

14 APRIL 2023

**REMEDICATION AND RELEASE OF MCCLELLAN AIR FORCE BASE (AFB)
OLD MAGPIE CREEK CHANNEL SOUTH OF MAGPIE CREEK**

STATEMENT OF WORK

FOR

**EXCAVATION OF RADIUM-CONTAMINATED SOIL IN SD290/OMCC SOUTH OF
THE CURRENT MAGPIE CREEK, DISPOSAL OF EXCAVATED SOIL,
RADIOLOGICAL FINAL STATUS SURVEY OF THE EXCAVATED SITE, SURFACE
RESTORATION, RESTORATION/PRESERVATION OF BUILDING 690,
UNRESTRICTED RADIOLOGICAL RELEASE, CERTIFICATION OF REMEDY
COMPLETION**

AT

FORMER MCCLELLAN AFB, CA

PROJECT: PRJY20237231

**CONTRACT NUMBER: FA8903-22-C-RXXX
TASK ORDER: FA8903-22-F-XXXX**

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1.0 INTRODUCTION

This statement of work (SOW) defines the requirements for remediation of radium-226 (Ra-226) contamination at the Old Magpie Creek Channel (OMCC) (SD290) site at the former McClellan Air Force Base (AFB) located in Sacramento County, California. The purpose of this work is to implement the excavation remedy selected by the Follow-on Strategic Sites (FoSS) Record of Decision (ROD) for Ra-226 contaminated soil in the OMCC. The ROD also selected an institutional control (IC) remedy for other contaminants found at the site, but it is not the purpose of this SOW to implement the ICs or address contamination other than Ra-226.

The Contractor shall furnish the personnel, services, equipment, materials, facilities, and other requirements necessary for, and incidental to, the performance of work set forth herein. Primary technical services shall be performed by individuals who are credentialed members of architectural, planning, science, and engineering professions. Generally, a credentialed professional (a) is licensed (e.g., registered professional engineer) to practice in the state where the work is being performed and/or (b) commands the necessary expertise, in terms of knowledge and experience, to undertake the specified task.

1.1 Site Description

The OMCC is a former creek bed, now buried beneath about 12 feet of clean fill, located in the western portion of McClellan AFB south of the current Magpie Creek channel in the vicinity of Building 690 (B690) and MAT K (also referred to as the Sun Gro Lot). The capital letter B followed by a number is used throughout this SOW to identify buildings. In plan view (Figure 1, Attachment 1) the buried channel forms a V-shape which intersects the current Magpie Creek east of B690, runs southwest beneath B690 to about the middle of MAT K, and then runs northwest until it intersects Magpie Creek again. The creek bed was contaminated with Ra-226 and various chemicals. A contaminated layer of soil approximately two (2) feet thick exists at about 12 feet below ground surface (bgs). The cross-section of the buried channel is a crescent shape approximately 15 feet wide at the floor of the former channel. The contaminated soil layer is dark in color. Because of its darker color with respect to the soil above and below it, the contaminated layer is referred to as the *gray layer*. In much of the former creek bed there is hard pan beneath the gray layer. Soil above the gray layer and the hard pan beneath it appear to be uncontaminated. This gray layer probably consists of sediment from the old creek channel and can be used as a marker for the creek bed. The eastern end of the site, from the current Magpie Creek to 13 feet east of B690 has been remediated and granted unrestricted radiological release. The portion of the site still needing remediation is about 1,500 feet long, from 13 feet west of B690 through MAT K to the current Magpie Creek. The dimensions provided above are good faith estimates based on all information currently available about the site. The Air Force does not represent that those estimates constitute a definitive limit on the extent of contamination.

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The remedy selected in the FoSS ROD is excavation for Ra-226 and engineering/institutional controls for chemical contamination. This SOW addresses the Ra-226 contamination only. Successful completion of this project requires (1) all soil contaminated with Ra-226 greater than 2.0 picoCuries per gram (PCi/g) to be excavated and disposed in an approved facility, (2) a radiological final status survey to be done in accordance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), (3) a final status survey report (FSSR) to be completed, (4) the grade, surfacing, utilities, and infrastructure to be restored to pre-remediation condition, (5) a Remedial Action Completion Report (RACR) to be completed, (6) the Air Force Radioisotope Committee (RIC) to remove the OMCC from the McClellan AFB Multi-Sites Radioactive Materials (RAM) Permit (Applicable Document 6 in Section 1.4 of this SOW), and (6) the California Department of Health Services (CDPH) to issue a recommendation for unrestricted radiological release (RURR) of the site.

Contamination is known to be present in three locations: (1) Trench 1 which is about 13 feet east of B690 where the previous excavation of the OMCC ended, (2) Trench 2 which is an exploratory trench dug about 15 feet west of B690 following the previous OMCC excavation, and (3) Trench 3 which is an exploratory trench dug approximately 30 feet west of B708 in MAT K following the previous OMCC excavation. All three trenches were dug, sampled, backfilled, and repaved in 2015. The western end of Trench 1 is marked by a subsurface slurry wall at the depth of the gray layer. The trenches are shown in Figure 1, Attachment 1 to this SOW. Based on the contamination in Trenches 1 and 2, the Air Force presumes there is contamination beneath B690. However, that contamination has not been confirmed. It is uncertain whether contamination is continuous between Trenches 2 and 3 and how far downstream contamination extends from Trench 3. Since all soil that exceeds the Ra-226 cleanup level must be excavated, the Contractor shall be responsible for determining the bounds of the contamination and demonstrating that all contamination has been excavated.

Building 690 is a slab-on-grade ribbed metal structure 127 feet wide (east-west) and 424 feet 10 inches long (north-south). It has two main bays (North and South) separated by a 31-foot-wide plenum. Each bay has a peaked roof with the ridges oriented east-west at the center lines of the bay. The roofs slope from a maximum height of 41 feet 10 $\frac{3}{4}$ inches to a minimum height of 34 feet. The west side of each bay has hangar doors that open to a width of 144 feet with a vertical clearance of 29 feet. The hangar doors are rail-mounted at the top and bottom. The surrounding area is paved with asphalt (2-inch coarse bituminous surface over a 6-inch aggregate base compacted to 97%) on the east, north, and south and concrete (10-inch concrete over 6-inch aggregate base compacted to 97% over 6-inch subgrade compacted to 92%) on the west. The floor of the building is the same construction as the pavement to the west (10-inch concrete over 6-inch aggregate base compacted to 97% over 6-inch subgrade compacted to 92%). The roof of B690 is supported by columns running around the perimeter of the building and a double row of support columns running east-west through the plenum. OMCC runs beneath B690 from northeast to southwest, starting about 13 feet west of the North Bay and running beneath parts of the North Bay, Central Plenum, and South Bay. Eight of the support columns, two on the east edge of the building and six inside the plenum, lie inside the OMCC boundary. It is unknown whether there is Ra-226 contamination beneath these support columns. Detailed drawings of the building are available in Applicable Documents 7 and 8 (Section 1.4 of this SOW).

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1.2 General Scope

Work shall be divided into the following six work units (Figure 1, Attachment 1):

- Work Unit 1 from Trench 1 to Trench 2
- Work Unit 2 from Trench 2 to Trench 3
- Work Unit 3 from Trench 3 to the east end of a set of the tent-covered berms set up by the MAT K tenant (Sun Gro Tents)
- Work Unit 4 underneath the Sun Gro Tents
- Work Unit 5 running northwest from the west end of Work Unit 4 for 380 feet
- Work Unit 6 from the north end of Work Unit 5 to Magpie Creek.

The Contractor shall perform the following for each work unit:

- 1) Identify an appropriate technical approach to satisfy the requirements of this SOW.
- 2) Coordinate the technical approach with the Air Force Civil Engineer Center (AFCEC) and other key stakeholders.
- 3) Execute the approved approach in such a manner as to meet the ROD cleanup level, request an RURR from the State of California, and prepare a request to amend the radioactive material permit to remove OMCC from the permit, obtain concurrence from the United State Environmental Protection Agency (USEPA) that the remedy is complete.
- 4) Complete the design, remediation, demolition, and construction activities needed to satisfy the requirements of this SOW.
- 5) Provide complete, accurate, on-time, quality deliverables.
- 6) Identify and comply with the substantive requirements of all relevant federal, state, and local statutes and regulations in effect on the date of issuance of this contract, including but not limited to Department of Defense (DoD) and Air Force instructions, manuals, handbooks, regulations, guidance, and policy letters, Executive Orders, American Society for Testing and Materials, National Association of Corrosions Engineers, National Fire Protection Association, Steel Structures and Painting Counsel, National Electrical Code, Uniform Fire Code, Occupational Safety and Health Administration (OSHA) regulations, California Division of Occupational Safety and Health (Cal/OSHA) regulations, International Building Code, and state and local building codes.
- 7) Identify to the Contracting Officer (CO), Contracting Officer's Representative (COR), and Base Realignment and Closure (BRAC) Environmental Coordinator (BEC) in a timely manner any problems or impediments to successful project execution, and work with the key stakeholders to resolve those issues in an efficient and timely manner.

