GROUNDWATER DATA SUBMITTAL GUIDANCE

Version 5.1 | April 2025

ADEQ Arizona Department of Environmental Quality

Clean Air, Safe Water, Healthy Land for Everyone

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1. The Arizona Water Quality Database

1.1 Introduction

The Water Quality Database (WQDB) managed by the Arizona Department of Environmental Quality (ADEQ or "DEQ") serves as a comprehensive repository for water data encompassing chemical and physical characteristics. This repository collates information gathered not only by ADEQ but also by more than 100 other reporting agencies. ADEQ water quality data is also shared with the EPA's National Water Quality Portal. Within the database, two distinct modules are present: The Surface Water and the Groundwater. These modules share a uniform structure and utilize a common web page for the seamless uploading and downloading of data.

This guidance focuses on the validation and upload instructions for four data types into the Groundwater module of the database:

- Well Inventory, also known as Sample Site (SS)
- Water Level (WL)
- Water Quality (WQ)
- Soil Vapor (SV)

The WQDB has a back-end component and a front-end component.

1.2 Back-End

An Oracle SQL core database application called eAquaPro that is developed and maintained by a vendor.

1.3 Front-End

1.3.1 Portal Page

The **Portal Page** is a web-based application designed to provides services such as importing water quality and water level data, accessing reference tables, project information, and user accounts. Furthermore, lab information can be downloaded through the Integration Import feature on this page.

WQDB Portal Page

The Groundwater Data users would need a user accounts to access these services. The user account can be requested by emailing complited form below to gwqd@azdeq.gov.

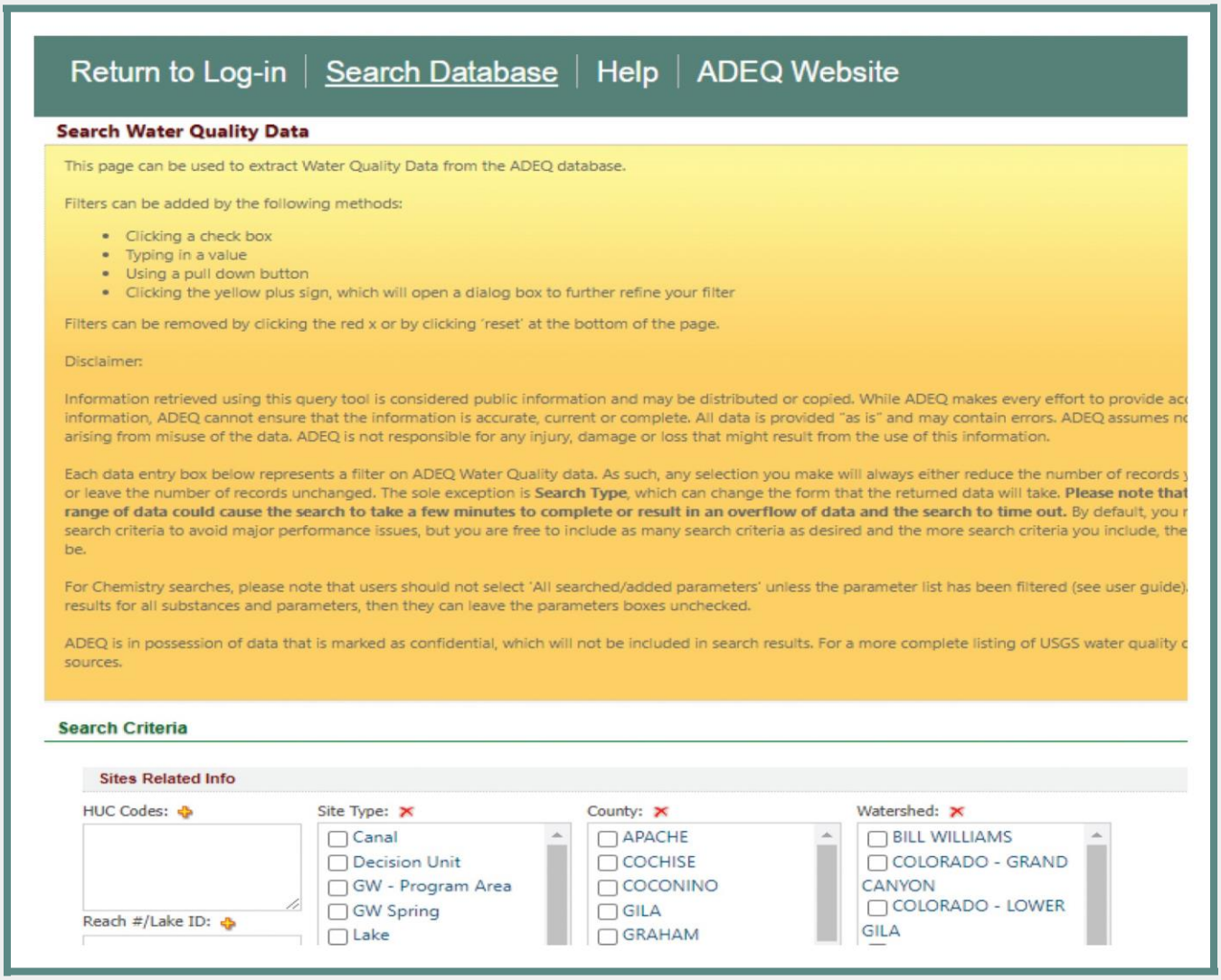
Official First Name	**Official Last Name**	**Email Address**	**Phone #**	**Company Name**	**Job Title**	
Program for which the data is collected		**Project Name**	**Facility ID Number**	**DEQ Project Manager(s)**	**Project start date**	**How often WQ data will be submitted?**
Leaking Underground Storage Tanks (LUST)						
Water Quality Assurance Revolving Fund (WQARF)						
Resource Conservation and Recovery Act Unit (RCRA)						
Department of Defense (DoD)						
Voluntary Remediation Program (VRP)						
Groundwater Quality Monitoring Program (GQMP)						
National Priority List (NPL)						
Other						

Request User Account

Once the user account is created, an email is sent to the account holder that contains the username and confidential password, as well as data submission instructions. It's important to change the temporary password immediately by logging into the database and clicking on "My Account". Passwords are not stored by database authorities, so it is your responsibility to ensure it is safe and secure.

1.3.2 Search Database Page

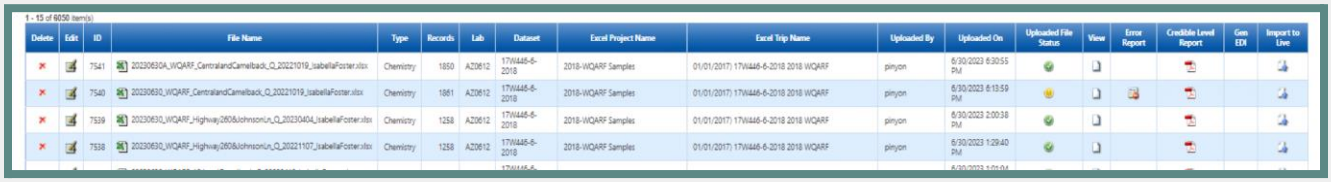
The database application also includes a **Public Search Tool** developed for the public to search for and download chemistry and well data from the database. No user account is needed to use this search tool. You can find detailed instructions on how to access data using the Public Search Tool in **Appendix A**.



WQDB Public Search Page

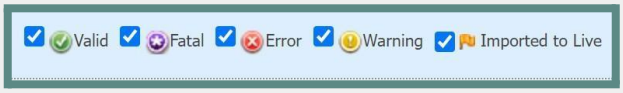
2. Operational Flow

Under ADEQ or private parties' directives, certified labs conduct data analysis and transmit results to consultant firms in the form of an Electronic Data Deliverable (EDD). These firms validate, edit, and re-format the data before importing it into the staging WQDB uploaded through the portal's Upload Sample/Result Data page, and an import record is created. The database validates and checks the imported data for compliance. Once validated, the data is uploaded to live database. An orange flag indicates the status of the imported file. All imported EDDs including unsuccessful imports are retained for tracking.



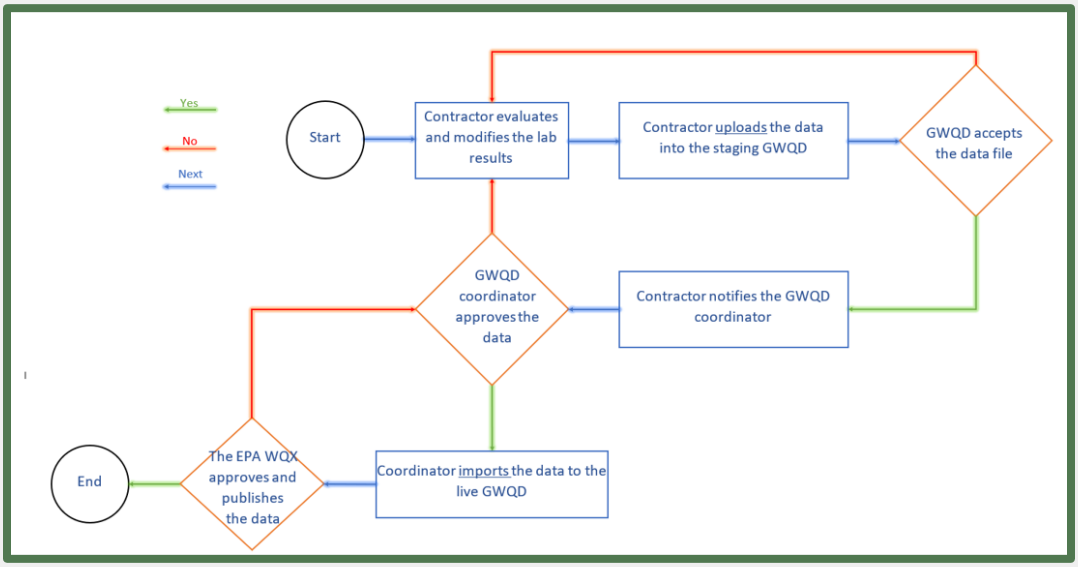
Records of Imported Files in The Portal Queue Page

Successful imports are shown by a Valid sign, while Warning, Error, or Fatal status indicates issues. Errors are resolved using the provided Error Reports, with the file being re-imported until it's validated.



