Statement of Work

For

General Materials or Services

Title: Ecological Monitoring and Environmental Surveillance Program Support

Date: 9/25/2018

Revision Number: 0

1.0 INTRODUCTION / BACKGROUND

Mission Support Alliance, LLC (MSA) conducts ecological monitoring and environmental surveillance on behalf of the United States Department of Energy, Richland Operations (RL) on the Hanford Site supporting the site mission while protecting natural resources on the site and the public in adjacent communities.

2.0 OBJECTIVE

MSA requires subcontractor to supply various labor category staff (staff augmentation and task based), equipment, and facilities for development and implementation of scientifically based plans for field collection of data and samples that meet regulatory requirements of Hanford site wide requirements, DOE Orders, and best management practices.

Environmental Surveillance program requires technical and scientific support collecting multi-media environmental samples for submission to an offsite laboratory for analysis. Assist with technical basis, plan development, data evaluation and data interpretation, annual dose calculations and monitoring trends, for in support of regulatory compliance and public assurance. Support, as needed in support of the Hanford Air Operating Permit and preparation of notice of construction applications.

Ecological Monitoring and Compliance program requires scientific support to conduct and document ecological monitoring and compliance reviews required for Hanford Site related actions that have the potential for impacting the biological environment, and to identify and document actual and potential impacts of Hanford operations on biota. Support is needed with species monitoring plan development, implementation,
documentation, data interpretation, development of recommendations, and report composition.

3.0 DESCRIPTION OF WORK – SPECIFIC

**Environmental Surveillance:**

- Assist in development of the technical basis, defensibility, and coordination of sample collection in support of environmental surveillance program to meet the requirements of DOE-HDBK-1216-2015 to ensure compliance with DOE O 458.1 *Radiation Protection of the Public and the Environment*.

- Support MSA with timely and accurate review of analytical data results. Notify MSA immediately in writing (email is sufficient) upon receipt of anomalous data results, as specified by DOE O 458.1, *Radiation Protection of the Public and the Environment*.

- Assist in the measurement of the ambient external radiation levels in the environment.

- Assist in the assessment of impacts and risks of Hanford contaminants on human health and the environment for the Annual Site Environmental Report (ASER) and in support of Hanford cleanup activities as requested. Author contribution to annual reports shall be completed by identified due dates, technically accurate, and well written.

- Actively participate in an annual review of the environmental surveillance program design and implementation, sample collection, sample analysis, data management, data review and evaluation, exposure assessment, and reporting requirements. Staff supporting this scope of work shall stay aware of emerging regulations and other Hanford contractor work, findings, and reports and present recommended program changes for consideration into the Environmental Surveillance program team members.

- Assist in ensuring that environmental surveillance data is technically sound and defensible for use in dose reconstruction efforts, damage assessments, site characterizations performed in conjunction with ongoing site environmental restoration activities, surveillance of biological impact, and contaminant transport model verification.

- Provide input to align the program with current operations and missions, focused on those contaminants having the greatest contribution to the potential off-site dose.
Review other Hanford Contractor annual reports and findings and make recommendations to the Environmental Surveillance program.

- Assist with conducting the environmental monitoring program in an integrated fashion to preclude collection of duplicative environmental data. Provide continuous improvement and recommendations for program improvements.

- Provide recommendations, strategies, and methods to evaluate potential impacts to the biota in vicinity of DOE activities.

- Compose applicable sections of the Hanford Annual Site Environmental Report that documents Hanford Site environmental compliance status, environmental conditions on and around the Hanford Site, and the potential off-site public radiological exposure resulting from Hanford operations.

- Actively contribute to the preparation of the Hanford Site Environmental Surveillance Master Sampling Schedule by the identified due dates.

- Stay aware of and current with all Hanford Analytical Services Quality Assurance Requirements Document (HASQARD) volume revisions and ensure methods of sample collection, analysis, interpretation, and reporting are consistent across the Hanford Site as appropriate to assure usability, consistency and comparability of the data with other DOE Hanford projects and Hanford Site contractors.

- Provide recommendations that align the environmental surveillance program with the needs of the environmental cleanup, restoration, and assessment activities at the Hanford Site since the information generated by the program is extensively used by site contractors.

- Actively participate in the annual review of the hazard and analysis review.

- Assist with, actively participate in, and document Pre and Post Job Reviews.

