4
[1,7] GLYPHOSATE	0.7 MG/L	§290.107(b)(1)	0.00005 MG/L	1071-83-6
[7] HEPTACHLOR	0.0004 MG/L	§290.107(b)(1)	0.0001 MG/L	76-44-8
[7] HEPTACHLOR EPOXIDE	0.0002 MG/L	§290.107(b)(1)	0.0001 MG/L	1024-57-3
[1,3,9] HEXACHLOROBENZENE	0.001 MG/L	§290.107(b)(1)	0.001 MG/L	118-74-1
[1,3] HEXACHLOROCYCLOPENTADIENE	0.05 MG/L	§290.107(b)(1)	0.005 MG/L	77-47-4
[1,7] LINDANE	0.0002 MG/L	§290.107(b)(1)	0.00001 MG/L	58-89-9
[1] METHOXYCHLOR	0.04 MG/L	§290.107(b)(1)	0.00005 MG/L	72-43-5
[1] OXAMYL	0.2 MG/L	§290.107(b)(1)	0.00005 MG/L	23135-22-0
[6,7] PCBs	0.0005 MG/L	§290.107(b)(1)	0.0001 MG/L	53469-21-9
[6,7] PENTACHLOROPHENOL	0.001 MG/L	§290.107(b)(1)	0.03 MG/L	87-86-5
[1] PICLORAM	0.5 MG/L	§290.107(b)(1)	0.00005 MG/L	1918-02-1
[1,2] SIMAZINE	0.004 MG/L	§290.107(b)(1)	0.00001 MG/L	122-34-9
[1,9] TOXAPHENE	0.003 MG/L	§290.107(b)(1)	0.002 MG/L	8001-35-2

Synthetic Organic Contaminant: Un-Regulated

Contaminant	Drinking Water Standard	PWS Rule	TCEQ Threshold	CAS Number
[1] 2,4,5-T			0.00005 MG/L	93-76-5

3-HYDROXYCARBOFURAN	0.00005	MG/L	16655-82-6
1,3,5 ACENAPHTHENE	0.005	MG/L	83-32-9
3,6 ACENAPHTHYLENE	0.005	MG/L	208-96-8
1 ALDICARB	0.00055	MG/L	116-06-3
1 ALDICARB SULFONE	0.0001	MG/L	1646-88-4
1 ALDICARB SULFOXIDE	0.00005	MG/L	1646-87-3
1 ALDRIN	0.0001	MG/L	309-00-2
3 ANTHRACENE	0.005	MG/L	120-12-7
AROCLOR (PCB)	0.00005	MG/L	53469-21-9
1 BENTAZON	0.00005	MG/L	25057-89-0
7 BENZO[A]ANTHRACENE	0.01	MG/L	56-55-3
3 BENZO[B]FLUORANTHENE	0.01	MG/L	205-99-2
3,5,6,7 BENZO[G,H,I]PERYLENE	0.01	MG/L	191-24-2
7 BENZO[K]FLUORANTHENE	0.01	MG/L	207-08-9
7 BROMACIL	0.00005	MG/L	314-40-9
1 BUTACHLOR	0.00005	MG/L	23184-66-9
3 BUTYL BENZYL PHTHALATE	0.005	MG/L	85-68-7
1,2 CARBARYL	0.00001	MG/L	63-25-2
1,7 CHLORDANE (ALPHA-CHLORDANE)	0.0001	MG/L	5103-71-9
1,7 CHLORDANE (GAMMA-CHLORDANE)	0.0001	MG/L	12789-03-6
1,7 CHLORDANE (TRANS-NONACHLOR)	0.0001	MG/L	39765-80-5
3,7 CHRYSENE	0.0001	MG/L	218-01-9
1,7 CYANAZINE	0.00001	MG/L	21725-46-2
DCPA DI-ACID DEGRADATE	0.00003	MG/L	2136-79-0
DCPA MONO-ACID DEGRADATE	0.00003	MG/L	887-54-7

1,9 DDE	0.00001	MG/L	72-55-9
1 DIAZINON	0.00001	MG/L	333-41-5
5,6 DIBENZ[A,H]ANTHRACENE	0.01	MG/L	53-70-3
1 DICAMBA	0.00005	MG/L	1918-00-9
1 DIELDRIN	0.00001	MG/L	60-57-1
3,7 DIETHYL PHTHALATE	0.005	MG/L	84-66-2
3 DIMETHYL PHTHALATE	0.005	MG/L	131-11-3
3 DI-N-BUTYL PHTHALATE	0.005	MG/L	84-74-2
1 DISULFOTON	0.00001	MG/L	298-04-4
1 DIURON	0.00005	MG/L	330-54-1
1 EPTC	0.00001	MG/L	759-94-4
3 FLUORENE	0.0001	MG/L	86-73-7
1,4,7 FONOFOS	0.00001	MG/L	944-22-9
5,7 INDENO[1,2,3,CD]PYRENE	0.01	MG/L	193-39-5
1 LAMBAST	0.00005	MG/L	845-52-3
1 LINURON	0.00001	MG/L	330-55-2
1 METHIOCARB	0.00005	MG/L	2032-65-7
1 METHOMYL	0.00005	MG/L	16752-77-5
1 METOLACHLOR	0.00001	MG/L	51218-45-2
1 METRIBUZIN	0.00001	MG/L	21087-64-9
1 MOLINATE	0.00001	MG/L	2212-67-1
3,5 PHENANTHRENE	0.005	MG/L	85-01-8
6,7 PROMETON	0.00001	MG/L	1610-18-0
1 PROPACHLOR	0.00001	MG/L	1918-16-7
1 PROPAZINE	0.00001	MG/L	139-40-2

PYRENE [3]			0.0001 MG/L	129-00-0
RDX [3]			0.0001 MG/L	121-82-4
TERBACIL [1,7]			0.00001 MG/L	5902-51-2
TERBUFOS [1]			0.00001 MG/L	13071-79-9
TRIAZINES [1]			0 MG/L	
TRIFLURALIN [1,7]			0.00001 MG/L	1582-09-8

Physical Parameter: Regulated

Contaminant	Drinking Water Standard	PWS Rule	TCEQ Threshold	CAS Number
pH	7	§290.105		

Physical Parameter: Un-Regulated

Contaminant	Drinking Water Standard	PWS Rule	TCEQ Threshold	CAS Number
HARDNESS				
P-ALKALINITY				
SPECIFIC CONDUCTANCE				

Disinfection By-Product: Regulated

Contaminant	Drinking Water Standard	PWS Rule	TCEQ Threshold	CAS Number
TOTAL TRIHALOMETHANE [7]	0.08 MG/L	§290.113	0.08 MG/L	

Disinfection By-Product: Un-Regulated

Contaminant	Drinking Water Standard	PWS Rule	TCEQ Threshold	CAS Number
BROMOCHLOROMETHANE [7]			0.08 MG/L	74-97-5
BROMODICHLOROMETHANE [4,7]			0.08 MG/L	75-27-4
BROMOFORM [3,4,7]			0.08 MG/L	75-25-2
BROMOMETHANE [1,7]			0.08 MG/L	74-83-9
CHLOROFORM [3]			0.08 MG/L	67-66-3
DIBROMOCHLOROMETHANE [4,7]			0.08 MG/L	124-48-1

Microbial Organism: Regulated

Contaminant	Drinking Water Standard	PWS Rule	TCEQ Threshold	CAS Number
1,7 TOTAL COLIFORM		§290.109		

Microbial Organism: Un-Regulated

Contaminant	Drinking Water Standard	PWS Rule	TCEQ Threshold	CAS Number
2 CRYPTOSPORIDIUM PARVUM		§290.111	1 OOCYST	
2 ESCHERICHIA COLI		§290.109		
2 FECAL VIRUSES		§290.111		
4 GIARDIA LAMBLIA		§290.111		

Appendix B — Description of the Public Drinking Water System and Water Supply

Brief description of the Public Water Supply (PWS) system and its water sources organized by TCEQ's water source identification number. Description of water source includes the system's name for the source, the water source's operational status, TCEQ entry point number and for ground water wells, selected well properties and the aquifer from which the well pumps.

0140161 CENTRAL TEXAS WSC

PWS System Information

Address: 4020 LAKECLIFF DR
HARKER HEIGHTS TX 765488607

Telephone: (254) 698-2779 — County: BELL

PWS Type: COMMUNITY — Population Served: 25

Total Production: 15.33 million gallons per day — Number Connections: 1

Ground Water Source

Water Source ID	PWS System Name for Source

Surface Water Sources

Water Source ID	PWS System Name for Source
S0140161A	1 & 5

Operational Status	Entry Point	Surface Waterbody Name	GPM
OPERATIONAL	001	STILLHOUSE HOLLOW LAKE	0

Appendix C PWS System Susceptibility Summary: Contaminants with HIGH Susceptibility

Each water source receives an attribute rating for each contaminant under each of the six components (see raw scores for waters sources under Appendices E and F). For systems with multiple sources, component attribute ratings are averaged and a contaminant susceptibility rating is calculated for an overall system susceptibility (see Sec. 2.7). Listed below are contaminants for which the system has received a high susceptibility rating as well as their component susceptibility ratings. If this page is empty then there are no susceptibility issues for this category.

0140161 CENTRAL TEXAS WSC

Inorganics: Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	Area Primary Influence	Contaminant Occurrence	SUMMARY
ALUMINUM	-----	LOW	MEDIUM	-----	MEDIUM	HIGH	**HIGH**
CADMIUM	-----	LOW	HIGH	-----	MEDIUM	HIGH	**HIGH**
CHLORIDE	-----	LOW	MEDIUM	-----	MEDIUM	HIGH	**HIGH**
IRON	-----	LOW	MEDIUM	-----	MEDIUM	HIGH	**HIGH**
LEAD	-----	LOW	MEDIUM	-----	MEDIUM	HIGH	**HIGH**
MANGANESE	-----	LOW	MEDIUM	-----	MEDIUM	HIGH	**HIGH**
MERCURY	-----	LOW	MEDIUM	-----	MEDIUM	HIGH	**HIGH**
TDS	-----	LOW	LOW	-----	MEDIUM	HIGH	**HIGH**

Inorganics: Un-Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	Area Primary Influence	Contaminant Occurrence	SUMMARY
BORON	-----	LOW	LOW	-----	MEDIUM	HIGH	**HIGH**
NICKEL	-----	LOW	MEDIUM	-----	MEDIUM	HIGH	**HIGH**

Radiochemical: Un-Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	Area Primary Influence	Contaminant Occurrence	SUMMARY
URANIUM	-----	LOW	LOW	-----	MEDIUM	HIGH	**HIGH**

Volatile Organic Contaminant: Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	Area Primary Influence	Contaminant Occurrence	SUMMARY
CARBON TETRACHLORIDE	-----	LOW	LOW	-----	MEDIUM	HIGH	HIGH
TETRACHLOROETHYLENE	-----	LOW	LOW	-----	MEDIUM	HIGH	HIGH

Volatile Organic Contaminant: Un-Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	Area Primary Influence	Contaminant Occurrence	SUMMARY
CARBON DISULFIDE	-----	LOW	LOW	-----	MEDIUM	HIGH	HIGH
TETRAHYDROFURAN	-----	LOW	LOW	-----	MEDIUM	HIGH	HIGH

Synthetic Organic Contaminant: Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	Area Primary Influence	Contaminant Occurrence	SUMMARY
2,4-D	-----	LOW	MEDIUM	-----	MEDIUM	HIGH	HIGH
PICLORAM	-----	LOW	LOW	-----	MEDIUM	HIGH	HIGH

Appendix D PWS System Susceptibility Summary: Contaminants with MEDIUM

Each water source receives an attribute rating for each contaminant under each of the six components (see raw scores for waters sources under Appendices E and F). For systems with multiple sources, component attribute ratings are averaged and a contaminant susceptibility rating is calculated for an overall system susceptibility (see Sec. 2.7). Listed below are contaminants for which the system has received a medium susceptibility rating as well as their component susceptibility ratings. If this page is empty then there are no susceptibility issues for this category.

0140161 CENTRAL TEXAS WSC

Inorganics: Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	Area Primary Influence	Contaminant Occurrence	SUMMARY
ANTIMONY	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ARSENIC	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ASBESTOS	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
BARIUM	-----	LOW	MEDIUM	-----	MEDIUM	-----	**MEDIUM**
BERYLLIUM	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CHROMIUM	-----	LOW	HIGH	-----	MEDIUM	-----	**MEDIUM**
COPPER	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CYANIDE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
FLUORIDE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
HYDROGEN SULFIDE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
NITRATE	-----	LOW	MEDIUM	-----	MEDIUM	-----	**MEDIUM**
NITRATE+NITRITE	-----	LOW	MEDIUM	-----	MEDIUM	-----	**MEDIUM**
NITRITE	-----	LOW	MEDIUM	-----	MEDIUM	-----	**MEDIUM**
SELENIUM	-----	LOW	MEDIUM	-----	MEDIUM	-----	**MEDIUM**
SILVER	-----	LOW	HIGH	-----	MEDIUM	-----	**MEDIUM**
SULFATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
THALLIUM	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ZINC	-----	LOW	MEDIUM	-----	MEDIUM	-----	**MEDIUM**

Inorganics: Un-Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	Area Primary Influence	Contaminant Occurrence	SUMMARY

BROMIDE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CALCIUM	-----	LOW	MEDIUM	-----	MEDIUM	-----	**MEDIUM**
MAGNESIUM	-----	LOW	HIGH	-----	MEDIUM	-----	**MEDIUM**
PERCHLORATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
SODIUM	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

Radiochemical: Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	Area Primary Influence	Contaminant Occurrence	**SUMMARY**
GROSS ALPHA	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
GROSS BETA	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
RADIUM-226	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
RADIUM-228	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
STRONTIUM-90	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TRITIUM	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

Radiochemical: Un-Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	Area Primary Influence	Contaminant Occurrence	**SUMMARY**
RADON	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
STRONTIUM-89	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TOTAL ALPHA EMITTING RADIUM	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

Volatile Organic Contaminant: Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	Area Primary Influence	Contaminant Occurrence	**SUMMARY**
1,1,1-TRICHLOROETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,1,2-TRICHLOROETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,1-DICHLOROETHYLENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,2,4-TRICHLOROBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,2-DICHLOROETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,2-DICHLOROPROPANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
BENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CIS-1,2-DICHLOROETHYLENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

DICHLOROMETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ETHYLBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ORTHO-1,2-DICHLOROBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
PARA-1,4-DICHLOROBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
STYRENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TOLUENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TRANS-1,2-DICHLOROETHYLENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TRICHLOROETHYLENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
VINYL CHLORIDE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
XYLENES (TOTAL)	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

Volatile Organic Contaminant: Un-Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	Area Primary Influence	Contaminant Occurrence	**SUMMARY**
1,1,1,2-TETRACHLOROETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,1,2,2-TETRACHLOROETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,1-DICHLOROETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,1-DICHLOROPROPENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,2,3-TRICHLOROBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,2,3-TRICHLOROPROPANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,2,4-TRIMETHYLBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,2-DIPHENYLHYDRAZINE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,3,5-TRIMETHYLBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,3-DICHLOROBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,3-DICHLOROPROPANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,3-DICHLOROPROPENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
2,2-DICHLOROPROPANE	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
2,4,6-TRICHLOROPHENOL	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
2,4-DICHLOROPHENOL	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
2,4-DINITROPHENOL	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
2,4-DINITROTOLUENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
2,6-DINITROTOLUENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
2-CHLOROTOLUENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

2-HEXANONE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
2-METHYLPHENOL	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
4-CHLOROTOLUENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
4-ISOPROPYLTOLUENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ACETOCHLOR	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ACETONE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ACRYLONITRILE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
BROMOBENZENE	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
CHLOROETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CHLOROMETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CIS-1,3-DICHLOROPROPENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DIBROMOMETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DICHLORODIFLUOROMETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ETHYL METHACRYLATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
HEXACHLOROBUTADIENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ISOPROPYLBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
M + P XYLENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
METHYL ETHYL KETONE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
METHYL METHACRYLATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
METHYL-T-BUTYL ETHER	-----	LOW	MEDIUM	-----	MEDIUM	-----	**MEDIUM**
M-XYLENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
NAPHTHALENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
N-BUTYLBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
NITROBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
N-PROPYLBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ORGANOTINS	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
O-XYLENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
P-XYLENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
S-BUTYLBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
T-BUTYLBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TRANS-1,3-DICHLOROPROPENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TRICHLOROFLUOROMETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
VINYL ACETATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

Synthetic Organic Contaminant: Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	Area Primary Influence	Contaminant Occurrence	SUMMARY
2,3,7,8-TCDD	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
2,4,5-TP	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ALACHLOR	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ATRAZINE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
BENZO(A)PYRENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CARBOFURAN	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
CHLORDANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DALAPON	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DI-(2-ETHYLHEXYL)ADIPATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DI-(2-ETHYLHEXYL)PHTHALATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DIBROMOCHLOROPROPANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DINOSEB	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
DIQUAT	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ENDOTHALL	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ENDRIN	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ETHYLENE DIBROMIDE	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
GLYPHOSATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
HEPTACHLOR	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
HEPTACHLOR EPOXIDE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
HEXACHLOROBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
HEXACHLOROCYCLOPENTADIENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
LINDANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
METHOXYCHLOR	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
OXAMYL	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
PCBs	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
PENTACHLOROPHENOL	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
SIMAZINE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TOXAPHENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

Synthetic Organic Contaminant: Un-Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	Area Primary Influence	Contaminant Occurrence	SUMMARY
2,4,5-T	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
3-HYDROXYCARBOFURAN	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
ACENAPHTHENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ACENAPHTHYLENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ALDICARB	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
ALDICARB SULFONE	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
ALDICARB SULFOXIDE	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
ALDRIN	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ANTHRACENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
BENTAZON	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
BENZO[A]ANTHRACENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
BROMACIL	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
BUTYL BENZYL PHTHALATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CARBARYL	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CHLORDANE (ALPHA-CHLORDANE)	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CHLORDANE (GAMMA-CHLORDANE)	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CHLORDANE (TRANS-NONACHLOR)	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CHRYSENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CYANAZINE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DCPA DI-ACID DEGRADATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DCPA MONO-ACID DEGRADATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DDE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DIAZINON	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DICAMBA	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DIELDRIN	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DIETHYL PHTHALATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DIMETHYL PHTHALATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DI-N-BUTYL PHTHALATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DISULFOTON	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**

DIURON	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
EPTC	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
FLUORENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
FONOFOS	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
INDENO[1,2,3,CD]PYRENE	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
LINURON	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
METHIOCARB	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
METHOMYL	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
METOLACHLOR	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
METRIBUZIN	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
MOLINATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
PHENANTHRENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
PROMETON	-----	LOW	MEDIUM	-----	MEDIUM	-----	**MEDIUM**
PROPACHLOR	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
PROPAZINE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
PYRENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
RDX	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TERBACIL	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TERBUFOS	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TRIFLURALIN	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

Disinfection By-Product: Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	Area Primary Influence	Contaminant Occurrence	**SUMMARY**
BROMOCHLOROMETHANE	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
BROMODICHLOROMETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
BROMOFORM	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
BROMOMETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CHLOROFORM	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DIBROMOCHLOROMETHANE	-----	LOW	-----	-----	MEDIUM	-----	**MEDIUM**

Microbial Organism: Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	Area Primary Influence	Contaminant Occurrence	SUMMARY
TOTAL COLIFORM	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

Microbial Organism: Un-Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	Area Primary Influence	Contaminant Occurrence	SUMMARY
CRYPTOSPORIDIUM PARVUM	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ESCHERICHIA COLI	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
FECAL VIRUSES	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
GIARDIA LAMBLIA	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

Appendix E High Susceptibility Contaminants by Source

Each water source receives component attribute ratings and a susceptibility summary determination for contaminants. The overall susceptibility rating for the system averages the individual component scores, producing a susceptibility determination for contaminants for the system as a whole. Listed below are component attribute rating scores and summary susceptibility determinations for each water source for those contaminants for which the water source has received a high susceptibility ranking. If this page is empty then there are no susceptibility issues for this category.

0140161 CENTRAL TEXAS WSC

S0140161A

Inorganics: Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	API	Contaminant Occurrence	SUMMARY
ALUMINUM	-----	LOW	MEDIUM	-----	MEDIUM	HIGH	HIGH
CADMIUM	-----	LOW	HIGH	-----	MEDIUM	HIGH	HIGH
CHLORIDE	-----	LOW	MEDIUM	-----	MEDIUM	HIGH	HIGH
IRON	-----	LOW	MEDIUM	-----	MEDIUM	HIGH	HIGH
LEAD	-----	LOW	MEDIUM	-----	MEDIUM	HIGH	HIGH
MANGANESE	-----	LOW	MEDIUM	-----	MEDIUM	HIGH	HIGH
MERCURY	-----	LOW	MEDIUM	-----	MEDIUM	HIGH	HIGH
TDS	-----	LOW	LOW	-----	MEDIUM	HIGH	HIGH

Inorganics: Un-Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	API	Contaminant Occurrence	SUMMARY
BORON	-----	LOW	LOW	-----	MEDIUM	HIGH	HIGH
NICKEL	-----	LOW	MEDIUM	-----	MEDIUM	HIGH	HIGH

Radiochemical: Un-Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	API	Contaminant Occurrence	SUMMARY
URANIUM	-----	LOW	LOW	-----	MEDIUM	HIGH	HIGH

Volatile Organic Contaminant: Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	API	Contaminant Occurrence	SUMMARY
CARBON TETRACHLORIDE	-----	LOW	LOW	-----	MEDIUM	HIGH	**HIGH**
TETRACHLOROETHYLENE	-----	LOW	LOW	-----	MEDIUM	HIGH	**HIGH**

Volatile Organic Contaminant: Un-Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	API	Contaminant Occurrence	SUMMARY
CARBON DISULFIDE	-----	LOW	LOW	-----	MEDIUM	HIGH	**HIGH**
TETRAHYDROFURAN	-----	LOW	LOW	-----	MEDIUM	HIGH	**HIGH**

Synthetic Organic Contaminant: Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	API	Contaminant Occurrence	SUMMARY
2,4-D	-----	LOW	MEDIUM	-----	MEDIUM	HIGH	**HIGH**
PICLORAM	-----	LOW	LOW	-----	MEDIUM	HIGH	**HIGH**

Appendix F Medium Susceptibility Contaminants by Source

Each water source receives component attribute ratings and a susceptibility summary determination for contaminants. The overall susceptibility rating for the system averages the individual component scores, producing a susceptibility determination for contaminants for the system as a whole. Listed below are component attribute rating scores and summary susceptibility determinations for each water source for those contaminants for which the water source has received a medium susceptibility ranking. If this page is empty then there are no susceptibility issues for this category.

0140161 **CENTRAL TEXAS WSC**

S0140161A

Inorganics: Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	API	Contaminant Occurrence	SUMMARY
ANTIMONY	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
ARSENIC	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
ASBESTOS	-----	-----	-----	-----	MEDIUM	-----	MEDIUM
BARIUM	-----	LOW	MEDIUM	-----	MEDIUM	-----	MEDIUM
BERYLLIUM	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
CHROMIUM	-----	LOW	HIGH	-----	MEDIUM	-----	MEDIUM
COPPER	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
CYANIDE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
FLUORIDE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
HYDROGEN SULFIDE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
NITRATE	-----	LOW	MEDIUM	-----	MEDIUM	-----	MEDIUM
NITRATE+NITRITE	-----	LOW	MEDIUM	-----	MEDIUM	-----	MEDIUM
NITRITE	-----	LOW	MEDIUM	-----	MEDIUM	-----	MEDIUM
SELENIUM	-----	LOW	MEDIUM	-----	MEDIUM	-----	MEDIUM
SILVER	-----	LOW	HIGH	-----	MEDIUM	-----	MEDIUM
SULFATE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM

THALLIUM	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ZINC	-----	LOW	MEDIUM	-----	MEDIUM	-----	**MEDIUM**

Inorganics: Un-Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	API	Contaminant Occurrence	SUMMARY
BROMIDE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CALCIUM	-----	LOW	MEDIUM	-----	MEDIUM	-----	**MEDIUM**
MAGNESIUM	-----	LOW	HIGH	-----	MEDIUM	-----	**MEDIUM**
PERCHLORATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
SODIUM	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

Radiochemical: Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	API	Contaminant Occurrence	SUMMARY
GROSS ALPHA	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
GROSS BETA	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
RADIUM-226	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
RADIUM-228	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
STRONTIUM-90	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TRITIUM	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

Radiochemical: Un-Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	API	Contaminant Occurrence	SUMMARY
RADON	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
STRONTIUM-89	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TOTAL ALPHA EMITTING RADIUM	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

Volatile Organic Contaminant: Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	API	Contaminant Occurrence	SUMMARY
1,1,1-TRICHLOROETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,1,2-TRICHLOROETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,1-DICHLOROETHYLENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

1,2,4-TRICHLOROBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,2-DICHLOROETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,2-DICHLOROPROPANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
BENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CIS-1,2-DICHLOROETHYLENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DICHLOROMETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ETHYLBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ORTHO-1,2-DICHLOROBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
PARA-1,4-DICHLOROBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
STYRENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TOLUENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TRANS-1,2-DICHLOROETHYLENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TRICHLOROETHYLENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
VINYL CHLORIDE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
XYLENES (TOTAL)	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

Volatile Organic Contaminant: Un-Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	API	Contaminant Occurrence	**SUMMARY**
1,1,1,2-TETRACHLOROETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,1,2,2-TETRACHLOROETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,1-DICHLOROETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,1-DICHLOROPROPENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,2,3-TRICHLOROBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,2,3-TRICHLOROPROPANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,2,4-TRIMETHYLBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,2-DIPHENYLHYDRAZINE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,3,5-TRIMETHYLBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,3-DICHLOROBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,3-DICHLOROPROPANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
1,3-DICHLOROPROPENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
2,2-DICHLOROPROPANE	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
2,4,6-TRICHLOROPHENOL	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
2,4-DICHLOROPHENOL	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

2,4-DINITROPHENOL	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
2,4-DINITROTOLUENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
2,6-DINITROTOLUENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
2-CHLOROTOLUENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
2-HEXANONE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
2-METHYLPHENOL	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
4-CHLOROTOLUENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
4-ISOPROPYLTOLUENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ACETOCHLOR	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ACETONE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ACRYLONITRILE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
BROMOBENZENE	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
CHLOROETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CHLOROMETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CIS-1,3-DICHLOROPROPENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DIBROMOMETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DICHLORODIFLUOROMETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ETHYL METHACRYLATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
HEXACHLOROBUTADIENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ISOPROPYLBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
M + P XYLENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
METHYL ETHYL KETONE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
METHYL METHACRYLATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
METHYL-T-BUTYL ETHER	-----	LOW	MEDIUM	-----	MEDIUM	-----	**MEDIUM**
M-XYLENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
NAPHTHALENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
N-BUTYLBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
NITROBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
N-PROPYLBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ORGANOTINS	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
O-XYLENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
P-XYLENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
S-BUTYLBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

T-BUTYLBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TRANS-1,3-DICHLOROPROPENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TRICHLOROFLUOROMETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
VINYL ACETATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

Synthetic Organic Contaminant: Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	API	Contaminant Occurrence	SUMMARY
2,3,7,8-TCDD	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
2,4,5-TP	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ALACHLOR	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ATRAZINE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
BENZO(A)PYRENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CARBOFURAN	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
CHLORDANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DALAPON	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DI-(2-ETHYLHEXYL)ADIPATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DI-(2-ETHYLHEXYL)PHTHALATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DIBROMOCHLOROPROPANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DINOSEB	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
DIQUAT	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ENDOTHALL	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ENDRIN	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ETHYLENE DIBROMIDE	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
GLYPHOSATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
HEPTACHLOR	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
HEPTACHLOR EPOXIDE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
HEXACHLOROBENZENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
HEXACHLOROCYCLOPENTADIENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
LINDANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
METHOXYCHLOR	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
OXAMYL	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
PCBs	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
PENTACHLOROPHENOL	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

SIMAZINE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
TOXAPHENE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM

Synthetic Organic Contaminant: Un-Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	API	Contaminant Occurrence	SUMMARY
2,4,5-T	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
3-HYDROXYCARBOFURAN	-----	-----	-----	-----	MEDIUM	-----	MEDIUM
ACENAPHTHENE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
ACENAPHTHYLENE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
ALDICARB	-----	-----	-----	-----	MEDIUM	-----	MEDIUM
ALDICARB SULFONE	-----	-----	-----	-----	MEDIUM	-----	MEDIUM
ALDICARB SULFOXIDE	-----	-----	-----	-----	MEDIUM	-----	MEDIUM
ALDRIN	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
ANTHRACENE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
BENTAZON	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
BENZO[A]ANTHRACENE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
BROMACIL	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
BUTYL BENZYL PHTHALATE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
CARBARYL	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
CHLORDANE (ALPHA-CHLORDANE)	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
CHLORDANE (GAMMA-CHLORDANE)	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
CHLORDANE (TRANS-NONACHLOR)	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
CHRYSENE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
CYANAZINE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
DCPA DI-ACID DEGRADATE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
DCPA MONO-ACID DEGRADATE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
DDE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
DIAZINON	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
DICAMBA	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
DIELDRIN	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
DIETHYL PHTHALATE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
DIMETHYL PHTHALATE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM
DI-N-BUTYL PHTHALATE	-----	LOW	LOW	-----	MEDIUM	-----	MEDIUM

DISULFOTON	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
DIURON	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
EPTC	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
FLUORENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
FONOFOS	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
INDENO[1,2,3,CD]PYRENE	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
LINURON	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
METHIOCARB	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
METHOMYL	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
METOLACHLOR	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
METRIBUZIN	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
MOLINATE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
PHENANTHRENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
PROMETON	-----	LOW	MEDIUM	-----	MEDIUM	-----	**MEDIUM**
PROPACHLOR	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
PROPAZINE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
PYRENE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
RDX	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TERBACIL	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TERBUFOS	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
TRIFLURALIN	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

Disinfection By-Product: Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	API	Contaminant Occurrence	SUMMARY
BROMOCHLOROMETHANE	-----	-----	-----	-----	MEDIUM	-----	**MEDIUM**
BROMODICHLOROMETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
BROMOFORM	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
BROMOMETHANE	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
CHLOROFORM	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
DIBROMOCHLOROMETHANE	-----	LOW	-----	-----	MEDIUM	-----	**MEDIUM**

Microbial Organism: Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	API	Contaminant Occurrence	SUMMARY
TOTAL COLIFORM	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

Microbial Organism: Un-Regulated

Contaminant Name	Structural Integrity	Aquifer \ Watershed	Nonpoint Source	Point Source	API	Contaminant Occurrence	SUMMARY
CRYPTOSPORIDIUM PARVUM	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
ESCHERICHIA COLI	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
FECAL VIRUSES	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**
GIARDIA LAMBLIA	-----	LOW	LOW	-----	MEDIUM	-----	**MEDIUM**

Appendix G Counts of Potential Sources of Contamination by Source

Contaminant susceptibility is based on the presence of potential sources of contamination (PSOCs) within the assessed area. For water wells, the PSOCs are located within times of travel which range from 2 to 100 years while PSOCs located within surface water assessment areas may be located within the area of primary influence (API) or the contributing watershed. Listed below are the number of PSOCs located within the various assessment zones for each water source grouped by PSOC type and subtype (refer to Table 2.2 for brief descriptions of PSOC types). If this page is empty then there are no known psocs intersecting the contributing areas.