Imported File Status

Upon successful import, the data submitter person notifies gwqd@azdeq.gov with the EDD and the Import ID. The WQDB coordinator verifies the data before uploading it to the live database. Subsequently, data is pushed to the **EPA Water Quality Portal**. If errors are found, revisions are requested | **View Appendix C**



Groundwater Data Submittal Flow

3. Data Validation

Below are key points to consider for data validation, ensuring valid values in data submittals through cross-referencing with reference tables. These tables can be downloaded at **azdeq.gov/wqd_ref_table_lookup**. An Electronic Data Submittal Transmittal Form (DTF) is required for adding new Sample Sites, or editing existing ones and adding water level, water quality, and soil vapor data.

3.1 General Requirements for Data Validation

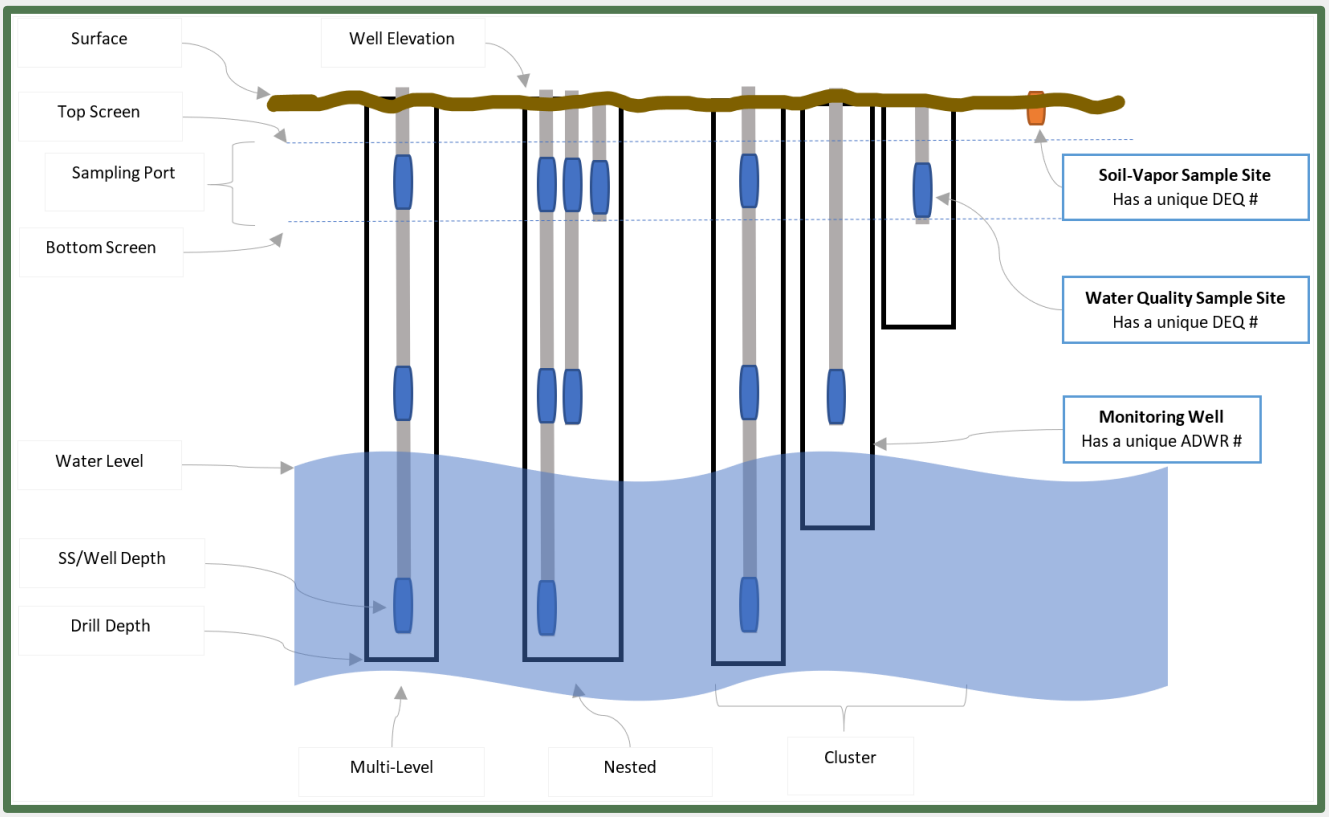
- Data should match values in the database's reference tables. Note that tables such as REF_Analytical Methods or DEQ well aka SS numbers are frequently updated. To access the most current lookup data, refer to the General tab in Portal>System Settings.
- Text files must be in ASCII format in fixed-width and left-justified.
- Data in text files must align with column names in the standard header lines.
- In text files exclude header lines and eliminate extra spaces or return lines.
- In text files, use spaces, not tabs, to fill shy characters at the end of the lines.
- In the DTF specify if submittal is for data adding, editing, or overwriting | **View Appendix E >**
- Prevent duplicate data and refrain from deleting data to simplify the import process.
- In the Water Quality Excel file, ensure the worksheet that contains the WQ data is named "Sheet1"

3.2 Well Inventory Data Validation

Each piece of water level, water quality, and soil vapor data must relate to a spatial reference known as a Sample Site. This spatial reference represents the latitude, longitude, and altitude of the location where a water or soil vapor sample is obtained. In most cases, an SS is positioned on the surface (to collect a soil vapor sample) or within a Sampling Port in a monitoring well with a single Sampling Port (to collect a water quality sample). However, there are instances where the SS is situated within a Sampling Port in a monitoring well with multi-level Sampling Ports at different depths of the monitoring well. Regardless of the configuration, each Sample Site is assigned an exclusive DEQ SS number.

DEQ SS numbers can be requested by emailing a text file to **gwqd@azdeq.gov** that includes the SS information. A specific template and header line for the EDD text file are provided in the following table. In addition, a site map in which the location of each requested Sample Sites are marked must be included in the request email. We use data from the EDD and the site map to perform location verification prior to creating/modifying an DEQ Sample Site number. Upon verification, the EDD is uploaded to the database, and DEQ SS numbers are generated. Within 21 days of receiving well data, the WQDB provides the new DEQ SS numbers. See the following simplified SS data submission flow:

SS data submission flow

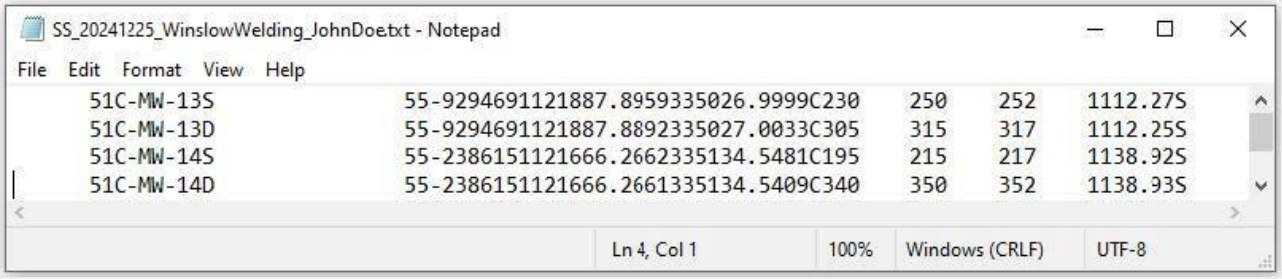


Monitoring Well Systems and Sample Sites

Well Data Columns in the EDD

DEQ SS header line with 2 examples: one for request adding a new DEQ SS number and one for request revision an existing SS number:

```
######Name_____________________ADWR___55Longitude___latitude___MTscreenBscreenDrillDDmp-elevm
      MW-15                   55-5903121120859.0052340255.8921C5      25     25     2010.71S
85236 MW-15                   55-5903121120859.0052340255.8921C5      25     25     2010.71S
```

