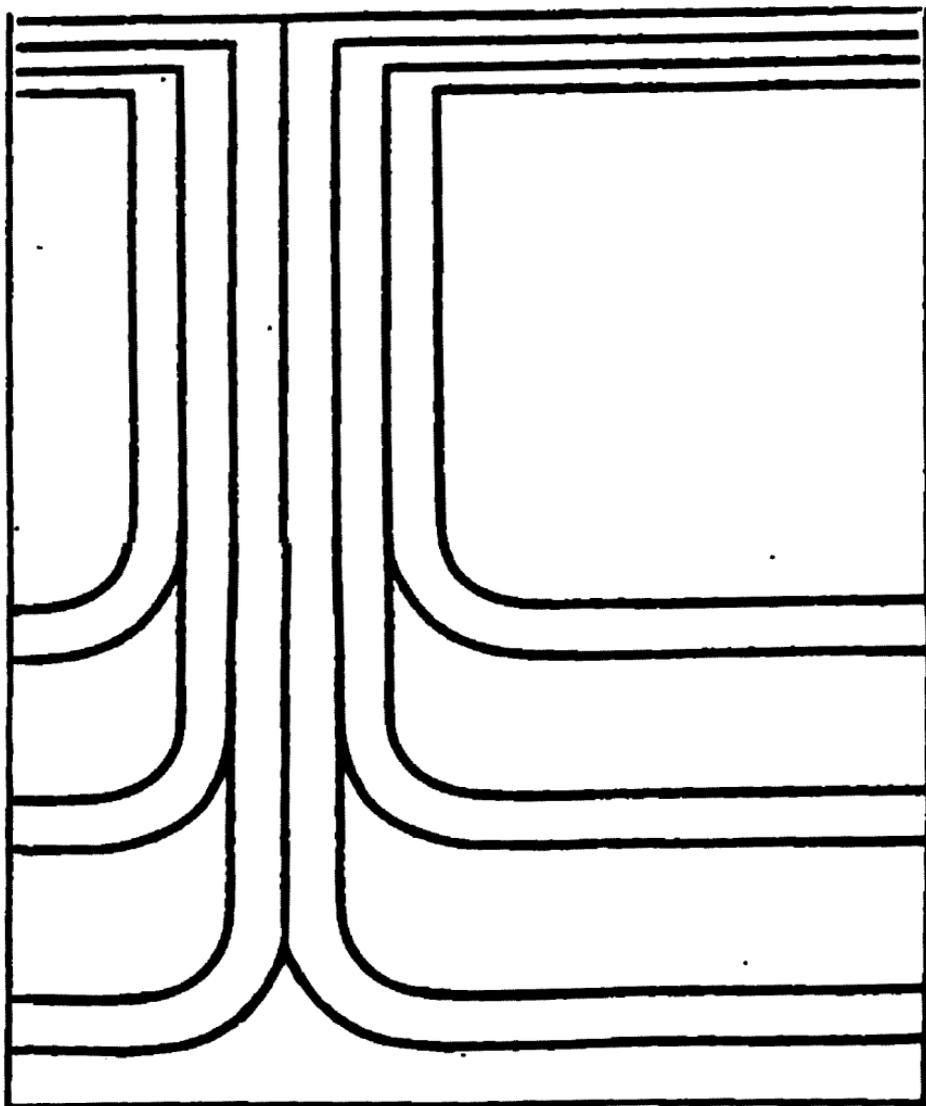


Office Of Water(WH-550G)



The Minimum Set Of Data Elements For Ground Water Quality

Fact Sheet On
Implementation
For EPA And
EPA Contractors



Why a Minimum Set of Data Elements for Ground Water Quality?

As a part of the Environmental Protection Agency's (EPA) continuing commitment to protect the Nation's ground water resources, the Agency has identified a critical need to improve the management of ground water information.

To meet this need, EPA's Office of Ground Water and Drinking Water, with the help of numerous State and Federal officials, has established a Minimum Set of Data Elements for Ground Water Quality (MSDE).

What is the MSDE?

The MSDE is "the minimum number of elements necessary to use ground water quality data . . . across related programs." It is a set of 21 ground water quality-related data elements that contain geographic, well and sample descriptors.

These data elements form a standard data set that EPA and States can use to improve their ability to store and manipulate ground water data in order to support better environmental decision-making and promote the integration of related environmental programs. The MSDE will also allow EPA, other Federal agencies and States to share data across agencies, offices and programs to accurately identify environmental risks associated with ground water contamination and to measure progress in efforts to protect ground water.

EPA is prescribing data formats in the MSDE for a limited number of elements to ensure conformance with EPA and Federal government policies. For most of the elements in the MSDE, however, EPA does not prescribe but rather suggests data storage conventions.

How does the MSDE affect EPA and EPA contractors?

In October 1992 EPA issued a Policy Order requiring EPA staff and contractors, including those involved in research and development and enforcement activities, to use the MSDE in all ground water data collection activities.

