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Statement of Work

For

General Materials or Services

Title: Data Quality Objectives Support for the Environmental Integration Services Organization

Date: 12/10/2020

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Signature Page Only

<i>APPROVALS</i>	<i>PRINT NAME</i>	<i>SIGNATURE</i>
<i>BTR*</i>	<i>April Johnson</i>	

* Approval for Technical Content

Based on the Hazardous Review and Identification Checklist to identify Subject Matter Experts (SMEs), the following approvals are applicable to this Statement of Work. (Note: hard copy signatures are made PDF and files in the notes panel of the Asset Suite requisition).

<i>Signature Required</i>	<i>No Signature Required</i>	<i>ORGANIZATION</i>	<i>PRINT NAME</i>	<i>SIGNATURE</i>
		<i>End-User / Requestor</i>	<i>April Johnson</i>	
		<i>End User / Requesting Manager (Project of Functional Director)</i>		
	<i>x</i>	<i>Environmental*</i>		
	<i>x</i>	<i>Radiation Protection</i>		
	<i>x</i>	<i>Industrial Safety and Health</i>		
	<i>x</i>	<i>Fire Protection</i>		
	<i>x</i>	<i>Chemical Management</i>		
	<i>x</i>	<i>Emergency Preparedness</i>		
		<i>Quality Assurance Engineer</i>	<i>Must be approved In Asset Suite</i>	<i>Must be approved In Asset Suite</i>
		<i>Engineering/Design Authority</i>	<i>Must be approved In Asset Suite</i>	<i>Must be approved in A Suite</i>



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1.0 INTRODUCTION / BACKGROUND

As a prime contractor to the U.S. Department of Energy (DOE), the Mission Support Alliance, LLC (MSA) (Contractor) supports cleanup of the Hanford Site. Under this contract to DOE, MSA performs environmental monitoring to measure the concentration of radionuclides and toxic chemicals in environmental media in order to assess the integrated effects of these contaminants on the environment and the public.

Technical support services including, but not limited to facilitating development of data quality objectives (DQO) and preparation of a technical basis documents are required to support the MSA Environmental Program and implementation of a new Toxic Air Monitoring Program (TAMP) at the Hanford Site. Programmatic support associated with environmental sample collection methods, field analytical methods, laboratory analytical methods, dispersion monitoring and statistical data evaluation may also be requested as needed by MSA.

The primary task for this scope of work (SOW) is for the Subcontractor to use the Environmental Protection Agency (EPA) DQO process (EPA/240-B-06-00) to support multiple tasks needed by MSA Environmental Program including the TAMP to develop the new program for development of an ambient air monitoring program for criteria and toxic air pollutants, hazardous air pollutants and other volatile organic pollutants at the Hanford Site. Multiple DQOs will be requested and funded separately as needed by MSA. MSA requires the subcontractor to supply various DQO technical and scientific labor category staff to perform the various DQOs.

2.0 OBJECTIVE

The Subcontractor shall provide technically qualified person(s) to facilitate development of a technical basis for environmental sampling using the EPA DQO process. Technical expertise in leading and conducting DQOs, radiological and toxic environmental sampling, field analytical sampling methods, laboratory analytical methods, environmental quality control, statistical sampling, and data verification and validation to support MSA continuous improvements for the environmental surveillance work processes and data management systems shall also be provided as needed to support process improvements. The primary objective of this SOW is delivery of DQOs for the Hanford Environmental Program and TAMP.

The Subcontractor shall provide the technical expertise to perform the work scope under the direction of the Contractor and within the project schedule and budget.

3.0 DESCRIPTION OF WORK – SPECIFIC

The Subcontractor shall perform the DQOs at the direction of the Contractor's Buyer's Technical Representative (BTR) or designee, who will be the Contractor's primary point of contact to the Subcontractor for all technical and administrative matters. The work



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scope included in this SOW for each DQO includes planning and facilitating DQO workshop(s) by using Contractor supplied requirements documents, interviewing DOE, MSA and Other Hanford Contractor's (OHCs) subject matter experts and DQO team members for the purpose of planning the workshop, facilitating the workshop, and developing DQO documents that provide the technical basis/sampling design for each environmental sampling media.