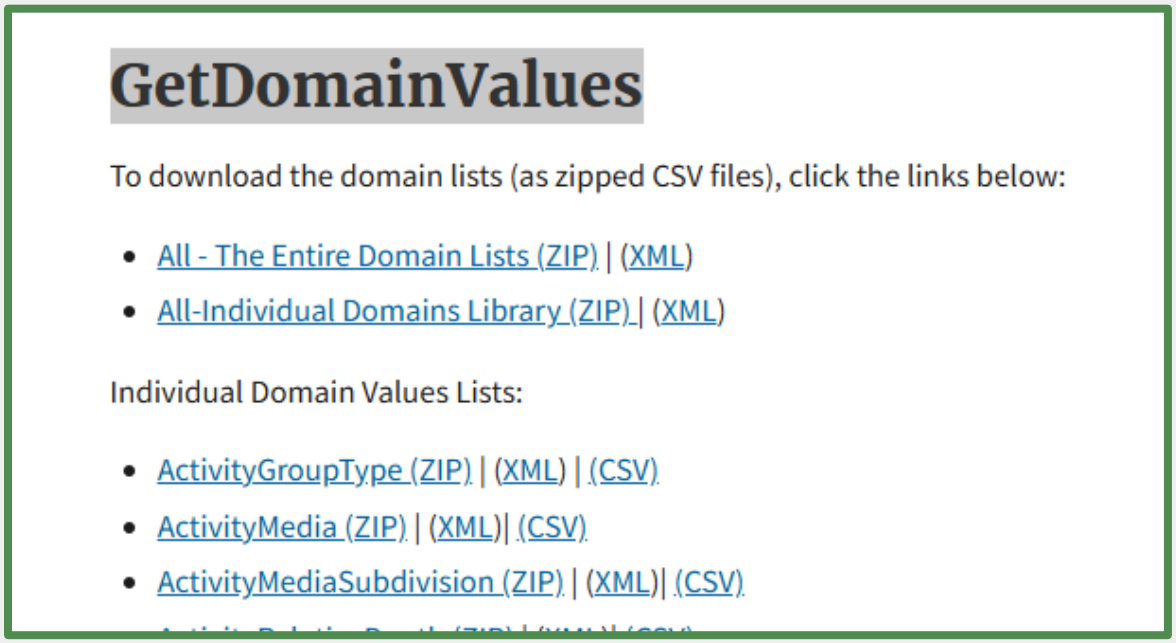


Field Name	Length	Position	Descriptions	Validation Requirement
DEQ SS Number	6	01-06	Unique identifier of the sample site in the WQDB. To request a new DEQ SS number, just enter 6 space characters. For well revisions, enter the DEQ SS number (e.g. 85236).	Obtain the DEQ SS number from the database |See Appendix B. None of the requested new DEQ SS numbers should match the existing ones in the database. Requests for new SS numbers and requests for editing existing DEQ number must be submitted separately.
Well Name	25	07-31	Facility or common name of Sample Site	Must be unique in the EDD
DWR Number	9	32-40	Well registration number from the **Arizona Department of Water Resources** (ADWR).	Normally starts with "55-" Must have a match in ADWR list. If unknown, use 55-NOCODE.

Longitude	12	41-52	The Longitude values in Degree Minute Second.decimals of seconds Format: dddmmss.sssss Example: 1120514.16550	Must use North America Datum (NAD) 83. You can convert the formats, if needed | **See Appendix C >** Do not include a negative sign at the beginning of the longitude.
Latitude	11	53-63	The Latitude values in Degree Minute Second.decimals of seconds Format: ddmmss.sssss Example: 340811.76450	Must use North America Datum (NAD) 83. You can convert the formats, if needed | **See Appendix C >**
Lat-Long Method	1	64	Method used to determine latitude/ longitude location of Sample Site	Must be selected from this reference table: System Setting > Generic Data> REF_GEO_HORIZONTAL_COLLECTION
Top Screen	7	65-71	Highest altitude of sample port measured in feet.	Unknown screen interval information is to be populated with zero (0). Multi-port wells are to be created as separate sample Sites for each isolated sample port.
Bottom Screen	7	72-78	Lowest altitude of sample port measured in feet.	There could be one or more sampling ports in one well.

Drill Depth	7	79-85	Total drilled depth of the borehole, in feet below ground.	
Elevation	7	86-92	Measuring Point Elevation. Elevation of the well above sea level in feet.	Datum NAVD88 is preferred unless there are numerous measurement point elevations in NAVD29.
Elevation Method	1	93	Measuring Point Elevation Method The method that was used to determine the measurement point elevation of the well.	Must be selected from this reference table: System Setting > Generic Data> REF_SPATIAL_COORDINATE_METHOD

To check the EPA Water Quality Exchange domain list visit the **WQX domain values>**



WQX domain values

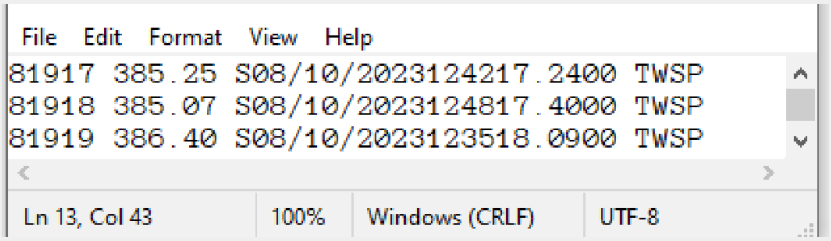
3.3 Water Level Data Validation

Water level (WL) data must meet the requirements in the table below. To ensure alignment between your WL data columns in the EDD text file and the standard WL header line, please copy the below header line and paste it at the top of your data in the text file.

Water Level Data Columns in the EDD

Water level header line with an example:

```
######M-POINTmMeasurDatetimeDepthToSMColle
81917 4856.38S02/25/2022130812.1900ATADEQ
```



Field Name	Field Length	Position	Descriptions	Validation Requirement
DEQ SS Number	6	01-06	Unique identifier of the SS in the WQDB. To request a new DEQ number, just enter 6 space characters. For well revisions, enter the DEQ Well number here (e.g. 81917).	Obtain the DEQ SS number from the database |See **Appendix B**. None of the requested new DEQ SS numbers should match the existing ones in the database. Requests for new SS numbers and requests for editing existing DEQ number must be submitted separately.
SS Elevation	7	07-13	Reference measuring point elevation relative to sea level in feet.	Datum NAVD88 is preferred unless there are numerous measurement point elevation in NAVD29.

Elevation Method	1	14	Method used to determine the measurement point elevation of the well	Must be selected from System Setting > Reference Data > Generic Data > REF_SPATIAL_COORDINATE_METHOD
Sample Date	10	15-24	Date of the water level measurement.	Must be in Text format like this: mm/dd/yyyy
Sample Time	4	25-28	Time of the water level measurement.	Use Military format. Measurement time must be unique for each measurement.
Depth to Water	7	29-35	Depth to water below reference measuring point elevation. measured in feet	
Well Status Code	1	36	Conditions that may affect the measured water level	This is Optional, but if entered, must be selected from System Setting > Reference Data > Well Status.
Water Level Method	1	37	Method used to measure Depth to Water	Must be selected from System Setting > Reference Data > Well Water Level Measurements.
Collecting Agency	5	38-42	Code for agency/consulting firm that collected the data	Must be selected from System Setting > Reference Data > Generic Data > REF_AGENCY.

3.4 Water Quality and Soil Vapor Data Validation

Please make sure your soil vapor and water quality data meet the requirements in the following table.

Column in Excel	Column Name	Descriptions
A	DEQ SS Number	Aka DEQ Well number. Unique identifier for the sample sites in the WQDB (e.g. 82159). - To obtain a SS number, in the login screen click on the Search Database and under Search Criteria, click on the gold + icon next to Sites. Enter the DWR-55 number in the Station ID field and click Search. If doesn't exist in the database, request it to be added to the database. **|See Appendix B**
B	**Lab Code**	Lab license code for the laboratory conducting the analysis (e.g. AZ0612). If doesn't exist in the database, request it to be added.
C	**Reporting Agency Code**	Agency code for agency that reported samples to lab. Choose Agency Code from REF_AGENCY from the Generic Reference Table List
D	**Collecting Agency**	Agency code for agency that collected samples to lab. Choose Agency Code from REF_AGENCY from the Generic Reference Table List Choose Agency Code from REF_AGENCY from the Generic Reference Table
E	**Lab Sample ID**	Sample ID that is assigned by the lab (e.g. VE-4)
F	**Sample Type Code**	Sample type code (e.g. G for G). Choose from Generic Reference Table List> REF_SAMPLE_PURPOSE

G	**Purpose Type Code**	Sample purpose code (e.g. R for Regular). Choose from Generic Reference Table List> REF_SAMPLE_Type
H	**Contractor Sample Number**	Assigned by the contractor
I	**Sample Date**	Sample date (e.g. 01/15/2024) Must be 10 characters in text format
J	**Sample Time**	Sample time. (e.g. 1430 or 0930) Use military time
K	**Sample Depth**	Sample depth (e.g. 19 or 19.5) The depth of the sample is defined as the depth to the intake of the pump, the depth to the sample collection opening on the bailer, the depth to the center of a passive diffusion bag sampler or a depth specific sampling device. Measure in feet below reference measuring point (elevation datum NAVD29 or datum NAVD88). Set default value of 0.00 if unknown.
L	**Analytical Method Name**	Analytical method (e.g. EPA 8260B). Choose from Generic Reference Table List> REF_ANALYTICAL_METHOD. If doesn't exist in the database, request it to be added. * The combination of Analytical Method, Substance Name, CAS qualifier, and Result Unit (called Protocol) must be valid in the database
M	STORET Code	Keep this column blank.
N	**Lab Reporting Limit**	Lab reporting limit (e.g. 0.255) Values may be adjusted if lab results exceed or fall below the lab's anticipated values.

