

WATER QUALITY MONITORING PROTOCOLS – REPORT NO. 9

**RESPONSE TO GROUND WATER CONTAMINANTS
DETECTED THROUGH IDAHO'S STATEWIDE
AMBIENT GROUND WATER QUALITY MONITORING PROGRAM**

**IDAHO DEPARTMENT OF HEALTH AND WELFARE
DIVISION OF ENVIRONMENTAL QUALITY**

**RESPONSE TO GROUND WATER CONTAMINANTS
DETECTED THROUGH IDAHO'S STATEWIDE
AMBIENT GROUND WATER QUALITY MONITORING PROGRAM**

Prepared By:

John Cardwell
Environmental Hydrogeologist

Idaho Department of Health and Welfare
Division of Environmental Quality
Monitoring and Technical Support Bureau
1410 North Hilton
Boise, Idaho 83706

January, 1995

Costs associated with this publication are available from the
Department of Health and Welfare
IDHW-200,83149,5/95.Cost per unit: 3.52

TABLE OF CONTENTS

INTRODUCTION	1
Background	1
Public Health Concerns.....	2
Protocol Goal	2
Protocol Objectives	2
NOTIFICATION PROCEDURE	4
Agency Notification	4
Public Notification	4
PROTOCOL	5
Initial Screening	5
Field Screening	6
Extent Of Contamination	8
Inventory of Potential Sources	11
QUALITY ASSURANCE PROJECT PLANS (QAPPs)	13
QAPP Development.....	13
QAPP Distribution	13
DATA MANAGEMENT	14
Data Management Services.....	14
Data Archiving And Retrieval Services.....	15

ACKNOWLEDGEMENTS	16
LITERATURE CITED	17
APPENDICES	19
APPENDIX A. District Health Department Contacts	19
APPENDIX B. Selected Ground Water Quality Information Sources	21
APPENDIX C. Idaho Department of Water Resources Contacts for Obtaining Well Driller’s Reports	23
APPENDIX D. Water Table Elevation Record Form	25
APPENDIX E. Assessing Sample Station Integrity.....	27
APPENDIX F. Selected Pollutants measured by Idaho’s Statewide Ambient Monitoring Program and Their Most Commonly Associated Uses	30
APPENDIX G. Selected Analytes Measured by Idaho’s Statewide Ambient Monitoring Program and Their Most Commonly Associated Uses	32
APPENDIX H. Compliance Agencies.....	39
APPENDIX I. Idaho Department of Health and Welfare Laboratory Contacts	44
APPENDIX J. Request For Sample Station Identification Number	46
APPENDIX K. Sample Station Descriptor Codes, Values, and Definitions.....	50
APPENDIX L. Ground Water Contaminant Analyte Codes	63
APPENDIX M. Request for Data Entry Form	69

ABSTRACT

The Idaho Ground Water Quality Protection Act of 1989, requires implementation of a three part ground water quality monitoring program. Division of the three part monitoring program is based on scale: Statewide, Regional, and Local. The Idaho Department of Water Resources is responsible for implementation of the Statewide Ambient Ground Water Quality Monitoring Program. The primary purpose of statewide monitoring is to identify long-term statewide trends in ambient ground water quality. Ground water quality problems detected by the statewide program are to be evaluated, using regional and local monitoring, by the Division of Environmental Quality. The primary purpose of regional monitoring is to identify regional ground water quality trends and investigate problems to distinguish between point and nonpoint source impacts. The primary purpose of local monitoring is to investigate point source impacts and ensure compliance through permit or consent order monitoring requirements.

This document provides guidance to the Idaho Division of Environmental Quality for response to ground water quality contaminant detections reported by the Idaho Statewide Ambient Ground Water Quality Monitoring Program. The decision to respond to a reported detection is based on regional priorities and available resources, present water quality conditions, vulnerability of the ground water system to contamination, and the existing and projected future uses of the water. For the purposes of this document, a detection may be the discovery of a non-naturally occurring contaminant in a ground water sample, an exceedance of a maximum contaminant level for a particular contaminant, or elevated contaminant levels relative to background conditions.

The goal of this protocol is to describe how DEQ may investigate a contaminant detected through statewide monitoring. The objective of this protocol is to establish consistent guidance for development of information to be provided to DEQ Regional Administrators for determination of the applicable management, permit compliance, or regulatory program to receive and subsequently respond to, the ground water quality problem identified.

The procedures outlined in this protocol provide a phased approach to characterize the nature and extent of the reported contamination. Each phase can be distinguished by a determination as to whether the reported contaminant detection is; associated with known problem or existing project; persistent or non-persistent; isolated, localized, or regional; or whether the detection can be associated with a suspected source. This information, along with applicable toxicological, geographic, and demographic information can provide a basis for water quality management decisions.

INTRODUCTION

This document provides guidance to the Idaho Division of Environmental Quality (DEQ) for response to ground water quality contaminant detections reported by the Idaho Statewide Ambient Ground Water Quality Monitoring Program. The decision to respond to a reported detection is based on regional priorities and available resources, present water quality conditions, vulnerability of the ground water system to contamination, and the existing and projected future uses of the water. For the purposes of this document, a detection may be the discovery of a non-naturally occurring contaminant in a ground water sample, an exceedance of a maximum contaminant level for a particular contaminant, or an elevated contaminant level relative to background conditions.

This protocol is one of a series intended to help provide guidance and consistency in water quality monitoring methods in Idaho resulting from the *Coordinated Nonpoint Source Water Quality Monitoring Program for Idaho* (Clark, 1990). This protocol is intended to be used in conjunction with the *Ground Water and Soils Quality Assurance Project Plan (QAPP) Development Manual* (Winter, 1993) and the standard operating procedures contained within it. Protocol documents are important in providing general guidance and statewide consistency, but are not intended to replace the field presence of an experienced professional.

Background

The Idaho Ground Water Quality Protection Act of 1989, requires implementation of a comprehensive ground water monitoring program (Ground Water Quality Council, 1992). A three part monitoring approach has been developed to implement Idaho's ground water quality monitoring program;

- Statewide,
- Regional and,
- Local.

The Idaho Department of Water Resources (IDWR) is responsible for implementation of the Statewide Ambient Ground Water Quality Monitoring Program (Ground Water Quality Council, 1992). The program is designed to identify long-term statewide trends in ambient ground water quality. Ground water quality problems detected by the statewide program are to be evaluated, using regional and local monitoring, by the Division of Environmental Quality (DEQ). The primary purpose of regional monitoring is to identify regional ground water trends and investigate identified ground water quality problems to distinguish between point and nonpoint source impacts. The primary purpose of local monitoring is to address point source impacts and ensure compliance through permit monitoring requirements.

While DEQ is designated as the primary agency to coordinate and administer ground water quality protection programs for the state, numerous other local, state, and federal agencies are involved with management of facilities, practices, or materials having the potential to impact ground water quality or be affected by impacted ground water quality. Dependent on contaminant characteristics, type of facility, and/or operation, implementation of this protocol should be coordinated with these agencies.

Public Health Concerns

Outstanding public health issues should be of immediate concern when formulating initial response actions. Issuance of public health advisories should be coordinated and implemented through appropriate District Health authorities and consideration should be given to notification of authorities responsible for public drinking water systems and private water supply systems. District health authority contacts are listed in Appendix A.

Protocol Goal

The goal of this protocol is to describe how DEQ may investigate a contaminant detected by the Idaho Statewide Ambient Ground Water Quality Monitoring Program. The procedures outlined in this protocol provide a phased approach to characterize the nature and extent of the reported contamination. This information along with available toxicological, geographic, and demographic information can provide a basis for water quality management decisions.

Protocol Objectives

This protocol is intended for application to routine ground water quality monitoring activities. For those situations requiring immediate actions to minimize imminent and substantial danger to public health or the environment, more appropriate procedures, such as complaint or emergency response contingency, should be considered.

The objective of this protocol is to establish guidance for development of a common core set of information to be provided to DEQ Regional Administrators for determination of the applicable management, permit compliance, or regulatory program to receive and subsequently respond to, the ground water quality problem identified. The type of contaminant, facility, or operation suspected of impacting ground water quality should determine which management, permit compliance, or regulatory program or agency should be notified for response. Applicable programs or agencies may be local, state, and/or federal.

A phased approach, terminated when the applicable program or agency can be identified, is suggested. Each phase can be distinguished by the determination as to whether the reported contaminant detection is;

1. Associated with known problem or existing project,

Initial screening should determine whether the contaminant detection is being addressed through existing efforts. If the contaminant detection is part of an existing effort, any monitoring information should be forwarded to the effort.

2. Persistent or non-persistent,

Field screening requires re-sampling the station yielding the contaminated sample. This will assist in determine whether the contaminant is persistent, intermittent, or unusual. Persistence may indicate the type of contaminant source (unusual or solitary contaminant release versus a continuous or uniform release) or whether a temporal or fluctuating ground water flow system is present. Persistency also may assist in determining appropriate health protection actions for the exposed population and environment.

3. Isolated, local, or regional,

Sampling to determine whether the detected contamination is isolated, localized, or regional will help determine the extent of the contamination. The extent of contamination should assist in evaluating potential geographic and demographic impacts.

4. Associated with a suspected source,

A survey of potential sources of the detected contaminant will assist in, and may possibly identify, the responsible facility, operation, or practice.

Investigation efforts should be terminated when the applicable management, permit compliance, or regulatory program or agency can be identified. Identification of the applicable program or agency may be accomplished through an evaluation of existing responsibilities for environmental control of the identified contaminant, facility, operation, or practice. Identification of a suspected source may be accomplished through an inferred association of contaminant characteristics, contaminant detection locations, and potential hydrogeologic transport routes from a potential source.

Further monitoring should be considered compliance or program specific and best addressed through program guidance. Assistance in compliance monitoring should be obtained from specific oversight programs or from publications such as DEQ's *A Guide to Ground Water Sampling And Monitoring, Water Quality Report #69* (Ogden, 1987), Environmental Protection Agency's (EPA) *Hazardous Waste Ground Water Task Force, Protocol for Ground Water Evaluations* (EPA, 1986a), EPA's *Ground Water Technical Enforcement Guidance Document* (EPA, 1986b), or EPA's *Compendium of Emergency Response Team Ground Water Sampling Procedures* (EPA, 1991).