0140161 CENTRAL TEXAS WSC

S0140161A

BUSINESS

AUTO REPAIR, SALES, SALVAGE, TOWING

Time of Travel in Years (Capture Zones)	Number of PSOC sites
n/a	3

CEMETERY

CEMETERY

Time of Travel in Years (Capture Zones)	Number of PSOC sites
n/a	2

CHEMICAL STORAGE

CHEMICAL STORAGE

Time of Travel in Years (Capture Zones)	Number of PSOC sites
n/a	9

NATURAL RESOURCE PRODUCTION

WATER WELL

Time of Travel in Years (Capture Zones)	Number of PSOC sites
n/a	5

TRANSPORTATION

BOAT RAMP

Time of Travel in Years (Capture Zones)	Number of PSOC sites
n/a	7

MARINA

Time of Travel in Years (Capture Zones)	Number of PSOC sites
n/a	1

WASTE

CONFINED ANIMAL FEEDING OPERATION

Time of Travel in Years (Capture Zones)	Number of PSOC sites
n/a	1

TRANSFER STATION

Time of Travel in Years (Capture Zones)	Number of PSOC sites
n/a	1

WASTEWATER

HOLDING POND

Time of Travel in Years (Capture Zones)	Number of PSOC sites
n/a	1

MUNICIPAL WASTEWATER OUTFALL

Time of Travel in Years (Capture Zones)	Number of PSOC sites
n/a	1

SEPTIC SYSTEM

Time of Travel in Years (Capture Zones)	Number of PSOC sites
n/a	293

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WASTEWATER

Time of Travel in Years (Capture Zones)	Number of PSOC sites
n/a	7

Appendix H Map Legend and Topographic Map Symbology

See Table 2.2 for examples of PSOC subtypes. Topographic map symbology included in this appendix was modified for clarity after the USGS publication: "Topographic Map Symbols". Information on how to interpret a topographic map may be found at http://mac.usgs.gov/mac/isb/pubs/booklets/symbols/reading.html.

Map Legend:

- Ground Water Well
- Surface Water Intake

Surface Water

- Watershed Boundary
- Truncated Watershed Boundary
- Area of Primary Influence (API)

Ground Water Capture Zone Travel Times

Years
50 to 100
20 to 50
10 to 20
5 to 10
2 to 5
0 to 2

PSOC Type

- Golf Course
- Radiochemical Site
- Grain Elevator
- Tire Sales, Repair Business
- Nuclear Power Plant
- Inorganic Chemical Industry
- New or Used Oil Site
- Organic Chemical Industry
- Metal Plating Industry
- Wood Preserving
- Paint Shop
- Battery Mfg., Sales
- Pesticide Mfg., Sales, Application
- Boat Storage
- Pesticide, Fertilizer Mfg., Sales Application
- Petroleum Storage Tank
- Military Armory
- Photo Process Business
- Sugar Refining
- Plastic Mfg., Sales
- Pulp or Paper Mill
- Auto Parts (New or Used)
- Auto Repair, Sales, Salvage
- Cotton Gin
- Dry Cleaner
- Fertilzer Mfg., Sales, Application
- Cemetery
- Chemical Storage
- Drum. Small Containers, Bags
- Chemical Mixing Site

- Oil/Gas Production Tanks
- Petroleum Chemical Industry
- Fireworks (Mfg/Retail)
- Transformer
- Class I Injection Well
- Class II Injection Well
- Class III Inj. Well (Brine)
- Class III Inj. Well (Sodium Sulphate)
- Class III Inj. Well (Sulfur)
- Class III Inj. Well (Uranium)
- Class V Injection Well
  - Untreated Sewage
  - Agricultural Drainage
  - Cesspool
  - Storm Drainage
  - Septic Undifferentiated
  - Septic Drainfield
  - Auto Repair Floor Drain
- Gun Range
- Gun Range (Public/Private)
- Gun Range (Military)
- Water Well
- Mined Land: Active/Abandoned
- Natural Resource Production
- Oil/Gas Well - Plugged
- Oil/Gas Well - Production
- Oil/Gas Well - Underground Storage
- Septic System

- Muni. Wastewater Outfall
- Treatment Plant
- Agri. Wastewater Outfall
- Priv. Wastewater Outfall
- Cesspool
- Wastewater
- Holding Pond
- Holding Tank
- Ind. Wastewater Outfall
- Land Application Sludge
- Lift Station
- Pipeline
- Airport
- Boat Ramp
- Heliport
- Landing Strip
- Marina
- Military Air Base
- Cattle Dipping Vat
- Livestock/Animal Pens
- Site Discovery - TCEQ
- Waste
- Groundwater Contamination
- Salt Water Dispossal Pit

- Superfund - TCEQ
- Confined Animal Feeding Operation
- Corrective Action - TCEQ
- Waste Transfer Station
- Domestic Waste or Burn Pile
- Voluntary Cleanup - TCEQ
- Industrial Hazardous Waste TSD - TCEQ
- Waste Registration - TCEQ
- Municipal Solid Waste - Abandoned - TCEQ
- Oilfield Sludge Disposal
- Municipal Solid Waste - Active - TCEQ
- Perchlorate Site

Pipelines

- Anhydrous Ammonia
- Carbon Dioxide
- Crude Oil
- Empty
- Hydrogen Gas
- Highly Volatile Liquids
- Liquid Petroleum Gas
- Natural Gas
- Natural Gas Liquids
- Product - Gasoline, Diesel, Jet Fuel

Topographic Map Symbology:

CONTROL DATA AND MONUMENTS	
Aerial photograph roll and frame number*	3-20
Horizontal control	
Third order or better, permanent mark	Neace
With third order or better elevation	BM 45.1
Checked spot elevation	19.5
Coincident with section corner	Cactus
Unmonumented*	
Vertical control	
Third order or better, with tablet	BM × 16.3
Third order or better, recoverable mark	120.0
Bench mark at found section corner	BM 18.6
Spot elevation	5.3
Boundary monument	
With tablet	BM 21.6
Without tablet	171.3
With number and elevation	67 301.1
U.S. mineral or location monument	
CONTOURS	
Topographic	
Intermediate	
Index	
Supplementary	
Depression	
Cut; fill	
Bathymetric	
Intermediate	
Index	
Primary	
Index Primary	
Supplementary	
BOUNDARIES	
National	
State or territorial	
County or equivalent	
Civil township or equivalent	
Incorporated city or equivalent	
Park, reservation, or monument	
Small park	

LAND SURVEY SYSTEMS	
U.S. Public Land Survey System	
Township or range line	
Location doubtful	
Section line	
Location doubtful	
Found section corner; found closing corner	
Witness corner; meander corner	WC MC
Other land surveys	
Township or range line	
Section line	
Land grant or mining claim; monument	
Fence line	
SURFACE FEATURES	
Levee	Levee
Sand or mud area, dunes, or shifting sand	Sand
Intricate surface area	Mine
Gravel beach or glacial moraine	Gravel
Tailings pond	Tailings Pond
MINES AND CAVES	
Quarry or open pit mine	
Gravel, sand, clay, or borrow pit	
Mine tunnel or cave entrance	
Prospect; mine shaft	
Mine dump	Mine dump
Tailings	Tailings
VEGETATION	
Woods	
Scrub	
Orchard	
Vineyard	
Mangrove	
MARINE SHORELINE	
Topographic maps	
Approximate mean high water	
Indefinite or unsurveyed	
Topographic-bathymetric maps	
Mean high water	
Apparent (edge of vegetation)	

COASTAL FEATURES

- Foreshore flat
- Rock or coral reef
- Rock bare or awash
- Group of rocks bare or awash
- Exposed wreck
- Depth curve; sounding
- Breakwater, pier, jetty, or wharf
- Seawall

BATHYMETRIC FEATURES

- Area exposed at mean low tide; sounding datum
- Channel
- Offshore oil or gas: well; platform
- Sunken rock

RIVERS, LAKES, AND CANALS

- Intermittent stream
- Intermittent river
- Disappearing stream
- Perennial stream
- Perennial river
- Small falls; small rapids
- Large falls; large rapids
- Masonry dam
- Dam with lock
- Dam carrying road
- Perennial lake; Intermittent lake or pond
- Dry lake
- Narrow wash
- Wide wash
- Canal, flume, or aqueduct with lock
- Elevated aqueduct, flume, or conduit
- Aqueduct tunnel
- Well or spring; spring or seep

SUBMERGED AREAS AND BOGS

- Marsh or swamp
- Submerged marsh or swamp
- Wooded marsh or swamp
- Submerged wooded marsh or swamp
- Rice field
- Land subject to inundation

BUILDINGS AND RELATED FEATURES

- Building
- School; church
- Built-up Area
- Racetrack
- Airport
- Landing strip
- Well (other than water); windmill
- Tanks
- Covered reservoir
- Gaging station
- Landmark object (feature as labeled)
- Campground; picnic area
- Cemetery: small; large

ROADS AND RELATED FEATURES

Roads on Provisional edition maps are not classified as primary, secondary, or light duty. They are all symbolized as light duty roads.

- Primary highway
- Secondary highway
- Light duty road
- Unimproved road
- Trail
- Dual highway
- Dual highway with median strip
- Road under construction
- Underpass; overpass
- Bridge
- Drawbridge
- Tunnel

RAILROADS AND RELATED FEATURES

- Standard gauge single track; station
- Standard gauge multiple track
- Abandoned
- Under construction
- Narrow gauge single track
- Narrow gauge multiple track
- Railroad in street
- Juxtaposition
- Roundhouse and turntable

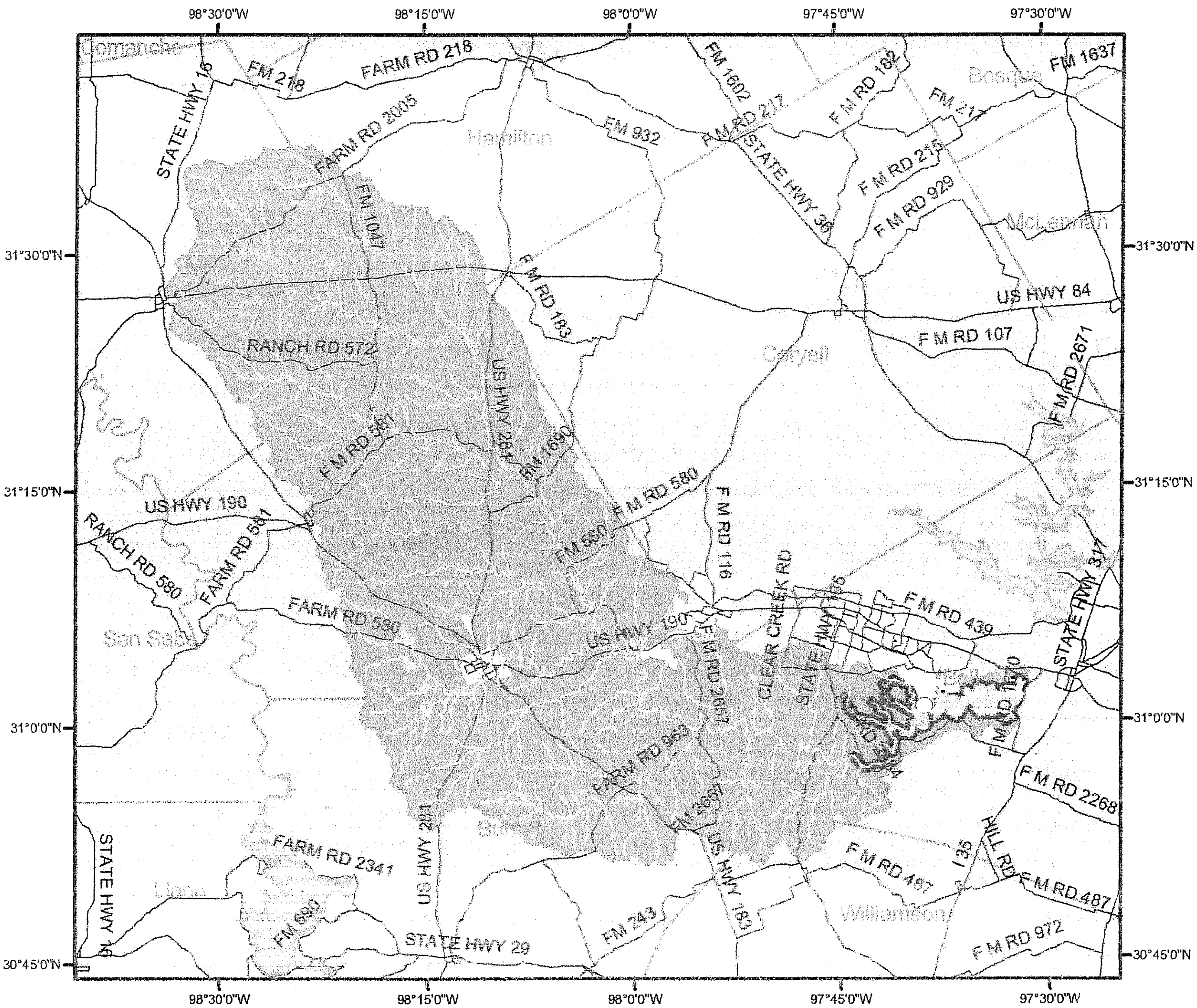
TRANSMISSION LINES AND PIPELINES

- Power transmission line; pole; tower
- Telephone line
- Aboveground oil or gas pipeline
- Underground oil or gas pipeline

Symbols shown in purple revised by the USGS from aerial photographs.

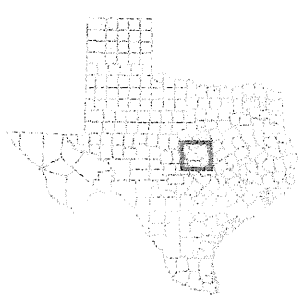
Appendix I Water Source and Potential Sources of Contaminants Map(s)

0140161 CENTRAL TEXAS WSC



1:716,266

0 7.5 15 22.5 30 Miles

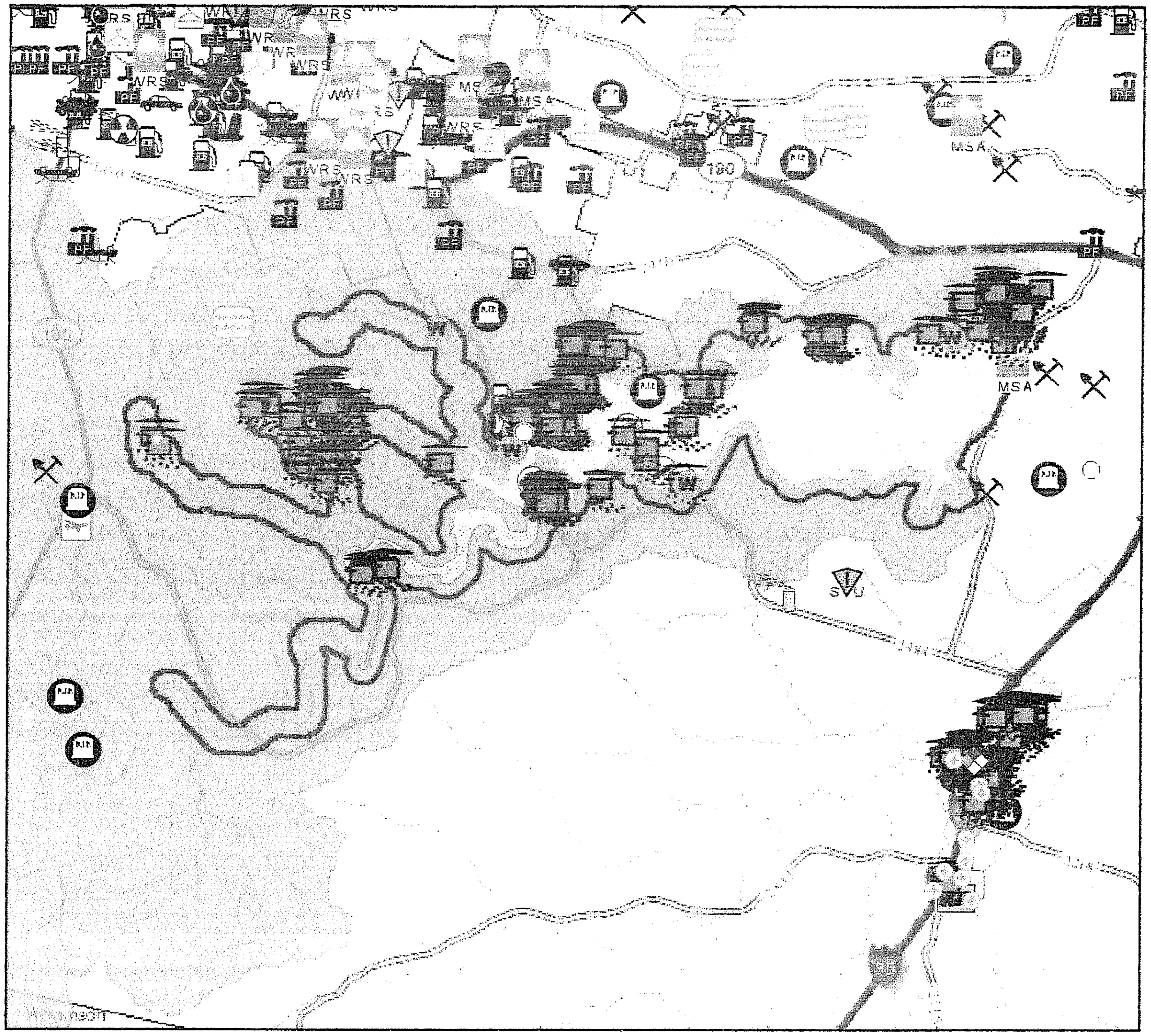


N W E S

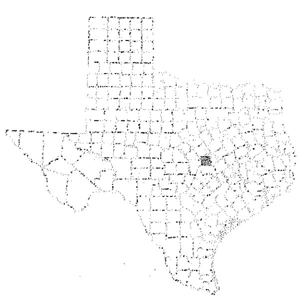
See Appendix H Generalized Legend

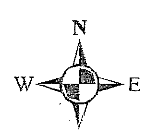
Appendix I Water Source and Potential Sources of Contaminants Map(s)

0140161 CENTRAL TEXAS WSC S0140161A



1:155,732





See Appendix H Generalized Legend

APPENDIX 7

POSSIBLE SOURCES OF CONTAMINATION QUICK REFERENCE

SWAP PSOC Notebook

TCEQ

Introduction:

The TCEQ Source Water Assessment Program (SWAP) was developed to assess all of the public water systems in Texas for contamination. To support this project, many databases were developed or collected that contain sites that potentially could affect ground and surface water quality. These sites are referred to as PSOCs: Potential Sources of Contamination. Each site may have many attributes, such as location, name, owner, address, and potential contaminants. Each site has been categorized into a type and subtype; this organization scheme was developed to support the efficient processing of this enormous amount of data by the SWAP software.

Purpose:

This notebook can be used as reference for each type and subtype of psoc. The notebook lists their respective codes, names, a description of the psoc and how it was obtained, required information about each site that needs to be collected in the field, the contaminant groups, and the individual contaminants that were assigned to this type of psoc.

Field verification of all of the psoc attributes is required to be certain of the data. Sites may have contaminants assigned by the type of psoc, such as a gas station. Some sites may have specific contaminants verified by sampling or inventory. Some sites may have no contaminants assigned, but the site itself could act as a conduit for contaminant migration such as domestic water well. Some sites may have contaminants in addition to those assigned by type. An example of this would be a gas station that also has a tank of used oil.

10/7/2003

SWAP PSOC Quick Reference

TCEQ

Potential Source of Contamination Types and Subtypes used in the TCEQ Source Water Assessment Program.

Psoc Type Code	Psoc Type Name
1	**BUSINESS**

Psoc SubType Code	Psoc SubType Name
1	AUTO PARTS BUSINESS (NEW, USED)
2	AUTO REPAIR, SALES, SALVAGE, TOWING
3	COTTON GIN
4	DRY CLEANER
5	FERTILIZER MFG, SALE, APPLICATION
6	GOLF COURSE
7	GRAIN ELEVATOR
8	INORGANIC CHEMICAL INDUSTRY
9	METAL PLATING BUSINESS
10	NUCLEAR POWER PLANT
11	ORGANIC CHEMICAL INDUSTRY
12	PAINT SHOP
13	PESTICIDE MFG, SALE, APPLICATION
14	PESTICIDE, FERTILIZER MFG, SALE, APPLICATION
15	PETROLEUM CHEMICAL INDUSTRY
16	PETROLEUM STORAGE TANK
17	PHOTO PROCESS BUSINESS
18	PLASTIC MFG, SALE
19	PULP OR PAPER MILL
20	RADIOCHEMICAL SITE
21	TIRE SALES, REPAIR BUSINESS
22	NEW OR USED OIL SITE
23	WOOD PRESERVING
24	BATTERY MFG., SALES
25	BOAT STORAGE
26	OIL AND GAS PRODUCTION TANKS
27	FIREWORKS BUSINESS (MFG OR RETAIL)
28	MILITARY ARMORY
29	SUGAR REFINING

Psoc Type Code	Psoc Type Name
2	**CEMETERY**

Psoc SubType Code	Psoc SubType Name
1	CEMETERY

Psoc Type Code	Psoc Type Name
3	**CHEMICAL PIPELINE**

Psoc SubType Code	Psoc SubType Name
1	PIPELINE
2	CRUDE OIL
3	HIGHLY VOLATILE LIQUIDS
4	NATURAL GAS LIQUIDS
5	PRODUCT - GASOLINE, DIESEL, JET FUEL
6	NATURAL GAS
7	PETROLEUM PUMP STATION

Psoc Type Code	Psoc Type Name
4	**CHEMICAL STORAGE**

Psoc SubType Code	Psoc SubType Name
1	CHEMICAL STORAGE
2	DRUM, SMALL CONTAINERS, BAGS
3	CHEMICAL MIXING SITE
4	TRANSFORMER

Psoc Type Code	Psoc Type Name
5	**CLASS I INJECTION WELL**

Psoc SubType Code	Psoc SubType Name
1	CLASS 1 INJECTION WELL

SWAP PSOC Quick Reference

TCEQ

Potential Source of Contamination Types and Subtypes used in the TCEQ Source Water Assessment Program.

Psoc Type Code	*Psoc Type Name*
6	**CLASS II INJECTION WELL**

Psoc SubType Code	*Psoc SubType Name*
1	CLASS 2 INJECTION WELL

Psoc Type Code	*Psoc Type Name*
7	**CLASS III INJECTION WELL**

Psoc SubType Code	*Psoc SubType Name*
1	CLASS 3 INJECTION WELL
2	BRINE
3	SODIUM SULPHATE
4	SULFUR
5	URANIUM

Psoc Type Code	*Psoc Type Name*
8	**CLASS V INJECTION WELL**

Psoc SubType Code	*Psoc SubType Name*
1	CLASS 5 INJECTION WELL
2	UNTREATED SEWAGE
3	AGRICULTURAL DRAINAGE
4	CESSPOOL
5	STORM DRAINAGE
6	SEPTIC UNDIFFERENTIATED
7	SEPTIC DRAINFIELD
8	TRASH BURNING WELL
9	AUTO REPAIR FLOOR DRAIN

Psoc Type Code	*Psoc Type Name*
9	**GUN RANGE**

Psoc SubType Code	*Psoc SubType Name*
1	GUN RANGE
2	PUBLIC OR PRIVATE
3	MILITARY

Psoc Type Code	*Psoc Type Name*
10	**NATURAL RESOURCE PRODUCTION**

Psoc SubType Code	*Psoc SubType Name*
1	NATURAL RESOURCE PRODUCTION
2	MINERAL EXPLORATION HOLE: ABANDONED
3	OIL OR GAS WELL - ABANDONED
4	OIL OR GAS WELL - PLUGGED
5	OIL OR GAS WELL - PRODUCTION
6	OIL OR GAS WELL - UNDERGROUND STORAGE
7	WATER WELL
8	WATER WELL: ABANDONED
9	MINED LAND: ACTIVE OR ABANDONED

Psoc Type Code	*Psoc Type Name*
11	**WASTEWATER**

Psoc SubType Code	*Psoc SubType Name*
1	WASTEWATER
2	HOLDING POND
3	HOLDING TANK
4	INDUSTRIAL WASTEWATER OUTFALL
5	LAND APPLICATION SLUDGE
6	LIFTSTATION
7	PIPELINE
8	SEPTIC SYSTEM
9	MUNICIPAL WASTEWATER OUTFALL
10	TREATMENT PLANT
11	AGRICULTURAL WASTEWATER OUTFALL
12	PRIVATE WASTEWATER OUTFALL

SWAP PSOC Quick Reference

Potential Source of Contamination Types and Subtypes used in the TCEQ Source Water Assessment Program.

13 CESSPOOL

Psoc Type Code	*Psoc Type Name*
13	**TRANSPORTATION**

Psoc SubType Code	*Psoc SubType Name*
1	TRANSPORTATION
2	AIRPORT
3	BOAT RAMP
4	HELIPORT
5	HIGHWAY
6	LANDING STRIP
7	MARINA
8	MILITARY AIR BASE
9	RAILROAD

Psoc Type Code	*Psoc Type Name*
14	**WASTE**

Psoc SubType Code	*Psoc SubType Name*
1	WASTE
3	CONFINED ANIMAL FEEDING OPERATION
4	CORRECTIVE ACTION SITE - TCEQ
5	DOMESTIC TRASH OR BURN PILE
6	INDUSTRIAL HAZARDOUS WASTE TSD
7	MUNICIPAL SOLID WASTE - ABANDONED, TCEQ
8	MUNICIPAL SOLID WASTE - ACTIVE, TCEQ
9	PERCHLORATE SITE
10	SITE DISCOVERY - TCEQ
12	SUPERFUND SITE - TCEQ
13	TOXIC RELEASE INVENTORY - TCEQ
14	TRANSFER STATION
15	VOLUNTARY CLEANUP - TCEQ
16	WASTE REGISTRATION - TCEQ
17	OILFIELD SLUDGE DISPOSAL
19	RECYCLING FACILITY
20	CATTLE DIPPING VAT
21	LIVESTOCK OR ANIMAL PENS
22	GROUNDWATER CONTAMINATION SITE
23	SALT WATER DISPOSAL PIT

Psoc Type Code	*Psoc Type Name*
15	**CLASS IV INJECTION WELL**

Psoc SubType Code	*Psoc SubType Name*
1	CLASS 4 INJECTION WELL

Psoc Type Code	*Psoc Type Name*
1	**BUSINESS**

Psoc Subtype Code	*Subtype Name*
1	AUTO PARTS BUSINESS (NEW, USED)

Description:

This dataset contains businesses in Texas that sell new or used auto parts. Chemicals associated with automobiles are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
2	1,1,1-TRICHLOROETHANE	71-55-6
3	1,1,2,2-TETRACHLOROETHANE	79-34-5
4	1,1,2-TRICHLOROETHANE	79-00-5
6	1,1-DICHLOROETHYLENE	75-35-4
39	ACETONE	67-64-1
49	ANTIMONY	64924-52-3
51	ARSENIC	15584-04-0
56	BENZENE	71-43-2
69	BROMODICHLOROMETHANE	75-27-4
70	BROMOFORM	75-25-2
74	CADMIUM	22537-48-0
79	CARBON TETRACHLORIDE	56-23-5
86	CHLOROBENZENE	108-90-7
90	CHROMIUM	11104-59-9
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
94	COPPER	17493-86-6
111	DICHLOROMETHANE	75-09-2
125	ETHYLBENZENE	100-41-4
147	LEAD	14701-27-0
153	MERCURY	14302-87-5
159	METHYL-T-BUTYL ETHER	1634-04-4
164	M-XYLENE	108-38-3
165	NAPHTHALENE	91-20-3
167	NICKEL	14701-22-5
174	ORTHO-1,2-DICHLOROBENZENE	95-50-1
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
196	SILVER	14701-21-4
203	SULFATE	14808-79-8
208	TETRACHLOROETHYLENE	127-18-4
211	TOLUENE	108-88-3
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
219	TRICHLOROETHYLENE	79-01-6
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	

Psoc Type Code	Psoc Type Name
1	**BUSINESS**

Psoc Subtype Code	Subtype Name
2	AUTO REPAIR, SALES, SALVAGE, TOWING

Description:

This dataset contains businesses in Texas that sell new or used automobiles, repair, tow, or salvage automobiles. Chemicals associated with automobiles are present. Sites were primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	Contaminant Name	CAS Number
2	1,1,1-TRICHLOROETHANE	71-55-6
3	1,1,2,2-TETRACHLOROETHANE	79-34-5
4	1,1,2-TRICHLOROETHANE	79-00-5
6	1,1-DICHLOROETHYLENE	75-35-4
39	ACETONE	67-64-1
49	ANTIMONY	64924-52-3
51	ARSENIC	15584-04-0
56	BENZENE	71-43-2
69	BROMODICHLOROMETHANE	75-27-4
70	BROMOFORM	75-25-2
74	CADMIUM	22537-48-0
79	CARBON TETRACHLORIDE	56-23-5
86	CHLOROBENZENE	108-90-7
90	CHROMIUM	11104-59-9
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
94	COPPER	17493-86-6
111	DICHLOROMETHANE	75-09-2
125	ETHYLBENZENE	100-41-4
147	LEAD	14701-27-0
153	MERCURY	14302-87-5
159	METHYL-T-BUTYL ETHER	1634-04-4
164	M-XYLENE	108-38-3
165	NAPHTHALENE	91-20-3
167	NICKEL	14701-22-5
174	ORTHO-1,2-DICHLOROBENZENE	95-50-1
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
196	SILVER	14701-21-4
203	SULFATE	14808-79-8
208	TETRACHLOROETHYLENE	127-18-4
211	TOLUENE	108-88-3
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
219	TRICHLOROETHYLENE	79-01-6
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	

Psoc Type Code	*Psoc Type Name*
1	**BUSINESS**

Psoc Subtype Code	*Subtype Name*
3	COTTON GIN

Description:

This dataset contains locations of current and historical cotton gins in Texas. Chemicals associated with cotton pesticides are present. These sites were determined by a review of USDA Soil Conservation Service publications for each county in Texas. Locations were determined by digitizing USGS 7.5' topographic maps.