		Results can be less than the laboratory reporting level with an appropriate lab qualifier.
O	**Lab Reporting Limit Units**	Lab reporting limit unit (e.g. UG/L) All capital cases
P	**Lab Results**	Chemical concentration level (e.g., 7.02) Must be numeric value only. Required only if the analyte is detected. If not detected, leave it blank.
Q	**Lab Notation Code**	Lab notation code (e.g. ND for non-detect) Required only if the analyte is NOT detected. If detected, leave it blank. Choose from Generic Reference Table List> REF_LAB_NOTATION
R	**Result Units**	Chemical concentration unit (e.g. UG/L). All Capital. *Required only if the analyte is detected. If not detected, leave it blank.
S	**Dilution**	Dilution factor (e.g. 1, 0.5, or 50). If no dilution was applied, enter a "1". The dilution factor field can accept real numbers. Including numbers less than 1 for concentration of metals or other samples.
T	**Lab Qualifier1**	Lab qualifier code (e.g. E4, L1) Choose from Generic Reference Table List> REF_LAB_QUALIFIERS. If doesn't exist in the database, request it to be added to the database Provides an additional description about the result. These are reported only by analyzing labs with appropriate Arizona Data Qualifiers. Carryover lab notation codes are not reported in these fields. Data reviewers can add notes using usability codes and comments. If more than 3 Lab Qualifier needed, use the Comment column.
U	**Lab Qualifier2**	
V	**Lab Qualifier3**	

W	**Sampler's Username**	WQDB username of the sampler (e.g. ABC_Defg.Hijk). If doesn't exist in the database, request a username for the person
X	**DWR Site ID**	ADWR-55 number (e.g. 55-572822) Include for double verification of well identity.
Y	**Comment**	Optional comment for sampler or data entry person.
Z	R_Comment	ADEQ comments. Please leave blank.
AA	**CAS Qualifier**	Sample Fraction code (e.g. Total) Choose from Generic Reference Table List> REF_CAS_QUALIFIER
AB	**Substance Name**	Substance name (e.g. BENZENE or 1,2,4-TRIMETHYLBENZENE) Choose from the "Characteristic Name" column in the "CharacteristicAlias(csv)" table that is available at https://cdx.epa.gov/wqx/download/DomainValues/Characteristic.CSV. This table is updated frequently. If it doesn't exist in the database, request it to be added to the database.
AC	**Sample Media**	Sample media (e.g. Water, Soil, Soil Vapor, etc.)
AD	**Speciation Name**	(e.g. “as Fe”). Case sensitive. Required if applicable Can be obtained from the MethodSpeciation (ZIP) | (XML)| (CSV)
AE	**Substance Category Code**	Substance group (e.g. VOC, PFAS, PEST, and BIO) Choose from Generic Reference Table >REF_SUBSTANCE_CATEGORY

AF	**Extraction Date**	Sample extraction date (e.g. 05/15/2025) Must be 10 Characters in text format
AG	**Analysis Date**	Lab analysis date (e.g. 05/15/2025) Must be 10 Characters in text format
AH	**Usability Originator Code**	Aka Originator Code. Select from the Originator column in the Usability Type table (e.g. LATA or USAF)
AI	**Usability Type Code**	A code that, along with the originator code, provides a quality note for data. Select from the Usability Type CD column in the Usability Type table" (e.g. J, M, NM) Choose from Usability Type tab from the Reference table list
AJ	**MDL**	Lab Method Detection Limit (e.g. 0.251)
AK	**MDL Unit**	Lab Method Detection Limit Unit (e.g. UG/L)
AL	**Collection Method**	For the ADEQ use only - please leave it blank.
AM	**Program Area**	Same as the selected Program Area in the upload page
AN	**Project Name**	Same as the selected Project in the upload page

4. Data Submission

In this section, the steps to submit data to the WQDB are outlined to ensure its successful integration into the database.

4.1 Naming the EDD

A proper file name, according to the following file naming convention is crucial for submission and organization. Files with improper names will be sent back for corrections. The file name must include no space characters and components are separated by underscores.

Data Type_Sampling Date_Project Short Name_ Data Submitter Username_Attempt Number		
Component	**Look-up list**	**Description**
Data Type	SV WL SS WQ	Soil Vapor Water Level Sample Site Water Quality
Sampling Date		The first date of samplings period. Must be 8 digits in this format: YYYYMMDD
Project Short Name	Provided by ADEQ when requested a user account	No space between the words
Data Submitter's Username		Is not necessarily the same person who emails the EDD

Attempt Number (If applicable)	A whole number from 2 to 99	Required only for subsequent attempts if data doesn't import successfully on the first attempt. Add '2' for the second attempt, '3' for the third attempt, and so on. (Not needed for the first attempt).

e.g. A Water Quality EDD collected from the *Payson* project on 08/13/2025 that was imported by Adam Smith
WQ_20250813_Payson_ABC_Adam.Smit

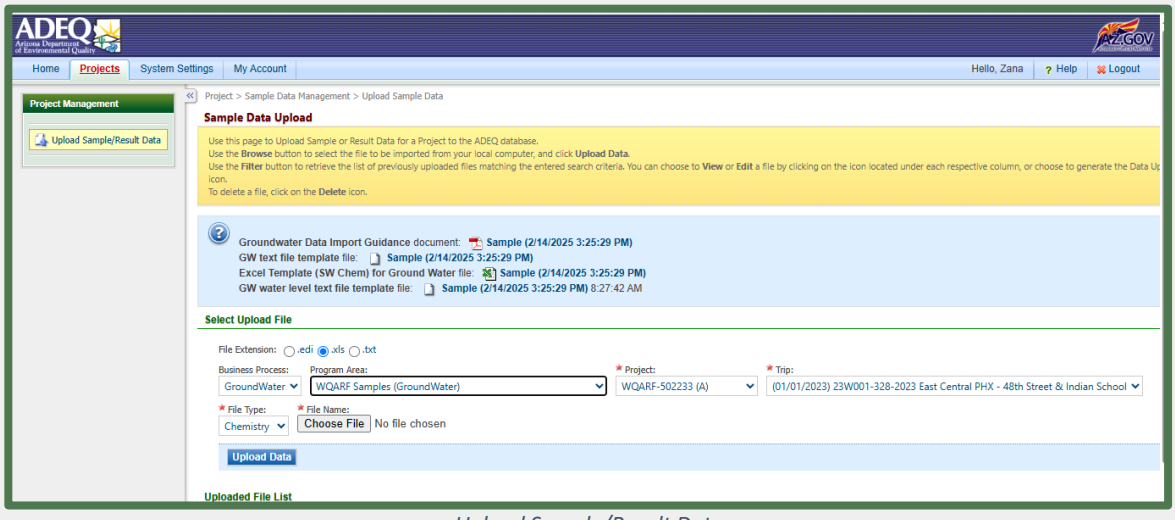
e.g. A Sample Site EDD located at the *Winslow Welding* project, surveyed on 12/25/2024 that is requested by John Doe for the second time
SS_20241225_WinslowWelding_DEF_John.Doe-_2

4.2 Importing the EDD into the staging database

Below are steps required to submit your EDD into the Water Quality Database:

1. In the **portal page**, navigate to Projects and click on "Upload Sample/Result Data."
2. Choose the appropriate EDD extension: ".txt" for water level and ".xls" for water quality or soil vapor EDDs. Note that SS text files are not submitted through this portal page.
3. For Business Process, select “Groundwater,” and choose the proper Program Area, Project, and Trip. Ensure that the Trip matches the project name in your EDD file name.
4. Select your File Type: “GW Level” for water level and “Chemistry” for water quality data.

Choose your EDD and click the "Upload Data" button to submit the data to the staging database. In some case, the spinning wheel shows that the data is still in upload process, while it has been already uploaded. In case the upload process takes too long, click on



Upload Sample/Result Data

5. System Setting or another tab, or log out and in back to see the correct upload status.
6. Verify that you receive a "Valid" status upon submission. In case of a "Fatal" and "Error" status, download the Error Report to identify and rectify the errors. “Warning” messages won’t prevent file from being uploaded, but it needs to be addressed for data integrity. For additional assistance, please contact the database coordinator.
7. Once the EDD has been successfully imported into the staging, inform the database coordinator via a notification email at gwqd@azdeq.gov. For follow up and tracking reasons, please only use this email address for any question or communication regarding the database.

4.3 Emailing the EDD

1. In the notification email, please include the file name, Import ID, the ADEQ Project Manager’s name, the imported EDD, and any supporting files if required (e.g., DTF, site map, error report).
2. Utilize the EDD's name as the subject of the email.
3. Consolidate all communications and edits related to a data submission within the same email thread by using the Reply key. If submitting a new edition of the file, continue using the initial email thread rather than starting a new one.
4. If submitting multiple EDDs, initiate a new email for each submission.
5. In the case of large EDDs, reach out to gwqd@azdeq.gov for alternative transfer methods.

4.4 Database Integration and Resolution

Upon successful submission into the staging environment, the database coordinator validates the file and data for requirements that might not been taken by the database upload validation procedures, such as correct file name. Once cleared by the database coordinator, the EDD will be imported into the live database and a confirmation email will be sent back to the data submitter. Should any issues arise, we will collaborate to identify resolutions. The submission process is considered complete when the EPA water quality exchange portal (WQX) accepts the data. For additional information and support, visit the WQDB Help Center at **azdeq.gov/WQDB/Help**.