The Subcontractor is responsible to properly execute the DQO process that will provide a level of data and information that is appropriate to the magnitude of scope. The Subcontractor will be responsible for the following:

- Document Review - The Subcontractor will perform a review of available information and documentation to support development of DQOs. Data and documents will be provided to the Subcontractor.
- DQO Meeting Facilitation - The Subcontractor will be responsible for preparing agenda, facilitating, and preparing notes for DQO planning meetings with MSA DQO team members on an as-needed basis. The Subcontractor will work closely with the designee to determine when a meeting is necessary and who should attend.
- Statistical Support - The Subcontractor shall perform statistical analysis to determine the level of sampling required to meet the data quality needs and evaluate past sampling if needed to support preparation of DQOs. Data will be supplied by MSA.
- Quality Assurance – The Subcontractor will incorporate quality assurance (QA) and quality control (QC) specifications in the DQO that are applicable for ambient air monitoring programs. The QA/QC requirements in the Hanford Site Quality Assurance Requirements Document (HASQARD) (DOE/RL-96-68) are applicable. Guidance provided in the EPA *Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II, Ambient Air Quality Monitoring Program* may be considered.
- Sampling Methods, Field Analytical Methods, Mobile Laboratory, and Laboratory Analytical Methods – The Subcontractor will evaluate available sampling methods, field analytical methods, laboratory analytical methods, technical feasibility, and associated costs for criteria (WAC 173-400), toxic air pollutants (TAPs) (WAC 173-460), and hazardous air pollutants (HAPs) (<https://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications>). Measurement techniques that are not standard approved EPA methods may be considered during the DQO process and will be developed using performance-based measurement system (PBMS) concepts that meet ambient air monitoring DQOs.
- Meeting Minutes – The Subcontractor will be responsible for development of meeting minutes and coordination of comment resolution from all parties involved for each phase of the DQO process.
- DQO Document Development – Draft the DQO report and resolution/incorporation of comments from all parties.



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The following is a list of the currently planned DQOs, other DQOs under this DOW may be needed in the future and the information will be communicated to the Subcontractor when known.

3.1 DQO for Toxic Air Emission Sources

The DQO will establish future air sampling protocols for criteria, TAPs, and HAPs from all Hanford Prime contractors:

- Mission Support Alliance (MSA) and its successor, Hanford Mission Integration Solutions (HMIS)
- CH2M Hill Plateau Remediation Company (CHPRC) and its successor, Central Plateau Cleanup Company (CPCC)
- Washington River Protection Solutions (WRPS) and its successor prime contractor (yet to be determined)
- Bechtel National, Inc. (BNI) and its successor contractor (yet to be determined), which will operate the Waste Treatment Plant
- Wastren Advantage Inc. Hanford Laboratory (222-S Laboratory)
- Pacific Northwest Nuclear Laboratory (PNNL)

Participation from the Hanford Prime contractors in addition to the facility/site owner (the US Department of Energy), regulatory agencies (EPA and Washington State Department of Energy), stakeholders, and TAMP technical team will need to be coordinated.

The DQO will provide a technical basis for developing a toxics air monitoring program that will generate data demonstrating a known and appropriate level of quality for its intended use in supporting conclusions on public health risk and toxic air permitting.

The Subcontractor will work the TAMP team to develop the problem statements, study questions, site conceptual model, and exposure scenarios. The team will work identify standards and regulatory guidelines that will be used to compare the data to (e.g., action levels), define the uncertainty and limitations associated with the historical toxic air monitoring data and perform statistical tests as needed. The Subcontractor and MSA will work to identify sample connection, field measurement and laboratory analytical methods. The team will work to define quality assurance/quality control specifications and the acceptance criteria for new data consistent with the EPA Data Quality Assessment guidance (EPA QA/G-9R).

3.2 DQO to Support Optimization of the Environmental Surveillance Program

The Subcontractor will execute a DQO process appropriate to the magnitude of the Hanford environmental surveillance and monitoring program needs. The Subcontractor will use the



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recommendations either the EPA DQO process (EPA/240-B-06-00) or the National Council on Radiation Protection and Measurements, *Design of Effective Radiological Effluent Monitoring and Environment Surveillance Programs* (NCRP Report No. 169) to support the development of this DQO as agreed to by MSA and the Subcontractor. The current sampling and analytical requirements are provided in the Hanford Site Environmental Surveillance Master Sampling Schedule for Calendar Year 2020 (DOE/RL-2013-53, Rev. 6). Historical environmental surveillance data and information is summarized in annual environmental reports available at <https://msa.hanford.gov/page.cfm/EnviroReports>.