Required Information:

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
51	ARSENIC	15584-04-0
96	CYANAZINE	21725-46-2
120	ENDOTHALL	145-73-3
122	EPTC	759-94-4
132	GLYPHOSATE	1071-83-6
175	OXAMYL	23135-22-0

Psoc Type Code	*Psoc Type Name*
1	**BUSINESS**

Psoc Subtype Code	*Subtype Name*
4	DRY CLEANER

Description:

This dataset contains businesses in Texas that perform dry cleaning. Chemicals associated with dry cleaning are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

The chemical use history must be obtained. The types of chemicals used must be determined. Some sites are actually clothing drop-off points, where the actual cleaning is done at a central facility.

Contaminant Groups: Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
2	1,1,1-TRICHLOROETHANE	71-55-6
4	1,1,2-TRICHLOROETHANE	79-00-5
6	1,1-DICHLOROETHYLENE	75-35-4
56	BENZENE	71-43-2
78	CARBON DISULFIDE	75-15-0
79	CARBON TETRACHLORIDE	56-23-5
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
208	TETRACHLOROETHYLENE	127-18-4
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
219	TRICHLOROETHYLENE	79-01-6
225	VINYL CHLORIDE	75-01-4

Psoc Type Code	*Psoc Type Name*
1	**BUSINESS**

Psoc Subtype Code	*Subtype Name*
5	**FERTILIZER MFG, SALE, APPLICATION**

Description:

This dataset contains businesses in Texas that perform fertilizer manufacturing, sales, or application. Chemicals associated with fertilizer are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Contaminant Groups: Inorganics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0

Psoc Type Code	Psoc Type Name
1	**BUSINESS**

Psoc Subtype Code	Subtype Name
6	GOLF COURSE

Description:

This dataset contains businesses in Texas that are golf courses. Chemicals associated with golf course fertilizer and pesticides are present. This data was primarily obtained through the field inventory of sites and reviews of USGS 7.5' topographic maps. Most of the locations were obtained by digitizing topographic maps.

Required Information:

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
24	2,4-D	94-75-7
51	ARSENIC	15584-04-0
53	ATRAZINE	1912-24-9
56	BENZENE	71-43-2
77	CARBOFURAN	1563-66-2
98	DALAPON	75-99-0
104	DIAZINON	333-41-5
117	DIQUAT	2764-72-9
132	GLYPHOSATE	1071-83-6
147	LEAD	14701-27-0
156	METHOXYCHLOR	72-43-5
168	NITRATE	14797-55-8
170	NITRITE	14797-65-0
184	PICLORAM	1918-02-1
197	SIMAZINE	122-34-9
211	TOLUENE	108-88-3
226	XYLENES (TOTAL)	

Psoc Type Code	*Psoc Type Name*
1	**BUSINESS**

Psoc Subtype Code	*Subtype Name*
7	GRAIN ELEVATOR

Description:

This dataset contains businesses in Texas that are grain storage facilities including grain elevators and storage bins. Chemicals associated with grain preservation pesticides are present. This data was primarily obtained through the field inventory of sites and reviews of USGS 7.5' topographic maps. Most of the locations were obtained by digitizing topographic maps.

Required Information:

Contaminant Groups: Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
12	1,2-DICHLOROETHANE	107-06-2
78	CARBON DISULFIDE	75-15-0
79	CARBON TETRACHLORIDE	56-23-5

Psoc Type Code	Psoc Type Name
1	BUSINESS

Psoc Subtype Code	Subtype Name
8	INORGANIC CHEMICAL INDUSTRY

Description:

This dataset contains businesses in Texas that perform inorganic chemical manufacturing. Chemicals associated with inorganic chemical industry are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Applicable TCEQ Site ID numbers.

Contaminant Groups: Inorganics

Organics

Physical Parameter

Radionuclides

Contaminants:

Contaminant Code	Contaminant Name	CAS Number
39	ACETONE	67-64-1
47	ALUMINUM	14903-36-7
49	ANTIMONY	64924-52-3
51	ARSENIC	15584-04-0
52	ASBESTOS	1332-21-4
54	BARIUM	16541-35-8
56	BENZENE	71-43-2
62	BERYLLIUM	14701-08-7
63	BICARBONATE	71-52-3
64	BORON	11113-50-1
66	BROMIDE	
74	CADMIUM	22537-48-0
75	CALCIUM	14102-48-8
79	CARBON TETRACHLORIDE	56-23-5
80	CARBONATE	3812-32-6
85	CHLORIDE	16887-00-6
90	CHROMIUM	11104-59-9
94	COPPER	17493-86-6
97	CYANIDE	57-12-5
129	FLUORIDE	16984-48-8
141	HYDROGEN SULFIDE	15035-72-0
144	IRON	15438-31-0
147	LEAD	14701-27-0
151	MAGNESIUM	14581-92-1
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
157	METHYL ETHYL KETONE	78-93-3
167	NICKEL	14701-22-5
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
182	pH	
190	RADIUM-226	13982-63-3
191	RADIUM-228	15262-20-1
195	SELENIUM	7782-49-2
196	SILVER	14701-21-4
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
205	TDS	
210	THALLIUM	7440-28-0
211	TOLUENE	108-88-3
223	URANIUM	
227	ZINC	15176-26-8

Psoc Type Code	Psoc Type Name
1	**BUSINESS**

Psoc Subtype Code	Subtype Name
9	METAL PLATING BUSINESS

Description:

This dataset contains businesses in Texas that perform metal plating activities. Chemicals associated with metal plating are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Organics

Physical Parameter

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
2	1,1,1-TRICHLOROETHANE	71-55-6
3	1,1,2,2-TETRACHLOROETHANE	79-34-5
4	1,1,2-TRICHLOROETHANE	79-00-5
5	1,1-DICHLOROETHANE	75-34-3
12	1,2-DICHLOROETHANE	107-06-2
39	ACETONE	67-64-1
47	ALUMINUM	14903-36-7
49	ANTIMONY	64924-52-3
51	ARSENIC	15584-04-0
54	BARIUM	16541-35-8
56	BENZENE	71-43-2
64	BORON	11113-50-1
74	CADMIUM	22537-48-0
79	CARBON TETRACHLORIDE	56-23-5
85	CHLORIDE	16887-00-6
88	CHLOROFORM	67-66-3
90	CHROMIUM	11104-59-9
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
94	COPPER	17493-86-6
97	CYANIDE	57-12-5
102	DI-(2-ETHYLHEXYL)ADIPATE	103-23-1
111	DICHLOROMETHANE	75-09-2
125	ETHYLBENZENE	100-41-4
144	IRON	15438-31-0
147	LEAD	14701-27-0
153	MERCURY	14302-87-5
167	NICKEL	14701-22-5
168	NITRATE	14797-55-8
179	PCBs	53469-21-9
180	PENTACHLOROPHENOL	87-86-5
182	pH	
195	SELENIUM	7782-49-2
196	SILVER	14701-21-4
202	STYRENE	100-42-5
203	SULFATE	14808-79-8
208	TETRACHLOROETHYLENE	127-18-4
210	THALLIUM	7440-28-0
211	TOLUENE	108-88-3
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
219	TRICHLOROETHYLENE	79-01-6
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	
227	ZINC	15176-26-8

Psoc Type Code	*Psoc Type Name*
1	**BUSINESS**

Psoc Subtype Code	*Subtype Name*
10	NUCLEAR POWER PLANT

Description:

This dataset contains businesses in Texas that perform nuclear power generation. Chemicals associated with nuclear power generation are present. The locations were obtained by digitizing topographic maps.

Required Information:

Contaminant Groups: Inorganics

Radionuclides

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
62	BERYLLIUM	14701-08-7
133	GROSS ALPHA	
134	GROSS BETA	
200	STRONTIUM-89	14701-18-9
201	STRONTIUM-90	10098-97-2
222	TRITIUM	15086-10-9
223	URANIUM	

Psoc Type Code *Psoc Type Name*

1 BUSINESS

Psoc Subtype Code *Subtype Name*

11 ORGANIC CHEMICAL INDUSTRY

Description:

This dataset contains businesses in Texas that perform organic chemical manufacturing. Chemicals associated with organic chemical industry are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Organics

Physical Parameter

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
1	1,1,1,2-TETRACHLOROETHANE	630-20-6
2	1,1,1-TRICHLOROETHANE	71-55-6
3	1,1,2,2-TETRACHLOROETHANE	79-34-5
4	1,1,2-TRICHLOROETHANE	79-00-5
5	1,1-DICHLOROETHANE	75-34-3
6	1,1-DICHLOROETHYLENE	75-35-4
7	1,1-DICHLOROPROPENE	563-58-6
8	1,2,3-TRICHLOROBENZENE	87-61-6
9	1,2,3-TRICHLOROPROPANE	96-18-4
10	1,2,4-TRICHLOROBENZENE	120-82-1
11	1,2,4-TRIMETHYLBENZENE	95-63-6
12	1,2-DICHLOROETHANE	107-06-2
13	1,2-DICHLOROPROPANE	78-87-5
14	1,2-DIPHENYLHYDRAZINE	122-66-7
15	1,3,5-TRIMETHYLBENZENE	108-67-8
16	1,3-DICHLOROBENZENE	541-73-1
17	1,3-DICHLOROPROPANE	142-28-9
18	1,3-DICHLOROPROPENE	542-75-6
19	2,2-DICHLOROPROPANE	594-20-7
20	2,3,7,8-TCDD	1746-01-6
21	2,4,5-T	93-76-5
22	2,4,5-TP	93-72-1
23	2,4,6-TRICHLOROPHENOL	88-06-2
24	2,4-D	94-75-7
25	2,4-DICHLOROPHENOL	120-83-2
26	2,4-DINITROPHENOL	51-28-5
27	2,4-DINITROTOLUENE	121-14-2
28	2,6-DINITROTOLUENE	606-20-2
29	2-CHLOROTOLUENE	95-49-8
30	2-HEXANONE	591-78-6
31	2-METHYLPHENOL	95-48-7
32	3-HYDROXYCARBOFURAN	16655-82-6
33	4-CHLOROTOLUENE	106-43-4
34	4-ISOPROPYLTOLUENE	99-87-6
35	4-METHYL-2-PENTANONE (MIBK)	108-10-1
36	ACENAPHTHENE	83-32-9
37	ACENAPHTHYLENE	208-96-8
38	ACETOCHLOR	34256-82-1
39	ACETONE	67-64-1
40	ACRYLONITRILE	107-13-1
41	ALACHLOR	15972-60-8
42	ALDICARB	116-06-3
43	ALDICARB SULFONE	1646-88-4
44	ALDICARB SULFOXIDE	1646-87-3
45	ALDRIN	309-00-2
47	ALUMINUM	14903-36-7
48	ANTHRACENE	120-12-7
49	ANTIMONY	64924-52-3
50	AROCLOR	53469-21-9
51	ARSENIC	15584-04-0
53	ATRAZINE	1912-24-9
54	BARIUM	16541-35-8
55	BENTAZON	25057-89-0
56	BENZENE	71-43-2
57	BENZO[A]ANTHRACENE	56-55-3
58	BENZO(A)PYRENE	50-32-8
59	BENZO[B]FLUORANTHENE	205-99-2
60	BENZO[G,H,I]PERYLENE	191-24-2
61	BENZO[K]FLUORANTHENE	207-08-9
62	BERYLLIUM	14701-08-7
65	BROMACIL	314-40-9
67	BROMOBENZENE	108-86-1
68	BROMOCHLOROMETHANE	74-97-5
69	BROMODICHLOROMETHANE	75-27-4
70	BROMOFORM	75-25-2
71	BROMOMETHANE	74-83-9
72	BUTACHLOR	23184-66-9
73	BUTYL BENZYL PHTHALATE	85-68-7
74	CADMIUM	22537-48-0
76	CARBARYL	63-25-2
77	CARBOFURAN	1563-66-2

78	CARBON DISULFIDE	75-15-0
79	CARBON TETRACHLORIDE	56-23-5
81	CHLORDANE	57-74-9
82	CHLORDANE (ALPHA-CHLORDANE)	5103-71-9
83	CHLORDANE (GAMMA-CHLORDANE)	12789-03-6
84	CHLORDANE (TRANS-NONACHLOR)	39765-80-5
85	CHLORIDE	16887-00-6
86	CHLOROBENZENE	108-90-7
87	CHLOROETHANE	75-00-3
88	CHLOROFORM	67-66-3
89	CHLOROMETHANE	74-87-3
90	CHROMIUM	11104-59-9
91	CHRYSENE	218-01-9
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
93	CIS-1,3-DICHLOROPROPENE	10061-01-5
94	COPPER	17493-86-6
96	CYANAZINE	21725-46-2
97	CYANIDE	57-12-5
98	DALAPON	75-99-0
99	DCPA DI-ACID DEGRADATE	2136-79-0
100	DCPA MONO-ACID DEGRADATE	887-54-7
101	DDE	72-55-9
102	DI-(2-ETHYLHEXYL)ADIPATE	103-23-1
103	DI-(2-ETHYLHEXYL)PHTHALATE	117-81-7
104	DIAZINON	333-41-5
105	DIBENZ[A,H]ANTHRACENE	53-70-3
106	DIBROMOCHLOROMETHANE	124-48-1
107	DIBROMOCHLOROPROPANE	67708-83-2
108	DIBROMOMETHANE	74-95-3
109	DICAMBA	1918-00-9
110	DICHLORODIFLUOROMETHANE	75-71-8
111	DICHLOROMETHANE	75-09-2
112	DIELDRIN	60-57-1
113	DIETHYL PHTHALATE	84-66-2
114	DIMETHYL PHTHALATE	131-11-3
115	DI-N-BUTYL PHTHALATE	84-74-2
116	DINOSEB	88-85-7
117	DIQUAT	2764-72-9
118	DISULFOTON	298-04-4
119	DIURON	330-54-1
120	ENDOTHALL	145-73-3
121	ENDRIN	72-20-8
122	EPTC	759-94-4
124	ETHYL METHACRYLATE	97-63-2
125	ETHYLBENZENE	100-41-4
126	ETHYLENE DIBROMIDE	106-93-4

128	FLUORENE	86-73-7
130	FONOFOS	944-22-9
132	GLYPHOSATE	1071-83-6
136	HEPTACHLOR	76-44-8
137	HEPTACHLOR EPOXIDE	1024-57-3
138	HEXACHLOROBENZENE	118-74-1
139	HEXACHLOROBUTADIENE	87-68-3
140	HEXACHLOROCYCLOPENTADIENE	77-47-4
141	HYDROGEN SULFIDE	15035-72-0
142	INDENO[1,2,3,CD]PYRENE	193-39-5
143	METHYL IODIDE (IODOMETHANE)	74-88-4
144	IRON	15438-31-0
145	ISOPROPYLBENZENE	98-82-8
146	LAMBAST	845-52-3
147	LEAD	14701-27-0
148	LINDANE	58-89-9
149	LINURON	330-55-2
150	M + P XYLENE	106-42-3
151	MAGNESIUM	14581-92-1
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
154	METHIOCARB	2032-65-7
155	METHOMYL	16752-77-5
156	METHOXYCHLOR	72-43-5
157	METHYL ETHYL KETONE	78-93-3
158	METHYL METHACRYLATE	80-62-6
159	METHYL-T-BUTYL ETHER	1634-04-4
160	METOLACHLOR	51218-45-2
161	METRIBUZIN	21087-64-9
162	MOLINATE	2212-67-1
163	MONOCHLOROBENZENE	108-90-7
164	M-XYLENE	108-38-3
165	NAPHTHALENE	91-20-3
166	N-BUTYLBENZENE	104-51-8
167	NICKEL	14701-22-5
171	NITROBENZENE	98-95-3
172	N-PROPYLBENZENE	103-65-1
173	ORGANOTINS	
174	ORTHO-1,2-DICHLOROBENZENE	95-50-1
175	OXAMYL	23135-22-0
176	O-XYLENE	95-47-6
178	PARA-1,4-DICHLOROBENZENE	106-46-7
179	PCBs	53469-21-9
180	PENTACHLOROPHENOL	87-86-5
181	PERCHLORATE	14797-73-0
182	pH	

183	PHENANTHRENE	85-01-8
184	PICLORAM	1918-02-1
185	PROMETON	1610-18-0
186	PROPACHLOR	1918-16-7
187	PROPAZINE	139-40-2
188	P-XYLENE	106-42-3
189	PYRENE	129-00-0
193	RDX	121-82-4
194	S-BUTYLBENZENE	135-98-8
195	SELENIUM	7782-49-2
196	SILVER	14701-21-4
197	SIMAZINE	122-34-9
198	SODIUM	17341-25-2
202	STYRENE	100-42-5
203	SULFATE	14808-79-8
204	T-BUTYLBENZENE	98-06-6
205	TDS	
206	TERBACIL	5902-51-2
207	TERBUFOS	13071-79-9
208	TETRACHLOROETHYLENE	127-18-4
209	TETRAHYDROFURAN	109-99-9
210	THALLIUM	7440-28-0
211	TOLUENE	108-88-3
214	TOTAL TRIHALOMETHANE	
215	TOXAPHENE	8001-35-2
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
217	TRANS-1,3-DICHLOROPROPENE	10061-02-6
218	TRIAZINES	
219	TRICHLOROETHYLENE	79-01-6
220	TRICHLOROFLUOROMETHANE	75-69-4
221	TRIFLURALIN	1582-09-8
224	VINYL ACETATE	108-05-4
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	
227	ZINC	15176-26-8

Psoc Type Code	Psoc Type Name
1	**BUSINESS**

Psoc Subtype Code	Subtype Name
12	PAINT SHOP

Description:

This dataset contains businesses in Texas that perform painting application or sales of products. Chemicals associated with paint are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	Contaminant Name	CAS Number
6	1,1-DICHLOROETHYLENE	75-35-4
12	1,2-DICHLOROETHANE	107-06-2
39	ACETONE	67-64-1
47	ALUMINUM	14903-36-7
49	ANTIMONY	64924-52-3
51	ARSENIC	15584-04-0
54	BARIUM	16541-35-8
56	BENZENE	71-43-2
64	BORON	11113-50-1
74	CADMIUM	22537-48-0
79	CARBON TETRACHLORIDE	56-23-5
86	CHLOROBENZENE	108-90-7
90	CHROMIUM	11104-59-9
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
94	COPPER	17493-86-6
125	ETHYLBENZENE	100-41-4
144	IRON	15438-31-0
147	LEAD	14701-27-0
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
167	NICKEL	14701-22-5
203	SULFATE	14808-79-8
208	TETRACHLOROETHYLENE	127-18-4
211	TOLUENE	108-88-3
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
219	TRICHLOROETHYLENE	79-01-6
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	
227	ZINC	15176-26-8

Psoc Type Code	Psoc Type Name
1	**BUSINESS**

Psoc Subtype Code	Subtype Name
13	PESTICIDE MFG, SALE, APPLICATION

Description:

This dataset contains businesses in Texas that perform pesticide manufacturing, sales, or application. Chemicals associated with pesticides are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	Contaminant Name	CAS Number
2	1,1,1-TRICHLOROETHANE	71-55-6
4	1,1,2-TRICHLOROETHANE	79-00-5
13	1,2-DICHLOROPROPANE	78-87-5
21	2,4,5-T	93-76-5
22	2,4,5-TP	93-72-1
24	2,4-D	94-75-7
29	2-CHLOROTOLUENE	95-49-8
32	3-HYDROXYCARBOFURAN	16655-82-6
38	ACETOCHLOR	34256-82-1
41	ALACHLOR	15972-60-8
42	ALDICARB	116-06-3
43	ALDICARB SULFONE	1646-88-4
44	ALDICARB SULFOXIDE	1646-87-3
45	ALDRIN	309-00-2
48	ANTHRACENE	120-12-7
50	AROCLOR	53469-21-9
51	ARSENIC	15584-04-0
53	ATRAZINE	1912-24-9
55	BENTAZON	25057-89-0
65	BROMACIL	314-40-9
72	BUTACHLOR	23184-66-9
74	CADMIUM	22537-48-0
76	CARBARYL	63-25-2
77	CARBOFURAN	1563-66-2
79	CARBON TETRACHLORIDE	56-23-5
81	CHLORDANE	57-74-9
82	CHLORDANE (ALPHA-CHLORDANE)	5103-71-9
83	CHLORDANE (GAMMA-CHLORDANE)	12789-03-6
84	CHLORDANE (TRANS-NONACHLOR)	39765-80-5
86	CHLOROBENZENE	108-90-7
87	CHLOROETHANE	75-00-3
88	CHLOROFORM	67-66-3
91	CHRYSENE	218-01-9
96	CYANAZINE	21725-46-2
98	DALAPON	75-99-0
99	DCPA DI-ACID DEGRADATE	2136-79-0
100	DCPA MONO-ACID DEGRADATE	887-54-7
101	DDE	72-55-9
102	DI-(2-ETHYLHEXYL)ADIPATE	103-23-1
103	DI-(2-ETHYLHEXYL)PHTHALATE	117-81-7
104	DIAZINON	333-41-5
109	DICAMBA	1918-00-9
110	DICHLORODIFLUOROMETHANE	75-71-8
112	DIELDRIN	60-57-1
113	DIETHYL PHTHALATE	84-66-2
114	DIMETHYL PHTHALATE	131-11-3
116	DINOSEB	88-85-7
117	DIQUAT	2764-72-9
118	DISULFOTON	298-04-4
119	DIURON	330-54-1
120	ENDOTHALL	145-73-3
121	ENDRIN	72-20-8
122	EPTC	759-94-4
125	ETHYLBENZENE	100-41-4
130	FONOFOS	944-22-9
132	GLYPHOSATE	1071-83-6
136	HEPTACHLOR	76-44-8
137	HEPTACHLOR EPOXIDE	1024-57-3
146	LAMBAST	845-52-3
147	LEAD	14701-27-0
148	LINDANE	58-89-9
149	LINURON	330-55-2
154	METHIOCARB	2032-65-7
155	METHOMYL	16752-77-5
156	METHOXYCHLOR	72-43-5
160	METOLACHLOR	51218-45-2
161	METRIBUZIN	21087-64-9
162	MOLINATE	2212-67-1
174	ORTHO-1,2-DICHLOROBENZENE	95-50-1
175	OXAMYL	23135-22-0
178	PARA-1,4-DICHLOROBENZENE	106-46-7
184	PICLORAM	1918-02-1
185	PROMETON	1610-18-0

186	PROPACHLOR	1918-16-7
187	PROPAZINE	139-40-2
197	SIMAZINE	122-34-9
206	TERBACIL	5902-51-2
207	TERBUFOS	13071-79-9
208	TETRACHLOROETHYLENE	127-18-4
211	TOLUENE	108-88-3
215	TOXAPHENE	8001-35-2
218	TRIAZINES	
219	TRICHLOROETHYLENE	79-01-6
220	TRICHLOROFLUOROMETHANE	75-69-4
221	TRIFLURALIN	1582-09-8
226	XYLENES (TOTAL)	

Psoc Type Code	Psoc Type Name
1	**BUSINESS**

Psoc Subtype Code	Subtype Name
14	PESTICIDE, FERTILIZER MFG, SALE, APPLICATION

Description:

This dataset contains businesses in Texas that perform pesticide and fertilizer manufacturing, sales, or application. The businesses include lawn care and retail sales of chemicals. Chemicals associated with pesticides and fertilizer are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
2	1,1,1-TRICHLOROETHANE	71-55-6
4	1,1,2-TRICHLOROETHANE	79-00-5
13	1,2-DICHLOROPROPANE	78-87-5
21	2,4,5-T	93-76-5
22	2,4,5-TP	93-72-1
24	2,4-D	94-75-7
29	2-CHLOROTOLUENE	95-49-8
32	3-HYDROXYCARBOFURAN	16655-82-6
38	ACETOCHLOR	34256-82-1
41	ALACHLOR	15972-60-8
42	ALDICARB	116-06-3
43	ALDICARB SULFONE	1646-88-4
44	ALDICARB SULFOXIDE	1646-87-3
45	ALDRIN	309-00-2
48	ANTHRACENE	120-12-7
50	AROCLOR	53469-21-9
51	ARSENIC	15584-04-0
53	ATRAZINE	1912-24-9
55	BENTAZON	25057-89-0
65	BROMACIL	314-40-9
72	BUTACHLOR	23184-66-9
74	CADMIUM	22537-48-0
76	CARBARYL	63-25-2
77	CARBOFURAN	1563-66-2
79	CARBON TETRACHLORIDE	56-23-5
81	CHLORDANE	57-74-9
82	CHLORDANE (ALPHA-CHLORDANE)	5103-71-9
83	CHLORDANE (GAMMA-CHLORDANE)	12789-03-6
84	CHLORDANE (TRANS-NONACHLOR)	39765-80-5
86	CHLOROBENZENE	108-90-7
87	CHLOROETHANE	75-00-3
88	CHLOROFORM	67-66-3
91	CHRYSENE	218-01-9
96	CYANAZINE	21725-46-2
98	DALAPON	75-99-0
99	DCPA DI-ACID DEGRADATE	2136-79-0
100	DCPA MONO-ACID DEGRADATE	887-54-7
101	DDE	72-55-9
102	DI-(2-ETHYLHEXYL)ADIPATE	103-23-1
103	DI-(2-ETHYLHEXYL)PHTHALATE	117-81-7
104	DIAZINON	333-41-5
109	DICAMBA	1918-00-9
110	DICHLORODIFLUOROMETHANE	75-71-8
112	DIELDRIN	60-57-1
113	DIETHYL PHTHALATE	84-66-2
114	DIMETHYL PHTHALATE	131-11-3
116	DINOSEB	88-85-7
117	DIQUAT	2764-72-9
118	DISULFOTON	298-04-4
119	DIURON	330-54-1
120	ENDOTHALL	145-73-3
121	ENDRIN	72-20-8
122	EPTC	759-94-4
125	ETHYLBENZENE	100-41-4
130	FONOFOS	944-22-9
132	GLYPHOSATE	1071-83-6
136	HEPTACHLOR	76-44-8
137	HEPTACHLOR EPOXIDE	1024-57-3
146	LAMBAST	845-52-3
147	LEAD	14701-27-0
148	LINDANE	58-89-9
149	LINURON	330-55-2
154	METHIOCARB	2032-65-7
155	METHOMYL	16752-77-5
156	METHOXYCHLOR	72-43-5
160	METOLACHLOR	51218-45-2
161	METRIBUZIN	21087-64-9
162	MOLINATE	2212-67-1
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0

174	ORTHO-1,2-DICHLOROBENZENE	95-50-1
175	OXAMYL	23135-22-0
178	PARA-1,4-DICHLOROBENZENE	106-46-7
184	PICLORAM	1918-02-1
185	PROMETON	1610-18-0
186	PROPACHLOR	1918-16-7
187	PROPAZINE	139-40-2
197	SIMAZINE	122-34-9
206	TERBACIL	5902-51-2
207	TERBUFOS	13071-79-9
208	TETRACHLOROETHYLENE	127-18-4
211	TOLUENE	108-88-3
215	TOXAPHENE	8001-35-2
218	TRIAZINES	
219	TRICHLOROETHYLENE	79-01-6
220	TRICHLOROFLUOROMETHANE	75-69-4
221	TRIFLURALIN	1582-09-8
226	XYLENES (TOTAL)	

Psoc Type Code	*Psoc Type Name*
1	**BUSINESS**

Psoc Subtype Code	*Subtype Name*
15	PETROLEUM CHEMICAL INDUSTRY

Description:

This dataset contains businesses in Texas that perform petroleum chemical manufacturing. Chemicals associated with the petroleum chemical industry are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
2	1,1,1-TRICHLOROETHANE	71-55-6
3	1,1,2,2-TETRACHLOROETHANE	79-34-5
6	1,1-DICHLOROETHYLENE	75-35-4
10	1,2,4-TRICHLOROBENZENE	120-82-1
12	1,2-DICHLOROETHANE	107-06-2
20	2,3,7,8-TCDD	1746-01-6
24	2,4-D	94-75-7
39	ACETONE	67-64-1
41	ALACHLOR	15972-60-8
47	ALUMINUM	14903-36-7
51	ARSENIC	15584-04-0
53	ATRAZINE	1912-24-9
54	BARIUM	16541-35-8
56	BENZENE	71-43-2
74	CADMIUM	22537-48-0
77	CARBOFURAN	1563-66-2
79	CARBON TETRACHLORIDE	56-23-5
85	CHLORIDE	16887-00-6
88	CHLOROFORM	67-66-3
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
94	COPPER	17493-86-6
97	CYANIDE	57-12-5
102	DI-(2-ETHYLHEXYL)ADIPATE	103-23-1
103	DI-(2-ETHYLHEXYL)PHTHALATE	117-81-7
111	DICHLOROMETHANE	75-09-2
121	ENDRIN	72-20-8
125	ETHYLBENZENE	100-41-4
138	HEXACHLOROBENZENE	118-74-1
140	HEXACHLOROCYCLOPENTADIENE	77-47-4
147	LEAD	14701-27-0
153	MERCURY	14302-87-5
156	METHOXYCHLOR	72-43-5
165	NAPHTHALENE	91-20-3
167	NICKEL	14701-22-5
175	OXAMYL	23135-22-0
179	PCBs	53469-21-9
195	SELENIUM	7782-49-2
198	SODIUM	17341-25-2
202	STYRENE	100-42-5
203	SULFATE	14808-79-8
208	TETRACHLOROETHYLENE	127-18-4
211	TOLUENE	108-88-3
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
219	TRICHLOROETHYLENE	79-01-6
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	
227	ZINC	15176-26-8

Psoc Type Code	*Psoc Type Name*
1	**BUSINESS**

Psoc Subtype Code	*Subtype Name*
16	PETROLEUM STORAGE TANK

Description:

This dataset contains businesses in Texas that sell gasoline, diesel, jet fuel. Chemicals associated with petroleum products are present. This data was primarily obtained through the Texas Commission of Environmental Quality Petroleum Storage Tank database. Most of the locations were obtained using address-matching software or review of files and digitizing of topographic maps.