5. Feedback

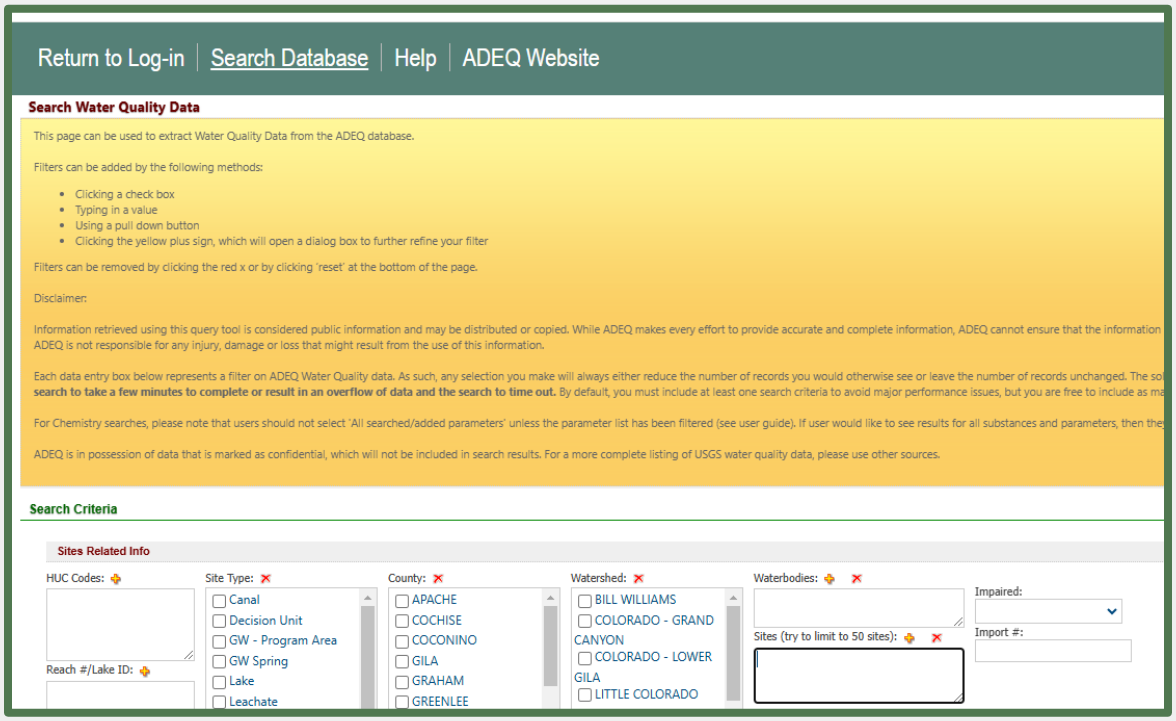
ADEQ values your input on potential database applications, required training, guidance, and other services to enhance the program's success. Please share your feedback with the database coordinator at **gwqd@azdeq.gov**. Your insights contribute to the continuous improvement of our services.

6. Appendices

Appendix A: Obtain water quality data from the Public Search tool

Follow these steps to obtain water quality data:

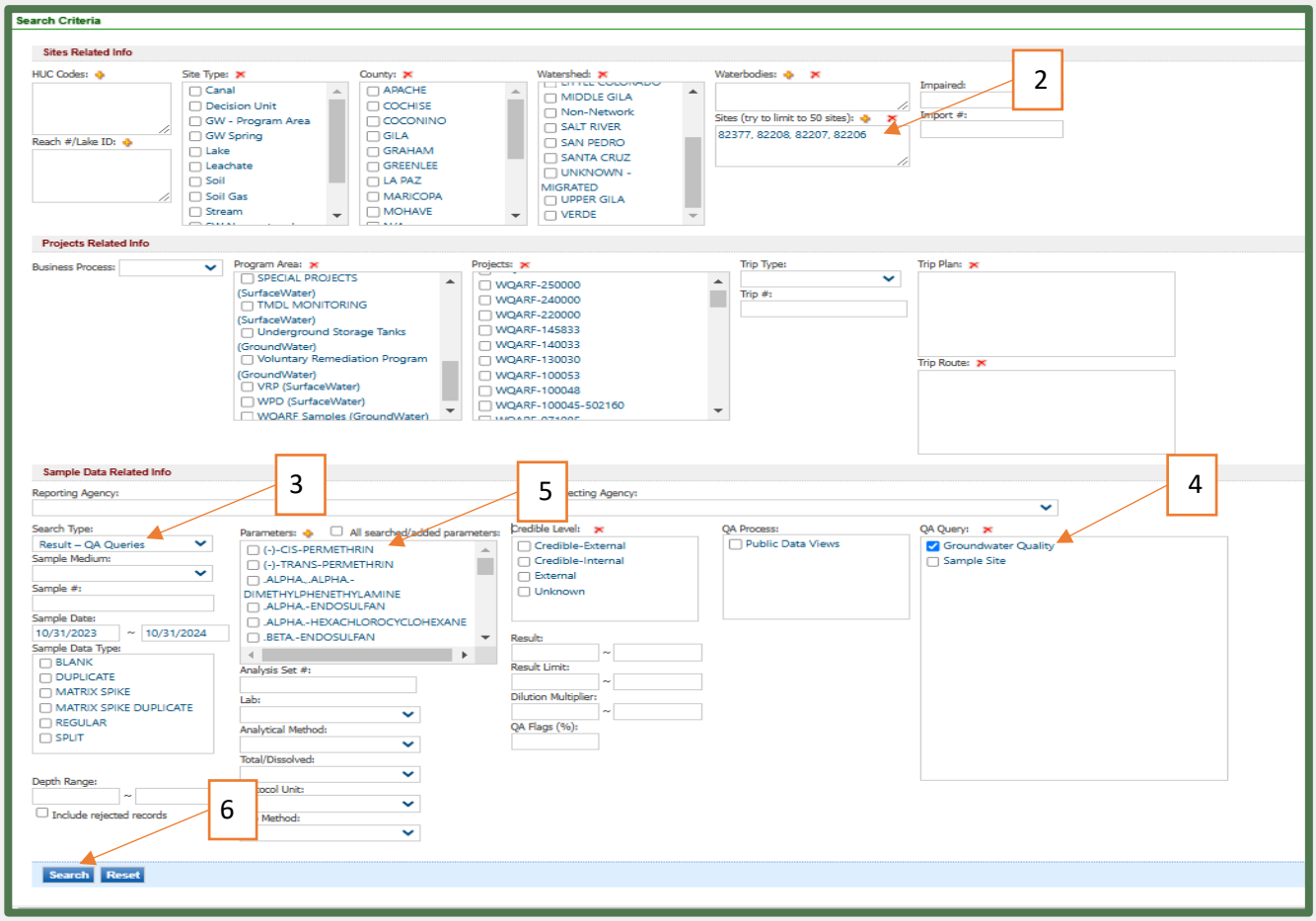
1. Navigate to **Search Database**. You don't need a user account to use this page.



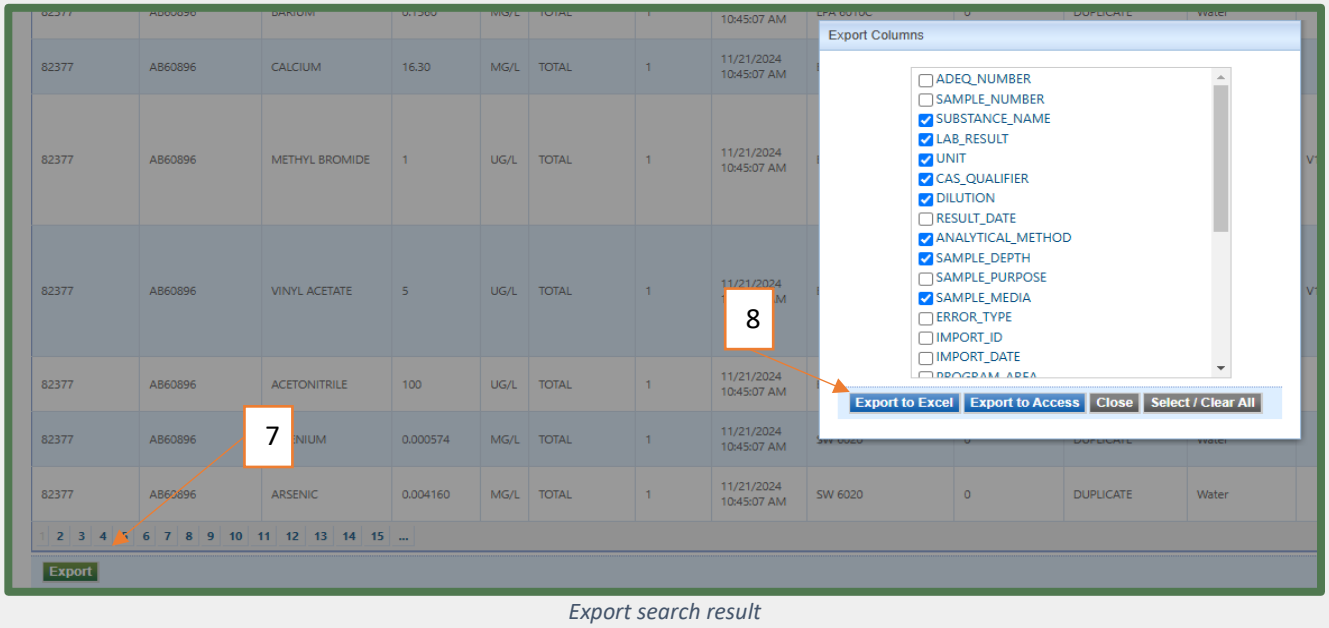
Search Database page

2. Enter up to 50 sample site numbers into the "Sites" box. Separate numbers by comma like this: 82377, 82208, 82207, 82206
3. From Search Type: select Result – QA Queries
4. From QA- Query select Groundwater Quality. Note: **This query cannot be filtered by Sample Date**
5. If looking for a specific substance, select it from the Parameters window. Please note that selecting too many substances slowdowns or crashes the search tool.