NOTIFICATION PROCEDURE

Contaminant detections discovered through the Statewide Ambient Ground Water Quality Monitoring program are evaluated through a comparison with Federal Primary Safe Drinking Water Standards for Public Water Supplies. Those detections which meet or exceed a referenced standard will prompt a notification of a ground water contaminant detection.

Agency Notification

The statewide monitoring program will provide a tabulated report to DEQ Regional Administrators listing ground water contamination detections discovered within the respective DEQ regions. Notification also will be provided to District Health Environmental Health Directors and the Idaho Department of Agriculture, Division of Agricultural Technologies.

Additional raw data and wellhead information can be obtained upon request from the Statewide Ambient Ground Water Quality Monitoring program (208) 327-7900, and through the Idaho Environmental Data Management System (EDMS). EDMS provides raw data and custom reports of ground water contaminant detections. Electronic file reports may be obtained directly from EDMS. Tabulated or individual hard copy reports may be obtained from the Department of Water Resources, (208) 327-7900, or DEQ central office Monitoring and Technical Support Bureau, (208) 334-5860. Raw ground water quality data may provide background information to assist in characterizing the reported detection.

Public Notification

The Statewide Ambient Ground Water Quality Monitoring program will inform well owners and users of the sample analysis results and also provide information concerning potential impacts to water users. The notification letter to the well owner or user may reference DEQ staff for additional information. Staff should have on hand available information to address concerns from interested well owners and be prepared to discuss regional and local ground water quality conditions.

Useful information to address questions and concerns from well owners and users are listed below. This information is available through the DEQ Monitoring and Technical Support Bureau (208) 334-5860.

- EPA's *Health Advisory Summaries and Contaminant Fact Sheets*,
- National Sanitation Foundation's *Standards for Listed Drinking Water Treatment Units*,
- DEQ's *Listing of Certified Drinking Water Laboratories*,
- Idaho Cooperative Extension System's *Water Quality Publications* and,
- DEQ's *Pollution Prevention Information Pamphlets*.

PROTOCOL

Upon notification of a ground water contaminant detected through the Statewide Ambient Ground Water Quality Monitoring program, DEQ Regional Administrators should determine an appropriate response action based on regional priorities and available resources, present water quality conditions, vulnerability of the ground water system to contamination, and the existing and projected future beneficial uses of the water (Ground Water Council 1992).

Dependent on the respective Regional Administrator's decision, investigators may chose to complete all, or portions of, the following investigative phases; initial screening, field screening, extent characterization, and survey of potential contaminant sources.

INITIAL SCREENING

Determine whether the contaminant detection is associated with a known problem or existing efforts.

Procedure:

1. Locate the contaminated well(s) on a 1:24,000 scale project map. A 1:24,000 scale map may be required later to establish a DEQ sampling station identification number.

Using state plane coordinates and reference datums, record the location of the sampled well and several sections surrounding it (township, range, and section may be required later to obtain well driller's reports). For the purpose of this protocol, this area is referred to as the area of concern. Discretion should be used when determining actual area boundaries to ensure the area selected is representative of the hydrogeologic regime of concern. Consideration should be given to:

- water table divide · barrier locations · direction of flow
- water levels · stratification and, · depth confining layers.

2. Obtain all applicable information relative to the area of concern and the reports contaminant.

A selection of ground water quality information sources are listed in Appendix B. Applicable information includes, but may not be limited to:

- known problems · existing projects · potential sources
- hydrogeology · water quality data · regional geography and,
- demographic features.

3. Plot the information obtained on the project map and determine any demographic, geographic, hydrogeologic, potential source facilities, and potential land use relationships with the contaminated well or the contaminant of concern.

Particular attention should be given to potential ground water/contaminant flow paths, contaminant transport behavior and regional hydrogeology. Ground water flow direction may be inferred through analysis of water levels listed in well driller's reports. Department of Water Resources contacts for obtaining well driller's reports are listed in Appendix C.

4. Results:

- A. If the reported detection can be associated with existing efforts or is part of a known problem, the information acquired should be provided to the identified project or program data file for future reference. Further monitoring using this protocol may not be necessary.
- B. If the reported detection can not be associated with a known problem or existing project, additional information may be obtained to determine the persistence of the contaminant.

FIELD SCREENING

Determine whether the detection is persistent.

Procedure:

1. Re-sample the well.

If possible measure the depth to water in the well and the well discharge rate during heavy use. An example form for recording water table elevation measurements is included in Appendix D.

2. Conduct a detailed wellhead assessment to determine the potential for the detected contaminant to be a direct result of poor wellhead protection practices.

The assessment should note well construction, well location, location of potential sources, and general wellhead sanitation. A work sheet to assess wellhead condition has been developed by the University of Wisconsin (Kammel 1991). An adaptation of the work sheet is included in Appendix E.

3. Results:

- A. A determination as to contaminant persistence may be implied with a second positive detection.
- B. A non-persistent contaminant may be implied with a non detection measurement with a second sample.

Caution must be used when making persistence determinations with respect to temporal influences on water quality variations. In a general sense, a persistent contaminant may indicate a more continuous contaminant release than a non persistent contaminant. A non-persistent contaminant may indicate amore solitary or unusual contaminant release as compared to a persistent contaminant. For example, a single application of a pesticide compound may lead to a non-persistent contaminant, where as, a continuous leaking underground storage tank may provide a more persistent contaminant.

4. Additional Monitoring:

- A. Further monitoring of a non-persistent contaminant using this protocol should be limited to re-sampling of the station to determine the potential for temporal recurrence.
- B. Further monitoring of a persistent contaminant using this protocol should attempt to characterize the horizontal and vertical extent of the contamination.

EXTENT OF CONTAMINATION

Determine the horizontal and vertical extent of the detected contamination and determine whether the detected contaminant reflects an isolated, regional, or a localized problem.

Procedure:

1. Establish a regional scale monitoring well network using existing wells within and near the area of concern.

Domestic wells or small quantity irrigation wells are preferred over larger producing wells to minimize agitation of any samples collected. Adequately protected wellhead areas are preferred over poorly protected wellhead areas to ensure samples collected are representative of the area's ground water quality and not an isolated contaminant source at the wellhead. Documented and properly constructed wells are preferred over undocumented or poorly constructed wells to ensure identification of the strata being sampled and to minimize cross contamination of water within the borehole or through a damaged casing.

The Sample Station Integrity work sheet in Appendix E may assist in assessing wellhead areas for use as a sampling station.

Sample site selection is critical to a successful investigation. The number and location of sampling stations need to consider three major perspectives: spatial coverage, available wells, and project budget.

When locating ground water monitoring wells, the soils and geology, the direction of ground water flow, and the type of ground water system needs to be considered. More than one well should be located up gradient, within, and down gradient from the area of concern. When actual ground water flow patterns are not well understood, the wells should be located, if possible, in a concentric or spiral pattern centered around the original well with the distance between wells increasing as the distance from the original well increases.

Generally, 5 to 25 additional wells located within a 50 to 30,000 acre area, with consideration given to the known or suspected direction of ground water flow, is a reasonable initial approach. One well should be selected to represent approximately 10 to 1,000 acres depending on the nature of the contaminant and its potential to originate from a single source or multiple sources. Contaminant with the potential to originate from a single source, gasoline for example, generally require a smaller scale network than contaminants with a potential to originate from multiple sources, such as nitrate for example.

Once the number and spatial coverage of sampling stations have been determined, simple random and stratified random sampling techniques should be employed to eliminate undesirable bias during individual well selection.

Simple random sampling is a process where each station within the total available population has an equal chance of being selected. The random selection of sampling stations should be completed after screening the total available population of sampling stations for considerations such as well construction, accessibility, sampling port adequacy, and pump size etc.

Stratified random sampling is a process where the screened population of potential sample stations are divided into groups that are more homogeneous than the homogeneity of the total population. More samples are then allocated to groups that have the potential for greater variability than for more homogenous groups. For example, in watershed areas with a greater number of potential sources, more stations may be allocated to these areas than in areas with less potential sources.

In unconfined aquifers, wells selected need to provide a range of screened or open intake intervals. Wells with intake intervals at the same strata within the aquifer as the well which yielded the reported contaminant detection may assist in determining horizontal extent. Wells with intake intervals different than the well which yielded the contaminated sample may assist in determining lateral extent. Open intervals can be determined through well driller's reports (Appendix C).

2. Obtain and analyze ground water quality samples collected from the established monitoring network.

Prior to collecting water quality samples, a quality assurance project plan (QAPP) should be developed, reviewed, and accepted by project personnel and the participating analytical laboratory. Quality assurance project plans are addressed in the quality assurance section of this protocol.

Contaminant and indicator parameters to be analyzed should be selected on a site specific basis. Consideration should be given to:

- common parameter measurements (Ca, Na, K, Cl, Mg, Fe, CO₃, HCO₃, SO₄).
- nutrients (NO₂+NO₃ as N, NH₄ as N),
- physical properties (specific conductance, pH, temperature),
- bacteria (total coliform, coliform density) and,
- the reported contaminant(s) and/or associated contaminant(s) and their respective breakdown products.

3. Plot the wells and the corresponding water quality contaminant data on the project map.

A variety of methods can be used to illustrate ground water data on a map. Ground water flow patterns, chemical concentration contours, sample station sites, and demographic and geographic information can be placed on a map. Computer software systems, such as Geographic Information Systems can provide assistance in development of mapped information.

4. Results:

- A. Generally, if no other wells yield a contaminated sample, the contamination may be considered isolated. A detailed site or wellhead assessment may be satisfactory to identify the contaminant source.
- B. Generally, if a group of wells, but not all wells, yield contaminated samples, the contamination may be considered localized. Localized impacts should be evaluated to determine if the impacted area can be associated with a suspected source.
- C. Generally, if all wells sampled yield contaminated samples and expansion of the network and subsequent sampling of an expanded network continues to yield contaminated samples, the contamination may be considered regional. Detections determined to be a regional problem should be included in applicable watershed management efforts.