EPA Program Offices and Regions shall incorporate this policy into their ground water data collection activities through appropriate mechanisms, including:

- Regulations;
- Policies;
- Directives;
- Orders;
- Guidance or Procedures.

In such instances, incorporation of the MSDE should be consistent with statutory and other significant policy, such as administrative and technical considerations.

This policy order does not preclude the EPA and its contractors from imposing more stringent accuracy requirements or from employing alternative ground water data collection schemes in future activities.

In addition, EPA encourages all organizations that collect ground water quality data to adopt and use the MSDE. Such organizations include State and local governments, EPA grantees, other Federal agencies, the regulated community, associations and other members of the ground water community.

How did the MSDE develop?

EPA began developing the MSDE as a result of a Ground Water Data Requirements Analysis conducted in 1987. An issue consistently identified during this analysis was the need to improve access to ground water data and the need to standardize data elements to increase information sharing capabilities. In response to this need, EPA conducted a workshop in 1988 to discuss the development of a minimum set of data elements for ground water quality.

EPA also developed an MSDE guidance document that includes definitions, discussions and examples of use for each element in the MSDE. The development of the MSDE guidance involved an iterative process of drafting and peer review by a work group of representatives from EPA, other Federal agencies and States. The 21 elements that comprise the MSDE represent the *minimum* data elements officials should consider when collecting ground water quality data. These elements form a core of ground water data elements upon which data managers can build data bases by adding additional elements.

The MSDE

The Minimum Set of Data Elements are subdivided into four categories:

1. General Descriptor #1
2. Geographic Descriptors #2-10
3. Well Descriptors #11-15
4. Sample Descriptors #16-21

The Minimum Set of Data Elements consists of the following elements:

1. Data Sources
2. Latitude
3. Longitude
4. Method Used to Determine Latitude and Longitude
5. Description of Entity
6. Accuracy of Latitude and Longitude Measurement
7. Altitude
8. Method Used to Determine Altitude
9. State FIPS Code
10. County FIPS Code
11. Well Identifier
12. Well Use
13. Type of Log
14. Depth of Well at Completion
15. Screened/Open Interval
16. Sample Identifier
17. Depth to Water
18. Constituent or Parameter Measured
19. Concentration/Value
20. Analytical Results Qualifier
21. Quality Assurance Indicator

What are the benefits of incorporating the MSDE into current activities?

There are a number of benefits to adopting and using the MSDE. The MSDE ensures consistency in the type and quality of ground water data collected by all users of this data set.

By using the same data elements, that have the same definitions, members of the ground water community can easily share important ground water quality data. Such sharing facilitates effective and efficient information exchange within and between Federal, State and local programs. Examples of activities the MSDE will facilitate are:

. **Regional Data Management.** Operating regional data management orders requires the integration of data bases. Use of a common minimum set of data elements eliminates time consuming and costly efforts to make data bases compatible.

. **STORET and FRDS.** In response to the MSDE Order, EPA is incorporating the MSDE into the modernization of the Federal Reporting Data System (FRDS) and the Office of Water's STOrage and RETrieval System (STORET).

FRDS is an automated data base supporting the Public Water Systems Supervision Program operated by the EPA's Office of Ground Water and Drinking Water. This data base, which is being modernized, is a repository for data on public water

supplies and compliance monitoring requirements and regulations of the Safe Drinking Water Act Amendments of 1986.

STORET, one of the oldest and largest water information systems, is undergoing a major modernization. STORET forms the basis for many other water information systems. Designed to reside on EPA's mainframe computer, the modernized STORET will provide enhanced capabilities to describe the more than 150 million parametric observations currently residing within the system.

Including the MSDE in FRDS and STORET is expected to greatly increase the utilization of ground water data between EPA programs and Federal, State and local agencies.

. Geographic Information Systems.

Geographic information system (GIS) applications often rely on data from several different data bases. The strength of a GIS lies in its ability to overlay numerous layers of location-related information. Entering data into a GIS is the most time-consuming component of GIS work. Differing means of locating sites and of describing the features at those sites can make operating a GIS difficult. Therefore, standardizing data, through efforts such as the MSDE, can simplify the use of a GIS.

. State Ground Water Programs.

Incorporating the MSDE will assist States in achieving formal endorsements of their Core Comprehensive State Ground Water Protection Programs (CSGWPPs) from EPA.

Implementation of the MSDE will also help EPA and States to efficiently measure progress in and document the success of CSGWPPs.

Where Can I Get More Information on the MSDE?

More information can be found in the following documents:

EPA Policy Order No. 7500.1A,
October 1992.

Definitions for The Minimum Set of Data Elements for Ground Water Quality, EPA 813/B-92-002, July 1992 (guidance document).

Minimum Set of Data Elements for Ground Water Quality - Brochure

Copies of these documents may be obtained by calling:

U.S. EPA
Safe Drinking Water Hotline
1-800-426-4791

or writing:

U.S. EPA
Office of Ground Water and Drinking
Water Resource Center
401 M Street, S.W., RC-4100
Washington, D.C. 20460