Required Information:

TCEQ PST Facility ID Number; TCEQ LPST ID Number, if applicable.

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
11	1,2,4-TRIMETHYLBENZENE	95-63-6
56	BENZENE	71-43-2
125	ETHYLBENZENE	100-41-4
147	LEAD	14701-27-0
159	METHYL-T-BUTYL ETHER	1634-04-4
164	M-XYLENE	108-38-3
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
211	TOLUENE	108-88-3
226	XYLENES (TOTAL)	

Psoc Type Code	Psoc Type Name
1	**BUSINESS**

Psoc Subtype Code	Subtype Name
17	PHOTO PROCESS BUSINESS

Description:

This dataset contains businesses in Texas that perform photographic chemical processing. Chemicals associated with photographic chemicals are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Some sites may be drop-off points where photo processing is done off site. Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Organics

Physical Parameter

Contaminants:

Contaminant Code	Contaminant Name	CAS Number
2	1,1,1-TRICHLOROETHANE	71-55-6
4	1,1,2-TRICHLOROETHANE	79-00-5
6	1,1-DICHLOROETHYLENE	75-35-4
13	1,2-DICHLOROPROPANE	78-87-5
39	ACETONE	67-64-1
47	ALUMINUM	14903-36-7
51	ARSENIC	15584-04-0
54	BARIUM	16541-35-8
56	BENZENE	71-43-2
64	BORON	11113-50-1
66	BROMIDE	
74	CADMIUM	22537-48-0
79	CARBON TETRACHLORIDE	56-23-5
88	CHLOROFORM	67-66-3
90	CHROMIUM	11104-59-9
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
94	COPPER	17493-86-6
97	CYANIDE	57-12-5
103	DI-(2-ETHYLHEXYL)PHTHALATE	117-81-7
111	DICHLOROMETHANE	75-09-2
136	HEPTACHLOR	76-44-8
137	HEPTACHLOR EPOXIDE	1024-57-3
138	HEXACHLOROBENZENE	118-74-1
147	LEAD	14701-27-0
153	MERCURY	14302-87-5
156	METHOXYCHLOR	72-43-5
167	NICKEL	14701-22-5
168	NITRATE	14797-55-8
182	pH	
195	SELENIUM	7782-49-2
196	SILVER	14701-21-4
202	STYRENE	100-42-5
203	SULFATE	14808-79-8
208	TETRACHLOROETHYLENE	127-18-4
211	TOLUENE	108-88-3
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
219	TRICHLOROETHYLENE	79-01-6
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	
227	ZINC	15176-26-8

Psoc Type Code	*Psoc Type Name*
1	**BUSINESS**

Psoc Subtype Code	*Subtype Name*
18	PLASTIC MFG, SALE

Description:

This dataset contains businesses in Texas that perform plastic chemical manufacturing or sales of products. Chemicals associated with plastic chemical industry are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
4	1,1,2-TRICHLOROETHANE	79-00-5
5	1,1-DICHLOROETHANE	75-34-3
6	1,1-DICHLOROETHYLENE	75-35-4
13	1,2-DICHLOROPROPANE	78-87-5
39	ACETONE	67-64-1
40	ACRYLONITRILE	107-13-1
47	ALUMINUM	14903-36-7
49	ANTIMONY	64924-52-3
54	BARIUM	16541-35-8
56	BENZENE	71-43-2
74	CADMIUM	22537-48-0
79	CARBON TETRACHLORIDE	56-23-5
85	CHLORIDE	16887-00-6
86	CHLOROBENZENE	108-90-7
88	CHLOROFORM	67-66-3
90	CHROMIUM	11104-59-9
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
94	COPPER	17493-86-6
97	CYANIDE	57-12-5
102	DI-(2-ETHYLHEXYL)ADIPATE	103-23-1
103	DI-(2-ETHYLHEXYL)PHTHALATE	117-81-7
111	DICHLOROMETHANE	75-09-2
125	ETHYLBENZENE	100-41-4
138	HEXACHLOROBENZENE	118-74-1
147	LEAD	14701-27-0
153	MERCURY	14302-87-5
157	METHYL ETHYL KETONE	78-93-3
167	NICKEL	14701-22-5
180	PENTACHLOROPHENOL	87-86-5
195	SELENIUM	7782-49-2
202	STYRENE	100-42-5
203	SULFATE	14808-79-8
208	TETRACHLOROETHYLENE	127-18-4
211	TOLUENE	108-88-3
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
219	TRICHLOROETHYLENE	79-01-6
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	
227	ZINC	15176-26-8

Psoc Type Code	Psoc Type Name
1	**BUSINESS**

Psoc Subtype Code	Subtype Name
19	PULP OR PAPER MILL

Description:

This dataset contains businesses in Texas that perform pulp and paper manufacturing. Chemicals associated with pulp chemical industry are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	Contaminant Name	CAS Number
2	1,1,1-TRICHLOROETHANE	71-55-6
6	1,1-DICHLOROETHYLENE	75-35-4
20	2,3,7,8-TCDD	1746-01-6
39	ACETONE	67-64-1
51	ARSENIC	15584-04-0
54	BARIUM	16541-35-8
56	BENZENE	71-43-2
74	CADMIUM	22537-48-0
79	CARBON TETRACHLORIDE	56-23-5
85	CHLORIDE	16887-00-6
88	CHLOROFORM	67-66-3
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
94	COPPER	17493-86-6
111	DICHLOROMETHANE	75-09-2
125	ETHYLBENZENE	100-41-4
144	IRON	15438-31-0
147	LEAD	14701-27-0
153	MERCURY	14302-87-5
179	PCBs	53469-21-9
195	SELENIUM	7782-49-2
202	STYRENE	100-42-5
203	SULFATE	14808-79-8
208	TETRACHLOROETHYLENE	127-18-4
211	TOLUENE	108-88-3
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
219	TRICHLOROETHYLENE	79-01-6
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	
227	ZINC	15176-26-8

Psoc Type Code	*Psoc Type Name*
1	**BUSINESS**

Psoc Subtype Code	*Subtype Name*
20	RADIOCHEMICAL SITE

Description:

This dataset contains businesses in Texas that contain radiochemicals as part of their business. Chemicals associated with radiochemicals are present. This data was primarily obtained through the Texas Department of Health Radiochemical databse and the Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Site specific chemical use should be determined.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
1	**BUSINESS**

Psoc Subtype Code	*Subtype Name*
21	TIRE SALES, REPAIR BUSINESS

Description:

This dataset contains businesses in Texas that sell new or used tires. Chemicals associated with tires, specifically lead tire weights, are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Contaminant Groups: Inorganics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
147	LEAD	14701-27-0

Psoc Type Code	*Psoc Type Name*
1	**BUSINESS**

Psoc Subtype Code	*Subtype Name*
22	NEW OR USED OIL SITE

Description:

This dataset contains businesses in Texas that sell new automobile oil or collect waste oil. Chemicals associated with automobile oil and waste oil are present. This data was primarily obtained through the Texas Commission on Environmental Quality Used Oil Recyclers database and the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
2	1,1,1-TRICHLOROETHANE	71-55-6
4	1,1,2-TRICHLOROETHANE	79-00-5
6	1,1-DICHLOROETHYLENE	75-35-4
56	BENZENE	71-43-2
79	CARBON TETRACHLORIDE	56-23-5
86	CHLOROBENZENE	108-90-7
90	CHROMIUM	11104-59-9
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
110	DICHLORODIFLUOROMETHANE	75-71-8
111	DICHLOROMETHANE	75-09-2
125	ETHYLBENZENE	100-41-4
147	LEAD	14701-27-0
159	METHYL-T-BUTYL ETHER	1634-04-4
164	M-XYLENE	108-38-3
174	ORTHO-1,2-DICHLOROBENZENE	95-50-1
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
208	TETRACHLOROETHYLENE	127-18-4
211	TOLUENE	108-88-3
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
219	TRICHLOROETHYLENE	79-01-6
220	TRICHLOROFLUOROMETHANE	75-69-4
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	

Psoc Type Code	*Psoc Type Name*
1	**BUSINESS**

Psoc Subtype Code	*Subtype Name*
23	WOOD PRESERVING

Description:

This dataset contains businesses in Texas that process preserved wood. Chemicals associated with wood preservation are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
51	ARSENIC	15584-04-0
56	BENZENE	71-43-2
64	BORON	11113-50-1
90	CHROMIUM	11104-59-9
94	COPPER	17493-86-6
125	ETHYLBENZENE	100-41-4
129	FLUORIDE	16984-48-8
147	LEAD	14701-27-0
150	M + P XYLENE	106-42-3
153	MERCURY	14302-87-5
159	METHYL-T-BUTYL ETHER	1634-04-4
164	M-XYLENE	108-38-3
176	O-XYLENE	95-47-6
180	PENTACHLOROPHENOL	87-86-5
188	P-XYLENE	106-42-3
195	SELENIUM	7782-49-2
203	SULFATE	14808-79-8
211	TOLUENE	108-88-3
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
226	XYLENES (TOTAL)	
227	ZINC	15176-26-8

Psoc Type Code	*Psoc Type Name*
1	**BUSINESS**

Psoc Subtype Code	*Subtype Name*
24	BATTERY MFG., SALES

Description:

This dataset contains businesses in Texas that manufacture or sell batteries. Chemicals associated with all type of batteries are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Physical Parameter

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
74	CADMIUM	22537-48-0
94	COPPER	17493-86-6
147	LEAD	14701-27-0
151	MAGNESIUM	14581-92-1
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
167	NICKEL	14701-22-5
182	pH	
203	SULFATE	14808-79-8
227	ZINC	15176-26-8

Psoc Type Code	*Psoc Type Name*
1	**BUSINESS**

Psoc Subtype Code	*Subtype Name*
25	BOAT STORAGE

Description:

This dataset contains businesses in Texas that store boats. Chemicals associated with boat fuels and batteries are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
11	1,2,4-TRIMETHYLBENZENE	95-63-6
56	BENZENE	71-43-2
125	ETHYLBENZENE	100-41-4
147	LEAD	14701-27-0
159	METHYL-T-BUTYL ETHER	1634-04-4
164	M-XYLENE	108-38-3
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
203	SULFATE	14808-79-8
211	TOLUENE	108-88-3
226	XYLENES (TOTAL)	

Psoc Type Code	Psoc Type Name
1	**BUSINESS**

Psoc Subtype Code	Subtype Name
26	OIL AND GAS PRODUCTION TANKS

Description:

This dataset contains sites with oil and gas production tanks. Chemicals associated with petroleum products are present. This data was primarily obtained through the review of topographic maps and soil conservation service maps. Most of the locations were obtained by digitizing topographic maps.

Required Information:

Applicable site ids should be obtained. Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
11	1,2,4-TRIMETHYLBENZENE	95-63-6
15	1,3,5-TRIMETHYLBENZENE	108-67-8
34	4-ISOPROPYLTOLUENE	99-87-6
36	ACENAPHTHENE	83-32-9
48	ANTHRACENE	120-12-7
54	BARIUM	16541-35-8
56	BENZENE	71-43-2
57	BENZO[A]ANTHRACENE	56-55-3
58	BENZO(A)PYRENE	50-32-8
66	BROMIDE	
85	CHLORIDE	16887-00-6
91	CHRYSENE	218-01-9
105	DIBENZ[A,H]ANTHRACENE	53-70-3
125	ETHYLBENZENE	100-41-4
128	FLUORENE	86-73-7
141	HYDROGEN SULFIDE	15035-72-0
145	ISOPROPYLBENZENE	98-82-8
150	M + P XYLENE	106-42-3
151	MAGNESIUM	14581-92-1
164	M-XYLENE	108-38-3
165	NAPHTHALENE	91-20-3
166	N-BUTYLBENZENE	104-51-8
172	N-PROPYLBENZENE	103-65-1
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
189	PYRENE	129-00-0
194	S-BUTYLBENZENE	135-98-8
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
204	T-BUTYLBENZENE	98-06-6
205	TDS	
211	TOLUENE	108-88-3
226	XYLENES (TOTAL)	

Psoc Type Code	*Psoc Type Name*
1	**BUSINESS**

Psoc Subtype Code	*Subtype Name*
27	FIREWORKS BUSINESS (MFG OR RETAIL)

Description:

This dataset contains businesses in Texas that manufacture or sell fireworks. Chemicals associated with fireworks are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
47	ALUMINUM	14903-36-7
49	ANTIMONY	64924-52-3
51	ARSENIC	15584-04-0
54	BARIUM	16541-35-8
151	MAGNESIUM	14581-92-1
152	MANGANESE	14333-14-3
181	PERCHLORATE	14797-73-0
210	THALLIUM	7440-28-0

Psoc Type Code	*Psoc Type Name*
1	**BUSINESS**

Psoc Subtype Code	*Subtype Name*
28	MILITARY ARMORY

Description:

This dataset contains military armories. Chemicals associated with automobiles are present. Sites were obtained through field work or review of USGS topographic maps. Most of the locations were obtained by digitizing topographic maps.

Required Information:

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
1	**BUSINESS**

Psoc Subtype Code	*Subtype Name*
29	**SUGAR REFINING**

Description:

This dataset contains businesses in Texas that manufacture sugar. Chemicals associated with sugar refining are present. This data was primarily obtained through the Texas Comptroller of Public Accounts database on businesses in Texas. The businesses were extracted using SIC codes and string searches on key names. Most of the locations were obtained using address-matching software.

Required Information:

Contaminant Groups: Inorganics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
54	BARIUM	16541-35-8
63	BICARBONATE	71-52-3
75	CALCIUM	14102-48-8
141	HYDROGEN SULFIDE	15035-72-0
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8

Psoc Type Code	*Psoc Type Name*
2	**CEMETERY**

Psoc Subtype Code	*Subtype Name*
1	CEMETERY

Description:

This dataset contains locations of cemeteries. Chemicals associated with cemeteries are present. This data was primarily obtained through the USGS Geographic Names Information System database and review of USGS topographic maps. The GNIS database contained a location of named cemeteries; unnamed or missing cemeteries were digitized from topographic maps.

Required Information:

Contaminant Groups: Inorganics

Microbiological

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
53	ATRAZINE	1912-24-9
63	BICARBONATE	71-52-3
85	CHLORIDE	16887-00-6
94	COPPER	17493-86-6
104	DIAZINON	333-41-5
117	DIQUAT	2764-72-9
127	FECAL VIRUSES	
132	GLYPHOSATE	1071-83-6
144	IRON	15438-31-0
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
203	SULFATE	14808-79-8
227	ZINC	15176-26-8

Psoc Type Code	*Psoc Type Name*
3	**CHEMICAL PIPELINE**

Psoc Subtype Code	*Subtype Name*
1	PIPELINE

Description:

This dataset contains major pipeline locations in Texas. Chemicals associated with pipeline products are present. This data was primarily obtained through the Railroad Commission of Texas. The locations were obtained from the Railroad Commission, along with the product transmitted through the pipeline.

Note: oilfield infield piping is not contained in this dataset.

Required Information:

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
3	**CHEMICAL PIPELINE**

Psoc Subtype Code	*Subtype Name*
2	CRUDE OIL

Description:

This dataset contains major pipeline locations in Texas. Chemicals associated with pipeline products are present. This data was primarily obtained through the Railroad Commission of Texas. The locations were obtained from the Railroad Commission, along with the product transmitted through the pipeline.

Required Information:

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
11	1,2,4-TRIMETHYLBENZENE	95-63-6
15	1,3,5-TRIMETHYLBENZENE	108-67-8
34	4-ISOPROPYLTOLUENE	99-87-6
36	ACENAPHTHENE	83-32-9
48	ANTHRACENE	120-12-7
56	BENZENE	71-43-2
57	BENZO[A]ANTHRACENE	56-55-3
58	BENZO(A)PYRENE	50-32-8
91	CHRYSENE	218-01-9
105	DIBENZ[A,H]ANTHRACENE	53-70-3
125	ETHYLBENZENE	100-41-4
128	FLUORENE	86-73-7
141	HYDROGEN SULFIDE	15035-72-0
145	ISOPROPYLBENZENE	98-82-8
150	M + P XYLENE	106-42-3
164	M-XYLENE	108-38-3
165	NAPHTHALENE	91-20-3
166	N-BUTYLBENZENE	104-51-8
172	N-PROPYLBENZENE	103-65-1
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
189	PYRENE	129-00-0
194	S-BUTYLBENZENE	135-98-8
204	T-BUTYLBENZENE	98-06-6
211	TOLUENE	108-88-3
226	XYLENES (TOTAL)	

Psoc Type Code	*Psoc Type Name*
3	**CHEMICAL PIPELINE**

Psoc Subtype Code	*Subtype Name*
3	HIGHLY VOLATILE LIQUIDS

Description:

This dataset contains major pipeline locations in Texas. Chemicals associated with pipeline products are present. This data was primarily obtained through the Railroad Commission of Texas. The locations were obtained from the Railroad Commission, along with the product transmitted through the pipeline.

Required Information:

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
3	**CHEMICAL PIPELINE**

Psoc Subtype Code	*Subtype Name*
4	NATURAL GAS LIQUIDS

Description:

This dataset contains major pipeline locations in Texas. Chemicals associated with pipeline products are present. This data was primarily obtained through the Railroad Commission of Texas. The locations were obtained from the Railroad Commission, along with the product transmitted through the pipeline.

Required Information:

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
3	**CHEMICAL PIPELINE**

Psoc Subtype Code	*Subtype Name*
5	PRODUCT - GASOLINE, DIESEL, JET FUEL

Description:

This dataset contains major pipeline locations in Texas. Chemicals associated with pipeline products are present. This data was primarily obtained through the Railroad Commission of Texas. The locations were obtained from the Railroad Commission, along with the product transmitted through the pipeline.

Required Information:

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
11	1,2,4-TRIMETHYLBENZENE	95-63-6
56	BENZENE	71-43-2
125	ETHYLBENZENE	100-41-4
147	LEAD	14701-27-0
159	METHYL-T-BUTYL ETHER	1634-04-4
164	M-XYLENE	108-38-3
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
211	TOLUENE	108-88-3
226	XYLENES (TOTAL)	

Psoc Type Code *Psoc Type Name*

3 CHEMICAL PIPELINE

Psoc Subtype Code *Subtype Name*

6 NATURAL GAS

Description:

This dataset contains major pipeline locations in Texas. Chemicals associated with pipeline products are present. This data was primarily obtained through the Railroad Commission of Texas. The locations were obtained from the Railroad Commission, along with the product transmitted through the pipeline.

Required Information:

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
3	CHEMICAL PIPELINE

Psoc Subtype Code	*Subtype Name*
7	PETROLEUM PUMP STATION

Description:

This dataset contains sites with oil and gas pipeline pump stations. Chemicals associated with petroleum products are present. This data was primarily obtained through the review of topographic maps and soil conservation service maps. Most of the locations were obtained by digitizing topographic maps.

Required Information:

Site specific chemical use should be determined. Some pump stations have contaminants used for cleaning and maintenance.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	Psoc Type Name
4	CHEMICAL STORAGE

Psoc Subtype Code	Subtype Name
1	CHEMICAL STORAGE

Description:

This dataset contains businesses sites in Texas that have chemicals stored. Chemicals at these sites are specific to that site . This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Site specific chemical use should be determined.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
4	CHEMICAL STORAGE

Psoc Subtype Code	*Subtype Name*
2	DRUM, SMALL CONTAINERS, BAGS

Description:

This dataset contains businesses sites in Texas that have chemicals stored. Chemicals at these sites are specific to that site . This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Site specific chemical use should be determined.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	Psoc Type Name
4	CHEMICAL STORAGE

Psoc Subtype Code	Subtype Name
3	CHEMICAL MIXING SITE

Description:

This dataset contains businesses sites in Texas that have chemicals mixed, such as for agricultural applications. Chemicals at these sites are specific to that site . This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Site specific chemical use should be determined.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
4	**CHEMICAL STORAGE**

Psoc Subtype Code	*Subtype Name*
4	TRANSFORMER

Description:

This dataset contains businesses sites in Texas that have transformers stored. The chemical in these transformers should be restricted to pcb's; note that most modern transfoerms are pcb-free. This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Site specific chemical use should be determined.

Contaminant Groups: Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
179	PCBs	53469-21-9

Psoc Type Code	*Psoc Type Name*
5	**CLASS I INJECTION WELL**

Psoc Subtype Code	*Subtype Name*
1	CLASS 1 INJECTION WELL

Description:

This dataset contains businesses in Texas that have a permitted Class I injection well. Class I injection wells inject a contaminant into a deep, non-potable stratigraphic formation. Chemicals associated with this type of injection well are site-specific. This data was primarily obtained through the Texas Commission of Environmental Quality permit files for Class I wells. Most of the locations were obtained after a review of files and digitizing of topographic maps.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	Psoc Type Name
6	CLASS II INJECTION WELL

Psoc Subtype Code	Subtype Name
1	CLASS 2 INJECTION WELL

Description:

This dataset contains businesses in Texas that have a permitted Class II injection well. Class II injection wells inject a contaminant into a deep, non-potable stratigraphic formation. Chemicals associated with this type of injection well include salt water brines and petroleum wastes. This data was primarily obtained through the Railroad Commission of Texas permit files for Class II wells. Locations are from the Railroad Commission of Texas and were obtained by digitizing topographic maps after the well locations were transferred from linen property ownership maps.

Required Information:

Applicable RRC Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	Contaminant Name	CAS Number
11	1,2,4-TRIMETHYLBENZENE	95-63-6
15	1,3,5-TRIMETHYLBENZENE	108-67-8
34	4-ISOPROPYLTOLUENE	99-87-6
36	ACENAPHTHENE	83-32-9
48	ANTHRACENE	120-12-7
54	BARIUM	16541-35-8
56	BENZENE	71-43-2
57	BENZO[A]ANTHRACENE	56-55-3
58	BENZO(A)PYRENE	50-32-8
66	BROMIDE	
85	CHLORIDE	16887-00-6
91	CHRYSENE	218-01-9
105	DIBENZ[A,H]ANTHRACENE	53-70-3
125	ETHYLBENZENE	100-41-4
128	FLUORENE	86-73-7
141	HYDROGEN SULFIDE	15035-72-0
145	ISOPROPYLBENZENE	98-82-8
150	M + P XYLENE	106-42-3
151	MAGNESIUM	14581-92-1
164	M-XYLENE	108-38-3
165	NAPHTHALENE	91-20-3
166	N-BUTYLBENZENE	104-51-8
172	N-PROPYLBENZENE	103-65-1
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
189	PYRENE	129-00-0
194	S-BUTYLBENZENE	135-98-8
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
204	T-BUTYLBENZENE	98-06-6
205	TDS	
211	TOLUENE	108-88-3
226	XYLENES (TOTAL)	

Psoc Type Code *Psoc Type Name*

7 CLASS III INJECTION WELL

Psoc Subtype Code *Subtype Name*

1 CLASS 3 INJECTION WELL

Description:

This dataset contains businesses in Texas that have a permitted Class III injection well. Class III injection wells inject chemicals into a potable aquifer and extract the mineral-bearing fluids through other wells. Chemicals associated with this type of injection well are site-specific. This data was primarily obtained through the Texas Commission of Environmental Quality permit files for Class III wells. Locations were obtained after a review of files and digitizing of topographic maps. Note that the centroid of the pemitted area was digitized and not the individual wells.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
7	**CLASS III INJECTION WELL**

Psoc Subtype Code	*Subtype Name*
2	BRINE

Description:

This dataset contains businesses in Texas that have a permitted Class III injection well. Class III injection wells inject chemicals into a potable aquifer and extract the brine (salt) fluids through other wells. This data was primarily obtained through the Railroad Commission of Texas permit files for Class III wells. Locations were obtained from the Railroad Commission of Texas.

Required Information:

Applicable RRC Site ID numbers.

Contaminant Groups: Inorganics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
66	BROMIDE	
85	CHLORIDE	16887-00-6
129	FLUORIDE	16984-48-8
168	NITRATE	14797-55-8
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
205	TDS	

Psoc Type Code *Psoc Type Name*

7 CLASS III INJECTION WELL

Psoc Subtype Code *Subtype Name*

3 SODIUM SULPHATE

Description:

This dataset contains businesses in Texas that have a permitted Class III injection well. Class III injection wells inject chemicals into a potable aquifer and extract the sodium sulphate-bearing fluids through other wells. This data was primarily obtained through the Texas Commission of Environmental Quality permit files for Class III wells. Locations were obtained after a review of files and digitizing of topographic maps. Note that the centroid of the pemitted area was digitized and not the individual wells.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
205	TDS	

Psoc Type Code	Psoc Type Name
7	**CLASS III INJECTION WELL**

Psoc Subtype Code	Subtype Name
4	SULFUR

Description:

This dataset contains businesses in Texas that have a permitted Class III injection well. Class III injection wells inject chemicals into a potable aquifer and extract the sulfur-bearing fluids through other wells. This data was primarily obtained through the Texas Commission of Environmental Quality permit files for Class III wells. Locations were obtained after a review of files and digitizing of topographic maps. Note that the centroid of the permitted area was digitized and not the individual wells.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
203	SULFATE	14808-79-8
205	TDS	

Psoc Type Code	*Psoc Type Name*
7	**CLASS III INJECTION WELL**

Psoc Subtype Code	*Subtype Name*
5	URANIUM

Description:

This dataset contains businesses in Texas that have a permitted Class III injection well. Class III injection wells inject chemicals into a potable aquifer and extract the mineral-bearing fluids through other wells. Chemicals associated with this type of injection well include uranium, radionuclides, and oxidized metals such as molybdenum, arsenic, sulphate, etc. This data was primarily obtained through the Texas Commission of Environmental Quality permit files for Class III wells. Locations were obtained after a review of files and digitizing of topographic maps. Note that the centroid of the pemitted area was digitized and not the individual wells.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Radionuclides

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
51	ARSENIC	15584-04-0
63	BICARBONATE	71-52-3
94	COPPER	17493-86-6
133	GROSS ALPHA	
134	GROSS BETA	
144	IRON	15438-31-0
147	LEAD	14701-27-0
152	MANGANESE	14333-14-3
190	RADIUM-226	13982-63-3
191	RADIUM-228	15262-20-1
192	RADON	10043-92-2
195	SELENIUM	7782-49-2
200	STRONTIUM-89	14701-18-9
201	STRONTIUM-90	10098-97-2
203	SULFATE	14808-79-8
205	TDS	
223	URANIUM	
227	ZINC	15176-26-8

Psoc Type Code	*Psoc Type Name*
8	CLASS V INJECTION WELL

Psoc Subtype Code	*Subtype Name*
1	CLASS 5 INJECTION WELL

Description:

This dataset contains businesses in Texas that have a Class V injection well. Class V injection wells inject fluids into a potable aquifer. Contaminants associated with this type of injection well are site-specific. This data was primarily obtained through the Texas Commission of Environmental Quality permit files for Class V wells. Locations were obtained for most sites from the applicant. Most wells have no latitude or longitude location. Sites with locations were not verified, and so accuracy is not known with any degree of certainty.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	Psoc Type Name
8	**CLASS V INJECTION WELL**

Psoc Subtype Code	Subtype Name
2	UNTREATED SEWAGE

Description:

This dataset contains businesses in Texas that have a Class V injection well. Class V injection wells inject fluids into a potable aquifer. Contaminants associated with this type of injection well are site-specific. This data was primarily obtained through the Texas Commission of Environmental Quality permit files for Class V wells. Locations were obtained for most sites from the applicant. Most wells have no latitude or longitude location. Sites with locations were not verified, and so accuracy is not known with any degree of certainty.