The Subcontractor will evaluate the environmental surveillance program pathway models and associated environmental media that are sampled by MSA to support DQO meetings and development of a technical basis for all media sampling. The DQO process will coordinate the aspects related to multiple sources, radionuclides, pathways, and exposed individuals or other biota. The surveillance program shall be designed with the spatial, temporal, and multi-radiation coverage needed to define the radiological environment at the sensitivity required by DOE criteria (DOE-HDBK-2016-2015). The media sampled include ambient air, surface soil, vegetation, surface water, sediment, food and farm products, and wildlife. Thermoluminescent dosimeters are used to collect radiation dose information and included in the monitoring program.

3.3 DQO to Support TAMP Ambient Sampling

The Subcontractor will execute a DQO process appropriate to the magnitude of a proposed TAMP ambient air toxic sampling program. The Subcontractor will evaluate the feasibility of performing toxic ambient air sampling on the Hanford Site. The TAMP will provide the Subcontractor with a list of toxics and ranked health risks and with spatially modeled air concentrations and deposition rates. The DQO process will evaluate the feasibility of performing sampling with emphasis on determining if ambient concentrations are above instrumentation detection limits and if the sampling system would provide beneficial data to TAMP in accessing toxic public health risk. The DQO process will also determine the best sampling technologies and costs for ambient sampling and the required QA processes for the sampling.

3.4 DQO to Support TAMP Health Risk Analysis Modeling

The Subcontractor will execute a DQO process appropriate to the magnitude of a proposed TAMP toxic environmental media sampling needs. The Subcontractor will evaluate the feasibility of conducting environmental media sampling of toxics. TAMP will identify the toxics and provide air and deposition rate concentrations. The DQO process will coordinate the aspects related to multiple sources, radionuclides, pathways, and exposed individuals or other biota. The surveillance program shall be designed with the spatial, temporal, and multi-toxic coverage needed to define the health risk.

The following is a list of staff anticipated to be needed for the above DQOs.



Mission Support Alliance

3.5 Additional DQO Support as required.

The Subcontractor will execute as requested DQO process appropriate for the to be determined DQO task scope. MSA will provide task request with appropriate detail for DQO support and vendor will provide a proposal with key personnel appropriate for the task with an estimated effort. The DQO process will coordinate the aspects related to multiple sources, radionuclides, pathways, and exposed individuals or other biota as needed to address.

The following is a list of staff anticipated to be needed for the above DQOs.

3.6 Staff

The subcontractor shall provide staff on an as needed basis to support the TAMP DQO as needed and as follows:

- **DQO Facilitator (Senior)** – The facilitator will have a minimum of 10 years’ experience facilitating DQO meetings. The facilitator will have documented experience facilitating toxic air quality DQOs. The individual has to have experience performing complex and large DQOs involving many parties, regulatory agencies, stakeholder, etc. The individual has to have experience keeping DQOs on schedule and participants on track.
- **DQO Data and Meeting Support** – - Requires a BA/BS in environmental science, anthropology, engineering or a related discipline (e.g. chemistry, biology). The person will support meeting minutes, setting up meetings, consolidation of data and moving data between the facilitator and the remaining team. The person must be familiar with various data bases, managing large sets of environmental data.
- **Toxic Environmental Sampling Expert** - The individual will have a minimum of 10 years of experience in air toxic sampling methods and detection limits. The individual will be familiar with EPA air toxic sampling methods.
- **Senior Statistician** – The individual will have experience supporting the DQO process for 10 years, Visual Sample Plan expertise, and shall have a minimum of 10 years’ statistical experience evaluating environmental monitoring data.
- **Junior Statistician** - The individual will have experience performing statistical evaluation of environmental sampling data and developing sampling protocols to meet high levels of confidence.
- **Environmental Quality Control Expert** – The individual will have experience with EPA quality control methods for air toxics.



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- **Data Verification and Validation Expert** - The individual will have 10 years of experience in laboratory quality assurance.

4.0 REQUIREMENTS

4.1 General

Will work be performed on site: Yes

For any work performed on the Hanford Site or any MSA controlled facility, the provisions of the On Site Services Special Provisions, will apply to Subcontractor personnel.

4.2 Engineering Requirements

Engineering requirements applicable: No

4.3 Environment, Safety, & Health (ES&H) Requirements

The Subcontractor shall exercise a degree of care commensurate with the work and the associated hazards. The Subcontractor shall ensure that management of safety and environmental functions and activities is an integral and visible part of the Subcontractor's work planning and execution processes. The Subcontractor shall flow down safety and environmental requirements to the lowest tier Subcontractor performing work on the Hanford site commensurate with the risk and complexity of the work.

Prior to start of work the Subcontractor shall work with the MSA BTR to do a Job Hazard Analysis (JHA).

