# Statement of Work and Quality Assurance Requirements for Analysis of Pesticides in Water and Solid Media Extracts for Research on Transformation of Agricultural Chemicals.

***\*Note that this sample has been revised from the source document on the Government Point of Entry as necessary to align formatting and applicable FAR procedures.\****

**Synopsis:** Water samples and solid media extract samples will be provided to the analytical contractor (the “contractor”) for analysis of pesticide compounds. The contractor shall analyze up to 500 samples involving the following media, methods, and analytes. *Media.* Aqueous samples and methanol (MeOH) extracts of solid phase media. *Analytes.* 1,2-Dibromo-3- chloropropane (DBCP), 1,2-Dichloropropane (DCP), 1,2-Dibromoethane (EDB), 1,2,3- Trichloropropane (TCP). *Method(s).* The method involves EPA Method 5021A or an 8260B or C equivalent method, and methanol (MeOH) extracts of solid media samples for the DBCP, EDB, DCP and TCP using EPA method 8260B or C. This work will be conducted under a category B quality assurance project plan (QAPP).

**Table 1.** Summary of sample types, numbers(1), target organic compounds, and analytical methods.

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| --- | --- |
| Sample Type | Pesticide Organic Compounds |
| Water | EPA Method 5021A or 8260B or C |
| MeOH (Solid Phase Extract) | EPA Method 8260B or C |
| Total number of samples | **(500)** |
| 1 The bold numbers in parentheses are the projected number of samples to be analyzed in the base year. A different estimate may be estimated for each option period, if exercised. | |

# Links to the EPA methods:

EPA Method 5021A [https://archive.epa.gov/epawaste/hazard/testmethods/web/pdf/method%205021a%2C%20revision%2](https://archive.epa.gov/epawaste/hazard/testmethods/web/pdf/method%205021a%2C%20revision%201%20-%202003.pdf) [01%20-%202003.pdf](https://archive.epa.gov/epawaste/hazard/testmethods/web/pdf/method%205021a%2C%20revision%201%20-%202003.pdf)

EPA Method 8260B

<https://archive.epa.gov/epa/sites/production/files/2015-12/documents/8260b.pdf> EPA Method 8260C

<https://archive.epa.gov/epa/sites/production/files/2015-12/documents/8260c.pdf>

**EPA Responsibilities:** Aqueous and solid media samples will be collected, extracted as needed, and samples will be submitted to the contractor through overnight UPS shipments. Samples will be submitted in batches of 10 or more for each submission. Total number of samples not to exceed 500. The contractor will be notified by the EPA at least one week in advance of the sample collection and shipping activities. Triplicate or duplicate samples will be collected and provided. The number of samples described above includes the sample, field duplicates, blanks (including method or extraction blanks and solvent blanks), and trip blanks. In addition to field duplicates, it is expected that the contractor shall select samples for laboratory duplicates and matrix spikes analysis in the submitted sample set to fulfill QA/QC requirements. The samples shall be analyzed for single pesticides, Instructions for sample analysis will be included in the sample chain of custody sheet for clarification purposes. For example, instructions will identify which compound to analyze, i.e., DBCP, EDB, DCP, or TCP. It is expected that these samples will be analyzed for single component analytes.

**Pesticide Organic Compounds (DBCP, DCP, EDB, TCP):** Analyses include aqueous and solid phase media extraction samples that contain 1,2-Dibromo-3-chloropropane (DBCP), 1,2- Dichloropropane (DCP), 1,2-Dibromoethane (EDB), 1,2,3-Trichloropropane (TCP). The aqueous samples will be collected unfiltered into 40 mL glass vials (pre-cleaned and certified grade). The vials will be filled to exclude headspace. The aqueous samples for analysis will be preserved with HCl to a pH ≤ 2 and stored at ≤ 6 oC. Often, if not always, duplicate samples will be collected and shipped where both samples are to be analyzed as field duplicates and specific instructions will be provided to analyze these samples to assure clarification of analysis. The aqueous samples will be analyzed by the contractor using EPA Method 5021A or EPA Method 8260B or C and the results shall be provided by the contractor in terms of pesticide concentrations in the 40 mL vial (i.e., μg/L DBCP, EDB, DCP, TCP).

Solid phase media will be extracted by the EPA and the extract shall be analyzed by the contractor using EPA method 8260B or C GC/MS. The solid phase media will be extracted with a sufficient volume of MeOH and the MeOH extract will be decanted, transferred to a vial (2 mL HPLC vial with a teflon lined cap), and provided to the contractor in replicate in case of breakage. Only one sample of the two shall be analyzed. However, at times, replicate samples will be provided where both are to be analyzed and specific instructions shall be provided to analyze these samples to assure clarification of analysis (note: matrix spikes will not be done on the GAC because of the inherent difficulty of trying to spike samples in one lab and analyzing in another and not having the same spiking solution available in both labs). The quantitation limit should be < 2-2.5 mg/kg solid media (i.e., 10 mL MeOH, extracting 1 g solid media). This quantitation limit for pesticides on GAC can be used to calculate a minimum quantitation limit of the pesticide in the MeOH extract.

**Contractor Responsibilities:** The contractor shall have current accreditation for the methods listed above through NELAP or other nationally recognized accrediting organization. The contractor shall determine the concentrations of DBCP, EDB, DCP, and TCP in water samples and methanol extracts using EPA methods as described previously. The contractor shall not be required to perform the sample extractions. The contractor shall analyze a laboratory duplicate and matrix spike for each method and matrix and adhere to the QA/QC requirements as dictated in the DOD Quality Systems Manual for Laboratories, Version 4.2 or the QA/QC requirements specified in the EPA Method 5021A. However, matrix spikes shall not be required for the extract samples. The analytical results for the methanol extracts shall be reported as pesticide concentration in the extract (µg/L). The aqueous sample sets shall be analyzed on the same instrument and using the same method for all samples analyzed; the methanol extracts shall be analyzed on the same instrument and using the same method for all samples analyzed. The contractor shall perform all analyses within the samples specified holding time.

**Acceptance Criteria:** The contractor’s results shall be considered acceptable if samples are analyzed within the 14 day holding time using EPA Method 8260B or C, or 5021A as described previously, the QA/QC requirements of the EPA Methods 8260B or C are met per DOD Quality Systems Manual for Laboratories, Version 4.2 or those specified in the EPA Method 5021A, and data deliverables as described below are provided within specified timeframe.

**Deliverables:** The contractor shall submit a final report at completion of analysis which includes, tabulation of final sample results and data package. Data package shall be provided via email for all sample analyses: Methods used, dates samples received, prepared and analyzed, sample matrix, units, calibration range, Method Detection Limits and Quantitation or Reporting Limits, results for QC checks, explanation of any deviations from method requirements, and qualification of data that do not meet QC acceptance criteria. The electronic deliverables can take the form of MS Excel spreadsheets or pdf files. Results of the analysis shall be reported to the EPA technical lead to be identified at task order award via e-mail within 45 days of the receipt of the samples.

**Period of Performance:** One year from contract award. One (1) one-year optional period will be included in the order. The total number of samples to be analyzed each optional period is up to 500 samples (i.e., as described above).

**Technical Point of Contact:** [insert info here]