UIC Program Laboratory Data QA/QC Report Instructions

The Laboratory Data Report QA/QC Checklist, (Appendix E) checklist is a tool designed to be completed by all permittees/laboratories, waste generators/laboratories, and any other regulated activities that require an analytical demonstration to verify compliance for the UIC program within the Radioactive Materials Division. The purpose of this checklist is to ensure that the records associated with all analytical data reflect all of the processes and procedures used to generate them, and to evaluate completeness, correctness, and compliance of the data against the applicable TCEQ and federal requirements.

I. Texas Accreditation Program

Laboratories providing data to the TCEQ must be NELAP-accredited unless an exception can be made under 30 TAC §25.6. In addition, all data used to meet compliance with the UIC program will also have to meet the performance criteria as designated in this QAPP.

II. Analytical Methods and Method Modifications Clarifications & Procedures

Analytical Methods

TCEQ rules allow flexibility in method selection consistent with U.S. EPA's 2005 Methods Innovation Rule. Unless prohibited by law, rule, or method, permittees/laboratories are not required to use U.S. EPA SW-846 methods when conducting RCRA monitoring programs. This allows for all versions of a method or different U.S. EPA method if the laboratory can demonstrate compliance through acceptable QA of the performance standards. All methods used by the laboratory must be provided on data report sheets and/or the checklist.

Method Modification Procedures

Due to the variation of waste, it is the responsibility of the permittee/laboratory to find the appropriate method suitable to demonstrate compliance along with data of known quality unless a particular method is required by permit or rule. The U.S. EPA and TCEQ recognize this flexibility through the CFR and TAC and require the permittee, or entity required to demonstrate compliance, to have a laboratory modify a method (as allowed) to ensure compliance to the UIC thereby protecting the environment and human/animal population. This is due on principle that most UIC methods are considered performance-based and guidance, therefore modifications to methods in SW-846 may be necessary to meet or enhance performance that could not otherwise be attained to demonstrate compliance. In other words, most of the methods are not one- size-fits-all and should be tailored to fit the sample type and associated interferences while maintaining clear and controlled QC performance standards. Other methods are not guidance and are written into the CFR and must be used without any modification if they are legally and defensibly used to demonstrate compliance for their intended purposes in the UIC programs. These are referred to as Method Defined Parameters (MDPs) and can be found at 40 CFR §260.11 (e.g., *Toxicity Characteristic Leaching Procedure (TCLP; flashpoint procedure, and corrosivity to identify hazardous waste*). Any modifications to these methods must have prior approval from the U.S. EPA.

All modifications to methods must be listed on the Case-Narrative Sheet and be written in the laboratory's SOP if this is a routine procedure or whether a modification was necessary at the time of sample preparation and analysis to demonstrate compliance. A list of potentially acceptable modifications that are allowed for meeting UIC compliance according to the U.S. EPA and TCEQ is presented here.

Equipment	
AA or AE lamp type Absorption cell size Amperometer equipment Atomizer type Auto-analyzer equipment Mixing technology Measurement technology Reaction procedure Automatic concentration equipment (e.g., TurboVap) Beaker and/or flask size Centrifuge tube size Chromatographic cleanup/isolation column type/size Chromatography column and dimensions Colorimetric apparatus Condenser glassware Connective tubing type Dilution glassware type/size Dissolved oxygen analyzer Distillation apparatus Evaporating dish type/size Filter type/size Filtration apparatus Flame AA burner type Fume traps Furnace AA platform and tube type Glassware stopper type	Gooch crucible/platinum dish size Graduated cylinder size Heating equipment Hydride generator Kuderna-Danish size Photometer type Pipet size Pressure reduction apparatus Proportionating or peristaltic pump Purge gas Reduction column composition/size Reflux apparatus Sample cooling and/or stirring devices Sample container type/size Sample digestion apparatus Chemical oxidation Microwave digestion Sample purge cell type/size Sample trap material/size Scrubber apparatus size Separatory funnel size Synder column Solvent delivery System Syringe size Titration vessel size Vacuum apparatus Vial size
Chemicals	

Atomic absorption/emission fuels and oxidant Buffer solution Catalyst Cleanup column elution solvent Color developing reagent Dechlorination reagents for residual chlorine Desiccant/drying chemical Dilution water composition Extraction solvent Fuel/oxidant ratio Class cleaning chemical HPLC system/pump Indicator solution	Inhibitor solution Internal standards Materials for reference matrix (e.g., air/gas, effluent water, oil, sand, soil Nitrification inhibitor Oxidizing and reducing agents Partitioning solvent Sample preservation chemical Sample digestion chemical Scrubber solution and concentration Stock solution concentration Surrogates Titrant
Specifications	
Aeration time Calibration range Conductance measurements Dehydration techniques Desorption technique and time Glassware cleaning techniques and sequences Heating time Hydride elimination techniques Interference elimination techniques	Metal-and-organic-free water preparation. reflux time Sample aliquot size Sample cleanup techniques Sample cooling techniques and times Sample digestion/extraction techniques Sample mixing techniques Solution Standardization techniques

III. How to Complete the Laboratory Data Report QA/QC

Provide a completed copy of the Laboratory Data Report QA/QC Checklist (Appendix E) for all analytical data sets submitted to the TCEQ to verify compliance to UIC Program with the Radioactive Materials Division.

- If entries are lengthy or in Table form: (1) refer in the checklist to a specific section of the reference or modified method or (2) use a separate sheet to document the information, indicate “See Attachment No.,” and attach the sheet to the checklist. Assign a number or other unique identifier to each attachment and indicate the identifier in the space on the checklist.
- All performance standards (QA/QC samples) that did not meet compliance to the goals and/or requirements to this QAPP must be described in the Case-Narrative for further evaluation by TCEQ staff to determine whether the data can be used to demonstrate regulatory compliance to the program requirements.
- All modifications to methods by the laboratory must be identified in the Case- Narrative (Appendix F) for record.
- Sample matrix interference problems must be identified in the Case-Narrative (Appendix F) and any corrective action the laboratory took including calling the TCEQ or modifying the method.
- The laboratory report sheet must comply with the minimum reporting requirements of the 2016 TNI Standards.
- The method detection limit (MDL), also known as the limit of detection (LOD–2016 TNI Standards), and the practical quantitation limit (PQL-2016 TNI Standards), also known as the limit of quantitation (LOQ), must be clearly defined.
- Each laboratory must define all flagged data.
- Any results reported outside the lower and upper calibration standards will be considered an estimate and must be flagged.
- A statement or sampling and run dates or proof by COC forms must be provided to verify that samples were run within required holding times.