All subcontractor and sub-tier employees shall have completed OSHA Hazard Communication training that meets the requirements of [MSC-PRO-WP-13299](#), *Hazard Communication*. See [MSC-PRO-WP-10468](#), *Chemical Management Process*, for more information.

Subcontractors and its lower-tier subcontractors shall be responsible to complete an Employee Job Task Analysis (EJTA) in accordance with [MSC-PRO-WP-11058](#) for any of the following situations:

- For any subcontractor employee who will be on the Hanford Site for more than 30 days in a year.
- For any subcontractor employee who may potentially be exposed to hazards (e.g. radiological, beryllium, hazardous wastes, noise) while performing in accordance with the subcontract statement of work.



Mission Support Alliance

- For any subcontractor employee enrolled in a medical or exposure monitoring program required by 10 CFR 851, and/or any other applicable federal, state or local regulation or other obligation.

If any of the above conditions are met, the subcontractor and its lower-tier subcontractor employee is to have a current approved EJTA prior to that employee beginning work on the Hanford Site.

Buyer's Safety and Health Procedures are available on the internet at <http://www.hanford.gov/pmm/page.cfm/Construction>. The documents on this site are kept current and are available for Subcontractors and lower-tier Subcontractor use.

4.4 Quality Assurance (QA) Requirements

The work activities for this Statement of work has been designated as a Quality Level G - Q Level 0 - GS

The Subcontractor shall be responsible for performing quality workmanship and shall conduct the quality control measures necessary to ensure work conforms to reference requirements defined in the SOW.

4.5 Government Property

Government property is not required to be used by the Subcontractor for this effort.

5.0 PERSONNEL REQUIREMENTS

5.1 Training and Qualifications

Training

Subcontractor shall ensure that its personnel meet and maintain the appropriate training, qualification and certification requirements.

- All Subcontractor personnel shall complete MSA General Employee Training (MGET) (4-hour average per individual) or Hanford Site Orientation (HSO) (sent to the Subcontractor at their location).

Required Qualifications

The Subcontractor shall provide professionals with the following experience. The subcontractor shall provide a list of individuals that meet the qualifications below. A single individual may satisfy more than one of the qualifications from the list below.



Mission Support Alliance

- **Senior DQO Facilitator** – Requires a BA/BS in environmental science, engineering or a related discipline (e.g. chemistry, biology). The individual will have a minimum of 15 years of experience facilitating DQO meetings and have previous experience conducting air toxic DQOs. The individual should have experience performing complex/large DQOs involving many parties, regulatory agencies, stakeholders, etc. The individual has to have experience keeping DQOs on schedule and participants on track.
- **DQO Data and Meeting Support** - Requires a BA/BS in environmental science, anthropology, engineering or a related discipline (e.g. chemistry, biology). The person will support meeting minutes, setting up meetings, consolidation of data and moving data between the facilitator and the remaining team. The person must be familiar with various data bases, managing large sets of environmental data.
- **Toxic/Chemical Air Sampling Expert** – Requires a BA/BS in environmental science, engineering or a related discipline (e.g. chemistry). The individual should have 15 or more years of experience with toxic sampling developing, methods, field analytical method, mobile laboratories, and laboratory analytical methods for criteria, toxic air pollutants, and hazardous air pollutants.
- **Senior Statistician** – Requires a MS or higher in statistics, math, chemistry or related field. The individual will have experience performing statistical evaluation of environmental sampling data and developing sampling protocols to meet high levels of confidence. The individual will have a minimum of 20 years’ experience in environmental sampling. The individual will have experience supporting the DQO process for 10 years, Visual Sample Plan expertise, and shall have a minimum of 10 years’ statistical experience evaluating environmental monitoring data.
- **Junior Statistician** - Requires a MS or higher in statistics, math, chemistry or related field. The individual will have experience performing statistical evaluation of environmental sampling data and developing sampling protocols to meet high levels of confidence. The individual will have a minimum of 5 years’ experience in environmental sampling or a PhD.
- **Environmental Quality Control Expert** – Requires a BA/BS in environmental science, engineering or a related discipline (e.g. chemistry). The individual will have a minimum of 10 years of experience in QA/QC associated with air monitoring programs, including auditing air monitoring field and laboratory analytical methods. Demonstrated experience with the QA/QC requirements in the Hanford Site Quality Assurance Requirements Document (HASQARD) (DOE/RL-96-68) and the EPA *Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II, Ambient Air Quality Monitoring Program*.