Required Information:

Contaminant Groups: Inorganics

Microbiological

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
2	1,1,1-TRICHLOROETHANE	71-55-6
23	2,4,6-TRICHLOROPHENOL	88-06-2
45	ALDRIN	309-00-2
47	ALUMINUM	14903-36-7
49	ANTIMONY	64924-52-3
51	ARSENIC	15584-04-0
56	BENZENE	71-43-2
62	BERYLLIUM	14701-08-7
64	BORON	11113-50-1
69	BROMODICHLOROMETHANE	75-27-4
70	BROMOFORM	75-25-2
74	CADMIUM	22537-48-0
75	CALCIUM	14102-48-8
85	CHLORIDE	16887-00-6
88	CHLOROFORM	67-66-3
95	CRYPTOSPORIDIUM PARVUM	
111	DICHLOROMETHANE	75-09-2
112	DIELDRIN	60-57-1
113	DIETHYL PHTHALATE	84-66-2
114	DIMETHYL PHTHALATE	131-11-3
123	ESCHERICHIA COLI	
127	FECAL VIRUSES	
129	FLUORIDE	16984-48-8
131	GIARDIA LAMBLIA	
144	IRON	15438-31-0
147	LEAD	14701-27-0
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
165	NAPHTHALENE	91-20-3
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
195	SELENIUM	7782-49-2
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
205	TDS	
211	TOLUENE	108-88-3
213	TOTAL COLIFORM	
219	TRICHLOROETHYLENE	79-01-6

Psoc Type Code	*Psoc Type Name*
8	**CLASS V INJECTION WELL**

Psoc Subtype Code	*Subtype Name*
3	AGRICULTURAL DRAINAGE

Description:

This dataset contains businesses in Texas that have a Class V injection well. Class V injection wells inject fluids into a potable aquifer. Contaminants associated with this type of injection well are site-specific. This data was primarily obtained through the Texas Commission of Environmental Quality permit files for Class V wells. Locations were obtained for most sites from the applicant. Most wells have no latitude or longitude location. Sites with locations were not verified, and so accuracy is not known with any degree of certainty.

Required Information:

Contaminant Groups: Inorganics

Microbiological

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
64	BORON	11113-50-1
85	CHLORIDE	16887-00-6
127	FECAL VIRUSES	
129	FLUORIDE	16984-48-8
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
213	TOTAL COLIFORM	

Psoc Type Code	Psoc Type Name
8	CLASS V INJECTION WELL

Psoc Subtype Code	Subtype Name
4	CESSPOOL

Description:

This dataset contains businesses in Texas that have a Class V injection well. Class V injection wells inject fluids into a potable aquifer. Contaminants associated with this type of injection well are site-specific. This data was primarily obtained through the Texas Commission of Environmental Quality permit files for Class V wells. Locations were obtained for most sites from the applicant. Most wells have no latitude or longitude location. Sites with locations were not verified, and so accuracy is not known with any degree of certainty.

Required Information:

Contaminant Groups: Inorganics

Microbiological

Contaminants:

Contaminant Code	Contaminant Name	CAS Number
47	ALUMINUM	14903-36-7
51	ARSENIC	15584-04-0
54	BARIUM	16541-35-8
85	CHLORIDE	16887-00-6
94	COPPER	17493-86-6
95	CRYPTOSPORIDIUM PARVUM	
123	ESCHERICHIA COLI	
127	FECAL VIRUSES	
131	GIARDIA LAMBLIA	
144	IRON	15438-31-0
152	MANGANESE	14333-14-3
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
213	TOTAL COLIFORM	
227	ZINC	15176-26-8

Psoc Type Code	Psoc Type Name
8	CLASS V INJECTION WELL

Psoc Subtype Code	Subtype Name
5	STORM DRAINAGE

Description:

This dataset contains businesses in Texas that have a Class V injection well. Class V injection wells inject fluids into a potable aquifer. Contaminants associated with this type of injection well are site-specific. This data was primarily obtained through the Texas Commission of Environmental Quality permit files for Class V wells. Locations were obtained for most sites from the applicant. Most wells have no latitude or longitude location. Sites with locations were not verified, and so accuracy is not known with any degree of certainty.

Required Information:

Contaminant Groups: Inorganics

Microbiological

Organics

Physical Parameter

Contaminants:

Contaminant Code	Contaminant Name	CAS Number
21	2,4,5-T	93-76-5
22	2,4,5-TP	93-72-1
24	2,4-D	94-75-7
41	ALACHLOR	15972-60-8
45	ALDRIN	309-00-2
47	ALUMINUM	14903-36-7
49	ANTIMONY	64924-52-3
51	ARSENIC	15584-04-0
53	ATRAZINE	1912-24-9
56	BENZENE	71-43-2
58	BENZO(A)PYRENE	50-32-8
62	BERYLLIUM	14701-08-7
74	CADMIUM	22537-48-0
81	CHLORDANE	57-74-9
85	CHLORIDE	16887-00-6
90	CHROMIUM	11104-59-9
94	COPPER	17493-86-6
97	CYANIDE	57-12-5
101	DDE	72-55-9
104	DIAZINON	333-41-5
111	DICHLOROMETHANE	75-09-2
112	DIELDRIN	60-57-1
121	ENDRIN	72-20-8
123	ESCHERICHIA COLI	
125	ETHYLBENZENE	100-41-4
127	FECAL VIRUSES	
144	IRON	15438-31-0
147	LEAD	14701-27-0
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
159	METHYL-T-BUTYL ETHER	1634-04-4
167	NICKEL	14701-22-5
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
180	PENTACHLOROPHENOL	87-86-5
182	pH	
195	SELENIUM	7782-49-2
197	SIMAZINE	122-34-9
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
205	TDS	
208	TETRACHLOROETHYLENE	127-18-4
211	TOLUENE	108-88-3
213	TOTAL COLIFORM	
219	TRICHLOROETHYLENE	79-01-6
227	ZINC	15176-26-8

Psoc Type Code	*Psoc Type Name*
8	**CLASS V INJECTION WELL**

Psoc Subtype Code	*Subtype Name*
6	SEPTIC UNDIFFERENTIATED

Description:

This dataset contains businesses in Texas that have a Class V injection well. Class V injection wells inject fluids into a potable aquifer. Contaminants associated with this type of injection well are site-specific. This data was primarily obtained through the Texas Commission of Environmental Quality permit files for Class V wells. Locations were obtained for most sites from the applicant. Most wells have no latitude or longitude location. Sites with locations were not verified, and so accuracy is not known with any degree of certainty.

Required Information:

Contaminant Groups: Inorganics

Microbiological

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
47	ALUMINUM	14903-36-7
51	ARSENIC	15584-04-0
54	BARIUM	16541-35-8
85	CHLORIDE	16887-00-6
94	COPPER	17493-86-6
95	CRYPTOSPORIDIUM PARVUM	
123	ESCHERICHIA COLI	
127	FECAL VIRUSES	
131	GIARDIA LAMBLIA	
144	IRON	15438-31-0
152	MANGANESE	14333-14-3
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
213	TOTAL COLIFORM	
227	ZINC	15176-26-8

Psoc Type Code	*Psoc Type Name*
8	**CLASS V INJECTION WELL**

Psoc Subtype Code	*Subtype Name*
7	SEPTIC DRAINFIELD

Description:

This dataset contains businesses in Texas that have a Class V injection well. Class V injection wells inject fluids into a potable aquifer. Contaminants associated with this type of injection well are site-specific. This data was primarily obtained through the Texas Commission of Environmental Quality permit files for Class V wells. Locations were obtained for most sites from the applicant. Most wells have no latitude or longitude location. Sites with locations were not verified, and so accuracy is not known with any degree of certainty.

Required Information:

Contaminant Groups: Inorganics

Microbiological

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
47	ALUMINUM	14903-36-7
51	ARSENIC	15584-04-0
54	BARIUM	16541-35-8
85	CHLORIDE	16887-00-6
94	COPPER	17493-86-6
95	CRYPTOSPORIDIUM PARVUM	
123	ESCHERICHIA COLI	
127	FECAL VIRUSES	
131	GIARDIA LAMBLIA	
144	IRON	15438-31-0
152	MANGANESE	14333-14-3
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
213	TOTAL COLIFORM	
227	ZINC	15176-26-8

Psoc Type Code	*Psoc Type Name*
8	**CLASS V INJECTION WELL**

Psoc Subtype Code	*Subtype Name*
8	TRASH BURNING WELL

Description:

This dataset contains businesses in Texas that have a Class V injection well. Class V injection wells inject fluids into a potable aquifer. Contaminants associated with this type of injection well are site-specific. This data was primarily obtained through the Texas Commission of Environmental Quality permit files for Class V wells. Locations were obtained for most sites from the applicant. Most wells have no latitude or longitude location. Sites with locations were not verified, and so accuracy is not known with any degree of certainty.

Required Information:

Contaminant Groups: Inorganics

Microbiological

Organics

Physical Parameter

Radionuclides

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
1	1,1,1,2-TETRACHLOROETHANE	630-20-6
2	1,1,1-TRICHLOROETHANE	71-55-6
3	1,1,2,2-TETRACHLOROETHANE	79-34-5
4	1,1,2-TRICHLOROETHANE	79-00-5
5	1,1-DICHLOROETHANE	75-34-3
6	1,1-DICHLOROETHYLENE	75-35-4
7	1,1-DICHLOROPROPENE	563-58-6
8	1,2,3-TRICHLOROBENZENE	87-61-6
9	1,2,3-TRICHLOROPROPANE	96-18-4
10	1,2,4-TRICHLOROBENZENE	120-82-1
11	1,2,4-TRIMETHYLBENZENE	95-63-6
12	1,2-DICHLOROETHANE	107-06-2
13	1,2-DICHLOROPROPANE	78-87-5
14	1,2-DIPHENYLHYDRAZINE	122-66-7
15	1,3,5-TRIMETHYLBENZENE	108-67-8
16	1,3-DICHLOROBENZENE	541-73-1
17	1,3-DICHLOROPROPANE	142-28-9
18	1,3-DICHLOROPROPENE	542-75-6
19	2,2-DICHLOROPROPANE	594-20-7
20	2,3,7,8-TCDD	1746-01-6
21	2,4,5-T	93-76-5
22	2,4,5-TP	93-72-1
23	2,4,6-TRICHLOROPHENOL	88-06-2
24	2,4-D	94-75-7
25	2,4-DICHLOROPHENOL	120-83-2
26	2,4-DINITROPHENOL	51-28-5
27	2,4-DINITROTOLUENE	121-14-2
28	2,6-DINITROTOLUENE	606-20-2
29	2-CHLOROTOLUENE	95-49-8
30	2-HEXANONE	591-78-6
31	2-METHYLPHENOL	95-48-7
32	3-HYDROXYCARBOFURAN	16655-82-6
33	4-CHLOROTOLUENE	106-43-4
34	4-ISOPROPYLTOLUENE	99-87-6
35	4-METHYL-2-PENTANONE (MIBK)	108-10-1
36	ACENAPHTHENE	83-32-9
37	ACENAPHTHYLENE	208-96-8
38	ACETOCHLOR	34256-82-1
39	ACETONE	67-64-1
40	ACRYLONITRILE	107-13-1
41	ALACHLOR	15972-60-8
42	ALDICARB	116-06-3
43	ALDICARB SULFONE	1646-88-4
44	ALDICARB SULFOXIDE	1646-87-3
45	ALDRIN	309-00-2
47	ALUMINUM	14903-36-7
48	ANTHRACENE	120-12-7
49	ANTIMONY	64924-52-3
50	AROCLOR	53469-21-9
51	ARSENIC	15584-04-0
52	ASBESTOS	1332-21-4
53	ATRAZINE	1912-24-9
54	BARIUM	16541-35-8
55	BENTAZON	25057-89-0
56	BENZENE	71-43-2
57	BENZO[A]ANTHRACENE	56-55-3
58	BENZO(A)PYRENE	50-32-8
59	BENZO[B]FLUORANTHENE	205-99-2
60	BENZO[G,H,I]PERYLENE	191-24-2
61	BENZO[K]FLUORANTHENE	207-08-9
62	BERYLLIUM	14701-08-7
63	BICARBONATE	71-52-3
64	BORON	11113-50-1
65	BROMACIL	314-40-9
66	BROMIDE	
67	BROMOBENZENE	108-86-1
68	BROMOCHLOROMETHANE	74-97-5
69	BROMODICHLOROMETHANE	75-27-4

70	BROMOFORM	75-25-2
71	BROMOMETHANE	74-83-9
72	BUTACHLOR	23184-66-9
73	BUTYL BENZYL PHTHALATE	85-68-7
74	CADMIUM	22537-48-0
75	CALCIUM	14102-48-8
76	CARBARYL	63-25-2
77	CARBOFURAN	1563-66-2
78	CARBON DISULFIDE	75-15-0
79	CARBON TETRACHLORIDE	56-23-5
80	CARBONATE	3812-32-6
81	CHLORDANE	57-74-9
82	CHLORDANE (ALPHA-CHLORDANE)	5103-71-9
83	CHLORDANE (GAMMA-CHLORDANE)	12789-03-6
84	CHLORDANE (TRANS-NONACHLOR)	39765-80-5
85	CHLORIDE	16887-00-6
86	CHLOROBENZENE	108-90-7
87	CHLOROETHANE	75-00-3
88	CHLOROFORM	67-66-3
89	CHLOROMETHANE	74-87-3
90	CHROMIUM	11104-59-9
91	CHRYSENE	218-01-9
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
93	CIS-1,3-DICHLOROPROPENE	10061-01-5
94	COPPER	17493-86-6
95	CRYPTOSPORIDIUM PARVUM	
96	CYANAZINE	21725-46-2
97	CYANIDE	57-12-5
98	DALAPON	75-99-0
99	DCPA DI-ACID DEGRADATE	2136-79-0
100	DCPA MONO-ACID DEGRADATE	887-54-7
101	DDE	72-55-9
102	DI-(2-ETHYLHEXYL)ADIPATE	103-23-1
103	DI-(2-ETHYLHEXYL)PHTHALATE	117-81-7
104	DIAZINON	333-41-5
105	DIBENZ[A,H]ANTHRACENE	53-70-3
106	DIBROMOCHLOROMETHANE	124-48-1
107	DIBROMOCHLOROPROPANE	67708-83-2
108	DIBROMOMETHANE	74-95-3
109	DICAMBA	1918-00-9
110	DICHLORODIFLUOROMETHANE	75-71-8
111	DICHLOROMETHANE	75-09-2
112	DIELDRIN	60-57-1
113	DIETHYL PHTHALATE	84-66-2
114	DIMETHYL PHTHALATE	131-11-3
115	DI-N-BUTYL PHTHALATE	84-74-2

116	DINOSEB	88-85-7
117	DIQUAT	2764-72-9
118	DISULFOTON	298-04-4
119	DIURON	330-54-1
120	ENDOTHALL	145-73-3
121	ENDRIN	72-20-8
122	EPTC	759-94-4
123	ESCHERICHIA COLI	
124	ETHYL METHACRYLATE	97-63-2
125	ETHYLBENZENE	100-41-4
126	ETHYLENE DIBROMIDE	106-93-4
127	FECAL VIRUSES	
128	FLUORENE	86-73-7
129	FLUORIDE	16984-48-8
130	FONOFOS	944-22-9
131	GIARDIA LAMBLIA	
132	GLYPHOSATE	1071-83-6
136	HEPTACHLOR	76-44-8
137	HEPTACHLOR EPOXIDE	1024-57-3
138	HEXACHLOROBENZENE	118-74-1
139	HEXACHLOROBUTADIENE	87-68-3
140	HEXACHLOROCYCLOPENTADIENE	77-47-4
141	HYDROGEN SULFIDE	15035-72-0
142	INDENO[1,2,3,CD]PYRENE	193-39-5
143	METHYL IODIDE (IODOMETHANE)	74-88-4
144	IRON	15438-31-0
145	ISOPROPYLBENZENE	98-82-8
146	LAMBAST	845-52-3
147	LEAD	14701-27-0
148	LINDANE	58-89-9
149	LINURON	330-55-2
150	M + P XYLENE	106-42-3
151	MAGNESIUM	14581-92-1
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
154	METHIOCARB	2032-65-7
155	METHOMYL	16752-77-5
156	METHOXYCHLOR	72-43-5
157	METHYL ETHYL KETONE	78-93-3
158	METHYL METHACRYLATE	80-62-6
159	METHYL-T-BUTYL ETHER	1634-04-4
160	METOLACHLOR	51218-45-2
161	METRIBUZIN	21087-64-9
162	MOLINATE	2212-67-1
163	MONOCHLOROBENZENE	108-90-7
164	M-XYLENE	108-38-3

165	NAPHTHALENE	91-20-3
166	N-BUTYLBENZENE	104-51-8
167	NICKEL	14701-22-5
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
171	NITROBENZENE	98-95-3
172	N-PROPYLBENZENE	103-65-1
173	ORGANOTINS	
174	ORTHO-1,2-DICHLOROBENZENE	95-50-1
175	OXAMYL	23135-22-0
176	O-XYLENE	95-47-6
178	PARA-1,4-DICHLOROBENZENE	106-46-7
179	PCBs	53469-21-9
180	PENTACHLOROPHENOL	87-86-5
181	PERCHLORATE	14797-73-0
182	pH	
183	PHENANTHRENE	85-01-8
184	PICLORAM	1918-02-1
185	PROMETON	1610-18-0
186	PROPACHLOR	1918-16-7
187	PROPAZINE	139-40-2
188	P-XYLENE	106-42-3
189	PYRENE	129-00-0
190	RADIUM-226	13982-63-3
193	RDX	121-82-4
194	S-BUTYLBENZENE	135-98-8
195	SELENIUM	7782-49-2
196	SILVER	14701-21-4
197	SIMAZINE	122-34-9
198	SODIUM	17341-25-2
202	STYRENE	100-42-5
203	SULFATE	14808-79-8
204	T-BUTYLBENZENE	98-06-6
205	TDS	
206	TERBACIL	5902-51-2
207	TERBUFOS	13071-79-9
208	TETRACHLOROETHYLENE	127-18-4
209	TETRAHYDROFURAN	109-99-9
210	THALLIUM	7440-28-0
211	TOLUENE	108-88-3
213	TOTAL COLIFORM	
214	TOTAL TRIHALOMETHANE	
215	TOXAPHENE	8001-35-2
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
217	TRANS-1,3-DICHLOROPROPENE	10061-02-6

218	TRIAZINES	
219	TRICHLOROETHYLENE	79-01-6
220	TRICHLOROFLUOROMETHANE	75-69-4
221	TRIFLURALIN	1582-09-8
222	TRITIUM	15086-10-9
224	VINYL ACETATE	108-05-4
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	
227	ZINC	15176-26-8

Psoc Type Code *Psoc Type Name*

8 CLASS V INJECTION WELL

Psoc Subtype Code *Subtype Name*

9 AUTO REPAIR FLOOR DRAIN

Description:

This dataset contains businesses in Texas that have a Class V injection well. Class V injection wells inject fluids into a potable aquifer. Contaminants associated with this type of injection well are site-specific. This data was primarily obtained through the Texas Commission of Environmental Quality permit files for Class V wells. Locations were obtained for most sites from the applicant. Most wells have no latitude or longitude location. Sites with locations were not verified, and so accuracy is not known with any degree of certainty.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
2	1,1,1-TRICHLOROETHANE	71-55-6
4	1,1,2-TRICHLOROETHANE	79-00-5
6	1,1-DICHLOROETHYLENE	75-35-4
56	BENZENE	71-43-2
79	CARBON TETRACHLORIDE	56-23-5
86	CHLOROBENZENE	108-90-7
90	CHROMIUM	11104-59-9
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
110	DICHLORODIFLUOROMETHANE	75-71-8
111	DICHLOROMETHANE	75-09-2
125	ETHYLBENZENE	100-41-4
147	LEAD	14701-27-0
159	METHYL-T-BUTYL ETHER	1634-04-4
164	M-XYLENE	108-38-3
174	ORTHO-1,2-DICHLOROBENZENE	95-50-1
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
208	TETRACHLOROETHYLENE	127-18-4
211	TOLUENE	108-88-3
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
219	TRICHLOROETHYLENE	79-01-6
220	TRICHLOROFLUOROMETHANE	75-69-4
226	XYLENES (TOTAL)	

Psoc Type Code	*Psoc Type Name*
9	**GUN RANGE**

Psoc Subtype Code	*Subtype Name*
1	GUN RANGE

Description:

This dataset contains locations of current and historical gun ranges in Texas. Metals associated with bullets are present, such as lead, copper, antimony. These sites were determined by a review of topographic maps. Locations were determined by digitizing USGS 7.5' topographic maps. The ranges are broken out by ownership: private, public, or military.

Required Information:

Contaminant Groups: Inorganics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
49	ANTIMONY	64924-52-3
94	COPPER	17493-86-6
147	LEAD	14701-27-0
227	ZINC	15176-26-8

Psoc Type Code	*Psoc Type Name*
9	**GUN RANGE**

Psoc Subtype Code	*Subtype Name*
2	PUBLIC OR PRIVATE

Description:

This dataset contains locations of current and historical gun ranges in Texas. Metals associated with bullets are present, such as lead, copper, antimony. These sites were determined by a review of topographic maps. Locations were determined by digitizing USGS 7.5' topographic maps. The ranges are broken out by ownership: private, public, or military.

Required Information:

Contaminant Groups: Inorganics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
49	ANTIMONY	64924-52-3
94	COPPER	17493-86-6
147	LEAD	14701-27-0
227	ZINC	15176-26-8

Psoc Type Code	*Psoc Type Name*
9	**GUN RANGE**

Psoc Subtype Code	*Subtype Name*
3	MILITARY

Description:

This dataset contains locations of current and historical gun ranges in Texas. Metals associated with bullets are present, such as lead, copper, antimony. These sites were determined by a review of topographic maps. Locations were determined by digitizing USGS 7.5' topographic maps. The ranges are broken out by ownership: private, public, or military.

Required Information:

Contaminant Groups: Inorganics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
49	ANTIMONY	64924-52-3
94	COPPER	17493-86-6
147	LEAD	14701-27-0
227	ZINC	15176-26-8

Psoc Type Code	Psoc Type Name
10	**NATURAL RESOURCE PRODUCTION**

Psoc Subtype Code	Subtype Name
1	NATURAL RESOURCE PRODUCTION

Description:

This dataset contains locations of current and historical production of minerals, rocks, oil, gas, or water in Texas. Chemicals are site-specific. These sites were determined by field work or literature searches. Locations were determined by digitizing USGS 7.5' topographic maps.

Required Information:

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code *Psoc Type Name*

10 NATURAL RESOURCE PRODUCTION

Psoc Subtype Code *Subtype Name*

2 MINERAL EXPLORATION HOLE: ABANDONED

Description:

This dataset contains locations of current and historical production of minerals, rocks, oil, gas, or water in Texas. Chemicals are site-specific. These sites were determined by field work or literature searches. Locations were determined by digitizing USGS 7.5' topographic maps.

Required Information:

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	Psoc Type Name
10	NATURAL RESOURCE PRODUCTION

Psoc Subtype Code	Subtype Name
3	OIL OR GAS WELL - ABANDONED

Description:

This dataset contains abandoned oil and gas well locations in Texas. Chemicals associated with petroleum production are present. The limited attribute data was obtained through the Railroad Commission of Texas. The locations were obtained from the Railroad Commission, with codes defining how the loactions were obtained.

Required Information:

Applicable RRC Site ID numbers.

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
11	1,2,4-TRIMETHYLBENZENE	95-63-6
15	1,3,5-TRIMETHYLBENZENE	108-67-8
34	4-ISOPROPYLTOLUENE	99-87-6
36	ACENAPHTHENE	83-32-9
48	ANTHRACENE	120-12-7
54	BARIUM	16541-35-8
56	BENZENE	71-43-2
57	BENZO[A]ANTHRACENE	56-55-3
58	BENZO(A)PYRENE	50-32-8
66	BROMIDE	
85	CHLORIDE	16887-00-6
91	CHRYSENE	218-01-9
105	DIBENZ[A,H]ANTHRACENE	53-70-3
125	ETHYLBENZENE	100-41-4
128	FLUORENE	86-73-7
141	HYDROGEN SULFIDE	15035-72-0
145	ISOPROPYLBENZENE	98-82-8
150	M + P XYLENE	106-42-3
151	MAGNESIUM	14581-92-1
164	M-XYLENE	108-38-3
165	NAPHTHALENE	91-20-3
166	N-BUTYLBENZENE	104-51-8
172	N-PROPYLBENZENE	103-65-1
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
189	PYRENE	129-00-0
194	S-BUTYLBENZENE	135-98-8
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
204	T-BUTYLBENZENE	98-06-6
205	TDS	
211	TOLUENE	108-88-3
226	XYLENES (TOTAL)	

Psoc Type Code	Psoc Type Name
10	NATURAL RESOURCE PRODUCTION

Psoc Subtype Code	Subtype Name
4	OIL OR GAS WELL - PLUGGED

Description:

This dataset contains plugged oil and gas well locations in Texas. Chemicals associated with petroleum production are present. The limited attribute data was obtained through the Railroad Commission of Texas. The locations were obtained from the Railroad Commission, with codes defining how the loactions were obtained.

Required Information:

Applicable RRC Site ID numbers.

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	Contaminant Name	CAS Number
11	1,2,4-TRIMETHYLBENZENE	95-63-6
15	1,3,5-TRIMETHYLBENZENE	108-67-8
34	4-ISOPROPYLTOLUENE	99-87-6
36	ACENAPHTHENE	83-32-9
48	ANTHRACENE	120-12-7
54	BARIUM	16541-35-8
56	BENZENE	71-43-2
57	BENZO[A]ANTHRACENE	56-55-3
58	BENZO(A)PYRENE	50-32-8
66	BROMIDE	
85	CHLORIDE	16887-00-6
91	CHRYSENE	218-01-9
105	DIBENZ[A,H]ANTHRACENE	53-70-3
125	ETHYLBENZENE	100-41-4
128	FLUORENE	86-73-7
141	HYDROGEN SULFIDE	15035-72-0
145	ISOPROPYLBENZENE	98-82-8
150	M + P XYLENE	106-42-3
151	MAGNESIUM	14581-92-1
164	M-XYLENE	108-38-3
165	NAPHTHALENE	91-20-3
166	N-BUTYLBENZENE	104-51-8
172	N-PROPYLBENZENE	103-65-1
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
189	PYRENE	129-00-0
194	S-BUTYLBENZENE	135-98-8
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
204	T-BUTYLBENZENE	98-06-6
205	TDS	
211	TOLUENE	108-88-3
226	XYLENES (TOTAL)	

Psoc Type Code	*Psoc Type Name*
10	**NATURAL RESOURCE PRODUCTION**

Psoc Subtype Code	*Subtype Name*
5	OIL OR GAS WELL - PRODUCTION

Description:

This dataset contains active oil and gas well locations in Texas. Chemicals associated with petroleum production are present. The limited attribute data was obtained through the Railroad Commission of Texas. The locations were obtained from the Railroad Commission, with codes defining how the loactions were obtained.

Required Information:

Applicable RRC Site ID numbers.

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
11	1,2,4-TRIMETHYLBENZENE	95-63-6
15	1,3,5-TRIMETHYLBENZENE	108-67-8
34	4-ISOPROPYLTOLUENE	99-87-6
36	ACENAPHTHENE	83-32-9
48	ANTHRACENE	120-12-7
54	BARIUM	16541-35-8
56	BENZENE	71-43-2
57	BENZO[A]ANTHRACENE	56-55-3
58	BENZO(A)PYRENE	50-32-8
66	BROMIDE	
85	CHLORIDE	16887-00-6
91	CHRYSENE	218-01-9
105	DIBENZ[A,H]ANTHRACENE	53-70-3
125	ETHYLBENZENE	100-41-4
128	FLUORENE	86-73-7
141	HYDROGEN SULFIDE	15035-72-0
145	ISOPROPYLBENZENE	98-82-8
150	M + P XYLENE	106-42-3
151	MAGNESIUM	14581-92-1
164	M-XYLENE	108-38-3
165	NAPHTHALENE	91-20-3
166	N-BUTYLBENZENE	104-51-8
172	N-PROPYLBENZENE	103-65-1
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
189	PYRENE	129-00-0
194	S-BUTYLBENZENE	135-98-8
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
204	T-BUTYLBENZENE	98-06-6
205	TDS	
211	TOLUENE	108-88-3
226	XYLENES (TOTAL)	

Psoc Type Code *Psoc Type Name*

10 NATURAL RESOURCE PRODUCTION

Psoc Subtype Code *Subtype Name*

6 OIL OR GAS WELL - UNDERGROUND STORAGE

Description:

This dataset contains underground storage oil and gas well locations in Texas. Chemicals associated with petroleum production are present. The limited attribute data was obtained through the Railroad Commission of Texas. The locations were obtained from the Railroad Commission, with codes defining how the loactions were obtained.

Required Information:

Applicable RRC Site ID numbers.

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
11	1,2,4-TRIMETHYLBENZENE	95-63-6
15	1,3,5-TRIMETHYLBENZENE	108-67-8
34	4-ISOPROPYLTOLUENE	99-87-6
36	ACENAPHTHENE	83-32-9
48	ANTHRACENE	120-12-7
54	BARIUM	16541-35-8
56	BENZENE	71-43-2
57	BENZO[A]ANTHRACENE	56-55-3
58	BENZO(A)PYRENE	50-32-8
66	BROMIDE	
85	CHLORIDE	16887-00-6
91	CHRYSENE	218-01-9
105	DIBENZ[A,H]ANTHRACENE	53-70-3
125	ETHYLBENZENE	100-41-4
128	FLUORENE	86-73-7
141	HYDROGEN SULFIDE	15035-72-0
145	ISOPROPYLBENZENE	98-82-8
150	M + P XYLENE	106-42-3
151	MAGNESIUM	14581-92-1
164	M-XYLENE	108-38-3
165	NAPHTHALENE	91-20-3
166	N-BUTYLBENZENE	104-51-8
172	N-PROPYLBENZENE	103-65-1
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
189	PYRENE	129-00-0
194	S-BUTYLBENZENE	135-98-8
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
204	T-BUTYLBENZENE	98-06-6
205	TDS	
211	TOLUENE	108-88-3
226	XYLENES (TOTAL)	

Psoc Type Code	*Psoc Type Name*
10	**NATURAL RESOURCE PRODUCTION**

Psoc Subtype Code	*Subtype Name*
7	WATER WELL

Description:

This dataset contains water wells in Texas. This data was primarily obtained through the Texas Water Development Board ground water database. Water wells were also located by field inventory during wellhead and source water assessment projects.

Note: the water wells themselves are not a psoc source, unless they have been illegally modified to accept waste products. The significance of this dataset resides in the ability of a water well to act as a conduit for contaminant migration, either through the casing or well annulus.

Required Information:

Applicable state well number or underground water conservation district id number, if applicable.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code *Psoc Type Name*

10 NATURAL RESOURCE PRODUCTION

Psoc Subtype Code *Subtype Name*

8 WATER WELL: ABANDONED

Description:

This dataset contains abandoned water wells in Texas. This data was primarily obtained through field inventory during wellhead and source water assessment projects.