- Subcontractor shall provide equipment as listed to support Environmental Surveillance Program as needed as follows:

  - At least one boat available to fully support the collection of samples identified in the annual master sampling schedule. Boat equipment shall include but not be limited to davit, depth finder, mechanical anchor pulling system, buoy buddy (or equivalent), portable eye wash station, personal flotation devices, and enclosure for worker protection when needed.
- Contractor shall provide boat, equipment, and staff expertise to execute electrofishing on the Columbia River when needed.

- All subcontractor boats shall be transported with subcontractor provided vehicles.

- Subcontractor shall provide facilities as listed to support Environmental Surveillance Program as needed as follows:
  - Department of Health Radiological Materials License and certified Radiological fume hood to safely process potentially radioactive samples in a fully functioning processing laboratory that includes chemical use, storage, and inventory, decontamination equipment and supplies, sample processing, sample packaging, waste management, and ice machine. Laboratory shall include calibrated equipment including small scale, large scale, calibrated weights for calibration checks, thermometers, and spring scales. Laboratory and equipment shall be available for MSA staff to assist with sample preparations.

  - Sample processing laboratory and equipment available for MSA staff to process samples including fish and wildlife medias. Disposal of excess biota sample materials.

  - Facility shall provide deionized water

  - Facility should provide ice for sample transport

  - Secured and locked sample storage area including temperature controlled and checked freezers to ensure sample security. Sample storage area to be accessible by MSA when needed.

  - Enclosed and secured equipment and supply storage area.

  - Sampling equipment decontamination capabilities.

- Subcontractor shall provide staff on an as needed basis to support Environmental Surveillance Program as needed as follows:

  - USGS Certified or contractor approved equivalent boat captains with at least 45 days working experience on free flowing waters like the Hanford Reach of the Columbia River and use of primitive boat launches in the last 2 years.
- Staff that has demonstrated working experience with Hanford Environmental Information System (HEIS), Sample Data Tracking (SDT), and implementing HASQARD requirements.

- Assist or perform sample management including sample planning, sample tracking, data verification, problem resolution, database uploading, vendor invoice review, and sample disposal requests.

- Assist or perform records review, administration and handling.

- Actively participate in and preparation of technical procedure development and revision.

- Staff shall have demonstrated experience collecting environmental samples including familiarity with sample collection methods, equipment, supplies, record keeping, and chain of custody requirements. Experience shall include experience recording animal health and harvest of wildlife samples including liver, bone, and muscle.

- Staff shall have demonstrated ability to analyze analytical data results both radiological and non-radiological, compare and trend against detection and reporting limits, and compose results into annual summaries for public information. Staff shall possess experience and ability to present and communicate technical findings clearly and concisely.

- Subcontractor shall provide staff with proven expertise to model potential radiological doses to the public and biota from Hanford Site operations and evaluate compliance with pertinent regulations and limits. Staff shall be familiar with GENII current Version and RESidual RADioactive (RESRAD-Biota) programs. Assist with the performance of cumulative assessments of on-site and off-site environmental impacts and off-site human health exposures from Hanford Site operations. Assist in the characterization of the pathways of exposure to members of the public. Characterize the exposures and doses to individuals and to the nearby population.

- Accurately calculate the potential radiation dose to humans, aquatic organisms, terrestrial biota, hazard quotient for the evaluation of risk to biota, and the carcinogenic and non-carcinogenic risks to humans. All data input files, final model output files, and short summery paper of results shall be provided to MSA within 30 days of task completion.
When annual dose modeling is completed under this scope of work, contractor shall also conduct an annual evaluation of the radiation dose model being used and provide white paper to MSA with findings and recommendations by January 15 of each year.

- Assist in preparation of reports required by the Hanford Site Air Operating Permit (00-05-006) and preparation of criteria and toxic air emission notice of construction applications and radioactive air emission notice of construction applications. Also, assist in performing new source reviews for new and modified air emission sources. Preparation of notices of construction could involve dispersion modeling and exposure assessment.

Ecological Monitoring and Compliance

DESCRIPTION OF WORK

- Assist with monitoring the abundance, vigor, and distribution of plant and animal populations on the Hanford Site and evaluate the cumulative impacts of Site operations on these resources. If analysis indicates that impacts to biological resources may have occurred due to Hanford operations, which have not been previously reported, provide MSA a verbal notification within 24 hours of discovery and written summary of those impacts within five (5) working days.

- Provide technical expertise and contribution to development of species specific and landscape level ecological resource monitoring strategies and methods.