5. Additional Monitoring:

Further monitoring using this protocol should be limited to identification of a suspected source of localized contamination.

INVENTORY OF POTENTIAL SOURCES

Determine if a localized contaminant detection can be associated with a suspected source.

Procedure;

1. Identify all potential contaminant sources with respect to the impacted area, and plot them on the project map.

The relative potential of the source to cause the detected impact may be estimated through an evaluation of operational procedures, land use management practices, subsurface geology and hydrogeology, and the volume of the contaminants present on site or handled in a particular operation or practice.

Most common ground water contaminant sources are listed in the EPA Technical Assistance Document, 440/6-90-005 (EPA 1990). An adaption of this list for selected pollutants measured by the Statewide Ambient Ground Water Monitoring program can be found in Appendix F.

Typical uses for chemicals most commonly detected in groundwater are listed in the Groundwater Chemicals Field Guide (Montgomery 1991). Registered uses for pesticide products are listed in the Farm Chemicals Handbook (Sine 1992). An adaptation of these lists for analytes measured by the Statewide Ambient Ground Water Monitoring program can be found in Appendix G.

2. Ground water flow direction, flow gradient, and up gradient and down gradient ground water quality conditions are identified and mapped relative to the impacted area and suspected source.

The type, location, construction, and sampling frequency of any sampling stations installed should be based on available contaminant transport and migration data and site specific conditions.

Wells should be placed up gradient and down gradient of the suspected source, as well as, within the suspected contaminant plume. In situations where the ground water flow gradient is not well defined, monitoring wells should be located as a network in a pattern expanding outward from the impacted well(s) and extended to encompass the area around the suspected source and impacted area.

Equipment and materials used for installation of constructed monitoring wells may vary depending on the type of contaminant being investigated, depth to the water table, and the geographic, geologic, and hydrogeologic features present at the site.

Standard operating procedures for constructing typical ground water quality monitoring wells are detailed in the DEQ *Ground Water and Soils Quality Assurance Project Plan Development Manual* (Winter, 1993). Further information on acceptable practices for construction of monitoring wells can be found in readily available publications such as the National Water Well Association's *Handbook of Suggested Practices for the Design and Installation of Ground Water Monitoring Wells* (Aller et al., 1989), EPA's *Hazardous Waste Ground Water Task Force, Protocol for Ground Water Evaluations* (1986a), and EPA's *Ground Water Monitoring Enforcement Guidance/Technical Enforcement Guidance Document* (1986b).

Identification of a suspected source of localized contamination can be inferred through a survey of detection locations within the monitoring network and the presence of a potential contaminant source. Consideration should be given to regional hydrogeologic characteristics, localized ground water flow, contaminant plume delineation, contaminant transport behavior and potential flow paths, and contaminant concentrations up gradient and down gradient of the suspected source.

Information from site specific studies, such as a site soil and vadose zone characterization, and contaminant transport and migration modeling will assist in the formulation of any conclusions.

3. Results:

- A. If a contaminant plume can be delineated and its origin traced to the location of the suspected source, then the reported detection is likely associated with the suspected source. Detections determined to be associated with a suspected source should be addressed through applicable water quality compliance actions.

Compliance agencies, contacts, and responsibilities are listed in Appendix H.

- B. If a contaminant plume cannot be delineated or traced to the location of the suspected source, then the reported detection is not likely associated with the suspected source. Detections which are not determined to be associated with a suspected source may originate from a different source. Modification of the location of the established network may be needed to evaluate other suspected sources.

4. Additional Monitoring:

Additional monitoring of an identified source should be considered compliance or program specific and best addressed through program guidance.

QUALITY ASSURANCE PROJECT PLANS (QAPPS)

Quality assurance is an integral part of any water quality monitoring project. Data collected in ground water sampling programs must be of sufficient quality to allow proper evaluation and interpretation. Field sampling procedures, performance of appropriate laboratory analysis, and the subsequent management of project monitoring data obtained must be adequately planned and executed to ensure that the data generated is precise, accurate, representative, and appropriate for evaluating the objective of the monitoring project. Adequate project planning can be facilitated through the development, review, and implementation of a Quality Assurance Project Plan (QAPP). All sample collection, sample transport, field measurements, quality assurance/quality control, analytical procedures, and data management should adhere to the QAPP and follow standard operating procedures.

QAPP Development

Information concerning the development of a QAPP, descriptions of DEQ standard operating procedures for ground water monitoring and required levels of data quality assurance are contained in the DEQ *Ground Water and Soils Quality Assurance Project Plan Development Manual* (Winter 1993). Copies of the QAPP development manual are available through the DEQ Monitoring and Technical Support Bureau (208 334-5860).

QAPP Distribution

The QAPP should be submitted for review and concurrence by participating project and laboratory personnel and potentially associated programs and agencies. Review and concurrence of the QAPP is necessary to ensure that data of appropriate and known quality will result from data collection and laboratory analysis activities and, enhance efficiency by coordinating and scheduling project activities.

Project QAPPs should be distributed to personnel involved or responsible for completing project assignments. For the purpose of this protocol these groups may include: field personnel, laboratory personnel, data management personnel, and public health authorities. Contacts for the Idaho Department of Health and Welfare Bureau of Laboratories are listed in Appendix I. The DEQ data management contact is listed in the Data Management Section of this protocol. Public health authority contacts are listed in appendix A.

Field personnel need to review the QAPP to ensure proper understanding and adequate implementation of field monitoring activities. Laboratory personnel need to review the QAPP to ensure laboratory requests and field sampling procedures are appropriate and scheduled to meet analytical method requirements. Data management personnel need to review the QAPP to assign sample station identification numbers and to record sample station locations and characteristics. Public health authorities need to review the QAPP to ensure appropriate information will be gathered to address public health concerns.

DATA MANAGEMENT

Data generated through the application of this protocol may be the foundation for additional ground water quality monitoring or management efforts. In order for the data to be available for subsequent use, the data must be organized and stored in a fashion which allows easy retrieval and evaluation. To ensure data generated will be available for such use, this protocol requires data be submitted to the DEQ Environmental Information Systems Bureau in accordance with the process described below.

DEQ Data Management Services

Data management services currently provided by the DEQ Environmental Information Systems Bureau for this protocol requires data be submitted in accordance with the following process.

Quality Assurance Project Plans (QAPPs) must be submitted to the DEQ Environmental Information Management Systems Bureau and the laboratory performing the analytical measurements desired. The QAPP must include:

1. A *Request For Sample Station Identification Number* form for each sample station, with sample stations located on one or several 1:24,000 scale maps, and a list of analyte codes for the analytical measurements which will be requested for samples submitted to the laboratory. A copy of this form and instructions to complete the form are included in Appendix J, station descriptor codes to use with the form are included in Appendix K. Analyte codes are listed in Appendix L.

The DEQ Environmental Information Systems Bureau will assign individual sample station numbers for each location to be sampled. Station numbers will need to be incorporated into the project QAPP and referenced on laboratory analysis submission forms.

2. After sample analysis has been completed and the results delivered to the project manager, the laboratory analysis reports should be reviewed by project managers to ensure the data meets the project's QA objectives. The laboratory report forms will list the applicable analyte codes for the laboratory measurements completed along with the concentrations measured.
3. Laboratory analysis report forms along with a *Request For Data Entry* form should be forwarded to the DEQ Environmental Information Systems Bureau, Data Management section for inclusion into the DEQ water quality data management systems.
4. A copy of the *Request For Data Entry* form and instructions for completing the form are included in Appendix M.

Information submitted to the DEQ Environmental Information Systems Bureau will be electronically transferred to the Idaho Environmental Data Management System (EDMS) quarterly. Information also may be loaded directly into EDMS by providing QAPP plans and electronic data files to the Idaho Department of Water Resources, EDMS Support, 1301 N. Orchard St., Boise Idaho 83706. Electronic files submitted to EDMS should adhere to the format provided in the IDWR *EDMS Data Providers Manual*. Information linking the DEQ Water Quality Data System with the EDMS system is available through the DEQ Monitoring and Technical Support Bureau (208) 334-5860.

Archiving And Retrieval Services

General data system retrieval and reporting services are available from:

1. the DEQ Environmental Information Systems Bureau, Data Management Section, (208)334-0598 and,
2. the EDMS accessed through the EDMS support group at the Department of Water Resources, (208)327-7900.

Water Quality Status Reports

Field activities, field information gathered, and analytical data obtained through an investigative ground water monitoring project should be compiled and distributed through a Water Quality Status Report.

DEQ Water Quality Status Reports should adhere to the DEQ standardized report format. Guidance for development, publication, and distribution of Water Quality Status Reports can be found in the DEQ Public Information Handbook. Assistance also may be obtained through the DEQ Public Information Office (208) 334-5879. DEQ Regional Administrators will have final approval on and responsibility for all aspects of Water Quality Status reports.

ACKNOWLEDGEMENTS

Thanks are extended to the Idaho Division of Environmental Quality, Community Programs, Regional Office and Central Office staff for providing direction and implementation guidance for activities addressed in this protocol. Thanks also are extended to the Idaho Department of Water Resources and the Idaho Department of Agriculture for their useful comments and suggestions. Special thanks are extended to Don Zaroban, Bill Clark, Robert Steed, Barry Burnell, Sandy Richlen, and Carlton Parker for their invaluable assistance in completing this protocol. Recognition also is given to Suzan Crandall, Kathy Hansen, and Lori Garza for their help in compiling and producing this document.