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- 8) Coordinate work with the following key stakeholders as necessary to meet the requirements of this SOW:
- AFCEC
 - The Air Force RIC
 - USEPA
 - The California Department of Toxic Substances Control (DTSC)
 - The California Central Valley Regional Water Quality Control Board (RWQCB)
 - CDPH
 - Sacramento County (serving as the Local Redevelopment Authority)
 - McClellan Business Park (MBP)
 - MBP tenants
 - Sacramento Metropolitan Fire District
 - Local utilities, including but not limited to Sacramento Metropolitan Utilities District for electrical services, Pacific Gas and Electric for gas services, Sacramento Suburban Water District for water service, Sacramento County Regional Sanitation District for sewer, Sacramento County Water Resources for storm water, and Consolidated Communications and ATT for Phone/Internet

Other stakeholders who are not directly involved with this project but have an interest in its outcome are the Nuclear Regulatory Commission (NRC), the McClellan AFB Restoration Advisory Board, and the public.

It is the Contractor's responsibility to identify and comply with all applicable requirements and to identify and coordinate with utilities owners who will be affected by this project.

1.3 List of Attachments

The Contractor shall comply with following attachments to this SOW:

- 1) Old Magpie Creek Channel Work Units
- 2) Key Personnel and Qualifications

1.4 Applicable Documents

The Contractor shall refer to and comply with the versions in effect at the time work is performed of the following reference documents:

- 1) *McClellan AFB Interagency Agreement (IAG)*, USEPA, State of California, Air Force, May 1990, AR # 1521
- 2) *Follow-on Strategic Sites Record of Decision*, CH2MHill, April 2014, AR# 420534
- 3) Air Force Manual (AFMAN) 40-201, *Radioactive Materials (RAM) Management*, Air Force Medical Command, March 2019
- 4) *Focused Strategic Sites Record of Decision*, CH2MHill, February 2012, AR# 7522

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- 5) *Basewide Quality Assurance Project Plan (QAPP)*, Revision 7, AFCEC, July 2022, AR # 619178
- 6) Radioactive Material Permit CA-00366-02/02AFP, Air Force Radioisotope Committee, September 2022
- 7) McClellan Air Force Base ADAL Corrosion Control Facility, drawings, Capital Engineering Consultants, Inc., September 1992
- 8) McClellan Air Force Base ADAL Corrosion Control Facility, drawings, Capital Engineering Consultants, Inc., September 1995
- 9) Comprehensive Plan Composite Utilities McClellan Air Force Base California, Tab G-11, drawing, Air Force Logistics Command, January 1993
- 10) *Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP)*, EPA-505-B-04-900A / DTIC ADA 427785, Intergovernmental Data Quality Task Force, March 2005
- 11) *Optimized UFP-QAPP Worksheets*, Intergovernmental Data Quality Task Force, March 2012
- 12) *Guidance on Systematic Planning Using the Data Quality Objectives (DQO) Process*, EPA/240/B-06/001, USEPA, February 2006
- 13) *Old Magpie Creek Channel Project*, video, https://youtu.be/g-bAD_7AHyI, AFCEC, August 2022
- 14) *Old Magpie Creek Channel Trench 1 Final Status Survey Report*, URS, June 2016, AR # 538391
- 15) *Follow-on Strategic Sites Remedial Action Status Report Old Magpie Creek Channel*, URS, September 2016, AR # 540129
- 16) *Radiological Non-time Critical Removal Action Final Status Survey Report for Eight Finding of Suitability for Early Transfer (FOSET) 3 Sites*, CH2M HILL, February 2014, AR # 301088
- 17) *Appendix 9 Final Status Survey Report Old Magpie Creek Channel South SU 01*, CH2M HILL, June 2015, AR # 461828
- 18) *Radiological Non-time Critical Removal Action for 17 of the 19 Finding of Suitability for Early Transfer (FOSET) 3 Sites*, CH2M HILL, May 2013, AR # 7830
- 19) *Revised Reference Area Report Final Status Survey Report*, Cabrera Services, November 2004, AR # 5777

1.5 Government Furnished Information (GFI)

GFI is provided in the Administrative Record (AR) at <http://afcec.publicadmin-record.us.af.mil/Search.aspx> and in reference documents 7, 8, and 9 (Section 1.4 of this SOW). Documents shown with “AR #” in Section 1.4 of this SOW are available in the AR.

1.6 Government Furnished Equipment (GFE)

The Air Force will provide no GFE in support of this SOW.

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2.0 PROJECT MANAGEMENT

2.1 Project Management Plan (PMP)

The Contractor shall prepare a PMP that will describe the management approach to perform the work required by this SOW and demonstrate the work has been completed successfully. The PMP shall include a description of the project management team and reporting relationships, a work breakdown structure (WBS), and an integrated management schedule (IMS). The WBS shall include all tasks required to complete the work specified in this SOW. The IMS shall take the form of a Gantt chart showing the schedule for all tasks identified in the WBS. The Contractor shall update the IMS monthly to show progress on each WBS task and any changes to the schedule. The Contractor shall include the updated IMS in the monthly Contractor's Progress, Status, and Management Report (CPSMR) described below. The PMP shall be delivered in draft and final versions. The AFCEC will have 30 days to review the draft, and the Contractor will have 30 days to address AFCEC comments and issue the final version. (CDRLs B001)

2.2 Contractor's Progress, Status, and Management Report

The Contractor shall prepare and submit a CPSMR monthly. The CPSMR shall include a summary of the events that occurred during the reporting period, discussion of performance, identification of problems, proposed solutions, corrective actions taken, outstanding issues, and projected tasks occurring in the next reporting period. The CPSMR shall also include the monthly update of the IMS. The report shall be prepared in a format coordinated and approved by the COR and on a day of each month coordinated and approved by the COR. (CDRL B002)

2.3 Meeting/Teleconference Support

The Contractor shall participate in the following meetings:

- 1 kick-off meeting with the Air Force
- Weekly project management meetings with the Air Force
- Monthly meetings of the McClellan AFB BRAC Cleanup Team (BCT)
- Up to 10 comment resolution or problem resolution meetings with the regulatory agencies or other key stakeholders

At the Air Force's discretion, other key stakeholders may be invited to the weekly project management meetings.

The Contractor shall prepare an agenda and presentation materials for the kick-off, project management, and comment/problem resolution meetings. If requested by the Air Force, the Contractor shall prepare presentation materials for BCT meetings. Presentation materials and agendas for the kick-off, comment/problem resolution, and BCT meetings shall be submitted to the Air Force for review not less than five (5) working days prior to the meeting (unless otherwise approved by the Air Force). Presentation materials and agendas for project management meetings shall be submitted to the Air Force for review not less than one (1)

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working day prior to the meeting (unless otherwise approved by the Air Force). At a minimum, presentation materials for comment resolution meetings shall include a response to comments table. The Contractor shall prepare summaries/minutes for the kickoff and comment/problem resolution meetings not less than 10 working days after the meeting has occurred. (CDRLs B003, B004, B005).

2.4 Regulatory/Professional Interface

The Contractor shall coordinate with the key stakeholders as necessary to accomplish the work specified in this SOW. Coordination may take the form of informal day-to-day interactions, informal meetings, formal meetings, or exchange of documents and/or data. Coordination may be in person, by teleconference or remote meeting (e.g., TEAMS), by email or text, or with written documents. The Air Force will be present for all meetings with the regulatory agencies and other key stakeholders. The Contractor shall not contact, nor take direction from, any regulatory agency or other key stakeholder without prior notification and approval by the Air Force.

2.5 Notification Requirements

The Contractor is required to notify the CO, COR, and BEC of critical issues that may affect contract performance and/or human health and the environment. The types of issues that require notification include, but are not limited to health risks, spills, medical, fire, or law enforcement incidents, unexploded ordnance (UXO) discoveries, Notices of Violation (received or anticipated), and changes in key personnel. On critical issues, verbal notification shall be made within 24 hours, followed by written notification within three working days. (CDRL A001)

In the event of a dispute with or enforcement action from a regulatory agency arising from performance of work specified in this SOW, regardless of whether the Air Force is a named party, the Contractor shall notify the BEC and CO or COR within 24 hours. If the Air Force is a named party in the dispute or enforcement action, the Contractor shall provide support to the Air Force as necessary to resolve the dispute or enforcement action. If the Air Force is not a named party in the dispute or enforcement action, the Contractor shall provide its proposed response to the dispute or enforcement action to the Air Force for review and comment prior to submission.