- Proactively stay knowledgeable about proposed and implemented regulatory changes and federal and state agency best management practices that could influence or impact the Hanford site.

- Assist with ecological compliance reviews for Hanford-related operations and cleanup activities; literature reviews, identify resources within the project areas, quantify potential ecological impacts, prescribe appropriate mitigations, and compose findings into project specific clearances. Clearances shall outline requirements that will ensure projects are compliant to the extent practicable in with Federal and applicable state wildlife protection laws and regulations and follow requirements outlined in the Hanford Site Biological Resources Management Plan.

- Assist in the development and maintenance of ecological resources databases, including data entry, verification, and GIS data layer development.
• Assist MSA to characterize and define changes or trends in the condition of Hanford biological resources that may result from causes external to the Hanford Site.

• Assist with defining and mapping significant habitats and species distribution for use in land use planning, ecological risk assessment, and mitigation action planning.

• Assist in performing surveys and monitor compliance with applicable requirements during the appropriate times of the year to document any changes to protected biological resources, species, and habitats.

• Develop characterization methods and apply these methods to determine individual organism health in species with high potentials for exposure and uptake of contaminants in coordination with contaminate monitoring activities conducted through the Environmental Surveillance function.

• Assist the Hanford fire and emergency response activities by providing information on sensitive species and habitat, as needed.

• Assist with development of monitoring plans and implementation of monitoring status of Federal, state sensitive species, and important resources found or potentially found on the Hanford Site.

• Support MSA in documentation needed to make notification to DOE within five (5) working days and provide in writing within ten (10) working days’ recommendations on actions DOE should take to comply with the Endangered Species Act, for potential listing if a species is found or potentially found on the Hanford Site.

• Support efforts to determine if injuries have occurred to Hanford natural resources including threatened and endangered species or populations on the Hanford Site and the Columbia River. Injuries are defined by the CERCLA Natural Resource Damage Regulations and Guidance.

• Actively participate in the annual review of the Job Hazard Analysis

• Participate in and document Pre and Post Job Reviews

• Compose clear, concise, reports that document monitoring methods, objectives, findings, and recommendations within the due dates assigned. Reports shall be well written and technically sound.

• Develop and provide GIS maps and graphics for use in MSA reports and supporting documentation. Manage the Ecological Resources Geodatabase and documents.
• Complete Geo-spatial analysis of existing GIS data as needed to support monitoring planning, NEPA, Mitigation and restoration planning.

Subcontractor shall provide staff on an as needed basis to support Ecological Monitoring and Compliance Program as needed as follows:

• Subcontractor shall provide Subject Matter Expert (SME) staff with rare plant and habitat expertise with Eastern Washington Shrub-Steppe ecosystems.

• Environmental Scientists shall have demonstrated experience researching and developing monitoring plans including clear objectives, methods, data collection and analysis, and report composition.

• Environmental Scientists shall have experience conducting project specific field survey’s, documenting the plant and animal species present, and composing findings and mitigation actions into compliance letters ensuring resource protection for project personnel to implement.

• Scientist shall have demonstrated experience completing Biological Assessments, informal and formal consultation to meet the requirements of the Endangered Species Act of 1973 (ESA).

• Environmental Scientists shall have working knowledge and experience with Trimble GPS and ArcGIS or similar software program so that they can navigate to, collect locations, and create professional maps and figures for reports and letters.

• Environmental Scientists shall have working knowledge of Migratory Bird Treaty Act.

• Environmental Scientists that have demonstrated experience contributing to NEPA documents and critically reviewing NEPA documents composed by others.

• Staff shall have demonstrated experience conducting GIS analysis of ecological resources data and developing recommendations for alternative project placement, restoration, and mitigation.

**General Support**

• Administrative support scanning documents, filing records hard copy and electronically, coordination of document and procedure preparation, and taking meeting notes.
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.

All staff that routinely support the scope of work 30+ hours a week shall be collocated with MSA staff for all work performed for MSA and considered staff augmentation. Staff augmentation personnel will have established work schedules that align with MSA team they support.

Staff that support the scope of work on an as needed basis will perform work at the subcontractors provided facility and be considered task based support.

4.2 Engineering Requirements

Engineering requirements applicable: No

If the effort will require the Subcontractor to work to any Engineering standards, list the number and title for each selected engineering code or engineering standard in the section below. If none are applicable, hit your delete button so remove this direction. Note: if the effort will require the subcontractor to work to MSA Engineering procedures or standards, list the number and title for each – however, make sure the procedure has been approve for public release.