LITERATURE CITED

- Aller, L., T. Bennett, G. Hackett, R. Petty, J. Lehr, H. Sedoris, D. Nielsen, and J. Denne, 1989. The Handbook of Suggested Practices for the Design and Installation of Ground Water Monitoring Wells, National Water Well Association, Environmental Monitoring Systems Laboratory, Las Vegas, Nevada.
- Clark, W.H., 1990. Coordinated Nonpoint Source Water Quality Monitoring Program For Idaho. Idaho Department of Health and Welfare, Division of Environmental Quality, Boise, Idaho.
- Ground Water Quality Council, 1992. Idaho Ground Water Quality Plan. Idaho Department of Health and Welfare – Division of Environmental Quality, Idaho Department of Water Resources, Idaho Department of Agriculture, Boise, Idaho.
- Kammel, David , 1991. Farmstead Assessment Information System. University of Wisconsin – Cooperative Extension, US Environmental Protection Agency Region V. University of Wisconsin, Madison, Wisconsin.
- Montgomery, J.H., 1991. Groundwater Chemicals Field Guide. Lewis Publishers, Inc., Chelsea, Mississippi.
- Ogden, A.E., 1987. A Guide to Ground Water Sampling And Monitoring. Water Quality Report #69. Idaho Department of Health and Welfare, Division of Environmental Quality. Water Quality Bureau, Boise, Idaho.
- Omicron, 1994. Rapid Assays. Omicron Marketing Department. Newtown, Pennsylvania
- Sine, C., S. Naegely, N. Fisher, F. Vlahovski, E. Weil, W. Rigo, M. Puskas, T. Pierce, 1992. Farm Chemicals Handbook. Meister Publishing Company, Willoughby Ohio.
- U.S. Environmental Protection Agency, 1986a. Hazardous Waste, Ground Water Task Force, Protocol for Ground Water Evaluations, Office of Solid Waste and Emergency Response, Dir. 9080.0-1. Washington D.C.

U.S. Environmental Protection Agency, 1986b. RCRA Ground Water Monitoring Enforcement Guidance/Technical Enforcement Guidance Document (TEGD), Office of Waste Programs Enforcement, Cincinnati, Ohio.

U.S. Environmental Protection Agency, 1987. Ground-Water Data Management With STORET, EPA 440/6-87-005. Washington D.C.

U.S. Environmental Protection Agency, 1990. U.S. EPA Technical Assistance Document, EPA 440/6-90-005. Washington D.C.

U.S. Environmental Protection Agency, 1991. Compendium of ERT Ground Water Sampling Procedures, Office of Solid Waste and Emergency Response, EPA/540/P-91/007. Washington D.C.

Winter, G. 1993. Ground Water and Soils Quality Assurance Project Plan (QAPP) Development Manual. Idaho Department of Health and Welfare, Division of Environmental Quality, Community Programs, Boise, Idaho.

APPENDIX A

DISTRICT HEALTH DEPARTMENT CONTACTS

DISTRICT HEALTH DEPARTMENT CONTACTS

- A. Panhandle District Health Department**
Environmental Health
2195 Ironwood Court
Coeur D'Alene, Idaho 83814
(208) 667-9513
- B. North Central District Health Department**
Environmental Health
215 10th Street
Lewiston, Idaho 83501
(208) 799-0353
- C. Southwest District Health Department**
Environmental Health
920 Main Street
Caldwell, Idaho 83605-3700
(208) 454-7608
- D. Central District Health Department**
Environmental Health
707 N. Armstrong
Boise, Idaho 83704
(208) 327-7499
- E. South Central District Health Department**
Environmental Health
213 Third Avenue East, P.O. Box 547
Twin Falls, Idaho 83303-0547
(208) 734-5900
- F. Southeastern District Health Department**
Environmental Health
465 Memorial Drive
Pocatello, Idaho 83201
(208) 233-9080
- G. District 7 Health Department**
Environmental Health
254 E Street
Idaho Falls, Idaho 83402
(208) 523-5382

APPENDIX B

SELECTED GROUND WATER QUALITY INFORMATION SOURCES

SELECTED GROUND WATER QUALITY DATA BASES

<u>Data Base</u>	<u>Type of Data</u>	<u>Contact</u>
A. STORET	National Water Quality Data Base	DEQ Data Management Bureau, (208) 334-5870 National Help Line, (1-800) 424-9067
B. DWIMS	Drinking Water Information Management System	DEQ Prevention and Certification Bureau, (208) 334-5860
C. EDMS	Environmental Data Management System	Department of Water Resources, (208) 327-7900
D. UST/LUST	Leaking Underground Storage Tanks	DEQ Remediation Bureau, (208) 334- 5860
E. RCRIS	Resource Conservation and Recovery Information System	DEQ Permits and Enforcement Bureau, (208) 334-5898

SELECTED SOURCES FOR CONTAMINATION INFORMATION

<u>Source</u>	<u>Contact</u>
A. Injection well locations	Idaho Department of Water Resources (208) 327-7900
B. Hazardous material spills or unregulated releases	DEQ Regional Offices
C. Permitted operations and facilities	DEQ Division of Permits and Enforcement (208) 334-5898
D. Underground storage tanks, remedial facilities, solid waste sites, confined feeding operation sites	DEQ Community Programs (208) 334-5860
E. Pesticide and fertilizer storage, distribution, and use	Idaho Department of Agriculture (208) 334-3550

SELECTED SOURCES FOR HYDROGEOLOGIC INFORMATION

<u>Source</u>	<u>Contact</u>
A. State Library	(208) 334-2150
B. Idaho Geologic Survey	(208) 385-4002
C. Department of Water Resources	(208) 327-7900
D. Idaho Water Resource Research Institute	(208) 885-642
E. U.S. Geologic Survey	(208) 387-1300

APPENDIX C

**IDAHO DEPARTMENT OF WATER RESOURCES CONTACTS FOR
OBTAINING WELL DRILLER'S REPORTS**

**IDAHO DEPARTMENT OF WATER RESOURCES CONTACTS FOR
OBTAINING WELL DRILLER'S REPORTS**

WESTERN REGION (208) 334-2190
Idaho Department of Water Resources
Western Region
2735 Airport Way
Boise, Idaho 83705

NORTHERN REGION (208) 765-4639
Idaho Department of Water Resources
Northern Region
1910 Northwest Blvd., Suite #2
Coeur D'Alene, ID 83814-2615

SOUTHERN REGION (208) 736-3033
Idaho Department of Water Resources
Southern Region
222 Shoshone St. East
Twin Falls, ID 83301-6105

EASTERN REGION (208) 525-7161
Idaho Department of Water Resources
Eastern Region
900 N. Skyline Dr.
Idaho Falls, ID 83402-1718

STATE OFFICE (208) 327-7900
Idaho Department of Water Resources
1301 N. Orchard
Statehouse Mail
Boise, ID 83720

APPENDIX D

WATER TABLE ELEVATION RECORD FORM

WATER TABLE ELEVATION RECORD

Monitoring Well Identification	Date/Time	Depth to Water	Well Collar Elevation	Water Table Elevation	Comments

APPENDIX E

**ASSESSING SAMPLE STATION INTEGRITY
(Kammell 1991)**

ASSESSING SAMPLE STATION INTEGRITY

1. For each category listed on the left read across to the right and choose the statement that best describes the conditions you observe at the sample station.
2. Enter the “rank number” (4, 3, 2, or 1) of statement chosen in the blank at the right hand side of the page.

	Rank 4	Rank 3	Rank 2	Rank 1	RANK
POLLUTION SOURCES					
Position of well in relation to potential pollution sources	Up slope from all pollution sources. No surface runoff reaches well. Surface water diverted from well.	Up slope from or at grade with pollution sources. No surface water runoff reaches well.	Down slope from most pollution sources. Some surface water runoff may reach well	Settling or depression near casing. Surface water runoff.	_____
Separation distances between well and potential pollution sources	> 250 feet	250-100 feet	100-50 feet	<50 feet	_____
Management of potential pollution sources	Potential pollution sources are contained, no apparent contaminant releases.	Potential pollution sources are contained, apparent contaminant releases.	Potential pollution sources are not contained, no apparent contaminant releases.	Potential pollution sources are not contained, apparent contaminant releases.	_____
CONDITION					
Well casing	Well driller’s report documents well casing extends into the primary water bearing zone..	Well driller’s report documents well casing not extending into the primary water bearing zone.	Well driller’s report documents the well is a drive point, or sand point well.	Well driller’s report documents no casing and the well is not a drive point or sand point well	_____
Borehole/casing seal	Well driller’s report documents space between borehole and casing (surface seal) is filled with a bentonite grout mixture.	Well driller’s report documents space between borehole and casing (surface seal) is filled with clay or grout mixture.	Well driller’s report documents space between borehole and casing (surface seal) is filled with native materials, soils.	Well driller’s report documents space between borehole and casing (surface seal) has not been filled or sealed.	_____
Casing height above land surface	More than 12 inches above grade.	4-12 inches above grade.	At grade or up to 4 inches above.	Below grade or in pit or basement.	_____
Well age	Less than 15 years old.	15-25 years old.	25-40 years old.	More than 40 years old.	_____
Well type	Drilled.	Driven well point (sand point).	Dug well.	Spring	_____

	Rank 4	Rank 3	Rank 2	Rank 1	RANK
MANAGEMENT					
Unused well at site	No unused well at site.	Unused well capped and plugged at site.	Unused well capped but not plugged.	Unused, uncapped, unplugged well at site.	_____
WELL PUMP					
Pump Condition	Pump appears new, shows little or no sign of wear or lubrication leakage. Anti-backflow device installed.	Pump is not worn, shows little or no sign of lubrication leakage. No anti-backflow device	Pump is worn and shows signs of lubrication leakage. Anti-backflow device installed.	Pump is worn, shows signs of lubrication leakage. No anti-back flow device installed.	_____
Pump Fixture	Constructed monitoring well with sealed cap and protective cover, pumping apparatus conforms to acceptable quality assurance protocol.	Domestic size well and pump, secured sanitary cap and seal (top of casing), pump drop pipe or discharge pipe permanently fixed and sealed to well casing.	Domestic size well and pump, unsecured or missing sanitary cap and seal (top of casing), pump drop pipe or discharge pipe permanently fixed and sealed to well casing.	Domestic size well and pump, unsecured or missing sanitary cap and seal (top of casing), Pump drop pipe or discharge pipe not permanently fixed and sealed to well casing.	_____
Sample Tap	Constructed monitoring well, sampling apparatus conforms to acceptable quality assurance protocol.	Domestic well, sample tap located between pump and holding tank.	Domestic well, sample tap located after holding tank and before domestic distribution system.	Domestic well, sample tap located within domestic distribution system.	_____
					TOTAL _____

Divide the total by 12 and carry your answer out to one decimal place. SCORE _____

3.6 – 4 = high integrity 2.6 – 3.5 = Moderate to high integrity 1.6 – 2.5 = Low to moderate integrity 1 – 1.5 = low integrity

This ranking should serve only as a very general guide for screening populations of available sampling stations. This assessment has been adapted from the Idaho Home-A-Syst program, as such, it may serve as a guide to assist well owners/users in prioritizing actions needing to be addressed for protection of a drinking water source.