2.6 Data and Deliverable Management

The Contractor shall deliver all plans, reports, meeting agendas and minutes, presentation materials, GIS files (including layers), CADD files, and data necessary to complete the work specified in this SOW. Agendas, minutes, and presentation materials shall be prepared in draft and final versions. Plans and reports are primary documents under the McClellan AFB IAG unless otherwise noted in this SOW or negotiated between the Air Force and regulatory agencies. Primary documents shall be prepared in Internal Draft (Working Copy), Draft, Draft Final, and Final versions. Based on the IAG and standing agreements with the regulatory agencies, the normal time to finalize a primary document from the date the working copy is issued is eight

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months. The IAG review periods for primary documents are as follows unless otherwise negotiated with the Air Force and regulatory agencies:

- Working Copy (Air Force review) – 30 days
- Draft (regulatory agency review) – 60 days
- Draft Final (regulatory agency review) – 30 days

The Contractor will have the following periods to respond to comments and prepare the next document version unless otherwise negotiated with the Air Force and regulatory agencies:

- Working Copy to Draft – 30 days
- Draft to Draft Final – 60 days
- Draft Final to Final – 30 days

Regulatory agencies may unilaterally grant themselves a 30-day extension for review of draft documents and may request extensions for review of draft final documents. The Air Force may request extensions for preparation of draft, draft final, and final documents. Any party to the IAG may dispute a document at the draft final stage. If any party invokes dispute, the Contractor will coordinate with the BEC and CO/COR concerning the dispute's effect on contract scope, schedule, and cost.

Some technical reports prepared for this SOW may be classified as IAG secondary documents. All secondary documents must be associated with a primary document. Secondary documents shall be prepared in Working Copy, Draft, and Final versions. Based on the IAG and standing agreements with the regulatory agencies, the normal time to finalize a secondary document from the date the working copy is issued is four months. The IAG review periods for secondary documents are as follows unless otherwise negotiated with the Air Force and regulatory agencies:

- Working Copy (Air Force review) – 30 days
- Draft (regulatory agency review) – 30 days

The Contractor shall have the following periods to respond to comments and prepare the next document version unless otherwise negotiated with the Air Force and regulatory agencies:

- Working Copy to Draft – 30 days
- Draft to Final – 30 days

Unless otherwise specified by the Air Force, primary and secondary documents shall be delivered to the following recipients in the form specified:

- Air Force AR – electronic on CD or DVD
- AFCEC – hard copy and electronic
- CDPH – hard copy and electronic
- DTSC – hard copy and electronic

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- MBP – electronic
- RIC – electronic
- RWQCB – electronic
- Sacramento County – electronic
- USEPA – 2 hard copies and electronic
- USEPA Support Contractor – electronic

The electronic versions will be in the form of portable document format (pdf) files unless otherwise negotiated with the Air Force. The pdf of the final version shall include electronic bookmarks. Final documents must be accompanied by a metadata sheet and the pdf must meet the Air Force's requirements in effect at the time of submittal for inclusion in the AR. The Contractor shall deliver the electronic files on CD or DVD to the address the Air Force has on file for each reviewer and using the DoD Safe Access File Exchange (SAFE) site (<https://safe.apps.mil/>). Uploading files to SAFE requires a DoD Common Access Card (CAC). If the Contractor does not have personnel to make this upload who have a CAC then the Contractor shall coordinate with the BEC to arrange for SAFE upload.

Copies sent to MBP and Sacramento County are for their information because they are the most directly-involved key stakeholders. They do not normally provide comments. The Air Force will determine on a case-by-case basis whether the Contractor needs to respond to any comments received from them.

The Contractor shall submit all field and laboratory data to ERPIMS unless otherwise authorized by the BEC. The Contractor shall prepare and submit ERPIMS deliverables as specified in the latest ERPIMS Data Loading Handbook (DLH) using the latest version of the ERPIMS software utility (ERPTools). The AFCEC website offers the latest DLH, ERPTools software, ERPIMS policy, Help Desk contact info, data submission requirements, and ERPTools training schedules, (<https://www.afcec.af.mil/What-We-Do/Environment/Restoration/ERPIMS/Registration-Process/>). Data submissions shall be error-free, pass all validation checks and be fully comply with the ERPIMS DLH. The Contractor shall ensure that any required corrections are accomplished within the contract period of performance and funding for this contract. Questions with regard to ERPTools software and training can be addressed to the ERPIMS Help Desk. (CDRL B006)

Figures, diagrams, maps, and drawings shall be delivered as pdf, image, CADD or GIS files as negotiated with the BEC. Files shall be compatible with the current AFCEC Microsoft™ Office Suite and GIS software versions. All figures shall be delivered in original application files GIS format. GIS submissions shall include layers. (CDRL A002a, A002b)

Analytical tools, techniques, and software developed specifically to perform the work specified in this SOW shall be the property of the United States Air Force, and shall be delivered at the end of the contract in an electronic form negotiated with the COR.

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2.7 Record Keeping

The Contractor shall create and maintain records sufficient to recreate each sampling, analytical, testing and monitoring event, and shall make these records available to the Government upon request. The records shall take the form of written, bound, numbered logbooks and/or equivalent electronic files. If electronic files are used, they must be protected such that they cannot be altered after they are created. The Contractor shall maintain records of, and derived from, all activities outlined in the appropriate portion of the Quality Program Plan (QPP) supporting the generation of these sampling and analysis records. The Contractor shall also retain written calculations using information obtained from sampling, analysis monitoring, and testing activities, to include all raw data. All information shall be provided to the Government upon request and included as part of the appropriate deliverables associated with this SOW.

2.8 Key Personnel and Qualifications

The Contractor shall identify key positions and assign qualified personnel to fill those positions. Key positions include but are not limited to those listed in Attachment 2 to this SOW. Personnel assigned to those positions shall be credentialed members of architectural, planning, science, and engineering professions. Generally, a credentialed professional (a) is licensed (e.g., registered professional engineer) to practice in the state where the work is being performed and/or (b) commands the necessary expertise, in terms of knowledge and experience, to undertake the specified task. For the positions shown in Attachment 2, assigned personnel must have the minimum qualifications and credentials shown in Attachment 2.

3.0 PLANS AND REPORTS

The Contractor shall prepare and deliver the technical plans and reports specified in this section (hereinafter referred to as project plans and project reports). All plans and reports shall be considered IAG primary documents unless otherwise specified below or negotiated with the by the Air Force and regulatory agencies. IAG primary and secondary documents shall be managed as specified in Section 2.7 of this SOW and the CDRL.

All versions of technical reports (working copy, draft final, and final) delivered by the Contractor shall be complete; substantively correct and consistent with applicable laws, regulations, DoD and Air Force policies; in proper format; and free of grammatical and typographical errors. Working copies are considered “drafts” only in the sense that they have not been reviewed and approved by the Air Force. Draft documents are the initial version of documents that have undergone Air Force review and are submitted to the appropriate regulatory agencies for review. Draft Final documents incorporate regulatory comments on the draft and are submitted to the regulatory agencies so the agencies can confirm their comments have been adequately addressed. Final documents incorporate regulatory comments on the draft final and are intended to be the last version of the document to be issued. The final is the version that will be placed in the AR to become a permanent part of the publicly-available record for the site.

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3.1 Quality Program Plan

The QPP shall comprise the Remedial Action Work Plan (RAWP), Health and Safety Plan (HSP), McClellan Basewide QAPP (to be included by reference), project-specific QAPP Addendum, Sampling and Analysis Plans (SAPs), Construction Work Plan (CWP), and Construction Quality Plan (CQP) for this contract. The QPP shall not be a separate deliverable. It will simply consist of the final versions of each of the documents listed above.