6. Click the search button.
7. Click the Export button. In the Export Columns pop-up window, start by clicking the Select/Clear button to unselect all columns. Next, choose the columns you need.
8. Click Export to Excel. A zip file containing multiple Excel files, each with 10,000 rows of data, will be downloaded. Collect all Excel files into one dataset. For better organization and analysis, consider using a database application such as Microsoft Access or an ESRI GIS Geodatabase.



Search Criteria

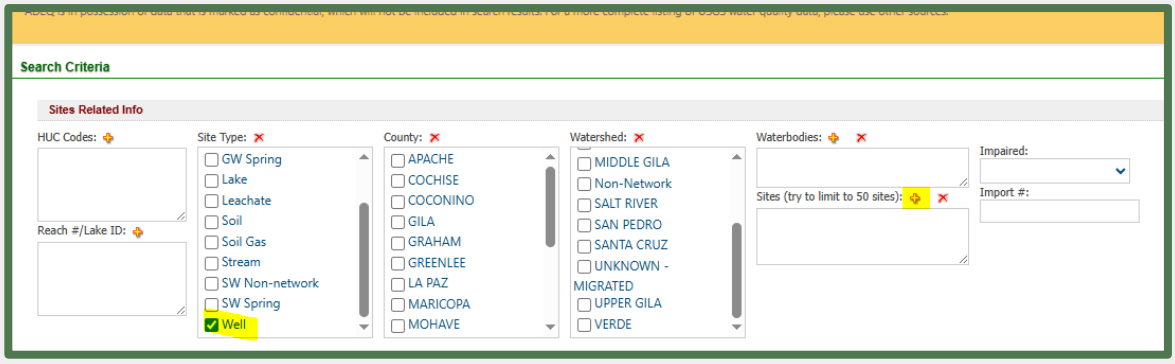


Export search result

Appendix B: Verify DEQ and DWR well numbers

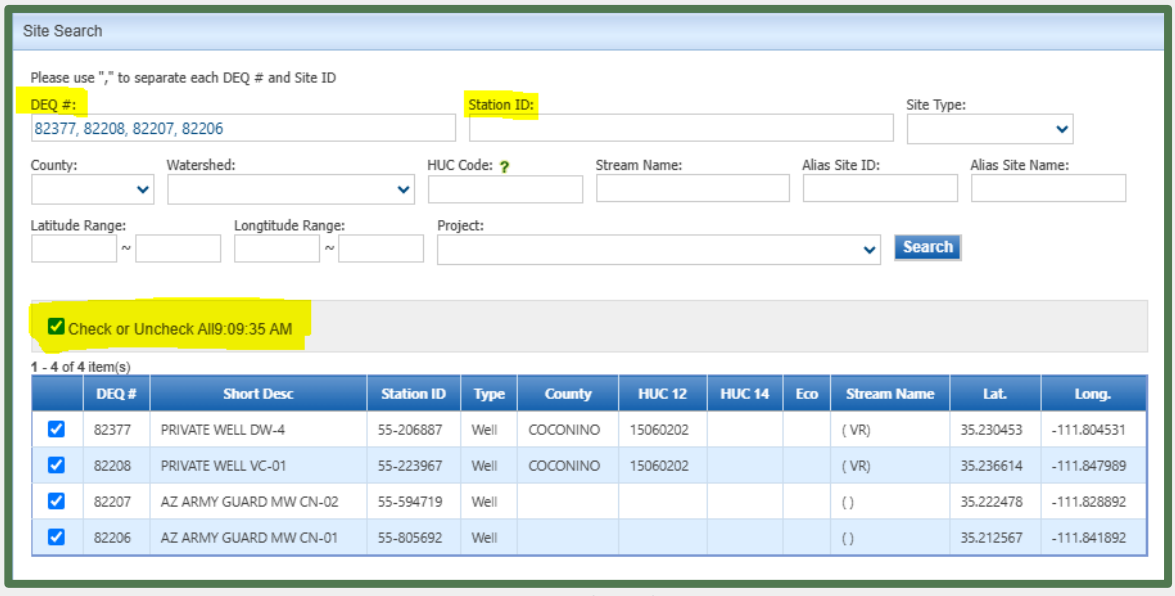
To verify the existence of DEQ well numbers or DWR well numbers in the database:

1. Navigate to the **Search Database**.
2. In the ***Search Criteria*** section***,*** scroll down in the drop-down list and select Well
3. If you want to conduct a search using ADEQ numbers, in the Sites box add up to 500 DEQ Well numbers that are separated by comma. Skip steps 4 and 5.
4. Click on the '+' next to the 'Sites'.



Search Criteria section

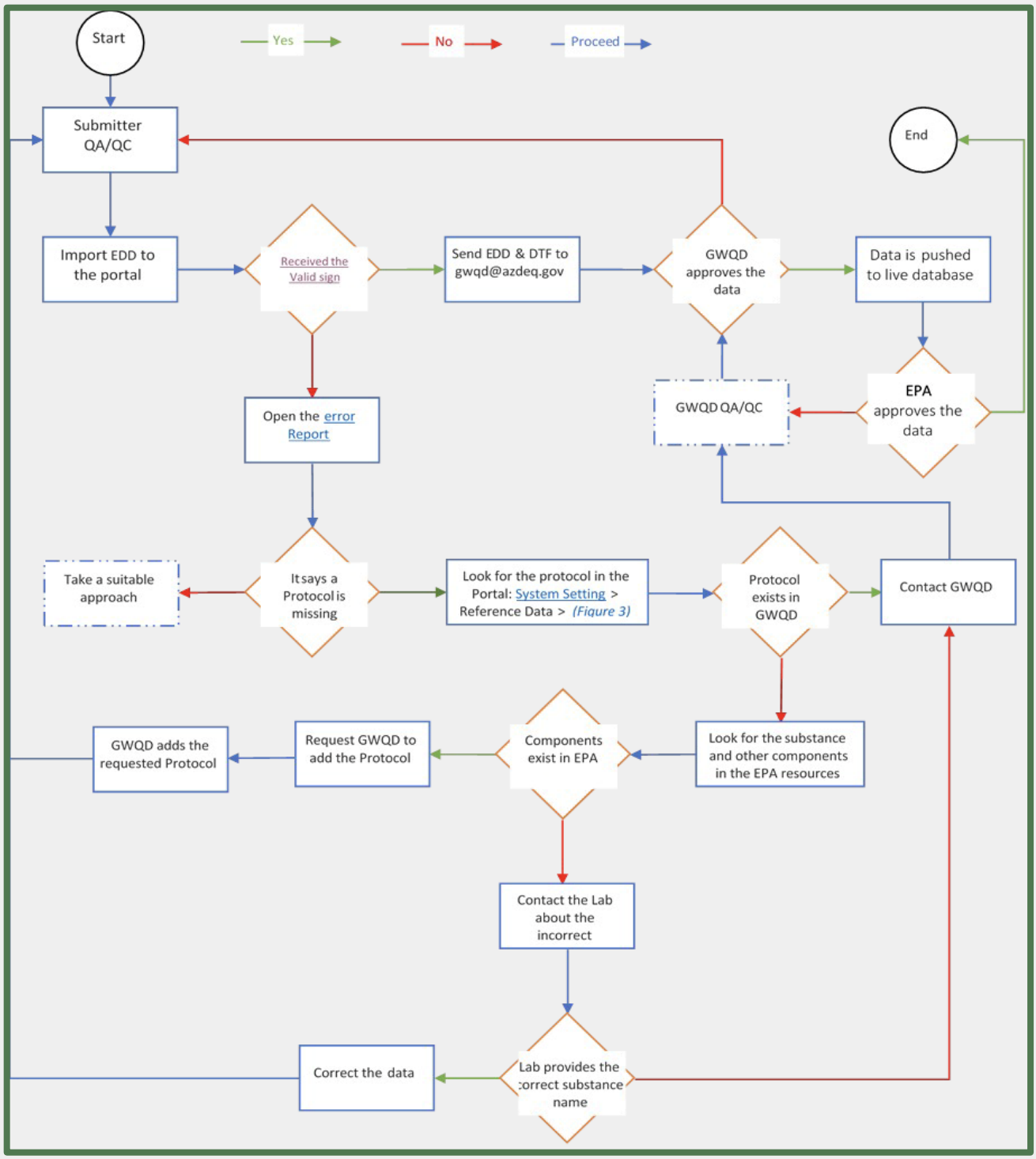
5. Enter the well or SS numbers:
   5.1. To search by ADWR numbers, add the 55- numbers to the **Station ID** field and click Search.
   5.2. To search by DEQ SS numbers, add the SS numbers to the **DEQ #** field and click Search.
6. Select the Check or Uncheck box to select all results
7. At the bottom of the page, click OK.