Applicable Engineering Codes and Standards

N/A

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.
- 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.

Unique or specific requirements: No

Applicable ES&H Requirements:

N/A

4.4 Quality Assurance (QA) Requirements

Are quality assurance requirement applicable to this scope of work: No

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.

The work activities for this statement of work shall be performed in accordance with the following MSA Quality Assurance Program and Procedures, if provided below:

Applicable Quality Assurance Standards:

N/A

4.5 **Government Property**

Government property is required to be used by the Subcontractor for this effort.

If Government property is permitted or required to be used by the Subcontractor, and controlled by the Subcontractor, to accomplish this statement of work, FAR 52.245-1 is applicable and is incorporated into the subcontract terms and conditions by reference. A list of the Government property is, if applicable, is attached to this scope of work.

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.

**Qualifications**

**Administrative Specialist** - Requires a high school diploma with 4 years of experience. Familiar with standard administrative support concepts, practices, and procedures. Relies on experience and judgment to plan and accomplish goals. Must have experience taking meeting minutes, filing, scanning, coordinating multiple staff input into single document. Shall have excellent written, verbal, and organizational skills.

**Boat Captain** - USGS Certified or contractor approved equivalent boat captain with at least 45 days working experience in the last 2 years on free flowing waters like the Hanford Reach of the Columbia River and use of primitive boat launches.

**Environmental Technician** – Associate’s degree and two years of environmental work experience or four years of experience in the field or in a related area. Knowledge of
protocols to collect environmental samples including biota, soils, and water for analytical analysis.

**Environmental Scientist I** - BA/BS in environmental science, engineering, or related discipline (e.g., biology, geology) and 2 years’ experience, or an MA/MS degree in the required fields of study. Experience in environmental sciences including: multimedia environmental monitoring, protection of natural resources (e.g., biological resources, fish and wildlife habitats), revegetation/restoration and mitigation; toxicology and environmental pollutants; collecting and evaluating environmental data; field remediation; and implementing health and safety programs. Field experience in construction-related activities. Must have knowledge of GPS Trimble equipment.

Must be skilled in oral and written communication.

**Environmental Scientist II** - BA/BS in environmental science, engineering or related discipline (e.g., biology, geology), and at least 6 years of technical experience, or an MA or MS degree in the required fields of study with 3 years of technical experience. Specific experience in environmental sciences including: multimedia environmental monitoring, protection of natural resources (e.g., biological resources, fish and wildlife habitats), botany, revegetation/restoration and mitigation; toxicology and environmental pollutants; collecting and evaluating environmental data; field remediation; and implementing health and safety programs. Must have experience using GPS Trimble equipment and demonstrated experience with ArcGIS.

Must be skilled in oral and written communication. Demonstrated ability to effectively manage and lead a professional organization in a team environment.

**Senior Environmental Scientist** - BA/BS in environmental science, engineering, or related discipline (e.g., biology, geology), and at least 12 years of technical experience, or an MA/MS degree in the required fields of study with 5 years of experience. Specific experience in environmental sciences including: multimedia environmental monitoring, protection of natural resources (e.g., biological resources, fish and wildlife habitats), botany, revegetation/restoration and mitigation; toxicology and environmental pollutants; collecting and evaluating environmental data; and implementing health and safety programs. Must have experience using GPS Trimble equipment and demonstrated experience with GIS.

Skilled in oral and written communication. Demonstrated ability to effectively manage and lead a professional organization in a team environment. Ability to resourcefully and proficiently mentor staff in career growth.
GIS Specialist - Bachelor’s Degree in GIS/GPS analysis or closely related field and at least 4 years of directly related experience. A combination of related education and experience may substitute as equivalent. Education/experience can be acquired through a degree in a technical discipline from an accredited university or college, or specialized courses in relevant disciplines to meet job requirements, or practical work experience to the extent necessary to meet job requirements. Must have demonstrated experience creating, maintaining, and updating geodatabases.

Basic oral and written communication skills and exceptional organizational skills.

Statistician – Bachelor’s Degree in statistics, biology, chemistry, or related field and 4 years of experience in the field. Experience with environmental data analysis and interpretation for the design of environmental studies, and for the dissemination of statistical methods and concepts to staff. Further education can be substituted for experience. Experience with statistical software is required. Supports research studies to develop monitoring and sampling plans. Supports developing project objectives so that appropriate sampling designs and data collection.