3.2 Remedial Action Work Plan and Remedial Design

The Contractor shall prepare and deliver a RAWP describing all activities needed to complete remediation of the OMCC as specified in the FoSS ROD. The contractor shall decide, in consultation with the Air Force, whether there will be a single RAWP for the entire project or separate RAWPs for each work unit. The activities will be described in sufficient detail for the Air Force and regulatory agencies to verify the work will be sufficient to meet the cleanup goals specified in the ROD, the Air Force to perform inspections and surveillance, and Contractor and subcontractor personnel to perform the work. The RAWP must describe the technical approach that will be used to obtain unrestricted radiological release of each OMCC Work Unit (Figure 1, Attachment 1), the technical approach that will be used to preserve and/or restore the structure, appearance, and function of B690, and the technical approach that will be used to preserve and/or restore other infrastructure disturbed during the OMCC remediation. The RAWP also must include the designs of the excavations and any structures required to complete the remedy such as roads, fences, soils holding areas, and staging areas. To the extent the remediation requires demolition of any pavement or structures, the RAWP shall include the demolition plan for those items. The RAWP is an IAG primary document. (CDRL A003a)

3.3 Quality Assurance Project Plans

The Contractor shall prepare a project-specific addendum to the McClellan AFB Basewide QAPP using the forms specified in the Basewide QAPP. The Contractor shall comply with the Basewide QAPP except as specified in the final, approved QAPP Addendum. The QAPP Addendum is an IAG primary document. The Contractor shall, in consultation with the Air Force, determine whether the QAPP addendum will be issued as a stand-alone document or as part of the RAWP. (CDRL A003b)

3.4 Sampling and Analysis Plans

The Contractor shall prepare SAPs for pre-excavation sampling (Section 4.2 of this SOW), radiological final status surveys (Section 4.6 of this SOW), and backfill sampling (Section 4.7 of this SOW). There shall be a separate pre-excavation SAP for each work unit and a separate final status survey SAP for each work unit. The contractor shall decide, in consultation with the Air Force, whether there will be a single backfill SAP for all backfill soil or separate backfill SAPs for each work unit. The Contractor shall prepare the SAPs in accordance with the UFP-QAPP, McClellan AFB Basewide QAPP, and project specific QAPP Addendum. The McClellan AFB Basewide QAPP worksheets shall be used, and a crosswalk (Worksheet 2) shall be used to document that all required elements of the UFP-QAPP are present in the SAP. The

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pre-excavation and final status survey SAPs are IAG primary documents. The backfill SAPs are IAG secondary documents, and the associated primary document is the RACR. The Contractor shall, in consultation with the Air Force, determine whether the SAPs will be issued as stand-alone plans or as part of the RAWP. (CDRL A004)

3.5 Construction Work Plan

The Contractor shall prepare a CWP describing all activities needed to restore infrastructure affected by the OMCC remediation. This includes but is not limited to B690, B708, B751, B752, B753, and pavement, structures, and utilities adjacent to or under B690, Kilzer Ave., MAT K, or the current Magpie Creek. There shall be a separate CWP for each work unit. The CWP is an IAG primary document. (CDRL A005a)

3.6 Construction Quality Plan

The Contractor shall prepare a CQP to define the organization, procedures, and quality control program necessary to ensure the proper execution of the efforts specified in the CWP. The CQP must address the following items at a minimum: (CDRL A005b)

- The processes, procedures, and forms the Contractor shall use to verify equipment, materials, and construction activities meet the requirements of the final 60% design (see Section 3.15 of this SOW) and comply with all relevant DoD, Air Force, federal, state, and local statutes, codes, requirements, and guidance.
- The inspections and documentation the Contractor shall use to verify equipment, materials, and infrastructure construction are in accordance with the specifications and work standards in the final 60% design.
- The corrective actions process the Contractor shall use to address deficiencies found during the inspections, including the selection and documentation of corrective actions, time frame for corrective actions, and re-inspection to confirm the implementation and effectiveness of corrective actions.
- Construction Quality Assurance (QA) personnel, responsibilities, and reporting chain.

The contractor shall decide, in consultation with the Air Force, whether there will be a single CQP for the entire project or separate plans for each work unit.

3.7 Health and Safety Plan

The Contractor shall prepare an HSP as required by Title 29 of the Code of Federal Regulations Part 1910.120 (29 CFR 1910.120), Title 10 of the Code of Federal Regulations Part 20 (10 CFR 20), and AFMAN 40-201. The HSP shall apply to all field activities required to perform the OMCC remediation and infrastructure restoration. The Contractor shall use USEPA guidelines, AFMAN 40-201, and 10 CFR 20 for designating the appropriate levels of protection needed at the site. The Contractor shall maintain written certification that the approved HSP has

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been reviewed with all personnel that work at the project site prior to their mobilization. The Contractor shall decide, in consultation with the Air Force, whether a single HSP will be issued for the entire project or separate HSPs are needed for the remediation and construction phases of the work and whether the HSP(s) will be issued as stand-alone documents or as parts of the RAWP and/or CWP. HSPs are IAG primary documents. (CDRL A006)

3.8 Other Plans

The Contractor shall prepare any other plans necessary to describe the work required at the site, protect human health and the environment and comply with federal, state, and local requirements during the performance of this SOW. Such plans might include but are not limited to plans for site security and access control, transportation, dust mitigation, surface water management, storm water pollution prevention, wildlife conservation, and confined space entry. The Contractor shall determine the need for any such plans in consultation with Air Force and the regulatory agencies. These plans shall be primary documents unless otherwise negotiated with the Air Force and regulatory agencies. The Contractor shall determine in consultation with Air Force whether each plan will be issued as a stand-alone document or as part of the RAWP and/or CWP. (CDRL A0005c)

3.9 Engineering Study Report for B690

The Contractor shall prepare a technical report documenting the results of the engineering study for B690 (see Section 4.3 of this SOW). This will be an Air Force-internal document and will not require review by the regulatory agencies. The report shall be prepared in draft and final versions. The Air Force shall have 30 days to review the draft report, and the Contractor shall issue the final version, incorporating the Air Force's comments on the draft within 30 days of receiving the Air Force comments. At the Air Force's discretion this report may be shared with MBP and Sacramento County. (CDRL A007a)

3.10 Biological Resources Field Investigation Report

The Contractor shall prepare a technical report for each work unit documenting the results of the biological resources field investigation for that work unit (see Section 4.1 of this SOW). These are IAG secondary documents. The associated primary document is the RACR. (A007b)

3.11 Pre-Excavation Sampling Reports

The Contractor shall prepare a pre-excavation sampling report for each work unit (Figure 1, Attachment 1). Pre-excavation sampling is discussed in Section 4.2 of this SOW. The reports shall present the following information:

- Locations, boundaries, and MARSSIM classification of each survey unit
- Locations and depths of all samples
- Sampling and analysis methods used
- Laboratory results for each sample

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- Quality assurance/quality control (QA/QC) measures used during the sampling and analysis
- Data validation
- Conclusions and recommendations
- Disposal of any waste generated during the sampling, i.e., Investigation Derived Waste (IDW)
- Decontamination of tools and equipment used during sampling and transport to the lab
- Any restoration done to return the site to its pre-sampling condition
- All necessary backup information needed to decide whether the SAP was followed, human health and the environment were protected during the sampling, and the data are usable for decision making, including but not limited to field logs; boring logs; laboratory reports; visitor access logs; incident, accident, and spill reports; and reports of actions taken to control fugitive dust and surface water run-on and run-off

The conclusions and recommendations must explicitly address whether the work unit or any part of the work unit requires excavation and whether all or part of the work unit is suitable for unrestricted radiological release without excavation. The Contractor shall decide in consultation with the Air Force whether the scoping survey reports for each work unit shall be issued as stand-alone documents or combined into a single document. For a work unit where the sampling shows no excavation is needed, the scoping survey report can be converted to a FSSR if the Air Force and regulatory agencies agree. (CDRL A007c)

3.12 Final Status Survey Reports

The Contractor shall prepare a FSSR for each work unit (Figure 1, Attachment 1). Each work unit requires a FSSR regardless of whether any excavation is performed in that work unit. Final status surveys are discussed in Section 4.6 of this SOW. The FSSRs shall present the following information:

- Locations, boundaries, and MARSSIM classification of each survey unit
- Surface scan results, instruments used for the surface scans, and instrument calibration and QA/QC
- Locations and depths of all samples
- Sampling and analysis methods used
- Laboratory results for each sample
- QA/QC measures used during the sampling and analysis
- Data validation
- Conclusions and recommendations
- All necessary backup information needed to decide whether the SAP was followed, and the data are usable for decision making including but not limited to field logs, boring logs, and laboratory reports.