	DEQ #	Short Desc	Station ID	Type	County	HUC 12	HUC 14	Eco	Stream Name	Lat.	Long.
☑	82377	PRIVATE WELL DW-4	55-206887	Well	COCONINO	15060202			(VR)	35.230453	-111.804531
☑	82208	PRIVATE WELL VC-01	55-223967	Well	COCONINO	15060202			(VR)	35.236614	-111.847989
☑	82207	AZ ARMY GUARD MW CN-02	55-594719	Well					( )	35.222478	-111.828892
☑	82206	AZ ARMY GUARD MW CN-01	55-805692	Well					( )	35.212567	-111.841892

Site Search window

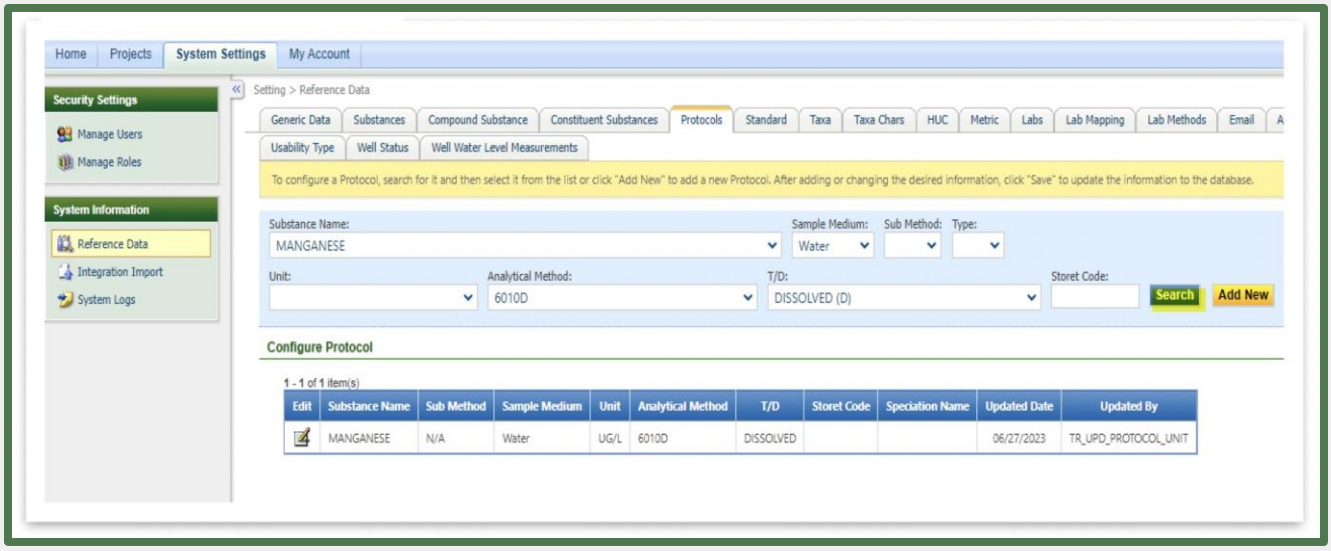
Appendix C: Missing Protocol Troubleshooting Flow



Valid Status

Fatal, Error, Warning

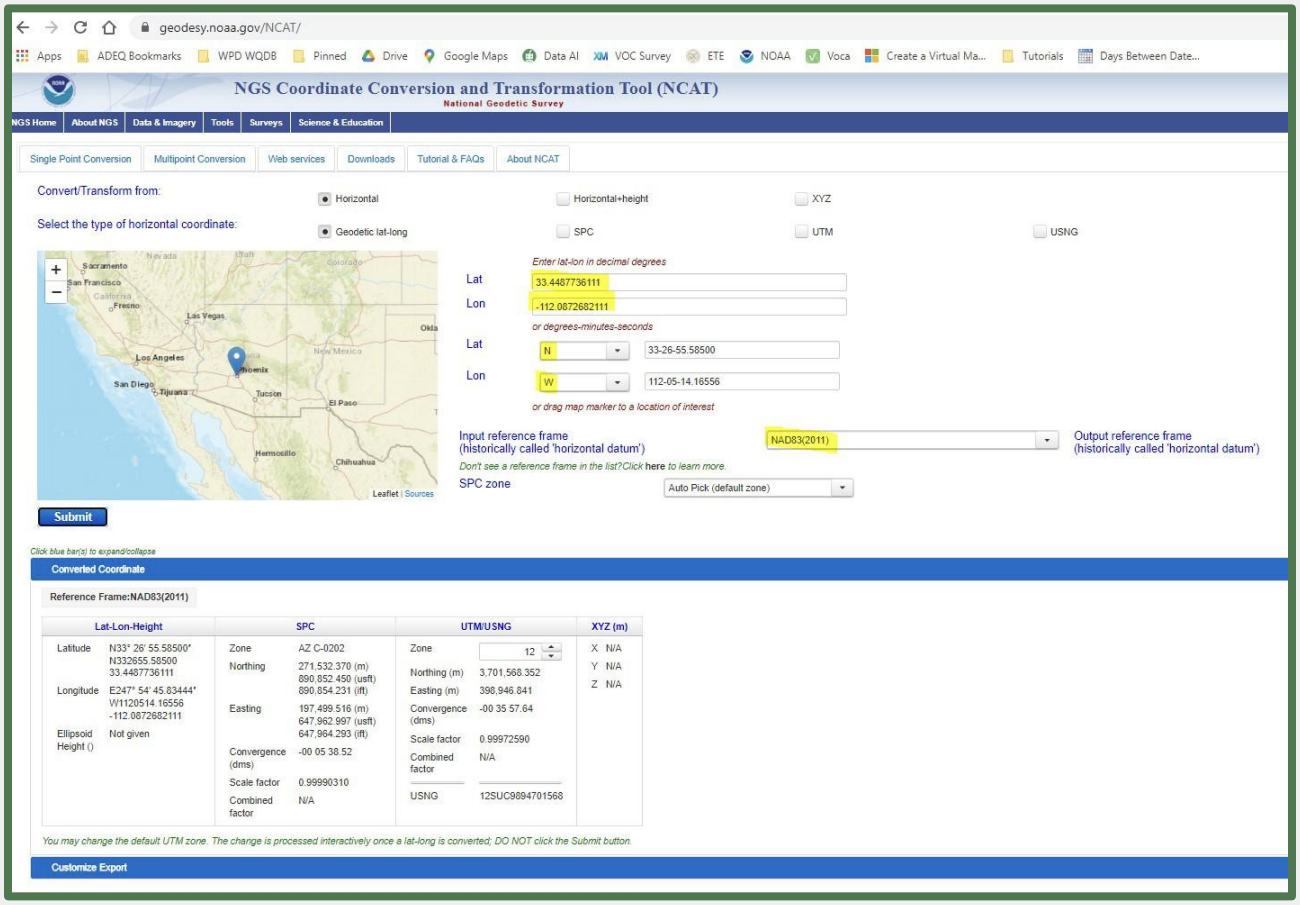
Error Reports



Search for Protocol

Appendix D: Convert Geographic Coordination

To convert different formats of Lat and Long data go to **geodesy.noaa.gov/NCAT**, enter your lat/lon values, fill out the yellow marked fields, and hit the submit button.



Groundwater Data Submittal Guidance

Appendix E: Electronic Data Transmittal Form (DTF)

Water Quality Database
Electronic Data Transmittal Form

Please submit this transmittal form with each electronic data submittal. Submit only one data type file with each transmittal form Direct transmittal form and electronic data submittal(s) to **gwqd@azdeq.gov**.

<table>
<tr><td>Submitting Agency:</td><td>ADEQ Project Manager:</td></tr>
<tr><td>Submitting Agent (Consultant):</td><td>ADEQ Hydrologist:</td></tr>
<tr><td>Phone Number:</td><td rowspan="2">Data Type:

☐ Sample Site ☐ Water Level
☐ Water Quality ☐ Soil Vapor</td></tr>
<tr><td>Email Address:</td></tr>
<tr><td>Program Name:</td><td rowspan="2">Sample Site Request Type:

☐ New ☐ Revision</td></tr>
<tr><td>Project Name:</td></tr>
<tr><td>Sampling Period:</td><td></td></tr>
<tr><td colspan="2">Document Name:</td></tr>
<tr><td colspan="2">Comments:</td></tr>
</table>

By submitting this document, you confirm you are using version 4.0 or a later version of the guidance document, Sample Type reference table codes, datum NAD83, and NAVD88 or NAVD29 for the reference measuring point elevation. Note the same elevation datum should be used for data being used to calculate groundwater table orientation and slope.

Thank you for your data submission.