Senior Statistician - MA/MS in statistics, biology, chemistry, or related field and 10 years of experience in the field. Further education can be substituted for experience. Experience with statistical software is required. Experience studying, analyzing and interpreting contaminant data to assess impacts of contaminants on human health and the environment. Experience developing conceptual and statistical models to support these assessments. Supports research studies to develop theories or methods of abating or controlling sources of environmental pollutants, utilizing knowledge of principles and concepts of various scientific and engineering disciplines. Supports developing project objectives so that appropriate sampling designs and data collection methods are employed in research projects and surveys.

Senior Toxicologist - MA/MS in toxicology, biology, chemistry, or related field and 10 years of experience in the field. Further education can be substituted for experience. Experience with dose or risk assessment software is required. Experience studying, analyzing and interpreting contaminant data and assessing impacts of contaminants on human health and the environment. Experience developing conceptual and mathematical models to support these assessments. Supports research studies to develop theories or methods of abating or controlling sources of environmental pollutants, utilizing knowledge of principles and concepts of various scientific and engineering disciplines. Supports developing project objectives so that appropriate sampling designs and data collection methods are employed in research projects and surveys.

See section 4.0 above under General Support
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).

There are other required training if listed below:

- All staff augmentation designated staff shall attend one professional development course applicable to the work scope supporting MSA on an annual basis paid for by the subcontractor. Potential training courses should be communicated with MSA BTR to ensure areas needing potential development are considered when selecting courses to attend.

### 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.

Will the scope of work will not require access authorization (security clearance). No

### 5.3 Work Location / Potential Access Requirements

Staff Augmentation personnel will be co-located with MSA staff at 825 Jadwin, Richland, WA.

Task based personnel will perform work at subcontractor provided facility.

### 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 shall participate in all meetings as required by the Buyer’s Technical Representative (BTR).

7.0 DELIVERABLES AND PERFORMANCE SCHEDULE REQUIREMENTS

7.1 Deliverables

Deliverables are required to be furnished by the Subcontractor.

If deliverables are required, the specific deliverables, dates for completion, reviews, etc., are as follows:

Weekly report contribution – due by 6am each Monday

Completion of a Daily Lab Use Report to include date, time in/out, name(s) of personnel, and detail of work completed.

Timely completion of Ecological Compliance reviews – due dates determined when requests are received.

Contribution to and comment resolution for the Annual Site Environmental Report – Due dates determined each February.

Contribution to Annual Master Sampling Schedule – Due date issued annually, generally October 15 of each year

Timely composition of monitoring plans – Due dates assigned with task assignments

Timely composition of monitoring reports - Due dates assigned with task assignments

All data input files, final model output files, and short summary paper of results shall be provided to MSA within 30 days of completion of calculations of potential radiation dose to humans, aquatic organisms, terrestrial biota, hazard quotient for the evaluation of risk to biota, and the carcinogenic and non-carcinogenic risks to humans.

When annual dose modeling is completed under this scope of work, contractor shall also conduct an annual evaluation of the radiation dose model being used and provide white paper to MSA with findings and recommendations by January 15 of each year.
7.2 Schedule

Start Date: 10/1/2018 through 9/30/2019*

*two one-year option periods may be exercised

8.0 SPECIAL REQUIREMENTS

Electrical Components: N/A

Meetings

General purpose of meetings is for the coordination, control, and direction of the Work. In addition to meetings addressed by this Section, Subcontractor may be required by other Sections and other Subcontract documents to conduct special-purpose meetings and various safety meetings and briefings.

MSA will issue meeting notices and prepare an agenda and minutes for each meeting addressed in this Section. When applicable, minutes will identify action items, assigned actionees, and due dates.

- KICKOFF MEETING - Before start of the Work, MSA will conduct a conference at a time and 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.

- PROGRESS MEETINGS - MSA will conduct a progress meeting at time and Hanford Site location determined by MSA. Invited attendees will include MSA, Subcontractor and key subcontractors. At the progress meeting, 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 four 94) week "look ahead" which provides details of how the Work will be completed, as applicable.

- The purpose of the meetings is the exchange of Work-related information.

Reports

- PROGRESS REPORT PREPARATION - Prepare a summary progress spend report each month, show actual spend versus authorized funding. Capture spend by resource each month and Fiscal Year to date.
• All staff augmentation staff shall input in to the MSA weekly report by the close of each week to capture work completed in the previous week.