The conclusions and recommendations must explicitly state that the ROD cleanup levels have been met, a reasonable effort was made to remove all radioactive contamination, and the work

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unit is suitable for unrestricted radiological release. The remediation at OMCC will be phased to manage the impact of the remediation on MBP and its tenants, so final status surveys for the different work units will be done at different times. Therefore, the FSSRs for each phase of work shall be issued at different times. The Contractor shall decide in consultation with the Air Force whether the FSSRs for each work unit done during a specific phase of the remediation shall be issued as stand-alone documents or combined into a single document. (CDRL A007d)

3.13 Backfill Suitability Reports

The Contractor shall prepare one or more technical reports documenting the sampling results for backfill soil (see Section 4.7 of this SOW). The contractor shall decide, in consultation with the Air Force, whether there will be a single backfill suitability report for all backfill soil used in the project or separate reports for each work unit. These are IAG secondary documents. The associated primary document is the RACR. (CDRL A007e)

3.14 Final Inspection Reports

The Contractor shall prepare a final inspection report for each work unit once the work unit has been restored to its pre-excavation condition. The draft version will be called the Pre-Final Inspection Report. It shall be issued prior to the final inspection and used as the basis for the final inspection. The final version will be called the Final Inspection Report. It shall be prepared after the final inspection has been completed and all final inspection punch list items have been completed. This report will document the final condition of the work unit. These are IAG secondary documents. The associated primary document is the RACR. (CDRL A007f)

3.15 Remedial Action Completion Report

The Contractor shall prepare a RACR for the entire OMCC remediation effort. The RACR shall present the following information:

- Remediation conducted at each work unit. If the scoping survey showed no excavation was needed at a work unit and the Air Force and regulatory agencies concur, then the remediation description will summarize the results of the scoping survey and state that no active remediation was required to meet the cleanup levels in that work unit.
- Quantity of soil removed.
- Where the excavated soil was disposed.
- Depth and width of the excavations and any lay-backs or terracing that was required.
- A summary of the data, conclusions, and recommendations from the FSSR demonstrating that the ROD cleanup level has been met.
- The source of backfill material and sampling results showing the backfill meets the ROD cleanup levels for Ra-226 and chemical contaminants of concern.
- Disposal of any IDW generated during the final status survey.
- Decontamination of tools and equipment used during the remediation and final status survey.

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- Any restoration, including construction, done to return the site to its pre-remediation condition.
- An explicit determination that the remedy selected in the ROD has been performed and the cleanup level in the ROD has been met.
- All necessary backup information needed to decide whether the RAWP was followed, human health and the environment were protected during the remediation, and the data collected during the final status survey are usable for decision making, including but not limited to field logs, boring logs, laboratory reports, visitor access logs, incident, accident, and spill reports, and reports of actions taken to control fugitive dust and surface water run-on and run-off.

The RACR will be largely repetitive of information presented in the FSSRs. However, the RACR and FSSRs cannot be combined into a single document because they follow different guidance concerning how to determine and document whether remediation is complete. (CDRL A007g)

3.16 Construction Drawings and Specifications

The Contractor shall prepare construction drawings and specifications (collectively referred to as the *design*) for all infrastructure requiring construction work to restore to its pre-remediation condition. The Contractor shall prepare a 60% design prior to construction and an as-built design after construction is complete. The as-built shall reflect the final configuration of the infrastructure as actually constructed and finished. The design shall include the following to the extent they are disturbed during remediation and need to be repaired/restored:

- B690
- Paving around B690
- Paving between B690 and Kilzer Ave.
- Roadway and west margin of Kilzer Ave.
- Utilities, landscaping, and fencing west of Kilzer Ave.
- B708
- Paving inside MAT K
- B751 and B752
- Paving between MAT K and Magpie Creek
- The liner of Magpie Creek

The 60% and as-built designs are not subject to the IAG. They are “other” documents and shall be prepared in working copy, draft, and final versions. The Air Force shall have 30 days to review the working copies, and the regulatory agencies shall have 30 days to review the drafts. The Contractor shall issue the drafts, incorporating the Air Force’s comments within 30 days of receiving their comments, and issue the finals, incorporating comments from the regulators, within 30 days of receiving their comments. (CDRL A008a, A008b)

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4.0 REMEDIAL ACTION

The Contractor shall implement the remedy selected in the FoSS ROD for Ra-226 contaminated soil in the OMCC—excavation to unrestricted use levels with disposal in the CU. The unrestricted use cleanup level for Ra-226 is 2.0 pCi/g. The Contractor shall completely or partially demolish infrastructure such as buildings, utilities, and roads as necessary to implement the remedy, excavate soil that exceeds the Ra-226 cleanup level, transport the contaminated soil for disposal, perform final status surveys, backfill the excavation, and restore infrastructure to its pre-remediation condition. The Contractor shall restore to its original condition all infrastructure affected by the work performed pursuant to this SOW.

4.1 Biological Resources Field Investigation

The Contractor shall perform a biological resources field investigation in each work unit prior to mobilization and site preparation. The purpose of the investigation is to determine whether any species protected by federal or state statutes or regulations are present at the site and, if so, to define mitigation actions commensurate with federal and state requirements. There are no wetlands or sensitive habitat within the OMCC or its surroundings.

4.2 Pre-Excavation Sampling

The Contractor shall perform pre-excavation sampling in each work unit. The pre-excavation sampling shall consist of a radiation scoping survey and chemical sampling to (1) identify which areas are contaminated above the Ra-226 cleanup level and which areas are not, (2) verify the depth at which Ra-226 contamination begins, (3) determine if any of the soil being sent for disposal will exceed CU waste acceptance criteria (WAC) for Ra-226 or chemicals, and (4) estimate the radiological source term being sent for disposal. Soil samples shall be taken from trenches or continuous core borings to make sure samples are collected from the gray layer. The number of samples to be taken shall be based on MARSSIM recommendations for a Class 1 final status survey. Soil samples shall be analyzed for Ra-226 by gamma spectroscopy in an analytical laboratory accredited by the DoD Environmental Laboratory Accreditation Program (ELAP). Chemical soil samples shall be analyzed for OMCC chemical contaminants of concern in an ELAP accredited laboratory. The radiological and chemical pre-excavation sampling results will be used to prepare waste profiles for disposal. Areas where the sample results show Ra-226 exceeds the cleanup level shall be excavated. (CDRL A007h)

4.3 Engineering Study for B690

The Contractor shall perform an engineering study to determine how best to excavate in and around B690. For the purposes of this SOW, the term excavate is used to mean removal of the contaminated soil from the site. It is not meant to require or imply the use of any specific methodology. The Contractor shall be responsible for selecting an appropriate methodology and obtaining approval for it from the Air Force and regulatory agencies. The Contractor shall perform a radiation scoping survey to determine which parts of the OMCC beneath B690 are contaminated either before or as part of the engineering study (see Section 4.2 of this SOW). The engineering study must document a technical approach to remove contaminated soil beneath

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B690, perform a MARSSIM final status survey of beneath the building, and preserve or restore the functionality, structural integrity, and appearance of B690. At a minimum, the study must address the following:

- How the Contractor will decide what parts of the OMCC inside B690 to excavate, and if any areas of the OMCC under B690 are not to be excavated how it can be demonstrated that the remediation beneath B690 meets the requirements of the FoSS ROD
- How the structural integrity of B690 will be maintained during the excavation, final status survey, and backfill
- Whether the soil beneath the eight structural supports inside the OMCC boundary will be sampled during the pre-excavation sampling and if so how
- Whether the soil beneath the eight structural supports inside the OMCC boundary will be removed during excavation and if so how building integrity and worker safety will be maintained during that process and how permanent structural support for the roof will be restored
- How worker safety and the integrity of the supports and the columns of soil on which they rest will be maintained during excavation if the eight structural supports inside the OMCC boundary are to be left in place during excavation
- How the contamination beneath the supports will be addressed if the eight structural supports inside the OMCC boundary are to be left in place during excavation
- How the full functionality, structural integrity, and appearance of B690 will be preserved during the excavation or restored at the end of the excavation

The Contractor shall evaluate the use of methods that will not require demolition or damage to B690. Multiple methods exist that are appropriate for this type of work. These include but may not be limited to horizontal boring, tunneling, slot trenching, or the use of false work to support the building's structure while an open excavation is performed inside the building. The Contractor may use any combination of these methods or may select a different method as long as the selected method(s) meet the requirements of removing all soil that exceeds the Ra-226 cleanup level from beneath the building and preserving or restoring the functionality, structural integrity, and appearance of B690.

4.4 Demolition

It is not the purpose of this project to demolish any structures. However, it might be necessary to demolish or partially demolish parts of B690, B708, B751, B752, B753, and/or utilities and pavement in the excavation pathway to reach contamination that lies beneath them. If such demolition proves necessary, the Contractor shall repair or rebuild any structures, utilities, pavement, landscaping, fencing, and gates affected by the remediation work. It is the Air Force's strong preference that B690 not be fully or partially demolished or damaged during

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the remediation of the OMCC. It is a specific requirement of this SOW that at the end of the remediation of the OMCC, B690 and any other structures, utilities, pavement, landscaping, fencing, and gates in the vicinity of the remediation shall have the same full functionality, structural integrity, and appearance as before the beginning of the project. The final condition of B690, and any other impacted structures, utilities, pavement, landscaping, fencing, and gates will be subject to inspection and acceptance by the Air Force and MBP. The Contractor shall describe all demolition work and the necessary restoration of infrastructure affected by this project in the RAWP and CWP.