Note: the water wells themselves are not a psoc source, unless they have been illegally modified to accept waste products. The significance of this dataset resides in the ability of a water well to act as a conduit for contaminant migration, either through the casing or well annulus.

Required Information:

Applicable state well number or underground water conservation district id number, if applicable.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
10	**NATURAL RESOURCE PRODUCTION**

Psoc Subtype Code	*Subtype Name*
9	MINED LAND: ACTIVE OR ABANDONED

Description:

This dataset contains active or abandoned mined lands in Texas. Chemicals associated with mining processes, mineral, rocks, and their weathering products are present. The data was obtained through the Railroad Commission of Texas. The locations were obtained from the Railroad Commission, with codes defining how the loactions were obtained.

Contaminant data was assigned by TCEQ, based upon the primary commodity and the minerals associated with that commodity. Mineral descriptions from published sources at the US Geological Survey and Bureau of Economic Geology were used as references.

Required Information:

Site specific chemical use should be determined.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
11	**WASTEWATER**

Psoc Subtype Code	*Subtype Name*
1	WASTEWATER

Description:

This dataset contains sites with a wastewater source. Contaminants are associated with wastewater . This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Contaminant Groups: Inorganics

Microbiological

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
1	1,1,1,2-TETRACHLOROETHANE	630-20-6
2	1,1,1-TRICHLOROETHANE	71-55-6
23	2,4,6-TRICHLOROPHENOL	88-06-2
45	ALDRIN	309-00-2
47	ALUMINUM	14903-36-7
49	ANTIMONY	64924-52-3
51	ARSENIC	15584-04-0
56	BENZENE	71-43-2
62	BERYLLIUM	14701-08-7
64	BORON	11113-50-1
69	BROMODICHLOROMETHANE	75-27-4
70	BROMOFORM	75-25-2
74	CADMIUM	22537-48-0
75	CALCIUM	14102-48-8
85	CHLORIDE	16887-00-6
88	CHLOROFORM	67-66-3
95	CRYPTOSPORIDIUM PARVUM	
106	DIBROMOCHLOROMETHANE	124-48-1
111	DICHLOROMETHANE	75-09-2
113	DIETHYL PHTHALATE	84-66-2
114	DIMETHYL PHTHALATE	131-11-3
123	ESCHERICHIA COLI	
127	FECAL VIRUSES	
129	FLUORIDE	16984-48-8
131	GIARDIA LAMBLIA	
144	IRON	15438-31-0
147	LEAD	14701-27-0
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
165	NAPHTHALENE	91-20-3
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
195	SELENIUM	7782-49-2
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
205	TDS	
210	THALLIUM	7440-28-0
211	TOLUENE	108-88-3
213	TOTAL COLIFORM	
219	TRICHLOROETHYLENE	79-01-6

Psoc Type Code	Psoc Type Name
11	WASTEWATER

Psoc Subtype Code	Subtype Name
2	HOLDING POND

Description:

This dataset contains sites with a wastewater holding pond. Contaminants are associated with wastewater . This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Contaminant Groups: Inorganics

Microbiological

Organics

Contaminants:

Contaminant Code	Contaminant Name	CAS Number
2	1,1,1-TRICHLOROETHANE	71-55-6
23	2,4,6-TRICHLOROPHENOL	88-06-2
45	ALDRIN	309-00-2
47	ALUMINUM	14903-36-7
49	ANTIMONY	64924-52-3
51	ARSENIC	15584-04-0
56	BENZENE	71-43-2
62	BERYLLIUM	14701-08-7
64	BORON	11113-50-1
69	BROMODICHLOROMETHANE	75-27-4
70	BROMOFORM	75-25-2
74	CADMIUM	22537-48-0
75	CALCIUM	14102-48-8
85	CHLORIDE	16887-00-6
88	CHLOROFORM	67-66-3
95	CRYPTOSPORIDIUM PARVUM	
111	DICHLOROMETHANE	75-09-2
113	DIETHYL PHTHALATE	84-66-2
114	DIMETHYL PHTHALATE	131-11-3
123	ESCHERICHIA COLI	
127	FECAL VIRUSES	
129	FLUORIDE	16984-48-8
131	GIARDIA LAMBLIA	
144	IRON	15438-31-0
147	LEAD	14701-27-0
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
165	NAPHTHALENE	91-20-3
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
195	SELENIUM	7782-49-2
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
205	TDS	
211	TOLUENE	108-88-3
213	TOTAL COLIFORM	
219	TRICHLOROETHYLENE	79-01-6

Psoc Type Code	*Psoc Type Name*
11	**WASTEWATER**

Psoc Subtype Code	*Subtype Name*
3	HOLDING TANK

Description:

This dataset contains sites with a wastewater holding tank, such as a recreational vehical dump or outhouse at a park. Contaminants are associated with wastewater . This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Contaminant Groups: Inorganics

Microbiological

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
95	CRYPTOSPORIDIUM PARVUM	
123	ESCHERICHIA COLI	
127	FECAL VIRUSES	
131	GIARDIA LAMBLIA	
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
213	TOTAL COLIFORM	

Psoc Type Code	Psoc Type Name
11	WASTEWATER

Psoc Subtype Code	Subtype Name
4	INDUSTRIAL WASTEWATER OUTFALL

Description:

This dataset contains businesses in Texas that have a permitted industrial wastewater outfall. Chemicals associated with this type of wastewater discharge are related to industiral and microbiological contaminants. This data was primarily obtained through the Texas Commission of Environmental Quality permit files. Most of the locations were obtained by digitizing topographic maps and Texas Department of Transportation county highway maps with plotted locations.

Required Information:

Contaminant Groups: Inorganics

Microbiological

Organics

Physical Parameter

Contaminants:

Contaminant Code	Contaminant Name	CAS Number
1	1,1,1,2-TETRACHLOROETHANE	630-20-6
2	1,1,1-TRICHLOROETHANE	71-55-6
3	1,1,2,2-TETRACHLOROETHANE	79-34-5
4	1,1,2-TRICHLOROETHANE	79-00-5
5	1,1-DICHLOROETHANE	75-34-3
6	1,1-DICHLOROETHYLENE	75-35-4
7	1,1-DICHLOROPROPENE	563-58-6
8	1,2,3-TRICHLOROBENZENE	87-61-6
9	1,2,3-TRICHLOROPROPANE	96-18-4
10	1,2,4-TRICHLOROBENZENE	120-82-1
11	1,2,4-TRIMETHYLBENZENE	95-63-6
12	1,2-DICHLOROETHANE	107-06-2
13	1,2-DICHLOROPROPANE	78-87-5
14	1,2-DIPHENYLHYDRAZINE	122-66-7
15	1,3,5-TRIMETHYLBENZENE	108-67-8
16	1,3-DICHLOROBENZENE	541-73-1
17	1,3-DICHLOROPROPANE	142-28-9
18	1,3-DICHLOROPROPENE	542-75-6
19	2,2-DICHLOROPROPANE	594-20-7
20	2,3,7,8-TCDD	1746-01-6
21	2,4,5-T	93-76-5
22	2,4,5-TP	93-72-1
23	2,4,6-TRICHLOROPHENOL	88-06-2
24	2,4-D	94-75-7
25	2,4-DICHLOROPHENOL	120-83-2
26	2,4-DINITROPHENOL	51-28-5
27	2,4-DINITROTOLUENE	121-14-2
28	2,6-DINITROTOLUENE	606-20-2
29	2-CHLOROTOLUENE	95-49-8
30	2-HEXANONE	591-78-6
31	2-METHYLPHENOL	95-48-7
32	3-HYDROXYCARBOFURAN	16655-82-6
33	4-CHLOROTOLUENE	106-43-4
34	4-ISOPROPYLTOLUENE	99-87-6
35	4-METHYL-2-PENTANONE (MIBK)	108-10-1
36	ACENAPHTHENE	83-32-9
37	ACENAPHTHYLENE	208-96-8
38	ACETOCHLOR	34256-82-1
39	ACETONE	67-64-1
40	ACRYLONITRILE	107-13-1
41	ALACHLOR	15972-60-8
42	ALDICARB	116-06-3
43	ALDICARB SULFONE	1646-88-4
44	ALDICARB SULFOXIDE	1646-87-3
45	ALDRIN	309-00-2
47	ALUMINUM	14903-36-7
48	ANTHRACENE	120-12-7
49	ANTIMONY	64924-52-3
50	AROCLOR	53469-21-9
51	ARSENIC	15584-04-0
53	ATRAZINE	1912-24-9
54	BARIUM	16541-35-8
55	BENTAZON	25057-89-0
56	BENZENE	71-43-2
57	BENZO[A]ANTHRACENE	56-55-3
58	BENZO(A)PYRENE	50-32-8
59	BENZO[B]FLUORANTHENE	205-99-2
60	BENZO[G,H,I]PERYLENE	191-24-2
61	BENZO[K]FLUORANTHENE	207-08-9
62	BERYLLIUM	14701-08-7
64	BORON	11113-50-1
65	BROMACIL	314-40-9
67	BROMOBENZENE	108-86-1
68	BROMOCHLOROMETHANE	74-97-5
69	BROMODICHLOROMETHANE	75-27-4
70	BROMOFORM	75-25-2
71	BROMOMETHANE	74-83-9
72	BUTACHLOR	23184-66-9
73	BUTYL BENZYL PHTHALATE	85-68-7
74	CADMIUM	22537-48-0

75	CALCIUM	14102-48-8
76	CARBARYL	63-25-2
77	CARBOFURAN	1563-66-2
78	CARBON DISULFIDE	75-15-0
79	CARBON TETRACHLORIDE	56-23-5
81	CHLORDANE	57-74-9
82	CHLORDANE (ALPHA-CHLORDANE)	5103-71-9
83	CHLORDANE (GAMMA-CHLORDANE)	12789-03-6
84	CHLORDANE (TRANS-NONACHLOR)	39765-80-5
85	CHLORIDE	16887-00-6
86	CHLOROBENZENE	108-90-7
87	CHLOROETHANE	75-00-3
88	CHLOROFORM	67-66-3
89	CHLOROMETHANE	74-87-3
90	CHROMIUM	11104-59-9
91	CHRYSENE	218-01-9
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
93	CIS-1,3-DICHLOROPROPENE	10061-01-5
94	COPPER	17493-86-6
95	CRYPTOSPORIDIUM PARVUM	
96	CYANAZINE	21725-46-2
97	CYANIDE	57-12-5
98	DALAPON	75-99-0
99	DCPA DI-ACID DEGRADATE	2136-79-0
100	DCPA MONO-ACID DEGRADATE	887-54-7
101	DDE	72-55-9
102	DI-(2-ETHYLHEXYL)ADIPATE	103-23-1
103	DI-(2-ETHYLHEXYL)PHTHALATE	117-81-7
104	DIAZINON	333-41-5
105	DIBENZ[A,H]ANTHRACENE	53-70-3
106	DIBROMOCHLOROMETHANE	124-48-1
107	DIBROMOCHLOROPROPANE	67708-83-2
108	DIBROMOMETHANE	74-95-3
109	DICAMBA	1918-00-9
110	DICHLORODIFLUOROMETHANE	75-71-8
111	DICHLOROMETHANE	75-09-2
112	DIELDRIN	60-57-1
113	DIETHYL PHTHALATE	84-66-2
114	DIMETHYL PHTHALATE	131-11-3
115	DI-N-BUTYL PHTHALATE	84-74-2
116	DINOSEB	88-85-7
117	DIQUAT	2764-72-9
118	DISULFOTON	298-04-4
119	DIURON	330-54-1
120	ENDOTHALL	145-73-3
121	ENDRIN	72-20-8

122	EPTC	759-94-4
123	ESCHERICHIA COLI	
124	ETHYL METHACRYLATE	97-63-2
125	ETHYLBENZENE	100-41-4
126	ETHYLENE DIBROMIDE	106-93-4
127	FECAL VIRUSES	
128	FLUORENE	86-73-7
129	FLUORIDE	16984-48-8
130	FONOFOS	944-22-9
131	GIARDIA LAMBLIA	
132	GLYPHOSATE	1071-83-6
136	HEPTACHLOR	76-44-8
137	HEPTACHLOR EPOXIDE	1024-57-3
138	HEXACHLOROBENZENE	118-74-1
139	HEXACHLOROBUTADIENE	87-68-3
140	HEXACHLOROCYCLOPENTADIENE	77-47-4
141	HYDROGEN SULFIDE	15035-72-0
142	INDENO[1,2,3,CD]PYRENE	193-39-5
143	METHYL IODIDE (IODOMETHANE)	74-88-4
144	IRON	15438-31-0
145	ISOPROPYLBENZENE	98-82-8
146	LAMBAST	845-52-3
147	LEAD	14701-27-0
148	LINDANE	58-89-9
149	LINURON	330-55-2
150	M + P XYLENE	106-42-3
151	MAGNESIUM	14581-92-1
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
154	METHIOCARB	2032-65-7
155	METHOMYL	16752-77-5
156	METHOXYCHLOR	72-43-5
157	METHYL ETHYL KETONE	78-93-3
158	METHYL METHACRYLATE	80-62-6
159	METHYL-T-BUTYL ETHER	1634-04-4
160	METOLACHLOR	51218-45-2
161	METRIBUZIN	21087-64-9
162	MOLINATE	2212-67-1
163	MONOCHLOROBENZENE	108-90-7
164	M-XYLENE	108-38-3
165	NAPHTHALENE	91-20-3
166	N-BUTYLBENZENE	104-51-8
167	NICKEL	14701-22-5
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0

171	NITROBENZENE	98-95-3
172	N-PROPYLBENZENE	103-65-1
173	ORGANOTINS	
174	ORTHO-1,2-DICHLOROBENZENE	95-50-1
175	OXAMYL	23135-22-0
176	O-XYLENE	95-47-6
178	PARA-1,4-DICHLOROBENZENE	106-46-7
179	PCBs	53469-21-9
180	PENTACHLOROPHENOL	87-86-5
181	PERCHLORATE	14797-73-0
182	pH	
183	PHENANTHRENE	85-01-8
184	PICLORAM	1918-02-1
185	PROMETON	1610-18-0
186	PROPACHLOR	1918-16-7
187	PROPAZINE	139-40-2
188	P-XYLENE	106-42-3
189	PYRENE	129-00-0
193	RDX	121-82-4
194	S-BUTYLBENZENE	135-98-8
195	SELENIUM	7782-49-2
196	SILVER	14701-21-4
197	SIMAZINE	122-34-9
198	SODIUM	17341-25-2
202	STYRENE	100-42-5
203	SULFATE	14808-79-8
204	T-BUTYLBENZENE	98-06-6
205	TDS	
206	TERBACIL	5902-51-2
207	TERBUFOS	13071-79-9
208	TETRACHLOROETHYLENE	127-18-4
209	TETRAHYDROFURAN	109-99-9
210	THALLIUM	7440-28-0
211	TOLUENE	108-88-3
213	TOTAL COLIFORM	
214	TOTAL TRIHALOMETHANE	
215	TOXAPHENE	8001-35-2
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
217	TRANS-1,3-DICHLOROPROPENE	10061-02-6
218	TRIAZINES	
219	TRICHLOROETHYLENE	79-01-6
220	TRICHLOROFLUOROMETHANE	75-69-4
221	TRIFLURALIN	1582-09-8
224	VINYL ACETATE	108-05-4
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	
227	ZINC	15176-26-8

Psoc Type Code *Psoc Type Name*

11 WASTEWATER

Psoc Subtype Code *Subtype Name*

5 LAND APPLICATION SLUDGE

Description:

This dataset contains businesses in Texas that have a permit for land application of wastewater sludgel. Chemicals associated with this type of site are municipal and microbiological contaminants. This data was primarily obtained through the Texas Commission of Environmental Quality permit files. Most of the locations were obtained after a review of permit files and by digitizing topographic maps.

Required Information:

Contaminant Groups: Inorganics

Microbiological

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
1	1,1,1,2-TETRACHLOROETHANE	630-20-6
2	1,1,1-TRICHLOROETHANE	71-55-6
23	2,4,6-TRICHLOROPHENOL	88-06-2
45	ALDRIN	309-00-2
47	ALUMINUM	14903-36-7
49	ANTIMONY	64924-52-3
51	ARSENIC	15584-04-0
56	BENZENE	71-43-2
62	BERYLLIUM	14701-08-7
64	BORON	11113-50-1
69	BROMODICHLOROMETHANE	75-27-4
70	BROMOFORM	75-25-2
74	CADMIUM	22537-48-0
75	CALCIUM	14102-48-8
85	CHLORIDE	16887-00-6
88	CHLOROFORM	67-66-3
95	CRYPTOSPORIDIUM PARVUM	
106	DIBROMOCHLOROMETHANE	124-48-1
111	DICHLOROMETHANE	75-09-2
113	DIETHYL PHTHALATE	84-66-2
114	DIMETHYL PHTHALATE	131-11-3
123	ESCHERICHIA COLI	
127	FECAL VIRUSES	
129	FLUORIDE	16984-48-8
131	GIARDIA LAMBLIA	
144	IRON	15438-31-0
147	LEAD	14701-27-0
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
165	NAPHTHALENE	91-20-3
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
195	SELENIUM	7782-49-2
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
205	TDS	
210	THALLIUM	7440-28-0
211	TOLUENE	108-88-3
213	TOTAL COLIFORM	
219	TRICHLOROETHYLENE	79-01-6

Psoc Type Code	*Psoc Type Name*
11	**WASTEWATER**

Psoc Subtype Code	*Subtype Name*
6	LIFTSTATION

Description:

This dataset contains sites with a wastewater lift station. Contaminants are associated with wastewater . This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Contaminant Groups: Inorganics

Microbiological

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
2	1,1,1-TRICHLOROETHANE	71-55-6
23	2,4,6-TRICHLOROPHENOL	88-06-2
45	ALDRIN	309-00-2
47	ALUMINUM	14903-36-7
49	ANTIMONY	64924-52-3
51	ARSENIC	15584-04-0
56	BENZENE	71-43-2
62	BERYLLIUM	14701-08-7
64	BORON	11113-50-1
69	BROMODICHLOROMETHANE	75-27-4
70	BROMOFORM	75-25-2
74	CADMIUM	22537-48-0
75	CALCIUM	14102-48-8
85	CHLORIDE	16887-00-6
88	CHLOROFORM	67-66-3
95	CRYPTOSPORIDIUM PARVUM	
111	DICHLOROMETHANE	75-09-2
113	DIETHYL PHTHALATE	84-66-2
114	DIMETHYL PHTHALATE	131-11-3
123	ESCHERICHIA COLI	
127	FECAL VIRUSES	
129	FLUORIDE	16984-48-8
131	GIARDIA LAMBLIA	
144	IRON	15438-31-0
147	LEAD	14701-27-0
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
165	NAPHTHALENE	91-20-3
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
195	SELENIUM	7782-49-2
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
205	TDS	
211	TOLUENE	108-88-3
213	TOTAL COLIFORM	
219	TRICHLOROETHYLENE	79-01-6

Psoc Type Code	*Psoc Type Name*
11	WASTEWATER

Psoc Subtype Code	*Subtype Name*
7	PIPELINE

Description:

This dataset contains sites with a wastewater pipeline. Contaminants are associated with wastewater . This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Note: field work assigned a point to this psoc, not a line. The point was plotted within the wellhead or source water protection area.

Required Information:

Contaminant Groups: Inorganics

Microbiological

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
2	1,1,1-TRICHLOROETHANE	71-55-6
23	2,4,6-TRICHLOROPHENOL	88-06-2
45	ALDRIN	309-00-2
47	ALUMINUM	14903-36-7
49	ANTIMONY	64924-52-3
51	ARSENIC	15584-04-0
56	BENZENE	71-43-2
62	BERYLLIUM	14701-08-7
64	BORON	11113-50-1
69	BROMODICHLOROMETHANE	75-27-4
70	BROMOFORM	75-25-2
74	CADMIUM	22537-48-0
75	CALCIUM	14102-48-8
85	CHLORIDE	16887-00-6
88	CHLOROFORM	67-66-3
95	CRYPTOSPORIDIUM PARVUM	
111	DICHLOROMETHANE	75-09-2
113	DIETHYL PHTHALATE	84-66-2
114	DIMETHYL PHTHALATE	131-11-3
123	ESCHERICHIA COLI	
127	FECAL VIRUSES	
129	FLUORIDE	16984-48-8
131	GIARDIA LAMBLIA	
144	IRON	15438-31-0
147	LEAD	14701-27-0
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
165	NAPHTHALENE	91-20-3
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
195	SELENIUM	7782-49-2
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
205	TDS	
211	TOLUENE	108-88-3
213	TOTAL COLIFORM	
219	TRICHLOROETHYLENE	79-01-6

Psoc Type Code	*Psoc Type Name*
11	WASTEWATER

Psoc Subtype Code	*Subtype Name*
8	SEPTIC SYSTEM

Description:

This dataset contains sites with a wastewater septic system. Contaminants are associated with wastewater. This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

List type of septic system.

Contaminant Groups: Inorganics

Microbiological

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
47	ALUMINUM	14903-36-7
51	ARSENIC	15584-04-0
54	BARIUM	16541-35-8
85	CHLORIDE	16887-00-6
94	COPPER	17493-86-6
95	CRYPTOSPORIDIUM PARVUM	
123	ESCHERICHIA COLI	
127	FECAL VIRUSES	
131	GIARDIA LAMBLIA	
144	IRON	15438-31-0
152	MANGANESE	14333-14-3
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
213	TOTAL COLIFORM	
227	ZINC	15176-26-8

Psoc Type Code	*Psoc Type Name*
11	**WASTEWATER**

Psoc Subtype Code	*Subtype Name*
9	MUNICIPAL WASTEWATER OUTFALL

Description:

This dataset contains businesses in Texas that have a permitted municipal wastewater outfall. Chemicals associated with this type of wastewater discharge are related to municipal and microbiological contaminants. This data was primarily obtained through the Texas Commission of Environmental Quality permit files. Most of the locations were obtained by digitizing topographic maps and Texas Department of Transportation county highway maps with plotted locations.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Microbiological

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
2	1,1,1-TRICHLOROETHANE	71-55-6
23	2,4,6-TRICHLOROPHENOL	88-06-2
45	ALDRIN	309-00-2
47	ALUMINUM	14903-36-7
49	ANTIMONY	64924-52-3
51	ARSENIC	15584-04-0
56	BENZENE	71-43-2
62	BERYLLIUM	14701-08-7
64	BORON	11113-50-1
69	BROMODICHLOROMETHANE	75-27-4
70	BROMOFORM	75-25-2
74	CADMIUM	22537-48-0
75	CALCIUM	14102-48-8
85	CHLORIDE	16887-00-6
88	CHLOROFORM	67-66-3
95	CRYPTOSPORIDIUM PARVUM	
111	DICHLOROMETHANE	75-09-2
113	DIETHYL PHTHALATE	84-66-2
114	DIMETHYL PHTHALATE	131-11-3
123	ESCHERICHIA COLI	
127	FECAL VIRUSES	
129	FLUORIDE	16984-48-8
131	GIARDIA LAMBLIA	
144	IRON	15438-31-0
147	LEAD	14701-27-0
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
165	NAPHTHALENE	91-20-3
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
195	SELENIUM	7782-49-2
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
205	TDS	
211	TOLUENE	108-88-3
213	TOTAL COLIFORM	
219	TRICHLOROETHYLENE	79-01-6

Psoc Type Code	*Psoc Type Name*
11	**WASTEWATER**

Psoc Subtype Code	*Subtype Name*
10	TREATMENT PLANT

Description:

This dataset contains sites with a wastewater treatment plant. Contaminants are associated with wastewater . This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Microbiological

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
2	1,1,1-TRICHLOROETHANE	71-55-6
23	2,4,6-TRICHLOROPHENOL	88-06-2
45	ALDRIN	309-00-2
47	ALUMINUM	14903-36-7
49	ANTIMONY	64924-52-3
51	ARSENIC	15584-04-0
56	BENZENE	71-43-2
62	BERYLLIUM	14701-08-7
64	BORON	11113-50-1
69	BROMODICHLOROMETHANE	75-27-4
70	BROMOFORM	75-25-2
74	CADMIUM	22537-48-0
75	CALCIUM	14102-48-8
85	CHLORIDE	16887-00-6
88	CHLOROFORM	67-66-3
95	CRYPTOSPORIDIUM PARVUM	
111	DICHLOROMETHANE	75-09-2
113	DIETHYL PHTHALATE	84-66-2
114	DIMETHYL PHTHALATE	131-11-3
123	ESCHERICHIA COLI	
127	FECAL VIRUSES	
129	FLUORIDE	16984-48-8
131	GIARDIA LAMBLIA	
144	IRON	15438-31-0
147	LEAD	14701-27-0
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
165	NAPHTHALENE	91-20-3
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
195	SELENIUM	7782-49-2
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
205	TDS	
211	TOLUENE	108-88-3
213	TOTAL COLIFORM	
219	TRICHLOROETHYLENE	79-01-6

Psoc Type Code	*Psoc Type Name*
11	**WASTEWATER**

Psoc Subtype Code	*Subtype Name*
11	AGRICULTURAL WASTEWATER OUTFALL

Description:

This dataset contains businesses in Texas that have a permitted agricultural wastewater outfall. Chemicals associated with this type of wastewater discharge are related to agricultural and microbiological contaminants. This data was primarily obtained through the Texas Commission of Environmental Quality permit files. Most of the locations were obtained by digitizing topographic maps and Texas Department of Transportation county highway maps with plotted locations.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Microbiological

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
64	BORON	11113-50-1
85	CHLORIDE	16887-00-6
127	FECAL VIRUSES	
129	FLUORIDE	16984-48-8
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
213	TOTAL COLIFORM	

Psoc Type Code	Psoc Type Name
11	WASTEWATER

Psoc Subtype Code	Subtype Name
12	PRIVATE WASTEWATER OUTFALL

Description:

This dataset contains businesses in Texas that have a permitted private wastewater outfall. Chemicals associated with this type of wastewater discharge are related to microbiological contaminants. This data was primarily obtained through the Texas Commission of Environmental Quality permit files. Most of the locations were obtained by digitizing topographic maps and Texas Department of Transportation county highway maps with plotted locations.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Microbiological

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
2	1,1,1-TRICHLOROETHANE	71-55-6
23	2,4,6-TRICHLOROPHENOL	88-06-2
47	ALUMINUM	14903-36-7
49	ANTIMONY	64924-52-3
51	ARSENIC	15584-04-0
56	BENZENE	71-43-2
62	BERYLLIUM	14701-08-7
64	BORON	11113-50-1
69	BROMODICHLOROMETHANE	75-27-4
70	BROMOFORM	75-25-2
74	CADMIUM	22537-48-0
75	CALCIUM	14102-48-8
85	CHLORIDE	16887-00-6
88	CHLOROFORM	67-66-3
95	CRYPTOSPORIDIUM PARVUM	
111	DICHLOROMETHANE	75-09-2
113	DIETHYL PHTHALATE	84-66-2
114	DIMETHYL PHTHALATE	131-11-3
123	ESCHERICHIA COLI	
127	FECAL VIRUSES	
129	FLUORIDE	16984-48-8
131	GIARDIA LAMBLIA	
144	IRON	15438-31-0
147	LEAD	14701-27-0
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
165	NAPHTHALENE	91-20-3
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
195	SELENIUM	7782-49-2
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
205	TDS	
211	TOLUENE	108-88-3
213	TOTAL COLIFORM	
219	TRICHLOROETHYLENE	79-01-6

Psoc Type Code	*Psoc Type Name*
11	**WASTEWATER**

Psoc Subtype Code	*Subtype Name*
13	CESSPOOL

Description:

This dataset contains sites with a wastewater cesspool. Contaminants are associated with wastewater . This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Contaminant Groups: Inorganics

Microbiological

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
47	ALUMINUM	14903-36-7
51	ARSENIC	15584-04-0
54	BARIUM	16541-35-8
85	CHLORIDE	16887-00-6
94	COPPER	17493-86-6
95	CRYPTOSPORIDIUM PARVUM	
123	ESCHERICHIA COLI	
127	FECAL VIRUSES	
131	GIARDIA LAMBLIA	
144	IRON	15438-31-0
152	MANGANESE	14333-14-3
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
213	TOTAL COLIFORM	
227	ZINC	15176-26-8

Psoc Type Code	*Psoc Type Name*
13	**TRANSPORTATION**

Psoc Subtype Code	*Subtype Name*
1	TRANSPORTATION

Description:

This dataset contains sites related to transportation; this category is a catch-all for miscellaneous types of sites. Contaminants are site-specific. This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
13	TRANSPORTATION

Psoc Subtype Code	*Subtype Name*
2	AIRPORT

Description:

This dataset contains airports. Chemicals associated with airplanes are present. This data was primarily obtained through the Federal Aviation Administration for airports, heliports, glider bases, and blimps in Texas. Locations and airport elevations were obtained from the FAA. Airports discovered by TCEQ staff from topo maps are added to this dataset and the locations are digitized from topographic maps.

Required Information:

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
2	1,1,1-TRICHLOROETHANE	71-55-6
6	1,1-DICHLOROETHYLENE	75-35-4
39	ACETONE	67-64-1
51	ARSENIC	15584-04-0
54	BARIUM	16541-35-8
56	BENZENE	71-43-2
74	CADMIUM	22537-48-0
79	CARBON TETRACHLORIDE	56-23-5
90	CHROMIUM	11104-59-9
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
111	DICHLOROMETHANE	75-09-2
150	M + P XYLENE	106-42-3
153	MERCURY	14302-87-5
159	METHYL-T-BUTYL ETHER	1634-04-4
164	M-XYLENE	108-38-3
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
195	SELENIUM	7782-49-2
208	TETRACHLOROETHYLENE	127-18-4
211	TOLUENE	108-88-3
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
219	TRICHLOROETHYLENE	79-01-6
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	

Psoc Type Code	*Psoc Type Name*
13	**TRANSPORTATION**

Psoc Subtype Code	*Subtype Name*
3	BOAT RAMP

Description:

This dataset contains boat ramps. Chemicals associated with boat motor fuels are present. This data was primarily obtained through the TCEQ review of topo maps are added to this dataset and the locations are digitized from topographic maps.