APPENDIX F

**SELECTED POLLUTANTS MEASURED BY IDAHO'S STATEWIDE
AMBIENT MONITORING PROGRAM AND THEIR MOST
COMMONLY ASSOCIATED SOURCES (EPA, 1990)**

**SELECTED POLLUTANTS MEASURED BY IDAHO'S STATEWIDE
AMBIENT MONITORING PROGRAM AND THEIR MOST
COMMONLY ASSOCIATED SOURCES (EPA, 1990)**

VOLATILE ORGANIC COMPOUNDS

Auto Repair/Machine Shop
Chemical Products Manufacturing/Storage/Application/Disposal
Cleaning Solvent/Refrigerant Operations
Electroplaters/Metal Fabricators
Laboratory Facilities (medical, engineering, research)
Landfill/Junkyard Leachate
Light Industry Manufacturing (printing, photos, furniture)
Petroleum Products Manufacturing/Storage/Application/Disposal
Pesticide Manufacturing/Storage/Application/Disposal

METALS

Electroplaters/Fabricators
Landfill/Junkyard Leachate
Mining Operations/Waste
Pesticide Manufacturing/Storage/Disposal/Application
Processing Wastes
Sludge leachate

BACTERIA

Animal Waste Management
Landfill Leachate
Sewage Effluent

NUTRIENTS

Ammunition Detonation/Disposal
Animal Waste Management
Crop Residue Management
Fertilizer Manufacturing/Storage/Disposal/Application
Landfill Leachate
Mining Operations
Sewage Effluent

PESTICIDES

Landfill/Junkyard Leachate
Manufacturing/Storage/Disposal/Application

APPENDIX G

SELECTED ANALYTES MEASURED BY IDAHO'S STATEWIDE AMBIENT MONITORING PROGRAM AND THEIR MOST COMMONLY ASSOCIATED USES (Montgomery 1991, Sine 1992)

**SELECTED ANALYTES MEASURED BY IDAHO'S STATEWIDE
AMBIENT MONITORING PROGRAM AND THEIR MOST
COMMONLY ASSOCIATED USES (Montgomery 1991, Sine 1992)**

VOLATILE ORGANIC COMPOUNDS

Benzene - Solvent; motor fuel; paints, coatings, plastics and resins; food processing; photographic chemicals; nylon intermediates; paint removers; rubber cement; antiknock gasoline; solvent for fats, waxes, inks, oils, paints, plastics and rubber; insecticides, pesticides, fumigants, explosives, aviation fuel, flavors, perfume, medicine, dyes and many other organic chemicals.

Bromodichloromethane - Component of fire extinguisher fluids, solvent for waxes, fats and resins; degreaser; flame retardant; heavy liquid for mineral and salt separations; chemical intermediate; laboratory use.

Bromoform - Solvent for waxes, greases and oils; separating solids with lower densities; component of fire resistant chemicals; geological assaying; medicine; gauge fluid; intermediate in organic synthesis.

Carbon Tetrachloride – Preparation of refrigerants, aerosols and propellants; metal degreasing; agricultural fumigant; chlorinating unsaturated organic compounds; production of semiconductors; solvent for fats, oils, rubber, etc.; dry cleaning operations; industrial extractant; spot remover; fire extinguisher manufacturing; preparation of dichlorodifluoromethane; veterinary medicine; organic synthesis.

Chlorobenzene – Preparation of phenol, *p*-chlorophenol, chloronitrobenzene, aniline, *o*-, *m*- and *p*-nitrochlorobenzenes; solvent; insecticide, pesticide and dyestuffs intermediate; heat transfer agent.

Chloroform – Fluorocarbon refrigerants and plastics; solvent for natural products; analytical chemistry; soil fumigant; insecticides; preparation of chlorodifluoromethane, methyl fluoride, salicylaldehyde; cleaning electronic circuit boards; anesthetics.

Debromochloromethane – Manufacture of fire extinguishing agents, propellants, refrigerants and pesticides, organic synthesis.

1,2-Dichlorobenzene – Solvent for a wide variety of organic compounds and for oxides for nonferrous metals; solvent carrier in products of toluene diisocyanate; intermediate for dyes; fumigant and insecticide; degreasing hides and wool; metal polishes; industrial air control; disinfectant; heat transfer medium.

1,3-Dichlorobenzene – Fumigant and insecticide; organic synthesis.

1,4-Dichlorobenzene – Moth repellent; general insecticide, fumigant and germicide; space odorant; manufacture of dyes; pharmacy; disinfectant and chemical intermediate.

Dichlorodifluoromethane – Refrigerant; aerosol propellant; blowing agent; low temperature solvent; chilling cocktail glasses. Freezing of foods by direct contact; leak detecting agent.

1,1-Dichloroethane – Extraction solvent; insecticide and fumigant; preparation of vinyl chloride; paint, varnish and finish removers; degreasing and drying metal parts; ore flotation; solvent for plastics, oils, and fats; in rubber cementing, fabric spreading and fire extinguishers; formerly

1,2-Dichloroethane – Vinyl chloride solvent; lead scavenger in anti-knock unleaded gasoline; paint, varnish and finish remover; metal degreasers; soap and scouring compounds; wetting and penetrating agents; ore flotation; tobacco flavoring; soil and foodstuff fumigant.

1,1-Dichloroethane – Synthetic fibers and adhesives; monomer for food packaging, coating resins and acrylic fibers.

1,2-Dichloroethylene – Solvent for fats, phenols, camphor, etc.; ingredient in perfumes; low temperature solvent for sensitive substances such as caffeine; refrigerant; organic synthesis.

1,2-Dichloropropane – Preparation of tetrachloroethylene and carbon tetrachloride; lead scavenger for antiknock fluids; metal cleanser; soil fumigant for nematodes; solvent for oils, fats, gums, waxes and resins; spotting agent.

Ethylbenzene – Manufacturing of many compounds; solvent.

Ethylene Dibromide – Refrigerant; solvent; grain and fruit fumigant; medicinal anesthetic.

Methylene Chloride – Low temperature solvent; ingredient in paint and varnish removers; cleaning, degreasing and drying metal parts; fumigant; manufacture of aerosols; refrigerant; de-waxing; blowing agent in foams; solvent for cellulose acetate; organic synthesis.

Naphthalene – Intermediate for naphthol derivatives and dyes; mothballs manufacturing; preparation of pesticides, fungicides, dyes, detergents and wetting agents, synthetic tanning; preservative; textile chemicals; emulsion breakers; scintillation counters; smokeless powders.

Styrene – Preparation of polystyrene, styrene oxide, ethylbenzene, benzoic acid, synthetic rubber, resins, plastics, protective coatings and insulators.

Tetrachloroethylene – Dry cleaning fluid; degreasing and drying metals and other solids; solvent for waxes, greases, fats, oils, gums, manufacturing printing inks and paint removers; preparation of fluorocarbons and trichloroacetic acid; vermifuge; heat transfer medium; organic synthesis.

Toluene – Solvent for paints and coatings, gums, resins, rubber, oils and vinyl compounds; adhesive solvent in plastic toys and model airplanes; diluent and thinner for nitrocellulose lacquers; antiknock agent for gasoline; manufacture of caprolactum, saccharin, medicines, dyes, perfumes, TNT, halogenated toluenes, and many other organic compounds; detergent manufacturing; aviation gasoline and high octane blending stock; preparation of toluene diisocyanate for polyurethane resins.

1,1,1-Trichloroethane – Organic synthesis; solvent for metal cleaning of precision instruments; textile processing; aerosol propellants; pesticide.

Trichloroethylene – Dry cleaning fluid; degreasing and drying metals and electronic parts; extraction solvent for oils, waxes and fats; solvent for cellulose esters and ethers; removing caffeine from coffee; refrigerant and heat exchange liquid; fumigant; diluent in paints and adhesives; textile processing; aerospace operations (flushing liquid oxygen); anesthetic; medicine; organic synthesis.

Trichlorofluoromethane – Aerosol propellant; refrigerant; solvent; blowing agent for polyurethane foams; fire extinguishing; chemical intermediate; organic synthesis.

1,2,3-Trichloropropane – Solvent; degreaser; paint and varnish remover.

1,1,2-Trichlorotrifluoroethane – Fire extinguishers; dry cleaning solvent; polymer intermediate; blowing agent; drying electronic parts and precision equipment; solvent drying.

Trimethylbenzene – Organic synthesis; manufacture of dyes, resins and perfumes; UV oxidation stabilizer for plastics.

Vinyl Chloride – Manufacture of vinyl resins, polyvinyl chloride and copolymers; adhesives for plastics; refrigerant; extraction solvent; organic synthesis.

Xylene – Solvent for resins, lacquers, enamels, rubber cements; petroleum and natural gas; manufacture of dyes, pharmaceuticals and insecticides; motor and aviation fuels.

PESTICIDE PRODUCTS

2,4-D – A general broadleaf herbicide, used for grasses, wheat, barley, oats, rye, rangeland, pasture, asparagus, fallowland, turf, sorghum, corn, and noncrop areas for Canadian Thistle, dandelion, mustards, ragweed, lambsquarters, and others.

2,4,5-T – Discontinued herbicide formerly used to control woody plants on industrial sites and rangeland. All uses of 2,4,5-T have been cancelled by EPA.

Acetochlor – Selective pre-emergence herbicide for annual grasses and broadleaf weeds in peas, onions, orchards, sugarbeets, and vineyards.

Alachlor – Pre-emergence herbicide used to control most annual grasses and certain broadleaf weeds in corn, dry beans, potatoes, and soybeans. It is also used on sunflowers, cabbage, and certain ornamental and established turf species.

Ametryn – Selective herbicide, Potato vine desiccant, post directed spray in corn.