4.5 Excavation and Disposal

The Contractor shall excavate all soils that exceed the Ra-226 cleanup level in each work unit. There is a single possible exception; if it is not possible to safely excavate the material beneath the structural supports in B690 then contaminated soil beneath those supports may be left in place. In that case, the Contractor shall work with the Air Force to demonstrate to the satisfaction of the regulatory agencies that (1) the risk reduction required under CERCLA has been achieved and (2) every *reasonable* effort has been made to remove all contaminated soil (a State of California requirement). The Contractor shall use a combination of visual evidence (i.e., removal of the gray layer) and remedial action support surveys (MARSSIM Section 4.3) to estimate when excavated areas are ready for final status survey.

The Contractor shall segregate soil that the pre-excavation sampling shows is clean (hereinafter referred to as *clean overburden*) from the contaminated soil. The Contractor shall dispose of contaminated soil that meets the CU WAC in the CU and contaminated soil that does not meet the CU WAC in an off-site facility approved by USEPA and the Air Force. The Contractor may hold the clean overburden on site for use as backfill or dispose of it off site. Clean overburden may not be taken to the CU for disposal. If the Contractor elects to retain the clean overburden for use as backfill, the Contractor shall be responsible for managing the soil and complying with all pertinent Federal, State, and local requirements.

The Contractor shall coordinate shipments to the CU with the CU operator. The Contractor shall use the pre-excavation sampling results to prepare waste profiles for the CU. These must be provided to the CU operator in writing and must be approved by the Air Force prior to the soil being transported to the CU. At a minimum, the Contractor shall provide the CU operator with weekly estimates of the quantity of soil and number of trucks that will be arriving at the CU each day, measurements of the actual quantity of soil delivered to the CU, and estimates of the quantity of Ra-226 delivered to the CU. The purpose of the weekly estimates is to allow the CU operator to plan their operations, so they must be delivered one (1) week in advance. Actual deliveries to the CU may vary from the weekly estimates based on conditions encountered in the field. The CU operator has stated that they can process up to six trucks per hour at the CU.

The CU accepts soil only during the dry season, approximately from mid-April to the end of October each year. Specific operating dates are determined by the Air Force each year based on conditions for that year. CU operating hours are from 7:00-11:30 AM and 12:00 noon – 3:00 PM. AFCEC has contracted for the CU to operate for 80 days during that period. If the

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Contractor requires additional operating days to meet the requirements of this SOW, then the Contractor shall submit a request to the COR in writing specifying the number of days needed and the reason they are required. The Air Force will add days to the CU contract if (1) funds are available and (2) there is sufficient time left in the affected field season to process the contract modification.

Prior to any excavation, the Contractor shall identify and mark utilities that might be affected by the excavation. The Contractor shall subscribe to appropriate utility locator services and arrange for the locator services to mark utilities in the excavation area. The Contractor shall also coordinate with the AFCEC field engineer and MBP to identify utilities. The Air Force has some utilities drawings for the area of this project as identified in Section 1.4 of this SOW and will provide those to the Contractor. However, the Air Force does not warrant that those drawings accurately reflect current conditions.

4.6 Final Status Surveys

When visual evidence and remedial action support surveys indicate an excavated area has met the cleanup level, the Contractor shall perform a final status survey of the excavated area in accordance with MARSSIM. For each final status survey, the Contractor shall define Class 1 and Class 2 survey units, calculate the number of random soil samples for each survey unit, and determine the number of biased samples needed, if any. The maximum area recommended in MARSSIM for a Class 1 survey unit is 2,000 square meters. However, the size and shape of the survey units for this project must be determined based on actual site conditions. A typical number of random samples for a MARSSIM Class 1 survey is 15-20. However, the precise number of samples for any given survey must be calculated following the guidance presented in MARSSIM. The Contractor shall perform a gross gamma surface scan of 100 percent of the excavation surface (sidewalls and floors), collect random and biased soil samples, and have the samples analyzed for Ra-226 by gamma spectroscopy in an ELAP accredited analytical laboratory. The Contractor shall document the results of the final status surveys as FSSRs as specified in Section 3.12 of this SOW.

Sections of OMCC that do not require excavation still require final status surveys. These areas shall be identified as MARSSIM Class 1 survey units. The pre-excavation radiation scoping surveys may be used as the final status surveys for unexcavated areas if there is sufficient data from those surveys to meet the MARSSIM Class 1 random sampling recommendations. The Contractor shall perform final status surveys for any unexcavated areas if there is insufficient scoping survey data in those areas to satisfy the MARSSIM recommendations for a Class 1 survey.

4.7 Site Restoration and Inspection

Once the Ra-226 cleanup level has been met, the Contractor shall restore the site to its condition prior to the start of remediation. This shall include backfilling all excavations and compacting the backfill soil, restoring all surface features affected by the remedial action to their pre-excavation condition, and repairing or replacing all property damaged or destroyed by the

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remedial action. Final site conditions will be subject to inspection by the Air Force, regulatory agencies, and MBP.

For each excavation, once the final status survey demonstrates the Ra-226 cleanup level has been met, the Contractor shall backfill the excavation and compact to 97%. There are several soil stockpiles at the former McClellan AFB called the McClellan soil stockpiles (Figure 2, Attachment 1). The Contractor may obtain backfill soil from the McClellan soil stockpiles, the clean overburden excavated from the OMCC, or off-base sources (i.e., sources outside the former McClellan AFB boundary). It is not a requirement that the Contractor use OMCC overburden for backfill. The Contractor may, at their own discretion dispose of clean overburden off site. Off-base sources may be used only if the McClellan soil stockpiles provide an insufficient quantity of soil that meets the FoSS ROD cleanup levels. The upper foot of the excavation may be backfilled with material other than soil, such as gravel, with the approval of the Air Force, MBP, and the regulatory agencies.

Prior to backfilling, the Contractor shall sample the backfill soil to demonstrate it meets the FoSS ROD unrestricted use cleanup level for Ra-226 and industrial use cleanup levels for aroclor-1254, aroclor-1260, cadmium, lead, and diesel range total petroleum hydrocarbons (TPH-D). At a minimum, this sampling must consist of a five-point composite sample for every 500 cubic yards of backfill. This sampling must be performed regardless of the source of the backfill.

The Contractor shall restore infrastructure and surface features affected by the remedial action to their pre-excavation condition. This includes but is not limited to structures, utilities, pavement, landscaping, fencing, and gates. Once the infrastructure and surface restoration are complete, the Contractor shall prepare a final inspection data package and schedule a post-remediation inspection with the Air Force and regulatory agencies. The Contractor shall accompany the Air Force and regulatory agencies during their inspections of each work unit and generate a “punch list” of action items based on the inspectors’ comments. The Contractor shall resolve any action items generated during the inspection and provide the Air Force and regulatory agencies with documentation that the action items are complete. The Air Force and regulatory agencies may, at their discretion, perform a follow-up inspection to verify the action items have been implemented. Once all remediation, restoration, and inspections have been completed for all six work units, the Contractor shall issue a RACR.

The Contractor shall be responsible for any property damaged or destroyed by the Contractor or its subcontractors during performance of this SOW. The Contractor shall promptly repair or replace any damaged or destroyed property to a condition satisfactory to the COR or reimburse the property owner to restore or replace the property to a condition satisfactory to the COR.

4.8 Site Release

Unrestricted radiological release of OMCC is the end goal of this contract. Three agencies must concur that the remedial action at OMCC has been completed successfully, the RIC, CDPH, and USEPA. The RIC and CDPH must concur that the site is suitable for unrestricted radiological release. USEPA must concur that the remedial action is complete. CDPH indicates its concurrence by issuing a RURR. The RIC indicates its concurrence by removing OMCC from

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the RAM permit. Once the FSSRs are final, the Contractor shall prepare a request to CDPH for an RURR and a permit amendment request to the RIC. The RIC prefers to release sites in their entirety rather than piecemeal, so the permit amendment request shall be prepared for the entire site after all FSSRs are final. Historically, CDPH has been willing to issue RURRs for any area that has a final FSSR, and not insist on releasing sites in their entirety. The Contractor shall, in consultation with the Air Force and CDPH, decide whether to request separate RURRs as each FSSR is completed or wait until the entire site is completed and request a single RURR. The request to USEPA for concurrence that the remedy is complete may be included in the cover letter for the final version of the RACR or sent as a separate letter to USEPA. The requests for RURR, permit amendment, and USEPA concurrence that the remedy is complete must be signed by the Air Force, not the Contractor. The Contractor shall work with the Air Force, CDPH, RIC, and USEPA to resolve any comments or requests for additional information on those documents. Work under the SOW shall not be considered complete until CDPH issues RURRs covering the entire site, the RIC amends the multi-sites RAM permit to remove OMCC, and USEPA concurs in writing that the remedy is complete.