Required Information:

Contaminant Groups: Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
56	BENZENE	71-43-2
125	ETHYLBENZENE	100-41-4
159	METHYL-T-BUTYL ETHER	1634-04-4
164	M-XYLENE	108-38-3
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
211	TOLUENE	108-88-3
226	XYLENES (TOTAL)	

Psoc Type Code	*Psoc Type Name*
13	**TRANSPORTATION**

Psoc Subtype Code	*Subtype Name*
4	HELIPORT

Description:

This dataset contains airports. Chemicals associated with airplanes are present. This data was primarily obtained through the Federal Aviation Administration for airports, heliports, glider bases, and blimps in Texas. Locations and airport elevations were obtained from the FAA. Airports discovered by TCEQ staff from topo maps are added to this dataset and the locations are digitized from topographic maps.

Required Information:

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
2	1,1,1-TRICHLOROETHANE	71-55-6
6	1,1-DICHLOROETHYLENE	75-35-4
51	ARSENIC	15584-04-0
54	BARIUM	16541-35-8
56	BENZENE	71-43-2
74	CADMIUM	22537-48-0
79	CARBON TETRACHLORIDE	56-23-5
90	CHROMIUM	11104-59-9
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
111	DICHLOROMETHANE	75-09-2
125	ETHYLBENZENE	100-41-4
153	MERCURY	14302-87-5
159	METHYL-T-BUTYL ETHER	1634-04-4
164	M-XYLENE	108-38-3
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
195	SELENIUM	7782-49-2
208	TETRACHLOROETHYLENE	127-18-4
211	TOLUENE	108-88-3
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
219	TRICHLOROETHYLENE	79-01-6
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	

Psoc Type Code	*Psoc Type Name*
13	TRANSPORTATION

Psoc Subtype Code	*Subtype Name*
5	HIGHWAY

Description:

Line work: usgs source

Required Information:

Contaminant Groups: Inorganics

Microbiological

Organics

Physical Parameter

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
21	2,4,5-T	93-76-5
22	2,4,5-TP	93-72-1
24	2,4-D	94-75-7
41	ALACHLOR	15972-60-8
45	ALDRIN	309-00-2
47	ALUMINUM	14903-36-7
49	ANTIMONY	64924-52-3
51	ARSENIC	15584-04-0
53	ATRAZINE	1912-24-9
56	BENZENE	71-43-2
58	BENZO(A)PYRENE	50-32-8
62	BERYLLIUM	14701-08-7
74	CADMIUM	22537-48-0
81	CHLORDANE	57-74-9
85	CHLORIDE	16887-00-6
90	CHROMIUM	11104-59-9
94	COPPER	17493-86-6
97	CYANIDE	57-12-5
101	DDE	72-55-9
104	DIAZINON	333-41-5
111	DICHLOROMETHANE	75-09-2
112	DIELDRIN	60-57-1
121	ENDRIN	72-20-8
123	ESCHERICHIA COLI	
125	ETHYLBENZENE	100-41-4
127	FECAL VIRUSES	
144	IRON	15438-31-0
147	LEAD	14701-27-0
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
159	METHYL-T-BUTYL ETHER	1634-04-4
167	NICKEL	14701-22-5
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
180	PENTACHLOROPHENOL	87-86-5
182	pH	
195	SELENIUM	7782-49-2
197	SIMAZINE	122-34-9
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
205	TDS	
208	TETRACHLOROETHYLENE	127-18-4
211	TOLUENE	108-88-3
213	TOTAL COLIFORM	
219	TRICHLOROETHYLENE	79-01-6
227	ZINC	15176-26-8

Psoc Type Code	*Psoc Type Name*
13	**TRANSPORTATION**

Psoc Subtype Code	*Subtype Name*
6	LANDING STRIP

Description:

This dataset contains airplane landing strips. Chemicals associated with airplane fuels are present. This data was primarily obtained through the TCEQ review of topo maps are added to this dataset and the locations are digitized from topographic maps.

Required Information:

Site specific chemical use should be determined. Some landing strips are used for temporary pesticide aerial applicators.

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
56	BENZENE	71-43-2
125	ETHYLBENZENE	100-41-4
147	LEAD	14701-27-0
150	M + P XYLENE	106-42-3
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
211	TOLUENE	108-88-3
226	XYLENES (TOTAL)	

Psoc Type Code	*Psoc Type Name*
13	**TRANSPORTATION**

Psoc Subtype Code	*Subtype Name*
7	MARINA

Description:

This dataset contains boat marinas. Chemicals associated with boat motor fuels are present; when known, wastewater contaminants are also present if holding tanks or dumps are at the marina. This data was initially obtained from a Texas AM publication on marinas. The locations were primarily obtained through the TCEQ review of topo maps, digital orthophoto quarter quads, reservoir recreational facilities maps, and letters requesting maps from marina owners. Locations were digitized from topographic maps.

Links to the pws systems and pst (petroleum storage tanks) databases are within this database table.

Required Information:

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
56	BENZENE	71-43-2
125	ETHYLBENZENE	100-41-4
147	LEAD	14701-27-0
159	METHYL-T-BUTYL ETHER	1634-04-4
164	M-XYLENE	108-38-3
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
211	TOLUENE	108-88-3
226	XYLENES (TOTAL)	

Psoc Type Code	*Psoc Type Name*
13	**TRANSPORTATION**

Psoc Subtype Code	*Subtype Name*
8	MILITARY AIR BASE

Description:

This dataset contains airports. Chemicals associated with airplanes are present. This data was primarily obtained through the Federal Aviation Administration for airports, heliports, glider bases, and blimps in Texas. Locations and airport elevations were obtained from the FAA. Airports discovered by TCEQ staff from topo maps are added to this dataset and the locations are digitized from topographic maps.

Required Information:

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
2	1,1,1-TRICHLOROETHANE	71-55-6
6	1,1-DICHLOROETHYLENE	75-35-4
39	ACETONE	67-64-1
51	ARSENIC	15584-04-0
54	BARIUM	16541-35-8
56	BENZENE	71-43-2
74	CADMIUM	22537-48-0
79	CARBON TETRACHLORIDE	56-23-5
90	CHROMIUM	11104-59-9
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
111	DICHLOROMETHANE	75-09-2
150	M + P XYLENE	106-42-3
153	MERCURY	14302-87-5
159	METHYL-T-BUTYL ETHER	1634-04-4
164	M-XYLENE	108-38-3
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
195	SELENIUM	7782-49-2
208	TETRACHLOROETHYLENE	127-18-4
211	TOLUENE	108-88-3
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
219	TRICHLOROETHYLENE	79-01-6
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	

Psoc Type Code	Psoc Type Name
13	**TRANSPORTATION**

Psoc Subtype Code	Subtype Name
9	RAILROAD

Description:

Line work: usgs source

Required Information:

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
14	WASTE

Psoc Subtype Code	*Subtype Name*
1	WASTE

Description:

This dataset contains sites where waste has been disposed of; this category is a catch-all for miscellaneous types of sites. Contaminants are site-specific. This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
14	WASTE

Psoc Subtype Code	*Subtype Name*
3	CONFINED ANIMAL FEEDING OPERATION

Description:

This dataset contains sites where livestock is confined. Contaminants are associated with animal waste. This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Applicable TCEQ Site ID numbers.

Contaminant Groups: Inorganics

Microbiological

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
85	CHLORIDE	16887-00-6
95	CRYPTOSPORIDIUM PARVUM	
127	FECAL VIRUSES	
131	GIARDIA LAMBLIA	
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
213	TOTAL COLIFORM	

Psoc Type Code	*Psoc Type Name*
14	**WASTE**

Psoc Subtype Code	*Subtype Name*
4	CORRECTIVE ACTION SITE - TCEQ

Description:

This dataset contains sites in Texas that have some degree of contamination, and may have permits at the TCEQ. Chemicals associated with these facilities are site-specific. This data was primarily obtained through the Texas Commission of Environmental Quality corrective action files. Most of the locations were obtained using a variety of techniques.

Required Information:

Applicable TCEQ Site ID numbers.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	Psoc Type Name
14	WASTE

Psoc Subtype Code	Subtype Name
5	DOMESTIC TRASH OR BURN PILE

Description:

This dataset contains sites where the landowner burns household trash in a barrel or pile. Contaminants are associated with household trash, equivalent to a landfill. This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Contaminant Groups: Inorganics

Microbiological

Organics

Physical Parameter

Radionuclides

Contaminants:

Contaminant Code	Contaminant Name	CAS Number
1	1,1,1,2-TETRACHLOROETHANE	630-20-6
2	1,1,1-TRICHLOROETHANE	71-55-6
3	1,1,2,2-TETRACHLOROETHANE	79-34-5
4	1,1,2-TRICHLOROETHANE	79-00-5
5	1,1-DICHLOROETHANE	75-34-3
6	1,1-DICHLOROETHYLENE	75-35-4
7	1,1-DICHLOROPROPENE	563-58-6
8	1,2,3-TRICHLOROBENZENE	87-61-6
9	1,2,3-TRICHLOROPROPANE	96-18-4
10	1,2,4-TRICHLOROBENZENE	120-82-1
11	1,2,4-TRIMETHYLBENZENE	95-63-6
12	1,2-DICHLOROETHANE	107-06-2
13	1,2-DICHLOROPROPANE	78-87-5
14	1,2-DIPHENYLHYDRAZINE	122-66-7
15	1,3,5-TRIMETHYLBENZENE	108-67-8
16	1,3-DICHLOROBENZENE	541-73-1
17	1,3-DICHLOROPROPANE	142-28-9
18	1,3-DICHLOROPROPENE	542-75-6
19	2,2-DICHLOROPROPANE	594-20-7
20	2,3,7,8-TCDD	1746-01-6
21	2,4,5-T	93-76-5
22	2,4,5-TP	93-72-1
23	2,4,6-TRICHLOROPHENOL	88-06-2
24	2,4-D	94-75-7
25	2,4-DICHLOROPHENOL	120-83-2
26	2,4-DINITROPHENOL	51-28-5
27	2,4-DINITROTOLUENE	121-14-2
28	2,6-DINITROTOLUENE	606-20-2
29	2-CHLOROTOLUENE	95-49-8
30	2-HEXANONE	591-78-6
31	2-METHYLPHENOL	95-48-7
32	3-HYDROXYCARBOFURAN	16655-82-6
33	4-CHLOROTOLUENE	106-43-4
34	4-ISOPROPYLTOLUENE	99-87-6
35	4-METHYL-2-PENTANONE (MIBK)	108-10-1
36	ACENAPHTHENE	83-32-9
37	ACENAPHTHYLENE	208-96-8
38	ACETOCHLOR	34256-82-1
39	ACETONE	67-64-1
40	ACRYLONITRILE	107-13-1
41	ALACHLOR	15972-60-8
42	ALDICARB	116-06-3
43	ALDICARB SULFONE	1646-88-4
44	ALDICARB SULFOXIDE	1646-87-3
45	ALDRIN	309-00-2
47	ALUMINUM	14903-36-7
48	ANTHRACENE	120-12-7
49	ANTIMONY	64924-52-3
50	AROCLOR	53469-21-9
51	ARSENIC	15584-04-0
52	ASBESTOS	1332-21-4
53	ATRAZINE	1912-24-9
54	BARIUM	16541-35-8
55	BENTAZON	25057-89-0
56	BENZENE	71-43-2
57	BENZO[A]ANTHRACENE	56-55-3
58	BENZO(A)PYRENE	50-32-8
59	BENZO[B]FLUORANTHENE	205-99-2
60	BENZO[G,H,I]PERYLENE	191-24-2
61	BENZO[K]FLUORANTHENE	207-08-9
62	BERYLLIUM	14701-08-7
63	BICARBONATE	71-52-3
64	BORON	11113-50-1
65	BROMACIL	314-40-9
66	BROMIDE	
67	BROMOBENZENE	108-86-1
68	BROMOCHLOROMETHANE	74-97-5
69	BROMODICHLOROMETHANE	75-27-4
70	BROMOFORM	75-25-2
71	BROMOMETHANE	74-83-9

72	BUTACHLOR	23184-66-9
73	BUTYL BENZYL PHTHALATE	85-68-7
74	CADMIUM	22537-48-0
75	CALCIUM	14102-48-8
76	CARBARYL	63-25-2
77	CARBOFURAN	1563-66-2
78	CARBON DISULFIDE	75-15-0
79	CARBON TETRACHLORIDE	56-23-5
80	CARBONATE	3812-32-6
81	CHLORDANE	57-74-9
82	CHLORDANE (ALPHA-CHLORDANE)	5103-71-9
83	CHLORDANE (GAMMA-CHLORDANE)	12789-03-6
84	CHLORDANE (TRANS-NONACHLOR)	39765-80-5
85	CHLORIDE	16887-00-6
86	CHLOROBENZENE	108-90-7
87	CHLOROETHANE	75-00-3
88	CHLOROFORM	67-66-3
89	CHLOROMETHANE	74-87-3
90	CHROMIUM	11104-59-9
91	CHRYSENE	218-01-9
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
93	CIS-1,3-DICHLOROPROPENE	10061-01-5
94	COPPER	17493-86-6
95	CRYPTOSPORIDIUM PARVUM	
96	CYANAZINE	21725-46-2
97	CYANIDE	57-12-5
98	DALAPON	75-99-0
99	DCPA DI-ACID DEGRADATE	2136-79-0
100	DCPA MONO-ACID DEGRADATE	887-54-7
101	DDE	72-55-9
102	DI-(2-ETHYLHEXYL)ADIPATE	103-23-1
103	DI-(2-ETHYLHEXYL)PHTHALATE	117-81-7
104	DIAZINON	333-41-5
105	DIBENZ[A,H]ANTHRACENE	53-70-3
106	DIBROMOCHLOROMETHANE	124-48-1
107	DIBROMOCHLOROPROPANE	67708-83-2
108	DIBROMOMETHANE	74-95-3
109	DICAMBA	1918-00-9
110	DICHLORODIFLUOROMETHANE	75-71-8
111	DICHLOROMETHANE	75-09-2
112	DIELDRIN	60-57-1
113	DIETHYL PHTHALATE	84-66-2
114	DIMETHYL PHTHALATE	131-11-3
115	DI-N-BUTYL PHTHALATE	84-74-2
116	DINOSEB	88-85-7
117	DIQUAT	2764-72-9

118	DISULFOTON	298-04-4
119	DIURON	330-54-1
120	ENDOTHALL	145-73-3
121	ENDRIN	72-20-8
122	EPTC	759-94-4
123	ESCHERICHIA COLI	
124	ETHYL METHACRYLATE	97-63-2
125	ETHYLBENZENE	100-41-4
126	ETHYLENE DIBROMIDE	106-93-4
127	FECAL VIRUSES	
128	FLUORENE	86-73-7
129	FLUORIDE	16984-48-8
130	FONOFOS	944-22-9
131	GIARDIA LAMBLIA	
132	GLYPHOSATE	1071-83-6
136	HEPTACHLOR	76-44-8
137	HEPTACHLOR EPOXIDE	1024-57-3
138	HEXACHLOROBENZENE	118-74-1
139	HEXACHLOROBUTADIENE	87-68-3
140	HEXACHLOROCYCLOPENTADIENE	77-47-4
141	HYDROGEN SULFIDE	15035-72-0
142	INDENO[1,2,3,CD]PYRENE	193-39-5
143	METHYL IODIDE (IODOMETHANE)	74-88-4
144	IRON	15438-31-0
145	ISOPROPYLBENZENE	98-82-8
146	LAMBAST	845-52-3
147	LEAD	14701-27-0
148	LINDANE	58-89-9
149	LINURON	330-55-2
150	M + P XYLENE	106-42-3
151	MAGNESIUM	14581-92-1
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
154	METHIOCARB	2032-65-7
155	METHOMYL	16752-77-5
156	METHOXYCHLOR	72-43-5
157	METHYL ETHYL KETONE	78-93-3
158	METHYL METHACRYLATE	80-62-6
159	METHYL-T-BUTYL ETHER	1634-04-4
160	METOLACHLOR	51218-45-2
161	METRIBUZIN	21087-64-9
162	MOLINATE	2212-67-1
163	MONOCHLOROBENZENE	108-90-7
164	M-XYLENE	108-38-3
165	NAPHTHALENE	91-20-3
166	N-BUTYLBENZENE	104-51-8

167	NICKEL	14701-22-5
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
171	NITROBENZENE	98-95-3
172	N-PROPYLBENZENE	103-65-1
173	ORGANOTINS	
174	ORTHO-1,2-DICHLOROBENZENE	95-50-1
175	OXAMYL	23135-22-0
176	O-XYLENE	95-47-6
178	PARA-1,4-DICHLOROBENZENE	106-46-7
179	PCBs	53469-21-9
180	PENTACHLOROPHENOL	87-86-5
181	PERCHLORATE	14797-73-0
182	pH	
183	PHENANTHRENE	85-01-8
184	PICLORAM	1918-02-1
185	PROMETON	1610-18-0
186	PROPACHLOR	1918-16-7
187	PROPAZINE	139-40-2
188	P-XYLENE	106-42-3
189	PYRENE	129-00-0
190	RADIUM-226	13982-63-3
193	RDX	121-82-4
194	S-BUTYLBENZENE	135-98-8
195	SELENIUM	7782-49-2
196	SILVER	14701-21-4
197	SIMAZINE	122-34-9
198	SODIUM	17341-25-2
202	STYRENE	100-42-5
203	SULFATE	14808-79-8
204	T-BUTYLBENZENE	98-06-6
205	TDS	
206	TERBACIL	5902-51-2
207	TERBUFOS	13071-79-9
208	TETRACHLOROETHYLENE	127-18-4
209	TETRAHYDROFURAN	109-99-9
210	THALLIUM	7440-28-0
211	TOLUENE	108-88-3
213	TOTAL COLIFORM	
214	TOTAL TRIHALOMETHANE	
215	TOXAPHENE	8001-35-2
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
217	TRANS-1,3-DICHLOROPROPENE	10061-02-6
218	TRIAZINES	
219	TRICHLOROETHYLENE	79-01-6

220	TRICHLOROFLUOROMETHANE	75-69-4
221	TRIFLURALIN	1582-09-8
222	TRITIUM	15086-10-9
224	VINYL ACETATE	108-05-4
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	
227	ZINC	15176-26-8

Psoc Type Code	Psoc Type Name
14	**WASTE**

Psoc Subtype Code	Subtype Name
6	INDUSTRIAL HAZARDOUS WASTE TSD

Description:

This dataset contains businesses in Texas that have permits for industrial hazardous waste, treatment, storage, or disposal. Chemicals associated with these facilities are site-specific. This data was primarily obtained through the Texas Commission of Environmental Quality industrial hazardous waste files. Most of the locations were obtained using a variety of techniques.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	Psoc Type Name
14	WASTE

Psoc Subtype Code	Subtype Name
7	MUNICIPAL SOLID WASTE - ABANDONED, TCEQ

Description:

This dataset contains businesses in Texas that have abandoned landfills. Chemicals associated with these facilities are related to landfills. This data was primarily obtained through the Southwest Texas State University study for the TCEQ. Most of the locations were obtained using a variety of techniques. Site location accuracy is not known.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Microbiological

Organics

Physical Parameter

Radionuclides

Contaminants:

Contaminant Code	Contaminant Name	CAS Number
1	1,1,1,2-TETRACHLOROETHANE	630-20-6
2	1,1,1-TRICHLOROETHANE	71-55-6
3	1,1,2,2-TETRACHLOROETHANE	79-34-5
4	1,1,2-TRICHLOROETHANE	79-00-5
5	1,1-DICHLOROETHANE	75-34-3
6	1,1-DICHLOROETHYLENE	75-35-4
7	1,1-DICHLOROPROPENE	563-58-6
8	1,2,3-TRICHLOROBENZENE	87-61-6
9	1,2,3-TRICHLOROPROPANE	96-18-4
10	1,2,4-TRICHLOROBENZENE	120-82-1
11	1,2,4-TRIMETHYLBENZENE	95-63-6
12	1,2-DICHLOROETHANE	107-06-2
13	1,2-DICHLOROPROPANE	78-87-5
14	1,2-DIPHENYLHYDRAZINE	122-66-7
15	1,3,5-TRIMETHYLBENZENE	108-67-8
16	1,3-DICHLOROBENZENE	541-73-1
17	1,3-DICHLOROPROPANE	142-28-9
18	1,3-DICHLOROPROPENE	542-75-6
19	2,2-DICHLOROPROPANE	594-20-7
20	2,3,7,8-TCDD	1746-01-6
21	2,4,5-T	93-76-5
22	2,4,5-TP	93-72-1
23	2,4,6-TRICHLOROPHENOL	88-06-2
24	2,4-D	94-75-7
25	2,4-DICHLOROPHENOL	120-83-2
26	2,4-DINITROPHENOL	51-28-5
27	2,4-DINITROTOLUENE	121-14-2
28	2,6-DINITROTOLUENE	606-20-2
29	2-CHLOROTOLUENE	95-49-8
30	2-HEXANONE	591-78-6
31	2-METHYLPHENOL	95-48-7
32	3-HYDROXYCARBOFURAN	16655-82-6
33	4-CHLOROTOLUENE	106-43-4
34	4-ISOPROPYLTOLUENE	99-87-6
35	4-METHYL-2-PENTANONE (MIBK)	108-10-1
36	ACENAPHTHENE	83-32-9
37	ACENAPHTHYLENE	208-96-8
38	ACETOCHLOR	34256-82-1
39	ACETONE	67-64-1
40	ACRYLONITRILE	107-13-1
41	ALACHLOR	15972-60-8
42	ALDICARB	116-06-3
43	ALDICARB SULFONE	1646-88-4
44	ALDICARB SULFOXIDE	1646-87-3
45	ALDRIN	309-00-2
47	ALUMINUM	14903-36-7
48	ANTHRACENE	120-12-7
49	ANTIMONY	64924-52-3
50	AROCLOR	53469-21-9
51	ARSENIC	15584-04-0
52	ASBESTOS	1332-21-4
53	ATRAZINE	1912-24-9
54	BARIUM	16541-35-8
55	BENTAZON	25057-89-0
56	BENZENE	71-43-2
57	BENZO[A]ANTHRACENE	56-55-3
58	BENZO(A)PYRENE	50-32-8
59	BENZO[B]FLUORANTHENE	205-99-2
60	BENZO[G,H,I]PERYLENE	191-24-2
61	BENZO[K]FLUORANTHENE	207-08-9
62	BERYLLIUM	14701-08-7
64	BORON	11113-50-1
65	BROMACIL	314-40-9
66	BROMIDE	
67	BROMOBENZENE	108-86-1
68	BROMOCHLOROMETHANE	74-97-5
69	BROMODICHLOROMETHANE	75-27-4
70	BROMOFORM	75-25-2
71	BROMOMETHANE	74-83-9

72	BUTACHLOR	23184-66-9
73	BUTYL BENZYL PHTHALATE	85-68-7
74	CADMIUM	22537-48-0
76	CARBARYL	63-25-2
77	CARBOFURAN	1563-66-2
78	CARBON DISULFIDE	75-15-0
79	CARBON TETRACHLORIDE	56-23-5
81	CHLORDANE	57-74-9
82	CHLORDANE (ALPHA-CHLORDANE)	5103-71-9
83	CHLORDANE (GAMMA-CHLORDANE)	12789-03-6
84	CHLORDANE (TRANS-NONACHLOR)	39765-80-5
85	CHLORIDE	16887-00-6
86	CHLOROBENZENE	108-90-7
87	CHLOROETHANE	75-00-3
88	CHLOROFORM	67-66-3
89	CHLOROMETHANE	74-87-3
90	CHROMIUM	11104-59-9
91	CHRYSENE	218-01-9
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
93	CIS-1,3-DICHLOROPROPENE	10061-01-5
94	COPPER	17493-86-6
95	CRYPTOSPORIDIUM PARVUM	
96	CYANAZINE	21725-46-2
97	CYANIDE	57-12-5
98	DALAPON	75-99-0
99	DCPA DI-ACID DEGRADATE	2136-79-0
100	DCPA MONO-ACID DEGRADATE	887-54-7
101	DDE	72-55-9
102	DI-(2-ETHYLHEXYL)ADIPATE	103-23-1
103	DI-(2-ETHYLHEXYL)PHTHALATE	117-81-7
104	DIAZINON	333-41-5
105	DIBENZ[A,H]ANTHRACENE	53-70-3
106	DIBROMOCHLOROMETHANE	124-48-1
107	DIBROMOCHLOROPROPANE	67708-83-2
108	DIBROMOMETHANE	74-95-3
109	DICAMBA	1918-00-9
110	DICHLORODIFLUOROMETHANE	75-71-8
111	DICHLOROMETHANE	75-09-2
112	DIELDRIN	60-57-1
113	DIETHYL PHTHALATE	84-66-2
114	DIMETHYL PHTHALATE	131-11-3
115	DI-N-BUTYL PHTHALATE	84-74-2
116	DINOSEB	88-85-7
117	DIQUAT	2764-72-9
118	DISULFOTON	298-04-4
119	DIURON	330-54-1

120	ENDOTHALL	145-73-3
121	ENDRIN	72-20-8
122	EPTC	759-94-4
123	ESCHERICHIA COLI	
124	ETHYL METHACRYLATE	97-63-2
125	ETHYLBENZENE	100-41-4
126	ETHYLENE DIBROMIDE	106-93-4
127	FECAL VIRUSES	
128	FLUORENE	86-73-7
129	FLUORIDE	16984-48-8
130	FONOFOS	944-22-9
131	GIARDIA LAMBLIA	
132	GLYPHOSATE	1071-83-6
133	GROSS ALPHA	
134	GROSS BETA	
136	HEPTACHLOR	76-44-8
137	HEPTACHLOR EPOXIDE	1024-57-3
138	HEXACHLOROBENZENE	118-74-1
139	HEXACHLOROBUTADIENE	87-68-3
140	HEXACHLOROCYCLOPENTADIENE	77-47-4
141	HYDROGEN SULFIDE	15035-72-0
142	INDENO[1,2,3,CD]PYRENE	193-39-5
143	METHYL IODIDE (IODOMETHANE)	74-88-4
144	IRON	15438-31-0
145	ISOPROPYLBENZENE	98-82-8
146	LAMBAST	845-52-3
147	LEAD	14701-27-0
148	LINDANE	58-89-9
149	LINURON	330-55-2
150	M + P XYLENE	106-42-3
151	MAGNESIUM	14581-92-1
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
154	METHIOCARB	2032-65-7
155	METHOMYL	16752-77-5
156	METHOXYCHLOR	72-43-5
157	METHYL ETHYL KETONE	78-93-3
158	METHYL METHACRYLATE	80-62-6
159	METHYL-T-BUTYL ETHER	1634-04-4
160	METOLACHLOR	51218-45-2
161	METRIBUZIN	21087-64-9
162	MOLINATE	2212-67-1
163	MONOCHLOROBENZENE	108-90-7
164	M-XYLENE	108-38-3
165	NAPHTHALENE	91-20-3
166	N-BUTYLBENZENE	104-51-8

167	NICKEL	14701-22-5
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
171	NITROBENZENE	98-95-3
172	N-PROPYLBENZENE	103-65-1
173	ORGANOTINS	
174	ORTHO-1,2-DICHLOROBENZENE	95-50-1
175	OXAMYL	23135-22-0
176	O-XYLENE	95-47-6
178	PARA-1,4-DICHLOROBENZENE	106-46-7
179	PCBs	53469-21-9
180	PENTACHLOROPHENOL	87-86-5
181	PERCHLORATE	14797-73-0
182	pH	
183	PHENANTHRENE	85-01-8
184	PICLORAM	1918-02-1
185	PROMETON	1610-18-0
186	PROPACHLOR	1918-16-7
187	PROPAZINE	139-40-2
188	P-XYLENE	106-42-3
189	PYRENE	129-00-0
190	RADIUM-226	13982-63-3
191	RADIUM-228	15262-20-1
192	RADON	10043-92-2
193	RDX	121-82-4
194	S-BUTYLBENZENE	135-98-8
195	SELENIUM	7782-49-2
196	SILVER	14701-21-4
197	SIMAZINE	122-34-9
198	SODIUM	17341-25-2
200	STRONTIUM-89	14701-18-9
201	STRONTIUM-90	10098-97-2
202	STYRENE	100-42-5
203	SULFATE	14808-79-8
204	T-BUTYLBENZENE	98-06-6
205	TDS	
206	TERBACIL	5902-51-2
207	TERBUFOS	13071-79-9
208	TETRACHLOROETHYLENE	127-18-4
209	TETRAHYDROFURAN	109-99-9
210	THALLIUM	7440-28-0
211	TOLUENE	108-88-3
212	TOTAL ALPHA EMITTING RADIUM	
213	TOTAL COLIFORM	
214	TOTAL TRIHALOMETHANE	
215	TOXAPHENE	8001-35-2
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
217	TRANS-1,3-DICHLOROPROPENE	10061-02-6
218	TRIAZINES	
219	TRICHLOROETHYLENE	79-01-6
220	TRICHLOROFLUOROMETHANE	75-69-4
221	TRIFLURALIN	1582-09-8
222	TRITIUM	15086-10-9
223	URANIUM	
224	VINYL ACETATE	108-05-4
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	
227	ZINC	15176-26-8

Psoc Type Code	Psoc Type Name
14	WASTE

Psoc Subtype Code	Subtype Name
8	MUNICIPAL SOLID WASTE - ACTIVE, TCEQ

Description:

This dataset contains businesses in Texas that have active landfills. Chemicals associated with these facilities are related to landfills. This data was primarily obtained through the Texas Commission of Environmental Quality municipal solid waste files. Most of the locations were obtained using a variety of techniques, submitted by the permit applicant. Site location accuracy is not known.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Microbiological

Organics

Physical Parameter

Radionuclides

Contaminants:

Contaminant Code	Contaminant Name	CAS Number
1	1,1,1,2-TETRACHLOROETHANE	630-20-6
2	1,1,1-TRICHLOROETHANE	71-55-6
3	1,1,2,2-TETRACHLOROETHANE	79-34-5
4	1,1,2-TRICHLOROETHANE	79-00-5
5	1,1-DICHLOROETHANE	75-34-3
6	1,1-DICHLOROETHYLENE	75-35-4
7	1,1-DICHLOROPROPENE	563-58-6
8	1,2,3-TRICHLOROBENZENE	87-61-6
9	1,2,3-TRICHLOROPROPANE	96-18-4
10	1,2,4-TRICHLOROBENZENE	120-82-1
11	1,2,4-TRIMETHYLBENZENE	95-63-6
12	1,2-DICHLOROETHANE	107-06-2
13	1,2-DICHLOROPROPANE	78-87-5
14	1,2-DIPHENYLHYDRAZINE	122-66-7
15	1,3,5-TRIMETHYLBENZENE	108-67-8
16	1,3-DICHLOROBENZENE	541-73-1
17	1,3-DICHLOROPROPANE	142-28-9
18	1,3-DICHLOROPROPENE	542-75-6
19	2,2-DICHLOROPROPANE	594-20-7
20	2,3,7,8-TCDD	1746-01-6
21	2,4,5-T	93-76-5
22	2,4,5-TP	93-72-1
23	2,4,6-TRICHLOROPHENOL	88-06-2
24	2,4-D	94-75-7
25	2,4-DICHLOROPHENOL	120-83-2
26	2,4-DINITROPHENOL	51-28-5
27	2,4-DINITROTOLUENE	121-14-2
28	2,6-DINITROTOLUENE	606-20-2
29	2-CHLOROTOLUENE	95-49-8
30	2-HEXANONE	591-78-6
31	2-METHYLPHENOL	95-48-7
32	3-HYDROXYCARBOFURAN	16655-82-6
33	4-CHLOROTOLUENE	106-43-4
34	4-ISOPROPYLTOLUENE	99-87-6
35	4-METHYL-2-PENTANONE (MIBK)	108-10-1
36	ACENAPHTHENE	83-32-9
37	ACENAPHTHYLENE	208-96-8
38	ACETOCHLOR	34256-82-1
39	ACETONE	67-64-1
40	ACRYLONITRILE	107-13-1
41	ALACHLOR	15972-60-8
42	ALDICARB	116-06-3
43	ALDICARB SULFONE	1646-88-4
44	ALDICARB SULFOXIDE	1646-87-3
45	ALDRIN	309-00-2
47	ALUMINUM	14903-36-7
48	ANTHRACENE	120-12-7
49	ANTIMONY	64924-52-3
50	AROCLOR	53469-21-9
51	ARSENIC	15584-04-0
52	ASBESTOS	1332-21-4
53	ATRAZINE	1912-24-9
54	BARIUM	16541-35-8
55	BENTAZON	25057-89-0
56	BENZENE	71-43-2
57	BENZO[A]ANTHRACENE	56-55-3
58	BENZO(A)PYRENE	50-32-8
59	BENZO[B]FLUORANTHENE	205-99-2
60	BENZO[G,H,I]PERYLENE	191-24-2
61	BENZO[K]FLUORANTHENE	207-08-9
62	BERYLLIUM	14701-08-7
64	BORON	11113-50-1
65	BROMACIL	314-40-9
66	BROMIDE	
67	BROMOBENZENE	108-86-1
68	BROMOCHLOROMETHANE	74-97-5
69	BROMODICHLOROMETHANE	75-27-4
70	BROMOFORM	75-25-2

71	BROMOMETHANE	74-83-9
72	BUTACHLOR	23184-66-9
73	BUTYL BENZYL PHTHALATE	85-68-7
74	CADMIUM	22537-48-0
76	CARBARYL	63-25-2
77	CARBOFURAN	1563-66-2
78	CARBON DISULFIDE	75-15-0
79	CARBON TETRACHLORIDE	56-23-5
81	CHLORDANE	57-74-9
82	CHLORDANE (ALPHA-CHLORDANE)	5103-71-9
83	CHLORDANE (GAMMA-CHLORDANE)	12789-03-6
84	CHLORDANE (TRANS-NONACHLOR)	39765-80-5
85	CHLORIDE	16887-00-6
86	CHLOROBENZENE	108-90-7
87	CHLOROETHANE	75-00-3
88	CHLOROFORM	67-66-3
89	CHLOROMETHANE	74-87-3
90	CHROMIUM	11104-59-9
91	CHRYSENE	218-01-9
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
93	CIS-1,3-DICHLOROPROPENE	10061-01-5
94	COPPER	17493-86-6
95	CRYPTOSPORIDIUM PARVUM	
96	CYANAZINE	21725-46-2
97	CYANIDE	57-12-5
98	DALAPON	75-99-0
99	DCPA DI-ACID DEGRADATE	2136-79-0
100	DCPA MONO-ACID DEGRADATE	887-54-7
101	DDE	72-55-9
102	DI-(2-ETHYLHEXYL)ADIPATE	103-23-1
103	DI-(2-ETHYLHEXYL)PHTHALATE	117-81-7
104	DIAZINON	333-41-5
105	DIBENZ[A,H]ANTHRACENE	53-70-3
106	DIBROMOCHLOROMETHANE	124-48-1
107	DIBROMOCHLOROPROPANE	67708-83-2
108	DIBROMOMETHANE	74-95-3
109	DICAMBA	1918-00-9
110	DICHLORODIFLUOROMETHANE	75-71-8
111	DICHLOROMETHANE	75-09-2
112	DIELDRIN	60-57-1
113	DIETHYL PHTHALATE	84-66-2
114	DIMETHYL PHTHALATE	131-11-3
115	DI-N-BUTYL PHTHALATE	84-74-2
116	DINOSEB	88-85-7
117	DIQUAT	2764-72-9
118	DISULFOTON	298-04-4

119	DIURON	330-54-1
120	ENDOTHALL	145-73-3
121	ENDRIN	72-20-8
122	EPTC	759-94-4
123	ESCHERICHIA COLI	
124	ETHYL METHACRYLATE	97-63-2
125	ETHYLBENZENE	100-41-4
126	ETHYLENE DIBROMIDE	106-93-4
127	FECAL VIRUSES	
128	FLUORENE	86-73-7
129	FLUORIDE	16984-48-8
130	FONOFOS	944-22-9
131	GIARDIA LAMBLIA	
132	GLYPHOSATE	1071-83-6
133	GROSS ALPHA	
134	GROSS BETA	
136	HEPTACHLOR	76-44-8
137	HEPTACHLOR EPOXIDE	1024-57-3
138	HEXACHLOROBENZENE	118-74-1
139	HEXACHLOROBUTADIENE	87-68-3
140	HEXACHLOROCYCLOPENTADIENE	77-47-4
141	HYDROGEN SULFIDE	15035-72-0
142	INDENO[1,2,3,CD]PYRENE	193-39-5
143	METHYL IODIDE (IODOMETHANE)	74-88-4
144	IRON	15438-31-0
145	ISOPROPYLBENZENE	98-82-8
146	LAMBAST	845-52-3
147	LEAD	14701-27-0
148	LINDANE	58-89-9
149	LINURON	330-55-2
150	M + P XYLENE	106-42-3
151	MAGNESIUM	14581-92-1
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
154	METHIOCARB	2032-65-7
155	METHOMYL	16752-77-5
156	METHOXYCHLOR	72-43-5
157	METHYL ETHYL KETONE	78-93-3
158	METHYL METHACRYLATE	80-62-6
159	METHYL-T-BUTYL ETHER	1634-04-4
160	METOLACHLOR	51218-45-2
161	METRIBUZIN	21087-64-9
162	MOLINATE	2212-67-1
163	MONOCHLOROBENZENE	108-90-7
164	M-XYLENE	108-38-3
165	NAPHTHALENE	91-20-3

166	N-BUTYLBENZENE	104-51-8
167	NICKEL	14701-22-5
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
171	NITROBENZENE	98-95-3
172	N-PROPYLBENZENE	103-65-1
173	ORGANOTINS	
174	ORTHO-1,2-DICHLOROBENZENE	95-50-1
175	OXAMYL	23135-22-0
176	O-XYLENE	95-47-6
178	PARA-1,4-DICHLOROBENZENE	106-46-7
179	PCBs	53469-21-9
180	PENTACHLOROPHENOL	87-86-5
181	PERCHLORATE	14797-73-0
182	pH	
183	PHENANTHRENE	85-01-8
184	PICLORAM	1918-02-1
185	PROMETON	1610-18-0
186	PROPACHLOR	1918-16-7
187	PROPAZINE	139-40-2
188	P-XYLENE	106-42-3
189	PYRENE	129-00-0
190	RADIUM-226	13982-63-3
191	RADIUM-228	15262-20-1
192	RADON	10043-92-2
193	RDX	121-82-4
194	S-BUTYLBENZENE	135-98-8
195	SELENIUM	7782-49-2
196	SILVER	14701-21-4
197	SIMAZINE	122-34-9
198	SODIUM	17341-25-2
200	STRONTIUM-89	14701-18-9
201	STRONTIUM-90	10098-97-2
202	STYRENE	100-42-5
203	SULFATE	14808-79-8
204	T-BUTYLBENZENE	98-06-6
205	TDS	
206	TERBACIL	5902-51-2
207	TERBUFOS	13071-79-9
208	TETRACHLOROETHYLENE	127-18-4
209	TETRAHYDROFURAN	109-99-9
210	THALLIUM	7440-28-0
211	TOLUENE	108-88-3
212	TOTAL ALPHA EMITTING RADIUM	
213	TOTAL COLIFORM	

214	TOTAL TRIHALOMETHANE	
215	TOXAPHENE	8001-35-2
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
217	TRANS-1,3-DICHLOROPROPENE	10061-02-6
218	TRIAZINES	
219	TRICHLOROETHYLENE	79-01-6
220	TRICHLOROFLUOROMETHANE	75-69-4
221	TRIFLURALIN	1582-09-8
222	TRITIUM	15086-10-9
223	URANIUM	
224	VINYL ACETATE	108-05-4
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	
227	ZINC	15176-26-8

Psoc Type Code	Psoc Type Name
14	**WASTE**

Psoc Subtype Code	Subtype Name
9	PERCHLORATE SITE

Description:

This dataset contains sites with a known perchlorate contamination of the ground or surface water. Contaminants are limited to the perchlorate anion (ClO4-). Sites are limited to military facilities. The locations were obtained by digitizing topographic maps. A point represents the entire site.

Required Information:

Contaminant Groups: Organics

Contaminants:

Contaminant Code	Contaminant Name	CAS Number
181	PERCHLORATE	14797-73-0

Psoc Type Code	*Psoc Type Name*
14	**WASTE**

Psoc Subtype Code	*Subtype Name*
10	SITE DISCOVERY - TCEQ

Description:

This dataset contains sites in Texas that are in the Site Discovery Program. These sites are reported to have some degree of contamination; evaluation of each site is undertaken. Chemicals associated with these facilities are site-specific. This data was primarily obtained through the Texas Commission of Environmental Quality site discovery files. Most of the locations were obtained using a variety of techniques, including file review, digitizing maps, GPS, and using address-matching software with site addresses.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
14	**WASTE**

Psoc Subtype Code	*Subtype Name*
12	SUPERFUND SITE - TCEQ

Description:

This dataset contains sites in Texas that are in the Superfund Program. These sites have some degree of contamination. Chemicals associated with these facilities are site-specific. This data was primarily obtained through the Texas Commission of Environmental Quality superfund files. Most of the locations were obtained using a variety of techniques.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
14	**WASTE**

Psoc Subtype Code	*Subtype Name*
13	TOXIC RELEASE INVENTORY - TCEQ

Description:

This dataset contains businesses in Texas that have decided to participate in the Toxic Release Inventory Program. Chemicals associated with these facilities are site-specific. This data was primarily obtained through the Texas Commission of Environmental Quality TRI files. Most of the locations were obtained using address-matching software with site addresses.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	Psoc Type Name
14	WASTE

Psoc Subtype Code *Subtype Name*

14 TRANSFER STATION

Description:

This dataset contains sites where landfill waste is collected and loaded into containers for eventual transport ot a landfill. Contaminants are associated with landfill waste. This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Microbiological

Organics

Physical Parameter

Radionuclides

Contaminants:

Contaminant Code	Contaminant Name	CAS Number
1	1,1,1,2-TETRACHLOROETHANE	630-20-6
2	1,1,1-TRICHLOROETHANE	71-55-6
3	1,1,2,2-TETRACHLOROETHANE	79-34-5
4	1,1,2-TRICHLOROETHANE	79-00-5
5	1,1-DICHLOROETHANE	75-34-3
6	1,1-DICHLOROETHYLENE	75-35-4
7	1,1-DICHLOROPROPENE	563-58-6
8	1,2,3-TRICHLOROBENZENE	87-61-6
9	1,2,3-TRICHLOROPROPANE	96-18-4
10	1,2,4-TRICHLOROBENZENE	120-82-1
11	1,2,4-TRIMETHYLBENZENE	95-63-6
12	1,2-DICHLOROETHANE	107-06-2
13	1,2-DICHLOROPROPANE	78-87-5
14	1,2-DIPHENYLHYDRAZINE	122-66-7
15	1,3,5-TRIMETHYLBENZENE	108-67-8
16	1,3-DICHLOROBENZENE	541-73-1
17	1,3-DICHLOROPROPANE	142-28-9
18	1,3-DICHLOROPROPENE	542-75-6
19	2,2-DICHLOROPROPANE	594-20-7
20	2,3,7,8-TCDD	1746-01-6
21	2,4,5-T	93-76-5
22	2,4,5-TP	93-72-1
23	2,4,6-TRICHLOROPHENOL	88-06-2
24	2,4-D	94-75-7
25	2,4-DICHLOROPHENOL	120-83-2
26	2,4-DINITROPHENOL	51-28-5
27	2,4-DINITROTOLUENE	121-14-2
28	2,6-DINITROTOLUENE	606-20-2
29	2-CHLOROTOLUENE	95-49-8
30	2-HEXANONE	591-78-6
31	2-METHYLPHENOL	95-48-7
32	3-HYDROXYCARBOFURAN	16655-82-6
33	4-CHLOROTOLUENE	106-43-4
34	4-ISOPROPYLTOLUENE	99-87-6
35	4-METHYL-2-PENTANONE (MIBK)	108-10-1
36	ACENAPHTHENE	83-32-9
37	ACENAPHTHYLENE	208-96-8
38	ACETOCHLOR	34256-82-1
39	ACETONE	67-64-1
40	ACRYLONITRILE	107-13-1
41	ALACHLOR	15972-60-8
42	ALDICARB	116-06-3
43	ALDICARB SULFONE	1646-88-4
44	ALDICARB SULFOXIDE	1646-87-3
45	ALDRIN	309-00-2
47	ALUMINUM	14903-36-7
48	ANTHRACENE	120-12-7
49	ANTIMONY	64924-52-3
50	AROCLOR	53469-21-9
51	ARSENIC	15584-04-0
52	ASBESTOS	1332-21-4
53	ATRAZINE	1912-24-9
54	BARIUM	16541-35-8
55	BENTAZON	25057-89-0
56	BENZENE	71-43-2
57	BENZO[A]ANTHRACENE	56-55-3
58	BENZO(A)PYRENE	50-32-8
59	BENZO[B]FLUORANTHENE	205-99-2
60	BENZO[G,H,I]PERYLENE	191-24-2
61	BENZO[K]FLUORANTHENE	207-08-9
62	BERYLLIUM	14701-08-7
64	BORON	11113-50-1
65	BROMACIL	314-40-9
66	BROMIDE	
67	BROMOBENZENE	108-86-1
68	BROMOCHLOROMETHANE	74-97-5
69	BROMODICHLOROMETHANE	75-27-4
70	BROMOFORM	75-25-2
71	BROMOMETHANE	74-83-9

72	BUTACHLOR	23184-66-9
73	BUTYL BENZYL PHTHALATE	85-68-7
74	CADMIUM	22537-48-0
76	CARBARYL	63-25-2
77	CARBOFURAN	1563-66-2
78	CARBON DISULFIDE	75-15-0
79	CARBON TETRACHLORIDE	56-23-5
81	CHLORDANE	57-74-9
82	CHLORDANE (ALPHA-CHLORDANE)	5103-71-9
83	CHLORDANE (GAMMA-CHLORDANE)	12789-03-6
84	CHLORDANE (TRANS-NONACHLOR)	39765-80-5
85	CHLORIDE	16887-00-6
86	CHLOROBENZENE	108-90-7
87	CHLOROETHANE	75-00-3
88	CHLOROFORM	67-66-3
89	CHLOROMETHANE	74-87-3
90	CHROMIUM	11104-59-9
91	CHRYSENE	218-01-9
92	CIS-1,2-DICHLOROETHYLENE	156-59-2
93	CIS-1,3-DICHLOROPROPENE	10061-01-5
94	COPPER	17493-86-6
95	CRYPTOSPORIDIUM PARVUM	
96	CYANAZINE	21725-46-2
97	CYANIDE	57-12-5
98	DALAPON	75-99-0
99	DCPA DI-ACID DEGRADATE	2136-79-0
100	DCPA MONO-ACID DEGRADATE	887-54-7
101	DDE	72-55-9
102	DI-(2-ETHYLHEXYL)ADIPATE	103-23-1
103	DI-(2-ETHYLHEXYL)PHTHALATE	117-81-7
104	DIAZINON	333-41-5
105	DIBENZ[A,H]ANTHRACENE	53-70-3
106	DIBROMOCHLOROMETHANE	124-48-1
107	DIBROMOCHLOROPROPANE	67708-83-2
108	DIBROMOMETHANE	74-95-3
109	DICAMBA	1918-00-9
110	DICHLORODIFLUOROMETHANE	75-71-8
111	DICHLOROMETHANE	75-09-2
112	DIELDRIN	60-57-1
113	DIETHYL PHTHALATE	84-66-2
114	DIMETHYL PHTHALATE	131-11-3
115	DI-N-BUTYL PHTHALATE	84-74-2
116	DINOSEB	88-85-7
117	DIQUAT	2764-72-9
118	DISULFOTON	298-04-4
119	DIURON	330-54-1
120	ENDOTHALL	145-73-3
121	ENDRIN	72-20-8
122	EPTC	759-94-4
123	ESCHERICHIA COLI	
124	ETHYL METHACRYLATE	97-63-2
125	ETHYLBENZENE	100-41-4
126	ETHYLENE DIBROMIDE	106-93-4
127	FECAL VIRUSES	
128	FLUORENE	86-73-7
129	FLUORIDE	16984-48-8
130	FONOFOS	944-22-9
131	GIARDIA LAMBLIA	
132	GLYPHOSATE	1071-83-6
133	GROSS ALPHA	
134	GROSS BETA	
136	HEPTACHLOR	76-44-8
137	HEPTACHLOR EPOXIDE	1024-57-3
138	HEXACHLOROBENZENE	118-74-1
139	HEXACHLOROBUTADIENE	87-68-3
140	HEXACHLOROCYCLOPENTADIENE	77-47-4
141	HYDROGEN SULFIDE	15035-72-0
142	INDENO[1,2,3,CD]PYRENE	193-39-5
143	METHYL IODIDE (IODOMETHANE)	74-88-4
144	IRON	15438-31-0
145	ISOPROPYLBENZENE	98-82-8
146	LAMBAST	845-52-3
147	LEAD	14701-27-0
148	LINDANE	58-89-9
149	LINURON	330-55-2
150	M + P XYLENE	106-42-3
151	MAGNESIUM	14581-92-1
152	MANGANESE	14333-14-3
153	MERCURY	14302-87-5
154	METHIOCARB	2032-65-7
155	METHOMYL	16752-77-5
156	METHOXYCHLOR	72-43-5
157	METHYL ETHYL KETONE	78-93-3
158	METHYL METHACRYLATE	80-62-6
159	METHYL-T-BUTYL ETHER	1634-04-4
160	METOLACHLOR	51218-45-2
161	METRIBUZIN	21087-64-9
162	MOLINATE	2212-67-1
163	MONOCHLOROBENZENE	108-90-7
164	M-XYLENE	108-38-3
165	NAPHTHALENE	91-20-3
166	N-BUTYLBENZENE	104-51-8

167	NICKEL	14701-22-5
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
171	NITROBENZENE	98-95-3
172	N-PROPYLBENZENE	103-65-1
173	ORGANOTINS	
174	ORTHO-1,2-DICHLOROBENZENE	95-50-1
175	OXAMYL	23135-22-0
176	O-XYLENE	95-47-6
178	PARA-1,4-DICHLOROBENZENE	106-46-7
179	PCBs	53469-21-9
180	PENTACHLOROPHENOL	87-86-5
181	PERCHLORATE	14797-73-0
182	pH	
183	PHENANTHRENE	85-01-8
184	PICLORAM	1918-02-1
185	PROMETON	1610-18-0
186	PROPACHLOR	1918-16-7
187	PROPAZINE	139-40-2
188	P-XYLENE	106-42-3
189	PYRENE	129-00-0
190	RADIUM-226	13982-63-3
191	RADIUM-228	15262-20-1
192	RADON	10043-92-2
193	RDX	121-82-4
194	S-BUTYLBENZENE	135-98-8
195	SELENIUM	7782-49-2
196	SILVER	14701-21-4
197	SIMAZINE	122-34-9
198	SODIUM	17341-25-2
200	STRONTIUM-89	14701-18-9
201	STRONTIUM-90	10098-97-2
202	STYRENE	100-42-5
203	SULFATE	14808-79-8
204	T-BUTYLBENZENE	98-06-6
205	TDS	
206	TERBACIL	5902-51-2
207	TERBUFOS	13071-79-9
208	TETRACHLOROETHYLENE	127-18-4
209	TETRAHYDROFURAN	109-99-9
210	THALLIUM	7440-28-0
211	TOLUENE	108-88-3
212	TOTAL ALPHA EMITTING RADIUM	
213	TOTAL COLIFORM	
214	TOTAL TRIHALOMETHANE	

215	TOXAPHENE	8001-35-2
216	TRANS-1,2-DICHLOROETHYLENE	156-60-5
217	TRANS-1,3-DICHLOROPROPENE	10061-02-6
218	TRIAZINES	
219	TRICHLOROETHYLENE	79-01-6
220	TRICHLOROFLUOROMETHANE	75-69-4
221	TRIFLURALIN	1582-09-8
222	TRITIUM	15086-10-9
223	URANIUM	
224	VINYL ACETATE	108-05-4
225	VINYL CHLORIDE	75-01-4
226	XYLENES (TOTAL)	
227	ZINC	15176-26-8

Psoc Type Code	*Psoc Type Name*
14	WASTE

Psoc Subtype Code	*Subtype Name*
15	VOLUNTARY CLEANUP - TCEQ

Description:

This dataset contains businesses in Texas that have decided to participate in the TCEQ Voluntary Cleanup Program. These sites have some degree of contamination. Chemicals associated with these facilities are site-specific. This data was primarily obtained through the Texas Commission of Environmental Quality voluntary cleanup files. Most of the locations were obtained using a variety of techniques, including using address-matching software with site addresses.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
14	WASTE

Psoc Subtype Code	*Subtype Name*
16	WASTE REGISTRATION - TCEQ

Description:

This dataset contains businesses in Texas that have registered their waste with the TCEQ. Chemicals associated with these facilities are site-specific. This data was primarily obtained through the Texas Commission of Environmental Quality waste registration permit files. Most of the locations were obtained using address-matching software with site addresses.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code *Psoc Type Name*

14 WASTE

Psoc Subtype Code *Subtype Name*

17 OILFIELD SLUDGE DISPOSAL

Description:

This dataset contains sites with oilfield sludge disposal as referenced on USGS topographic maps. Contaminants are associated with petroleum. The locations were obtained by digitizing topographic maps.

Required Information:

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
11	1,2,4-TRIMETHYLBENZENE	95-63-6
15	1,3,5-TRIMETHYLBENZENE	108-67-8
34	4-ISOPROPYLTOLUENE	99-87-6
36	ACENAPHTHENE	83-32-9
48	ANTHRACENE	120-12-7
54	BARIUM	16541-35-8
56	BENZENE	71-43-2
57	BENZO[A]ANTHRACENE	56-55-3
58	BENZO(A)PYRENE	50-32-8
66	BROMIDE	
85	CHLORIDE	16887-00-6
91	CHRYSENE	218-01-9
105	DIBENZ[A,H]ANTHRACENE	53-70-3
125	ETHYLBENZENE	100-41-4
128	FLUORENE	86-73-7
141	HYDROGEN SULFIDE	15035-72-0
145	ISOPROPYLBENZENE	98-82-8
150	M + P XYLENE	106-42-3
151	MAGNESIUM	14581-92-1
164	M-XYLENE	108-38-3
165	NAPHTHALENE	91-20-3
166	N-BUTYLBENZENE	104-51-8
172	N-PROPYLBENZENE	103-65-1
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
189	PYRENE	129-00-0
194	S-BUTYLBENZENE	135-98-8
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
204	T-BUTYLBENZENE	98-06-6
205	TDS	
211	TOLUENE	108-88-3
226	XYLENES (TOTAL)	

Psoc Type Code	*Psoc Type Name*
14	**WASTE**

Psoc Subtype Code	*Subtype Name*
19	RECYCLING FACILITY

Description:

This dataset contains sites where waste is collected and processed for recycling. Contaminants are site-specific. This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Site specific chemical use should be determined.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
14	WASTE

Psoc Subtype Code	*Subtype Name*
20	CATTLE DIPPING VAT

Description:

This dataset contains sites where cattle were dipped into pesticides using a vat, trough, or tank. Contaminants are associated with pesticides. This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Site specific chemical use should be determined.

Contaminant Groups: Inorganics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
51	ARSENIC	15584-04-0

Psoc Type Code	*Psoc Type Name*
14	WASTE

Psoc Subtype Code	*Subtype Name*
21	LIVESTOCK OR ANIMAL PENS

Description:

This dataset contains sites where livetock is kept in pens. Contaminants are associated with animal waste. This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Contaminant Groups: Inorganics

Microbiological

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
85	CHLORIDE	16887-00-6
95	CRYPTOSPORIDIUM PARVUM	
127	FECAL VIRUSES	
131	GIARDIA LAMBLIA	
168	NITRATE	14797-55-8
169	NITRATE+NITRITE	
170	NITRITE	14797-65-0
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
213	TOTAL COLIFORM	

Psoc Type Code	*Psoc Type Name*
14	**WASTE**

Psoc Subtype Code	*Subtype Name*
22	GROUNDWATER CONTAMINATION SITE

Description:

This dataset contains sites with known groundwater contamination, but the source is not attributable to a psoc site. Contaminants are site-specific. This data was primarily obtained through field work associated with the wellhead and source water assessment inventories. Most of the locations were obtained by digitizing topographic maps or using GPS receivers.

Required Information:

Applicable TCEQ Site ID numbers. Site specific chemical use should be determined.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

Psoc Type Code	*Psoc Type Name*
14	**WASTE**

Psoc Subtype Code	*Subtype Name*
23	SALT WATER DISPOSAL PIT

Description:

This dataset contains sites with oilfield saltwater disposal. Contaminants are associated with petroleum brine production. Sites were discovered with field work or literature review. The locations were obtained by digitizing topographic maps.

Required Information:

Contaminant Groups: Inorganics

Organics

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*
11	1,2,4-TRIMETHYLBENZENE	95-63-6
15	1,3,5-TRIMETHYLBENZENE	108-67-8
34	4-ISOPROPYLTOLUENE	99-87-6
36	ACENAPHTHENE	83-32-9
48	ANTHRACENE	120-12-7
54	BARIUM	16541-35-8
56	BENZENE	71-43-2
57	BENZO[A]ANTHRACENE	56-55-3
58	BENZO(A)PYRENE	50-32-8
66	BROMIDE	
85	CHLORIDE	16887-00-6
91	CHRYSENE	218-01-9
105	DIBENZ[A,H]ANTHRACENE	53-70-3
125	ETHYLBENZENE	100-41-4
128	FLUORENE	86-73-7
141	HYDROGEN SULFIDE	15035-72-0
145	ISOPROPYLBENZENE	98-82-8
150	M + P XYLENE	106-42-3
151	MAGNESIUM	14581-92-1
164	M-XYLENE	108-38-3
165	NAPHTHALENE	91-20-3
166	N-BUTYLBENZENE	104-51-8
172	N-PROPYLBENZENE	103-65-1
176	O-XYLENE	95-47-6
188	P-XYLENE	106-42-3
189	PYRENE	129-00-0
194	S-BUTYLBENZENE	135-98-8
198	SODIUM	17341-25-2
203	SULFATE	14808-79-8
204	T-BUTYLBENZENE	98-06-6.
205	TDS	
211	TOLUENE	108-88-3
226	XYLENES (TOTAL)	

Psoc Type Code	*Psoc Type Name*
15	**CLASS IV INJECTION WELL**

Psoc Subtype Code	*Subtype Name*
1	CLASS 4 INJECTION WELL

Description:

This dataset contains sites with class 4 injection wells. These injection wells are illegal, where contaminants are injected into a drinking water aquifer. Contaminants are site-specific. The locations were obtained through field work by digitizing topographic maps.

Required Information:

Site specific chemical use should be determined.

Contaminant Groups:

Contaminants:

Contaminant Code	*Contaminant Name*	*CAS Number*

PSOC database development by TCEQ Water Supply Division, Public Drinking Water Section, Source Water Assessment and Protection Team. This report developed in MS Access 2000: dbPsocBuild. mdb, rptPsocNotebook + srp's. 10/07/2003 design. J.E. Meyer, Senior Geologist

APPENDIX 8

MAPS

MAP 1

WATER SOURCE AND POTENTIAL SOURCES OF CONTAMINANTS MAP(S)

0140161 CENTRAL TEXAS WSC
S0140161A

BLACK & WHITE

TOO LARGE TO SCAN

DEVELOPED BY TCEQ

MAP 2

STILLHOUSE HOLLOW LAKE

COLOR

TOO LARGE TO SCAN

DEVELOPED BY TRWA