Atrazine – Selective herbicide for weed control in corn, sorghum, and corn. Also commonly used for weed control in noncrop and industrial areas.

Butachor – Selective herbicide for pre-emergence control of most annual grasses and certain broadleaf weeds in rice.

Carbaryl – Broad spectrum insecticide, for use on many crops including fruit, forage crops, forests, field crops, lawns, nuts, ornamentals, rangeland, turf, and shade trees.

Carbofuran – Broad spectrum insecticide, nematicide, and miticide. Used for control of various soil and foliar pests. Aphids, lygus bugs, alfalfa weevil, corn rootworm, nematodes in sweetcorn, Colorado potato beetle, grasshopper and leaf beetle in small grains.

Cyanzine – Selective herbicide for early pre-plant, pre-emergence or post-emergence for field corn and weed control on fallow cropland.

EPTC – Selective herbicide for annual grassy weeds, perennial weeds, and some broadleaf weeds in beans, legumes, potatoes, and corn.

MCPA – Herbicide for use in small grains, peas, grasslands, tree crops, turf, and non crop areas for post-emergent control of annual and perennial broadleaf weeds.

Metalaxyl – Fungicide seed dressing, foliar or soil systemic.

Metolachlor – Selective herbicide for pre-emergence and pre-plant incorporated weed control in corn, soybeans, grain sorghum, potatoes, pod crops, and woody ornamentals.

Prometon – Nonselective herbicide applied before or following weed emergence. Controls most annual, many perennial broadleaf weeds and grasses.

Prometryn – Selective herbicide for most annual grasses, broadleaf weeds in cotton and celery.

Propachlor – Pre-emergence to early post-emergence herbicide for many grasses and certain broadleaf weeds.

Propazine – Selective herbicide for control of annual broadleaf weeds and annual grasses in sorghum.

Simazine – Selective herbicide for most annual grasses and broadleaf weeds in corn, established alfalfa, bermudagrass, cherries, peaches, caneberries, cranberries, grapes, apples, pears, certain nuts, asparagus, certain ornamental and tree nursery stock, turf grass production, fairways, lawns, and industrial areas.

Terbutryn – Discontinued selective herbicide for pre-emergence and pre-plant incorporated on grain sorghum; pre-emergence and post-emergence on fallow croplands.

REACTIVITY OF IMMUNOASSAY METHODS (Ohmicron 1994)

Pesticide analysis by the statewide monitoring program are often completed using immunoassay methods. Consideration should be given to false positive detections caused by cross reactivity when using the immunoassay methods. Compounds with the potential to cause positive detections are categorized based on the concentration required to cause a positive detection.

<u>IMMUNOASSAY METHOD</u>	<u>REACTIVE COMPOUND</u>	<u>CONCENTRATION REQUIRED (PPB)</u>
2,4-D	2,4-D	0.7
	2,4,5-T	2.98
	MCPA	7.8
Alachlor	Alachlor	0.05
	Metolachlor	6.0
Carbofuran	Carbofuran	0.056
	EPTC	340.0
	Carbaryl	740.0
Cyanazine	Cyanazine	0.035
	Terbutryn	0.110
	Ametryn	0.5
	Prometryn	1.5
	Simazine	1.6
	Propazine	3.5
	Prometon	82.0
Metolachlor	Metolachlor	0.05
	Acetochlor	0.06
	Metalaxyl	0.06
	Butachlor	0.26
	Propachlor	1.0
	Alachlor	1.3
Atrazine	Atrazine	0.046
	Propazine	0.033
	Ametryn	0.053
	Prometryn	0.054
	Prometon	0.056
	Terbutryn	0.090
	Simazine	0.340
	Cyanazine	1.0

APPENDIX H

WATER QUALITY COMPLIANCE AGENCIES

COMPLIANCE AGENCIES

I. **Idaho District Health Departments** are responsible for ensuring public health standards are met and private water supply systems, solid waste disposal facilities, and on-site sewage disposal facilities are adequate for such purposes.

- A. Environmental Health
Panhandle District Health Department
2195 Ironwood Court
Coeur D'Alene, Idaho 83814
(208) 667-9513

- B. Environmental Health
North Central District Health Department
215 10th Street
Lewiston, Idaho 83501
(208) 799-0353

- C. Environmental Health
Southwest District Health Department
920 Main Street
Caldwell, Idaho 83605-3700
(208) 454-7608

- D. Environmental Health
Central District Health Department
707 N. Armstrong
Boise, Idaho 83704
(208) 327-7499

- E. Environmental Health
South Central District Health Department
213 Third Avenue East, P. O. Box 547
Twin Falls, Idaho 83303-0547
(208) 734-5900

- F. Environmental Health
Southeastern District Health Department
465 Memorial Drive
Pocatello, Idaho 83201
(208) 233-9080

G. Environmental Health
District 7 Health Department
254 E Street
Idaho Falls, Idaho 83402
(208) 523-5382

II. **Idaho Department of Agriculture** is responsible for regulation of agricultural chemicals and fish hatcheries.

A. Idaho Department of Agriculture
Division of Agricultural Technology
2270 Old Penitentiary Road
Boise, Idaho 83702
(208) 334-3550

III. **Idaho Department of Water Resources** is responsible for regulation of well construction practices and underground injection wells.

A. Idaho Department of Water Resources
1301 North Orchard
Boise, Idaho 83706
(208) 327-7900

IV. **Major Federal Land Management Agencies** are responsible for land use activities taking place within their jurisdiction. Including mining, grazing, resource extraction, logging, etc.

A. Bureau of Land Management
Division of Renewable Resources
3380 Americana Terrace
Boise, Idaho 83706
(208) 384-3000

B. United States Forest Service
Northern Region 1
Box 7669
Missoula, Montana 59807
(406) 329-3132

C. United States Forest Service
Intermountain Region 4
324 25th Street
Ogden, Utah 84401
(801) 625-5127

V. **Idaho Division of Environmental Quality** is responsible for Public Water Supplies, Solid Waste Facilities, Sewage Treatment Effluent, Emergency Spill Response, Hazardous Materials, Underground Storage Tanks, Land Application Operations, limited NPDES inspections, Confined Animal Feeding Operations, and Nonpoint Source compliance.

A. Division of Environmental Quality
Central Office
1410 North Hilton
Boise, ID 83706
(208) 344-0502

B. Division of Environmental Quality Regional Offices

1. Southwest Idaho Regional Office
1300 N. Orchard, Boise, ID 83706
(208) 334-0550
2. South Central Idaho Regional Office
601 Pole Line Rd., Suite #2, Twin Falls, ID 83301
(208) 736-2190
3. Southeast Idaho Regional Office
224 South Arthur, Pocatello, ID 83204
(208) 236-6160
4. Eastern Idaho Regional Office
900 N. Skyline, Idaho Falls, ID 83402
(208) 528-2650
5. North Idaho Regional Office
2110 Ironwood Parkway, Coeur d'Alene, ID 83814
(208) 769-1422
6. North Central Idaho Regional Office
1118 F Street, Lewiston, ID 83501
(208) 799-4370

VI. **U.S. Environmental Protection Agency** is responsible for National Pollution Discharge Elimination System (NPDES) permitted operations.

A. United States Environmental Protection Agency
Idaho Operations Office
422 West Washington Street
Boise, Idaho 83702
(208) 334-9498

VII. **Idaho National Engineering Laboratory** is responsible for activities taking place within their jurisdiction.

A. INEL Oversight Program
1410 North Hilton
Boise, ID 83706
(208) 334-0549

APPENDIX I

**IDAHO DEPARTMENT OF HEALTH AND WELFARE
LABORATORY CONTACTS**

**IDAHO DEPARTMENT OF HEALTH AND WELFARE
LABORATORY CONTACTS**

**Idaho Department of Health and Welfare
Division of Health
Bureau of Laboratories**

Idaho Department of Health and Welfare
Bureau of Laboratories
2220 Old Penitentiary Road
Boise, Idaho 83712
(208) 334-2235

**Idaho Department of Health and Welfare
Division of Health
Branch Laboratories**

Coeur D'Alene Branch Laboratory
2195 Ironwood Ct.
Coeur D'Alene, Idaho 83814
(208) 769-1432

Pocatello Branch Laboratory
465 Memorial Dr.
Pocatello, Idaho 83210
(208) 233-4341

APPENDIX J

REQUEST FOR SAMPLE STATION IDENTIFICATION NUMBER

**REQUEST FOR
SAMPLE STATION IDENTIFICATION NUMBER**

Project Manager _____ Assigned Sample Station Number _____

Project Plan _____

Regional Office _____ Date Requested _____

Phone Number _____

Descriptor (<37 characters) _____

Lat/Long (GPS / Mapped) _____ Datum (if GPS) _____
circle one

County FIPs Code _____ HUC Code _____

Quadrangle _____

(Attach 1:24000 (7.5') map w/location)
State Plane Coordinate T R S Category DR S SU
circle one

Aquifer Type/Name _____ Class I II
circle one

Well Owner/User _____

Phone Number _____

Well Address _____

Mailing Address _____

<u>CODE</u>	<u>NAME</u>	<u>VALUE</u>	<u>REMARK CODE</u>
84063	Drilling Method	_____	
72008	Well Depth	_____ ft.	_____
82509	Screened Interval	_____ ft.	_____
84113	Screen Type	_____	
82513	Casing Diameter	_____ in.	_____
84114	Casing Material	_____	
73663	Seal Depth	_____ ft.	_____
72000	Land Elevation	_____ ft.	_____
82514	Measuring Pt. Elev.	_____ ft.	_____
84146	Water Use	_____	
84061	Well Use	_____	
84060	Topography	_____	
84146	Land Use, 100 ft.	_____	
84147	Land Use, ¼ mi.	_____	
84111	Dominant Lithology	_____	
()	_____	_____	