4.9 Permits and Licenses

The Contractor shall obtain any permits and pay any fees necessary to complete the work specified in this SOW. Pursuant to CERCLA (42 U.S.C. 9621(e)), no federal, state, or local permits shall be required for on-site CERCLA remedial actions. However, the Contractor may be required to comply with the substantive requirements for federal, state, or local permits. The Contractor must consult with the Air Force prior to obtaining environmental permits for on-site CERCLA activities. If the Contractor has any question whether a particular permit may or may not be required or whether specific permit requirements are substantive, the Contractor shall consult with the Air Force prior to obtaining the permit or complying with those requirements.

The Contractor shall prepare and obtain approval of Air Force encroachment permits prior to performing any activity that involves disturbance of soil or infrastructure. Encroachment permit forms and instructions are available electronically from AFCEC. Regulatory agency approval may be required for some encroachment permits. Coordination of encroachment permits with MBP may be required in some circumstances. Air Force approval is required for all encroachment permits. (CDRL A009)

The remedial action will be performed under a radioactive materials license held by the Contractor. The Contractor shall maintain a current radioactive materials license from the NRC or the State of California for the work described in this SOW, comply with the license, inform the Air Force if and when the NRC or State of California conducts any inspection or audit of the license, and provide the Air Force with copies of any NRC or State of California inspection/audit reports and all related corrective action documents.

4.10 Worksite Access and Coordination

The entire length of the OMCC runs through areas and facilities in use by MBP and its tenants. This includes B690 and the areas immediately east and west of the building, Kilzer Ave., MAT K, and the areas north and west of MAT K. The Contractor shall work with the Air Force

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to coordinate activities under this SOW with Sacramento County, MBP, and the tenants. The Contractor shall be responsible for obtaining access to the work site including access through the Kilzer Ave. gate south of OMCC, access to MAT K, and access to B690. The Contractor shall notify MBP and its tenants prior to conducting any project activities that might affect the tenants. The Contractor shall coordinate with the Air Force prior to making such notifications.

4.11 Worksite Control

The Contractor shall control access to the worksite to ensure protection of human health and the environment, prevent damage to property, utilities, materials, supplies, and equipment, and minimize work interruptions. Security and access controls shall be implemented to prevent unauthorized entry to the work site. The Contractor shall be responsible for the provision and cost of electrical power, water, sewer, and other utilities required to perform the work specified in this SOW.

4.12 Health, Safety, Unexploded Ordnance, and Emergency Response

The Contractor must comply with OSHA and Cal/OSHA safety and health regulations, AFMAN 40-201, and state and local safety requirements. Health and safety measures shall be documented in the HSP. Health and safety measures shall apply to all Contractor and subcontractor personnel as well as all visitors to the site. Health and safety measures shall be monitored and enforced by the Contractor and shall be subject to monitoring by AFCEC's McClellan AFB field engineer and Air Force Radiation Safety Officer (RSO).

All on-site workers (Contractor and subcontractor) performing hazardous operations, including working with hazardous materials, must have completed the OSHA 1910.120 Hazardous Waste Operations and Emergency Response (HAZWOPER) training plus annual refresher courses. All on-site workers (Contractor and subcontractor) performing work with radioactive waste, must have completed annual radiation worker training as specified in AFMAN 40-201 and 10 CFR 20. The Contractor shall maintain training records in accordance with AFMAN 40-201 and OSHA reporting requirements and have the HSP on site, available for workers, Air Force, and/or regulatory agency review.

The Contractor shall identify radiation control areas (RCAs), place physical barriers around the RCAs to limit access to authorized personnel, and post the RCAs with radiation warning signs. The Contractor shall coordinate with the Air Force RSO to determine whether the entire work site should be treated as an RCA or RCAs should be defined within the work site. The Contractor shall also coordinate with the Air Force RSO to determine whether the physical barriers and signage are appropriate for conditions at the worksite.

If UXO is discovered during field activities, the Contractor shall immediately stop work, report the discovery to the CO, COR, and McClellan AFB BEC, and implement the appropriate safety precautions. At a minimum the safety precautions must include stopping work in the vicinity of the suspected UXO, moving all personnel away from the suspected UXO, and not disturbing the suspected UXO. The Contractor shall follow the 3Rs (Recognize, Retreat, and Report) per the

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Explosives Safety Education Program, <https://www.denix.osd.mil/uxo>. Field activities cannot continue until clearance is received from the CO.

The Contractor shall respond to any emergency situations arising from work performed under this SOW. McClellan AFB is not an active military installation, so law enforcement, fire protection, and emergency response must be obtained from the appropriate local agencies. In case of law enforcement situations involving imminent threat to personnel or property, medical emergencies, or fire the Contractor shall immediately call 9-1-1 then call the McClellan AFB BEC. For law enforcement situations not involving imminent threat to personnel or property such as trespass, theft, or vandalism, the Contractor shall call the BEC. The BEC will decide whether the call to law enforcement will be made by the Contractor or Air Force. In case of spills the Contractor shall immediately contain the spill then call the BEC. The regulatory agencies shall be notified of all spills. The BEC will decide whether the Contractor or Air Force shall make that notification. The regulatory agencies may be informed of spills by phone or email. If facilities, systems, improvements, or utilities are damaged in the course of work specified in this SOW then the Contractor shall call the BEC and perform emergency repairs. The BEC will decide whether the regulatory agencies need to be informed and determine who owns of the damaged property. The BEC will also decide whether the Contractor or Air Force shall inform the regulatory agencies and property owners. If in any situation the BEC cannot be reached the Contractor shall call the McClellan AFB field engineer. If the field engineer cannot be reached the Contractor shall call the COR. For all the situations described above the Contractor shall inform the BEC, CO, and COR in writing within 72 hours. The Contractor is required to provide the BEC and CO and/or COR copies of any OSHA or Cal/OSHA report(s) submitted during the duration of this contract. (CDRL A010)

The Contractor shall deliver the results of all radiation and dose monitoring conducted as part of this project. Such monitoring shall be in accordance with the Contractor's RAM license, the Air Force RAM permit, and the HSP. The HSP shall specify how often and in what form the results are delivered. In addition to any periodic reporting specified in the HSP, the results shall be delivered as part of the RACR. They shall also be delivered at any point during the project upon request from the CO, COR, or BEC.

4.13 Photo Documentation

The Contractor shall prepare digital photographic documentation of all field work performed pursuant to this SOW. The photographs must document the following:

- The condition of buildings, pavement, and other surface infrastructure before, during, and after project activities
- Field activities including but not limited to sampling, scanning, demolition, excavation, and construction
- Examples of sample location markings
- Evidence of the gray layer in each excavation
- Site controls such as fences, gates, and signs
- Any emergency situations that arise

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The Contractor shall provide photo documentation to the Air Force as part of the FSSRs, RACR, backfill data packages, and site inspection data packages or at the request of the CO, COR, or BEC. No separate CDRL is required for this as it shall be included as part of the technical reports and documents specified in earlier sections of this SOW.

5.0 QUALITY ASSURANCE

The Contractor shall implement QA programs to make sure (1) data collected to meet the requirements of this SOW are of adequate quality to support the decisions for which they were collected, (2) project plans and reports comply with the requirements of this SOW and the appropriate federal, state, and local requirements and guidance for the preparation of such documents, (3) work is performed in accordance with the project plans and Basewide QAPP, (4) designs prepared to meet the requirements of this SOW comply with the requirements and guidance listed in Section 1.4 of this SOW, are of adequate detail for use in construction, and if followed will result in infrastructure that will perform its intended function, be durable, and have an outward form and appearance appropriate to its intended end use and setting, and (5) construction and site restoration performed to meet the requirements of this SOW is performed in accordance with the designs.

5.1 Data Quality Assurance

The Contractor shall ensure project decisions are made with technically defensible data of known and documented quality. The Contractor shall develop project specific DQOs consistent with Air Force policy and objectives, and designed to ensure data of adequate quality are collected and used to support project decisions. DQOs shall be developed in consensus with AFCEC and the regulatory agencies and in accordance with MARSSIM, UFP-QAPP, and USEPA guidance. The DQOs shall be documented in the SAPs.

The Contractor shall ensure all sampling and analysis work required under this SOW is performed in accordance with the McClellan AFB Basewide QAPP, the project specific QAPP Addendum, and the SAPs. The standard operating procedures (SOP) in the McClellan AFB Basewide QAPP shall be followed unless there is a project-specific need to follow other SOPs. If an SOP not included in the McClellan AFB Basewide QAPP needs to be used, the Contractor shall document the SOP in the QAPP Addendum or SAPs.

If all requirements specified in the Basewide QAPP, project specific QAPP addendum, and SAPs are not met, the Contractor shall re-accomplish the sampling at the Contractor's expense. Data validation shall be performed by an independent, qualified, and experienced data validator in accordance with DoD General Data Validation Guidelines and any applicable Modules. The data validation SOPs specified in the McClellan AFB Basewide QAPP shall be used unless there is a project specific need to use other data validation SOPs. Any project specific data validation SOPs shall be included in the QAPP Addendum or SAPs.