Mission Support Alliance

- **Data Verification and Validation Expert** - Requires a BA/BS in environmental science, engineering or a related discipline (e.g. chemistry). The individual will have 10 years of experience in laboratory quality assurance.

Desired Qualifications

- Experience conducting DQOs at Hanford
- Experience with Visual Sample Plan (VSP) software

5.2 Security and Badging Requirements

For any on site work, see Special Provisions – On Site Services for details.

Subcontractor employees will be required to submit to vehicle searches and not personally carry or transport certain prohibited articles.

5.3 Work Location / Potential Access Requirements

Work will primarily be performed from the Subcontractor's office location. Onsite meetings are anticipated to occur in Richland, Washington.

5.4 Site Access and Work Hours

Hanford personnel at the Hanford Site work a standard 4/10 schedule. The standard work week consist of ten (10) hours of work between 6:00 am and 4:30 pm, with one-half hour designated as an unpaid period for lunch, Monday through Thursday.

Work performed outside normal operating hours shall be coordinated and/or approved through the BTR and/or the Contract Specialist prior to performing the work.

6.0 MEETINGS

Subcontractor and MSA will meet regularly while DQOs are in progress. Due to the current state of the COVID-19 pandemic online meetings are preferred and if needed, onsite meetings are anticipated to occur in Richland, Washington. Travel to Richland, Washington may be required. Currently, travel is not authorized due to the COVID-19 pandemic.

7.0 DELIVERABLES AND PERFORMANCE SCHEDULE REQUIREMENTS

7.1 Deliverables

Deliverables are required to be furnished by the Subcontractor.



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7.2 Schedule

After DQOs are approved and funded a contract meeting is held and MSA and the Subcontractor will develop a schedule for completion of the DQOs.

8.0 SPECIAL REQUIREMENTS

- **KICKOFF MEETING** - Before start of Work, MSA will conduct an online conference at a time and/or Hanford Site location agreed to by Subcontractor and MSA. Invited attendees will include MSA, Subcontractor, key lower tier subcontractors and others having an interest in the Work. Purpose of the conference is the coordination of Work start up and familiarization of project participants with the Work and worksite.
- **PROGRESS MEETINGS** - MSA will conduct progress meetings online at a time and/or Hanford Site location determined by MSA. Invited attendees will include MSA, Subcontractor and key subcontractors. At the progress meetings, Subcontractor shall submit a written report showing actual man-hours expended versus planned and scheduled progress versus actual progress giving details of Work completed in relation to the approved schedule, together with a monthly "look ahead" which provides details of how the Work will be completed.
- **PROGRESS REPORT PREPARATION** - Prepare a summary progress report each reporting period, show actual progress versus scheduled progress. Scheduled progress is given by baseline project schedule. Show actual progress in the form of percentages completed for activities or resources.

9.0 REFERENCES

DOE-HDBK-1216-2015, *Environmental Radiological Monitoring and Environmental Surveillance*<https://www.standards.doe.gov/standards-documents/1200/1216-bhdbk-2015>

DOE-RL-2013-53, Rev. 4, *Hanford Site Environmental Surveillance Master Sampling Schedule for Calendar Year 2020*
http://msc.ms.rl.gov/ims/files.cfm/2020_Site_Environmental_Surveillance_Master_Sampling_Schedule.pdf

DOE/RL-96-68, Rev. 4, *Hanford Quality Assurance Requirements Document (HASQARD)* <https://www.hanford.gov/page.cfm/AnalyticalServices>

EPA/240-B-06-001, *Guidance on Systematic Planning Using the Data Quality Objectives Process*, EPA QA/G-4 <https://www.epa.gov/quality/guidance-systematic-planning-using-data-quality-objectives-process-epa-qag-4>



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EPA/240/B-06/002, *Data Quality Assessment: A Reviewer's Guide*, EPA QA/G-9R
<https://www.epa.gov/sites/production/files/2015-08/documents/g9r-final.pdf>

EPA/454/B-17-001, *Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II, Ambient Air Quality Monitoring Program*
https://www.epa.gov/sites/production/files/2020-10/documents/2017_qa_handbook_planned_edits.pdf

NCRP Report No. 169, *Design of Effective Radiological Effluent Monitoring and Environmental Surveillance Programs* <https://ncrponline.org/publications/reports/ncrp-report-169/>

WAC 173-400, *General Regulations for Air Pollution Sources*, Washington Administrative Code (WAC).

WAC 173-460, *Controls for New Sources of Toxic Air Pollutants*, Washington Administrative Code (WAC).