**INSTRUCTIONS FOR COMPLETING
A SAMPLE STATION IDENTIFICATION NUMBER REQUEST FORM**

1. **Project Manager,**
The project manager is the person available to address questions relative to the project and the project's data management process.
2. **Assigned Sample Station Number,**
This number is assigned by the Environmental Information Systems Bureau during review of a submitted QAPP and should be incorporated in the QAPP after the number has been assigned.
3. **Project Plan,**
The title of the associated QAPP should be listed here.
4. **Descriptor,**
If a individual description of the sampling station is needed it can be included here. Up to 37 characters can be used. Mailing addresses and names can not be used.
5. **Lat/Long (*GPS/Mapped*),**
A latitude/longitude **MUST** be provided to obtain a sample station number. If a Geographic Position System was used to obtain the lat/long, enter the lat/long here and circle *GPS*. Be sure to include datum if using GPS. If a lat/long was determined using a map, enter the lat/long here, circle *Mapped* and attach a copy of the mapped location(s). If a lat/long has not been determined, attached a copy of the 1:24,000 scale map with the location(s) clearly indicated to the form, circle *Mapped*, and the Environmental Information Systems Bureau will provide a lat/long.
6. **County FIPs Code**
List the county code for the county where the station is located. FIPs codes are listed in this Appendix.
7. **Quadrangle,**
This is the name of the 1:24,000 scale map covering the area where the well is located.
8. **HUC Number,**
List the HUC number for station locations.
9. **State Plane Coordinates (T/R/S),**
Township/Range/Section numbers, if possible locations can be further identified with quarter sections.
10. **Category,**
If determined, circle the appropriate ground water category for the aquifer, DR – Drinking Water, S – Sensitive, or SU – Special Use.
11. **Class,**
If determined, circle the appropriate aquifer class, I or II.
12. **Aquifer Type/Name,**
Enter the general type of aquifer where the station is located, Valley-Fill, Basalt, or Sedimentary or Volcanic. If the aquifer has a designated name etc., list it here.
13. **Station Description Codes,**
Use Appendix K to complete the remaining portion of the Sample Station Identification Number Request Form. If characterization codes are desired that are not included in Appendix K, contact the Community Programs Monitoring and Technical Support Bureau for assistance.

IDAHO COUNTY FIPS CODES BY REGION

NORTH IDAHO REGION

Benewah	009
Bonner	017
Boundary	021
Kootenai	055
Shoshone	079

NORTH CENTRAL IDAHO REGION

Clearwater	035
Idaho	049
Latah	057
Lewis	061
Nez Perce	069

SOUTHWEST IDAHO REGION

Ada	001
Adams	003
Boise	015
Canyon	027
Elmore	039
Gem	045
Owyhee	073
Payette	075
Valley	085
Washington	087

EASTERN IDAHO REGION

Bonneville	019
Butte	023
Clark	033
Custer	037
Fremont	043
Jefferson	051
Lemhi	059
Madison	065
Teton	081

SOUTH CENTRAL IDAHO REGION

Blaine	013
Camas	025
Cassia	031
Gooding	047
Jerome	053
Lincoln	063
Minidoka	067
Twin Falls	083

SOUTHEAST IDAHO REGION

Bannock	005
Bear Lake	007
Bingham	011
Caribou	029
Franklin	041
Oneida	071
Power	077

APPENDIX K

**SAMPLE STATION DESCRIPTOR CODES, VALUES, AND
DEFINITION (EPA 1987)**

**SAMPLE STATION DESCRIPTOR CODES, VALUES, AND
DEFINITIONS (EPA 1987)**

<u>Code</u>	<u>Name</u>	<u>Value</u>	<u>Definition</u>
84059	Well Ownership	PRIV	Private
		COMM	Commerical
		STATE	State
		CORP	Corporation
		FED	Federal
84060	Topography	170.00	Valley
		140.00	Slope
		80.00	Hilltop
		180.00	Draw
		60.00	Flat
		10.00	Alluvial fan
		20.00	Playa
		30.00	Stream channel
		40.00	Local depression
		50.00	Dunes
		70.00	Flood plain
		100.00	Lake, swamp, or marsh
150.00	Alluvial or marine		

<u>Code</u>	<u>Name</u>	<u>Value</u>	<u>Definition</u>
84146	Land use within 100 ft of well	110.00	Residential
		115.00	Residential with septic system
		120.00	Commercial or services
		125.00	Golf course
		130.00	Industrial
		170.00	Other urban areas
		211.00	Non-irrigated crop land
		212.00	Irrigated crop land
		213.00	Pasture
		214.00	Mushroom farm
		220.00	Orchards, vineyards, nurseries
		230.00	Confined feeding operation
		231.00	Intensive poultry/swine
		232.00	Dairy
		240.00	Other agricultural land
		300.00	Rangeland and Forestland
		500.00	Water
		600.00	Wetland
		700.00	Barrenland

<u>Code</u>	<u>Name</u>	<u>Value</u>	<u>Definition</u>
84147	Land use within ¼ mi. of well	110.00	Residential
		115.00	Residential with septic System
		120.00	Commercial or services
		125.00	Golf course
		130.00	Industrial
		170.00	Other urban areas
		211.00	Non-irrigated crop land
		212.00	Irrigated crop land
		213.00	Pasture
		214.00	Mushroom farm
		220.00	Orchards, vineyards, nurseries
		230.00	Confined feeding operation
		231.00	Intensive poultry/swine
		232.00	Dairy
		240.00	Other agricultural land
		300.00	Rangeland and Forestland
		500.00	Water
		600.00	Wetland
		700.00	Barrenland

<u>Code</u>	<u>Name</u>	<u>Value</u>	<u>Definition</u>
84111	Lithologic	GW	Well graded gravel, gravel-sand mixture, little or no fines
		GP	Poorly-graded gravels, gravel-sand mixture, little or no fines
		GM	Silty gravels, gravel-sand-silt mixture
		GC	Clayey gravels, gravel-sand-clay mixtures
		SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly-graded sands, gravelly sands, little or no fines
		SM	Silty sands, sand silt mixtures
		SC	Clayey sands, sand-clay mixtures
		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy silty clays, lean clays
		OL	Organic silt and organic silty clays of low plasticity
		MH	Inorganic silts, micaceous or diatomaceous fine sand or silty soils
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
		PT	Swamp soils with high organics

<u>Code</u>	<u>Name</u>	<u>Value</u>	<u>Definition</u>
84001	Aquifer type	VAFIL	Valley fill, intermountain, valley deposited, unconsolidated sediment (Rathrum Prairie, Wood River).
		BASLT	Basalt, basalt flows with thin interbeds of sediment and/or pyroclastic volcanic rock (Eastern Snake Plain, Moscow/Lewiston Basins, Weiser River Basin).
		SEDVO	Sedimentary/volcanic, unconsolidated sediments with basalt and rhyolitic rocks and interbedded shale and sandstone (Western Snake River Plain, Boise Valley, Mountain Home area).

<u>Code</u>	<u>Name</u>	<u>Value</u>	<u>Definition</u>
73661	Depth to top of aquifer	_____ft.	Depth in feet to top of aquifer unit
73662	Depth to bottom of aquifer	_____ft.	Depth in feet to bottom of aquifer unit
84063	Drilling method	BORE	Bored or augered
		CABLE	Cable tool
		DUG	Dug
		HYDRT	Hydraulic
		AIRRT	Air rotary
		DRIVN	Driven
		OTHER	Other
82509	Screened interval	_____ft.	Length of screen, in feet
72001	Depth of hole	_____ft.	Depth, in feet below land surface of borehole into which well was placed
72008	Depth of well	_____ft.	Depth, in feet below land surface, or well bottom

<u>Code</u>	<u>Name</u>	<u>Value</u>	<u>Definition</u>
84113	Well intake finish	MSCRN	Screen machine slotted
		FSCRN	Screen field slotted
		SNDPT	Sandpoint
		OPNHL	Open hole
		OTHER	Other
		PERFC	Perforated, porous, or slotted casing
84114	Well casing material	WWDSC	Wire wound screen
		OTHSS	Stainless steel
		STEEL	Steel
		GALFE	Galvanized iron
		OTHRM	Other metal
		CNCRT	Concrete
		PVC	PVC
		TEFLN	Teflon
		TILE	Tile
		WOOD	Wood
OTHER	Other		
84117	Type of surface seal	BNTNT	Bentonite
		CLYCT	Clay or cuttings
		CMGRT	Cement grout
		OTHER	Other

<u>Code</u>	<u>Name</u>	<u>Value</u>	<u>Definition</u>
84118	Method of development	AIRFT	Airlift
		BAILD	Bailed
		COMPR	Blown or surged with compressed air
		NONE	None
		PUMPD	Pumped
		SRGBL	Surges with surge block
		OTHER	Other
73668	Screen slot size	_____in.	Thousands of an inch
82513	Casing diameter	_____in.	Diameter in inches
73671	Borehole diameter	_____in.	Diameter of borehole in inches
84120	Screen packing material	SAND	Sand
		GRAVL	Gravel
		NBKFL	Natural backfill
		SYNTH	Synthetic

<u>Code</u>	<u>Name</u>	<u>Value</u>	<u>Definition</u>
84056	Type of water use	DMSTC	Domestic
		IND	Industrial
		PUBSP	Public supply
		COMM	Commercial
		IRRIG	Irrigation
		STKSP	Stock supply
		AQCLT	Aquacultural
		UNUSD	Unused
		OTHER	Other
84122	Sample purpose	BKGRD	Sampled to determine background levels
		GWQAL	Sampled to determine ground water quality
		CNTMN	Sampled to determine ground water contamination
72019	Depth to water level	_____ft.	Depth, from land surface to measuring point, in feet
82514	Measuring point elevation	_____ft.	Elevation of measuring point, in feet above mean sea level
71993	Elevation of ground water	_____ft.	Elevation of top of water table at sampling point, in feet above mean sea level
72000	Elevation of land surface	_____ft.	Elevation of land surface, in feet above mean sea level
50042	Flow Rate, well yield	_____g/m	Flow rate, well yield, gall/min.