Appendix F: Glossary

Business Term	Synonym	Description
DEQ Sample Site Number	ADEQ Well Number	A unique identifier for Sample Sites with coordinate data used to submit and retrieve water quality and water level data. Note: “ADEQ” and “DEQ” are used interchangeably in this guide.
DWR Number	Station ID	A well registration number from ADWR, typically starting with "55-". Note: “ADWR” and “DWR” are used interchangeably in this guide.
Bscreen	Bottom Screen	The lowest elevation of the screening area in a well.
Business Process		A module within the WQDB, such as Surface Water or Groundwater, used to organize and filter relevant data.
CAS Qualifier		Chemical Abstracts Service Qualifier, typically used to indicate various aspects of the analysis to ensure accurate data interpretation.
CAS Qualifier - Dissolve		A type of CAS Qualifier representing dissolved substances.
CAS Qualifier - Suspend		A type of CAS Qualifier representing suspended substances in the WQ template.
CAS Qualifier - Total		A type of CAS Qualifier representing the entire amount of a substance in a sample.
CAS Qualifier - Total Recovery		A type of CAS Qualifier indicating the overall recovery of a substance during a specific analytical procedure or process. It reflects how efficiently a chemical substance was retrieved or recovered from a sample during the analysis.

Comprehensive Environmental Response, Compensation and Liability Act sites	**Superfund Sites**	Sites that pose the greatest potential threat to public health and the environment are put on the NPL and DoD.
Coordinates		Geographic latitude and longitude coordinates for specific well locations.
Data Transmittal Form	DTF	A data cover page, typically included with the data file, providing information about submitted data.
Dilution		A required water quality sampling property, indicating the degree of sample dilution when analyzing substance concentration, typically "1" for no dilution.
Drill Depth		The total drilled depth below surface, optionally used. If unknown, populate with "1".
eAquaPro		The ADEQ water quality database application that is developed and maintained by a vendor
Electronic Data Deliverable	EDD	A file in digital format such as Excel that includes data
Groundwater Module	GW	One of the two modules of the Business Process dedicated to storing groundwater, soil vapor, and water level data.
Groundwater Data Submitter	GDS	A person or entity that submits groundwater quality, water level, or well inventory data into the Groundwater module of the WQDB.
Header Line		The first line in a text data file specifying the structure and component lengths of every line of data.
Import ID		An identifier in the portal log used for tracking and managing each data file imported into the WQDB.

Lab Qualifier		Water quality sampling codes used by labs to report specific information about results.
Lat/Lon Method		A method for determining the latitude and longitude (coordinate) of Sample Sites.
Measuring Point Elevation Method		A method for determining well elevation above sea level.
Method Detection Limit	MDL	The limit below which a sample result is considered a non-detection.
Monitoring Well	MW	The drilled well where a water sample is collected.
Not detected	ND	Lab notation for not detected substances in a water/soil sample
North American Vertical Datum of 1929	NAVD29	National Geodetic Vertical Datum of 1929
National Priorities List	NPL	The NPL is the EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial response under Superfund.
Per- and Polyfluoroalkyl Substances	**PFAS**	A group of man-made chemicals with fire-retardant properties manufactured and used by various industries since the 1940s. Exposure to some PFAS in the environment may be linked to harmful health effects in humans and animals.
Protocol		A well-defined combination of Substance Name, CAS Qualifier, Analytical Method, and Result Unit used to validate a record of data in uploaded data files.
Purpose Type-Duplicate		A lab method involving multiple independent samples for assessing precision.
Purpose Type-Regular		The initial collection of samples from a source.

Purpose Type-Split		A lab method dividing a single sample into subsamples for consistency checks.
Resource Conservation and Recovery Act Unit	RCRA	The **management of hazardous waste** is governed by the Resource Conservation and Recovery Act.
Reference Tables		Look-up tables for cross-referencing and validating data submissions, found in the Generic Data tab in the Portal.
Reporting Limit		The limit at which the lab confidently reports a sample result.
Result		The concentration or value of the substance measured in water or soil samples.
Sample Purpose Type	Purpose Type	Lab method for analyzing water quality.
Sample Result		The concentration or value of a parameter, substance, or pollutant from lab analysis.
Sample Type		A required water quality sampling property that describes how the sample was taken (e.g., Composite, Grab).
Sampling Port		A section of a monitoring well where the water samples are collected. A monitoring well could have one or more Sampling Ports
Speciation Name		A required water quality sampling property used by EPA to more accurately define the measured substance.
STORET Code		STOrage and RETrieval, a system used to manage and store water quality, biological, and physical data in the United States, which was discontinued in 2009.
Trip		A subset of WQD Project, representing a planned event for taking samples at sites or wells.

Trip Plan		Defines where samples will be taken for a Project and is composed of Trip Plan Routes.
Trip Plan Routes		Groups of sites associated with a Project or Program Area, used for grouping data and defining sampling areas.
Tscreen	Top Screen	The highest elevation of the screening area in a well.
Usability Code		A code that, along with the originator code, provides a quality note for data.
Usability Originator		The agency defining the usability code.
Underground Storage Tank Corrective Action	USTCA	Section typically contains provisions that are not normally contained within Consent Orders administered by other ADEQ programs.
Well Name		Facility or common name of Sample Site, unique in the data file.
Water Quality Assurance Revolving Fund	**WQARF**	An ADEQ program which supports identifying, prioritizing, assessing and resolving the threat of contaminated soil and groundwater sites in the state.
WQDB Back-End		An Oracle SQL core database managed by a vendor, serving as the primary data storage for the WQDB.
WQDB Error Report		An Excel file containing error information about incorrect records in the imported data file, used to resolve errors in data import.
WQDB Fatal Error		A critical error preventing data import, indicated in purple.
WQDB Front-End		A public search tool for exploring and downloading data by the public.
WQDB Portal		The WQDB API used for database maintenance, including importing data, creating user accounts, and downloading reference tables.

WQDB Program Area		The highest data level in WQDB, grouping work over years and different purposes such as Leaking Underground Storage Tanks (LUST), Water Quality Assurance Revolving Fund (WQARF), and Voluntary Remediation Program (VRP).
WQDB Project		A subset of Program Areas covering specific purposes and periods with defined data types and QA/QC requirements.
WQDB Warning Message		A potential issue during data submission, indicated in yellow.
WQX		EPA's Water Quality Data Exchange portal.
WQX Processing Report		A report from WQX containing information and potential errors about submitted data.

Appendix G: Questions & Answers

Q: What if I discover an error after the data has been submitted and imported into the Database?
A: Contact the WQDB Coordinator to inform them of the error. While data cannot be deleted, a replacement batch can be submitted to address the error.

Q: What if I find incorrect data that exists in the WQDB?
A: Contact the WQDB Coordinator with the DEQ Well Number and the correct information. They will ensure the necessary corrections are made in the WQDB.

Q: Is there any case sensitivity in the WQDB?
A: Yes, the WQDB is case sensitive. Ensure that your entries match the case used in the reference tables to prevent issues with recognizing valid values.

Q: Do I need to include the leading zeros on DEQ WELL NUMBER fields?
A: Yes, you should include the leading zeros on DEQ WELL NUMBER fields. The DEQ WELL NUMBER must match the database exactly.

Q: Do I include data from trip blanks or field blanks?
A: The Excel file format may include the field blanks or trip blanks, and other information

Q: Do I include data from surrogates as a record?
A: The Excel file format may include the surrogate and other information.

Q: What should I do if I need a look-up code (reference table value) that isn't available in the database?
A: You can send a completed specific request form and a detailed description of what you need to gwqd@azdeq.gov. The database authority will add the necessary look-up code and provide you with the relevant information.

Q: What if my laboratory's method of analysis isn't listed in the "ACCEPTABLE LABORATORY METHODS" table?
A: You should send an email to the WQDB Coordinator with details about the method, laboratory, analyte list, CAS Numbers, common names, and other relevant information. ADEQ will work to accommodate the addition of the method if appropriate.

Q: How should collecting and reporting agency codes be handled when a consultant is working for a client?

A: Generally, the consultant company should be the collecting agency, and the client should be the reporting agency. Both parties might need to obtain source agency codes. If clarification is needed, it's best to contact the WQDB Coordinator.

Q: Can my own data validation codes override the laboratory's codes in the LAB NOTATION field?
A: While you can establish Usability Originator Codes and Usability Codes for your data, it's generally recommended to report data exactly as the laboratory reports it. You can use the water quality comment field for additional information.

Q: Is an entry required for the ANALYSIS DATE field even for field samples?
A: Yes, an entry is required for the ANALYSIS Date field. You can use the sample date or the date results are obtained, depending on the circumstances.

Q: Is the extraction date required for data submissions?
A: Yes, the extraction date is required. If your laboratory results do not include an extraction date, you should contact both the laboratory and the WQDB coordinator. If there's no extraction date or concentration/digestion date for the sample, this should be reported in the data submittal cover.

Remember, if you have any further questions or need assistance with your data submission contact the WQDB coordinator at **gwqd@azdeq.gov** for guidance and support.

Appendix H: Useful Resources

ADEQ

- Quick Start Guide >
- Azwqdb Detailed User Guide >
- Groundwater Data Submittal Guide (old version) >
- Reference Tables Lookup >
- State Law: Arizona Water Quality Standards >
- Water Quality Public Search Tool >
- WQDB Access Request >
- WQDB Portal >

ADWR

ADWR Maps >

EPA

- National Environmental Methods >
- STORET Codes (retired list) >
- Water Quality Portal >
- WQX Domain Tables >
- WQX Glossary >

U.S. Geological Survey (USGS)

Water Quality Database >

OTHER

Standard Methods for the Examination of Water & Wastewater >