

SWAP-DSS

Source-Water Assessment Program – Decision Support System

The SWAP-DSS program was developed to assist water-resource managers in Texas protect drinking-water sources by identifying potential contaminants and contaminant sources that could negatively impact thousands of public ground- and surface-water supply systems throughout the State of Texas. The SWAP-DSS application allows this complex process to be based on sound, scientific principles utilized, or developed, by USGS scientists yet be driven by an innovative architecture that makes all of this functionality easily available to the resource managers that require it. The ability of SWAP-DSS to make complex science accessible allows resource managers to effectively prevent possible contamination of public water-supply sources; decrease water treatment costs; more effectively allocate monitoring resources; and increase public awareness about activities that could negatively impact drinking water such as: failing septic systems, poorly performing wastewater treatment plants, and(or) businesses such as gas stations and dry cleaners.

The screenshot displays the SWAP-DSS application window. The title bar reads 'Texas Source Water Assessment and Protection Program'. The interface includes a navigation pane on the left with a tree view of system details. The main area shows two tables:

Group	SUMM	Explanation
VOC	medium	Maximum susceptibility rating among 92 out of 92 volatile organic contaminants assessed
SOC	low	Maximum susceptibility rating among 86 out of 86 synthetic organic contaminants assessed
INORGANIC	low	Maximum susceptibility rating among 33 out of 36 inorganic contaminants assessed
DBP	low	Maximum susceptibility rating among 8 out of 7 disinfection byproduct contaminants assessed
MICROBIAL	low	Maximum susceptibility rating among 9 out of 9 microbial contaminants assessed
RADIOCHEMICAL	low	Maximum susceptibility rating among 10 out of 10 radiochemical contaminants assessed
PHYSICAL	-----	No contaminants from this group were assessed
REGULATED	medium	Maximum susceptibility rating among 93 out of 95 regulated contaminants assessed
ASSESSED	medium	Maximum susceptibility rating among 232 out of 232 (of 247) contaminants assessed

ID	Group	Contaminant Name	SUMM	EDGW	ISGW	NP0W	PT0W	CO0W
52	INORGANIC	ASBESTOS	low	low	-----	-----	-----	-----
53	SOC	ATRAZINE	low	low	-----	-----	-----	-----
54	INORGANIC	BARIUM	low	low	-----	-----	-----	-----
55	SOC	BENTAZONE	low	low	-----	-----	-----	-----
56	VOC	BENZENE	medium	low	-----	-----	high	-----
58	SOC	BENZOSUPHRENE	low	low	-----	-----	-----	-----
57	SOC	BENZOSANTHRACENE	low	low	-----	-----	-----	-----
59	SOC	BENZOPHANTHRENE	-----	-----	-----	-----	-----	-----
60	SOC	BENZOSULFONPERYLENE	-----	-----	-----	-----	-----	-----



Potential Applications

- Analysis and assessment of land-use and land-cover changes
- Development of targeted output to support specific permitting decisions such as mining, urban development, and others

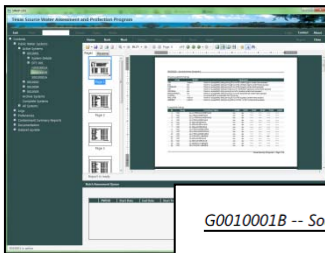
What Makes SWAP-DSS Unique?

- Comprehensive data
- A flexible program structure
- A foundation built on defensible USGS science



SWAP-DSS

SWAP-DSS relies on comprehensive geospatial, water-quality, and other data that includes more than 2-million potential contaminant sources, more than 20 different land-use classifications, more than 4-million water-quality samples, and numerous other hydrological and hydrogeological data sets. The result of the assessments processed by SWAP-DSS is a tailored summary for each of approximately 6,000 public drinking-water systems, with approximately 18,000 drinking-water sources among them, that details each source and system's susceptibility to over 200 drinking-water contaminants (an example page from this report is shown below). Water-resource managers may then save, print, or otherwise use these assessments to effectively target potential contaminant sources, allocate personnel and other limited resources to address specific targets and issues, and improve planning and management practices based on informed decisions.



G0010001B -- Source Summary Component

Group Susceptibility Ratings

Group	SUMM	Explanation
VOC	medium	Maximum susceptibility rating among 92 out of 93 volatile organic contaminants assessed
SOC	low	Maximum susceptibility rating among 86 out of 92 synthetic organic contaminants assessed
INORGANIC	low	Maximum susceptibility rating among 33 out of 36 inorganic contaminants assessed
DBP	low	Maximum susceptibility rating among 6 out of 7 disinfection byproduct contaminants assessed
MICROBIAL	low	Maximum susceptibility rating among 5 out of 5 microbial contaminants assessed
RADIOCHEMICAL	low	Maximum susceptibility rating among 10 out of 10 radiochemical contaminants assessed
PHYSICAL	----	No contaminants were assessed from this group
REGULATED	medium	Maximum susceptibility rating among 93 out of 95 regulated contaminants assessed
ASSESSED	medium	Maximum susceptibility rating among 232 out of 232 (of 247) contaminants assessed

Susceptibility Ratings

ID	Group	Contaminant Name	SUMM	IDGW	ISGW	NPGW	PTGW	COGW
1	VOC	1,1,1,2-TETRACHLOROETHANE	low	low	----	----	----	----
2	VOC	1,1,1-TRICHLOROETHANE	low	low	----	----	----	----
3	VOC	1,1,2,2-TETRACHLOROETHANE	low	low	----	----	----	----
4	VOC	1,1,2-TRICHLOROETHANE	low	low	----	----	----	----
5	VOC	1,1-DICHLOROETHANE	low	low	----	----	----	----
6	VOC	1,1-DICHLOROETHYLENE	low	low	----	----	----	----
7	VOC	1,1-DICHLOROPROPENE	low	low	----	----	----	----
8	VOC	1,2,3-TRICHLOROBENZENE	low	low	----	----	----	----
9	VOC	1,2,3-TRICHLOROPROPANE	low	low	----	----	----	----
10	VOC	1,2,4-TRICHLOROBENZENE	low	low	----	----	----	----
11	VOC	1,2,4-TRIMETHYLBENZENE	low	low	----	----	low	----
12	VOC	1,2-DICHLOROETHANE	low	low	----	----	----	----
13	VOC	1,2-DICHLOROPROPANE	low	low	----	----	----	----
14	VOC	1,2-DIPHENYLHYDRAZINE	low	low	----	----	----	----
15	VOC	1,3,5-TRIMETHYLBENZENE	low	low	----	----	----	----

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Additional Information and Contacts

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