The Contractor shall include Data Validation Reports for all analytical data analyzed under this contract as an integral part of the project reports. No separate CDRL is required.

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5.2 Laboratory Selection and Analysis

The Contractor shall select a DoD ELAP accredited laboratory or laboratories. The laboratory(s) must be capable of maintaining and achieving accreditation to the most current version the Quality Systems Manual for Environmental Laboratories and the General Data Validation Guidelines in the UFP-QAPP throughout the period of performance. The laboratory(s) also must be capable of achieving and maintaining the throughput necessary to meet project schedules.

The Contractor shall be responsible for the quality of all radiological and chemical laboratory analyses required to complete the work specified in this SOW. The Contractor shall ensure that all laboratory analysis tasks are conducted in accordance with the McClellan AFB Basewide QAPP, the QAPP addendum, and SAPs.

The Contractor shall ensure that all hard copy and electronic data deliverables supplied by the laboratory are complete and adequate to support the quality and usability of the data. Validated data packages shall be submitted to the Air Force and regulatory agencies as part of the project reports specified in Section 3 of this SOW. Data packages shall meet federal and state standards and include all information required to recreate the analysis, including correspondence with the laboratory regarding QA/QC exceedances and documentation of corrective actions. No separate CDRL is required for laboratory data packages as they shall be included as part of the reports specified in previous sections of this SOW.

5.3 Construction Quality Assurance

The Contractor shall implement the construction QA process defined in the CQP. This shall include inspection of all equipment, materials, and finished infrastructure to verify it complies with the final 60% design and all DoD, Air Force, federal, state, and local requirements; selection and inspection of corrective actions; and any other activities specified in the CQP.

The contractor shall designate in writing QA staff members and their responsibilities. The QA responsibilities may be documented by reference to the CQP. QA staff shall be independent of remediation/construction management except at the top level where they shall report to the Contractor manager responsible for successful completion of this contract.

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6.0 GOVERNMENT POINTS OF CONTACT

The Government POCs shall be as follows:

Contracting Officer Rep.	Function Program Manager	Contracting Officer
Christiana Hewitt, GS-13	Steven Mayer, GS-13	Linda Cavazos, NH-03
AFCEC/CIBE	AFCEC/CIBW	772 ESS/PKC
2261 Hughes Ave Ste 155	3237 Peacekeeper Way Ste 205	2261 Hughes Ave Ste 155
JBSA Lackland, TX 78236	McClellan, CA 05843	JBSA Lackland, TX 78236
(210) 395-9426	(916) 600-7542	
christiana.hewitt.1@us.af.mil	steven.mayer@us.af.mil	linda.cavazos@us.af.mil

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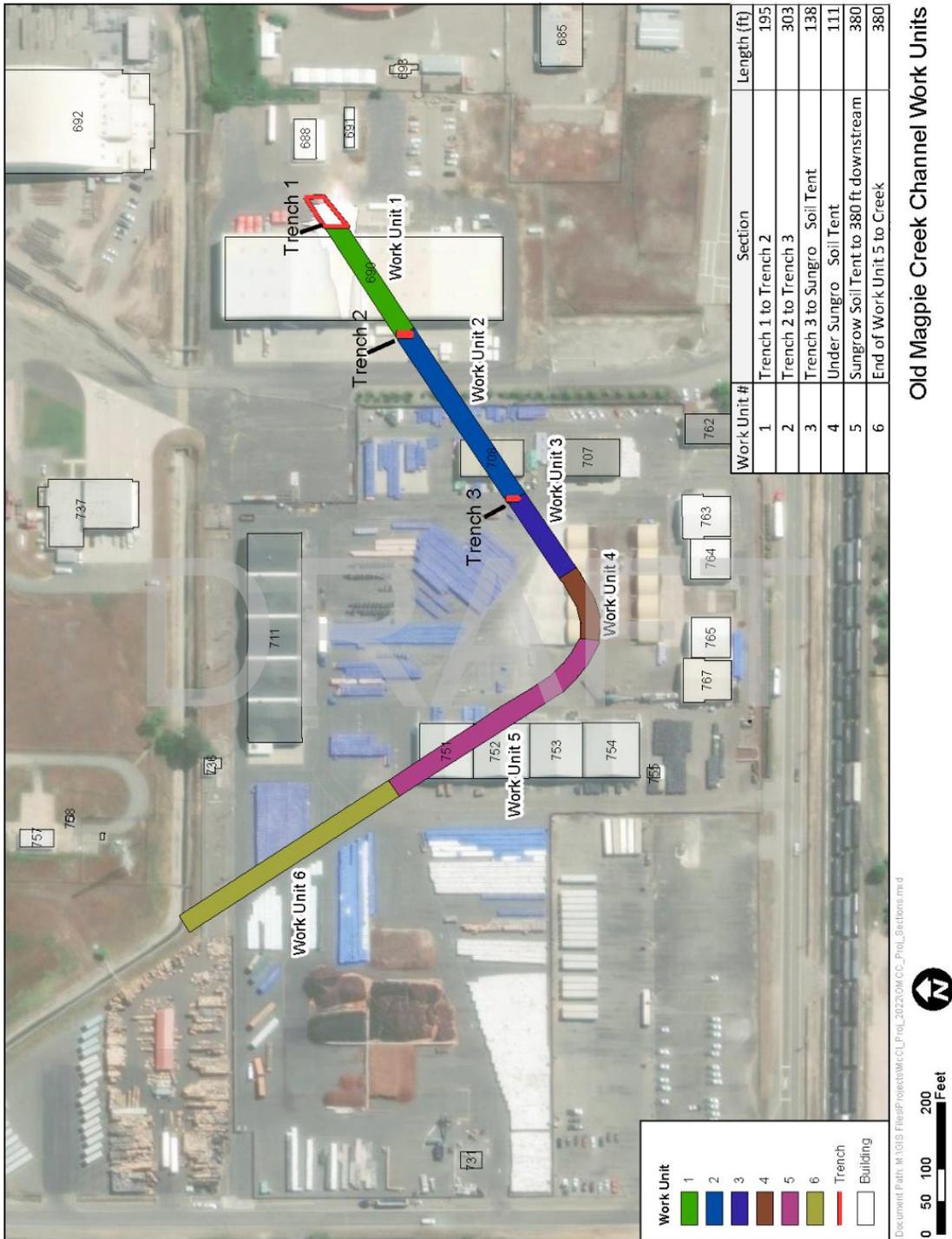
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ATTACHMENT 1

FIGURES

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Old Magpie Creek Channel Work Units

Figure 1. Old Magpie Creek Channel Location and Work Units

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Figure 2. McClellan Soil Stockpiles

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ATTACHMENT 2

Key Positions and Qualifications

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This is a senior management position responsible for coordinating all aspects of the project and managing the expectations of the key stakeholders. Minimum qualifications are a BA/BS degree in science or engineering and over 10 years of experience in environmental remediation including at least 5 years of experience as a project manager.

Position: Radiation Manager / Health Physicist

This is a senior technical position responsible for planning and managing the execution of the radiological decontamination and decommissioning and the radiation health and safety program. Minimum qualifications are a BA/BS in science or engineering. Training health physics and/or radiological science. Over 10 years of experience as a health physicist for environmental decontamination and decommissioning projects.

Position: Radiation Safety Officer (RSO)

This is a journeyman technical position responsible for using radiation protection procedures and controls to ensure occupational doses and doses to the public are as low as reasonably achievable (ALARA) and comply with the requirements of the Contractor's license, the Air Force's permit, 10 CFR 20 and AFMAN 40-201. Minimum qualifications are an Associates Degree in science or engineering. Training health physics and/or radiological science. Completion of 40-hour RSO training. Over 5 years of experience in radiation safety including at least one previous assignment as an RSO.

Position: Health and Safety Manager

This is a journeyman technical position responsible for planning and implementing the health and safety program for this project. Minimum qualifications are one of the following:

- BA/BS in industrial hygiene, occupational health sciences, occupational and environmental health, toxicology, safety sciences, or related science
- BA/BS in a branch of engineering, physical science, or life science that included 12 semester hours in chemistry, including organic chemistry, and 18 additional semester hours of courses in any combination of chemistry, physics, engineering, health physics, environmental health, biostatistics, biology, physiology, toxicology, epidemiology, or industrial hygiene
- Certification from the American Board of Industrial Hygiene

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Position: Design Engineer

This is a senior position responsible for designing the construction elements of this project. Minimum qualifications are a BA/BS in an engineering discipline relevant to the technical approach proposed for Building 690, experience applying the technical approach proposed for Building 690, a professional engineer (PE) license from the State of California or a state with a reciprocity agreement with California, and over 10 years experience in building design.

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