<u>Code</u>	<u>Name</u>	<u>Value</u>	<u>Definition</u>
84077	Monitoring well sampling method	BAIL	Bailer
		PERP	Peristaltic pump
		CENP	Centrifugal pump
		SBPMP	Submersible pump
		BLDRP	Bladder pump
		OTHER	Other
84129	Data quality, Four digit # code	1 st #	2 – Well has been inspected and determined to be of high quality
			1 – Well has been properly drilled, constructed, located, and secured
			O-well is inadequate
			Blank – unknown
			Blank – unknown
		2 nd #	3 – Positive field QA/QC evaluation
			2 – Field QA/QC plan with SOPs, plan objectives verified as being met
			1 – QA/QC field plan with SOPs
			0 – No field QA/QC plan
			Blank – Unknown field QA/QC

<u>Code</u>	<u>Name</u>	<u>Value</u>	<u>Definition</u>
84129	Data quality, four digit # code	3 rd #	3 – Positive lab QA/QC evaluation 2 – Lab QA/QC plan with SOPs, plan objectives verified as being met 1 – Lab QA/QC plan with SOPs 0 – No lab QA/QC plan Blank – Unknown lab QA/QC
		4 th #	3 – Positive project QA/QC evaluation 2 – Project QA/QC plan with SOPs, plan objectives verified as being met 1 – Project QA/QC plan with SOPs 0 – No project QA/QC plan Blank – Unknown project QA/QC
84061	Well use	OBSWL	Observation well
		WTRSP	Water supply
		INJCT	Injection/disposal
		ABAN	Abandoned
		UNUSD	Unused
		MONWQ	Water quality monitoring
		MINE	Mine
		DSTRD	Destroyed
UNKN	Unknown		

<u>Remark Code</u>	<u>Remark Definition</u>
Blank	No remark
J	Estimated value
K	Actual value is known to be less than the value shown
L	Actual value is known to be greater than the value shown
M	Presence of material verified but not quantified
N	Presumptive evidence of presence of material
U	Material specifically analyzed for but not detected

APPENDIX L

**GROUND WATER CONTAMINANT ANALYTE CODES
As of December 1, 1994
(EPA 1987)**

GROUND WATER CONTAMINANT ANALYTE CODES
As of December 1, 1994 (EPA 1987)

<u>Code</u>	<u>Name</u>	<u>Unit</u>
00094	Field Conductivity	umhos/cm
00400	Field pH	s.u.
00010	Water Temperature	°C
00610	Ammonia as N, Total (NH ₃ +NH ₄ -N)	mg/l
00630	Nitrogen as N, Total (NO ₂ +NO ₃ -N)	mg/l
00620	Nitrate as N (NO ₃ -N)	mg/l
00665	Phosphorus as P, Total	mg/l
00430	Alkalinity, (CaCO ₃)	mg/l
47004	Total Dissolved Solids	mg/l
00300	Dissolved Oxygen	mg/l
00335	Chemical Oxygen Demand	mg/l
00440	Bicarbonate Ion as HCO ₃	mg/l
00445	Carbonate Ion as CO ₃	mg/l
00916	Calcium	mg/l
00940	Chloride	mg/l
00951	Fluoride	mg/l
00927	Magnesium	mg/l
00937	Potassium	mg/l
00929	Sodium	mg/l
00945	Sulfate, (SO ₄)	mg/l
00956	Silica, (SiO ₂)	mg/l
01002	Arsenic, Total	µg/l
01007	Barium, Total	µg/l
01027	Cadmium, Total	µg/l
01034	Chromium, Total	µg/l
01042	Copper, Total	µg/l
00720	Cyanide, Total	µg/l
01045	Iron, Total	µg/l
01046	Iron, Dissolved	µg/l
01051	Lead, Total	µg/l
01049	Lead, Dissolved	µg/l
01055	Manganese, Total	µg/l
71900	Mercury, Total	µg/l
71890	Mercury, Dissolved	µg/l
01147	Selenium, Total	µg/l
01077	Silver, Total	µg/l
01092	Zinc, Total	µg/l
31501	Total Coliform Bacteria	#/100ml
31516	Fecal Coliform Bacteria	#/100ml

<u>Code</u>	<u>Name</u>	<u>Unit</u>
31579	Fecal Strep Bacteria	#/100ml
34030	Benzene	µg/l
32104	Bromoform	µg/l
32102	Carbon Tetrachloride	µg/l
34301	Chlorobenzene	µg/l
32106	Chloroform	µg/l
77093	Cis-1,2 Dichloroethene	µg/l
32105	Dibromochloromethane	µg/l
77779	Dibromodichloromethane	µg/l
77651	1,2 Dibromoethane (EDB)	µg/l
34536	1,2 Dichlorobenzene	µg/l
34566	1,3 Dichlorobenzene	µg/l
34571	1,4 Dichlorobenzene	µg/l
34668	Dichlorodifluoromethane	µg/l
34496	1,1 Dichloroethane	µg/l
32103	1,2 Dichloroethane	µg/l
81328	1,1 Dichloroethene	µg/l
34541	1,2 Dichloropropane	µg/l
34371	Ethylbenzene	µg/l
34423	Methylene Chloride	µg/l
34696	Naphthalene	µg/l
34475	Tetrachloroethene (Perc)	µg/l
34010	Toluene	µg/l
34546	Trans-1,2 Dichloroethene	µg/l
34506	1,1,1 Trichloroethane	µg/l
39180	Trichloroethene (TCE)	µg/l
34488	Trichlorofluoromethane	µg/l
81611	Trichlorotrifluoroethane	µg/l
78136	Trimethyl benzene	µg/l
77128	Styrene	µg/l
39175	Vinyl Chloride	µg/l
81551	Xylene, Total	µg/l
77825	Alachlor	µg/l
39053	Aldicarb	µg/l
82587	Aldicarb Sulfone	µg/l
82586	Aldicarb Sufoxide	µg/l
39330	Aldrin	µg/l
82184	Ametryn	µg/l
39053	Atrazine	µg/l
38710	Bentazon	µg/l
39338	Benzene Hexachloride	µg/l
30234	Bromacil	µg/l
30236	Butylate	µg/l
39640	Captan	µg/l

<u>Code</u>	<u>Name</u>	<u>Unit</u>
82618	Carbaryl	µg/l
81405	Carbofuran	µg/l
30245	Carboxin	µg/l
39350	Chlordane	µg/l
77548	Chloropicrin	µg/l
81322	Chlorpropham	µg/l
38932	Chlorpyrifos	µg/l
46350	Chlorsulfuron	µg/l
04091	Clopyralid	µg/l
81757	Cyanazine	µg/l
39770	Dacthal	µg/l
38760	Dibromochloropropane	µg/l
39360	DDD	µg/l
39370	Dichloro Diphenyl Trichloroethane	µg/l
39570	Diazinon	µg/l
38442	Dicamba	µg/l
30190	Dichlorprop	µg/l
73071	Dichlorvos	µg/l
39380	Dieldrin	µg/l
46314	Dimethoate	µg/l
30191	Dinoseb	µg/l
81888	Disulfoton	µg/l
39011	Disyston	µg/l
38932	Dursban	µg/l
81522	Ethylene Dibromide	µg/l
39388	Endosulfan	µg/l
34361	Endosulfan I	µg/l
82624	Endosulfan II	µg/l
39390	Endrin	µg/l
81894	Eptam (EPTC)	µg/l
38787	Ethalfuralin	µg/l
45606	Ethofumesate	µg/l
81758	Ethoprop	µg/l
46315	Ethyl Parathion	µg/l
38462	Famphur	µg/l
38685	Fenthion	µg/l
46351	Folpet	µg/l
82615	Fonofos	µg/l
39700	Hexachlorobenzene	µg/l
39410	Heptachlor	µg/l
30264	Hexazinone	µg/l
39782	Lindane	µg/l
39530	Malathion	µg/l
30282	Methiocarb	µg/l

<u>Code</u>	<u>Name</u>	<u>Unit</u>
39051	Methomyl	μg/l
39480	Methoxychlor	μg/l
39600	Methyl Parathion	μg/l
81408	Metribuzin	μg/l
38865	Oxamyl	μg/l
79755	Oxychlorane	μg/l
39032	Pentachlorophenol (PCP)	μg/l
79190	Pendimethalin	μg/l
79191	Permethrin	μg/l
46313	Phorate	μg/l
39720	Pichloram	μg/l
39080	Pronamide	μg/l
30295	Propachlor	μg/l
38578	Propazine	μg/l
03783	Propiconazole	μg/l
30296	Propoxur	μg/l
39055	Simazine	μg/l
30311	Terbacil	μg/l
82088	Terbufos	μg/l
39400	Toxaphene	μg/l
78062	Trans-Nonachlor	μg/l
04184	Triallate	μg/l
52686	Trichlorfon	μg/l
81284	Trifluralin	μg/l

APPENDIX M

REQUEST FOR DATA ENTRY

INSTRUCTIONS FOR COMPLETING A REQUEST FOR SAMPLE STATION DATA ENTRY FORM

1. Sample Station Number,
This number is assigned by the DEQ Environmental Information Systems Bureau during review of a submitted QAPP and should be incorporated into the QAPP after the number has been assigned.
2. Project Manager,
The person to address questions relative to the project and the project's data management process, project manager should be the same for both the Sample Station Identification Number Request form and the Request For Sample Station Data Entry form.
3. Project Plan (QAPP),
This is the title of the submitted Project Plan (QAPP).
4. Regional Office,
The name of the DEQ Regional Office submitting data.
5. Data Submitted,
The date the Request for Sample Station Data Entry form is submitted to the DEQ Environmental Information Bureau.
6. Phone Number,
Phone number of the person to contact concerning the data submitted.
7. Date of Sample Collection,
The date the sample was collected (yr/mn/dy).
8. Time of Sample Collection,
The time the sample was collected (24 hour clock).
9. Lab Report Attached,
Answer yes or no depending on whether a laboratory analysis report form is attached and being submitted.
10. Collected By,
This is the person who generated the field measurements being submitted.
11. Description Codes,
Use the table of sample station codes to complete this section of the Request For Sample Station Data Entry form. Sample Station Identification Codes are listed in Appendix K. If characterization codes are desired that are not included in Appendix K, contact the Community Programs Monitoring and Technical Support Bureau.
12. Samples Collected,
Circle the types of samples which were collected from the sample station during the visit.
13. Comments,
Provide pertinent observation comments concerning the visit here.