

Attachment 2

**STATEMENT OF WORK
FOR
REMEDIAL DESIGN AND
REMEDIAL ACTION (RD/RA)
for Groundwater of the
Perimeter Groundwater Operable Unit (OU-5)**

**AEROJET SUPERFUND SITE
SACRAMENTO COUNTY, CALIFORNIA**

September 19, 2011

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ATTACHMENT 2

STATEMENT OF WORK FOR REMEDIAL DESIGN AND REMEDIAL ACTION

for Groundwater of the
Perimeter Groundwater Operable Unit (OU-5)
Aerojet Superfund Site, Sacramento County, California

I. Introduction

This Statement of Work (SOW) describes the activities the Respondents must perform in order to design, construct, operate, maintain, monitor, and evaluate the Groundwater Remedial Action (RA) for the Perimeter Groundwater Operable Unit (OU)-5 (hereafter referred to as OU-5), as described in the *Perimeter Groundwater Operable Unit OU-5 Record of Decision* (hereafter referred to as the ROD), dated February 15, 2011. This SOW is Attachment 2 to the *Unilateral Administrative Order for the Performance of Remedial Design and Interim Remedial Action for Groundwater* (hereafter referred to as the “Administrative Order”) of the Perimeter Groundwater Operable Unit (OU-5), Aerojet Superfund Site (Site), Sacramento County, California.

OU-5 encompasses both soil and groundwater at the Aerojet Property (property) and beneath portions of the cities of Fair Oaks, Rancho Cordova, and Folsom as well as unincorporated areas of Sacramento County, California ([Attachment A](#) of this SOW [Approximate Extent of Contamination as of 2006-2008]). The soil areas comprise the following sites on the property: C4, C41, 7D, 10D, 11D, 32D, 33D, 34D, 35D, 38D, and the Former Company Store location (see Map of Soil Areas in [Attachment A](#) to this SOW). The groundwater included in OU-5 lies beneath four areas known as Zones 1 to 4 that lie to the north and south of the source operable units on the property (see Composite Plume Map in [Attachment A](#) to this SOW). The Contaminants of Concern (COC) in the soil and groundwater include the seventeen chemicals set forth in [Attachment B](#) (Chemicals of Concern with Containment Levels) of this SOW. The Remedial Action for the Soil areas of OU-5 is addressed in a separate Administrative Order and SOW.

The United States Environmental Protection Agency (EPA) is the lead Agency for the Administrative Order. The California Department of Toxic Substances Control (DTSC) and the California Regional Water Quality Control Board for the Central Valley Region (CVRWQCB) will represent the State of California in providing state review. Comments on submitted documents or data will be provided to Respondents by EPA. As lead Agency, EPA will resolve any differences in Agencies’ responses to Respondents. The term “Agencies” shall mean EPA, DTSC, and CVRWQCB.

The Agencies intend to review deliverables to assess whether or not the RA will achieve the Remedial Action Objectives (RAO) set forth in [Section II](#) (Remedial Action Objectives) of this

SOW. Reviews by the Agencies or EPA's approval of a task or deliverable shall not, however, be construed as a guarantee of the adequacy of such task or deliverable.

The definitions set forth in the Definitions section of the Administrative Order shall apply to this SOW unless expressly provided otherwise herein.

II. Remedial Action Objectives

As specified in the Administrative Order, Respondents shall conduct an RA to meet all RAOs, discussed below, and other Performance Standards.

The RA for OU-5 is an interim remedy for the groundwater areas in OU-5, since the groundwater remedy is dependent on control of source areas in other OUs still in the Remedial Investigation/Feasibility Study (RI/FS) phase. The OU-5 groundwater remedy does not establish final cleanup levels for restoration of the contaminated aquifer, which will be selected in the final Site-wide Record of Decision document. Complete cleanup of the entire Site will require coordination of all seven groundwater and source operable units.

The interim groundwater RAOs for OU-5 are specified in the ROD as follows:

- Protect human health and the environment by preventing exposure to contaminated groundwater through restricting withdrawal of the water within the containment area on the current Aerojet property for purposes other than remediation;
- Achieve containment of the contaminated groundwater that exceeds the groundwater containment standards (listed in [Attachment B](#)) to prevent future migration of contaminants until cleanup levels are achieved to protect long-term beneficial uses of the groundwater; and
- Remove contaminant mass from the aquifer through extraction and treatment of highly contaminated groundwater at or near the upgradient portions of the OU-5 groundwater zones. This action will improve the efficiency and effectiveness of contaminant containment of OU-5 groundwater.

III. Summary of the OU-5 Remedial Action for Groundwater

The groundwater portion of the OU-5 remedy will complete the containment of groundwater contamination around the boundary of the Site, in conjunction with the remedy for Western Groundwater Operable Unit (OU-3). The containment provided by Groundwater Extraction and Treatment (GET) systems will prevent the contamination of additional drinking water supplies in a populated area dependent on groundwater supplies. This RA is an interim remedy for the containment of groundwater contamination in OU-5, and does not set numerical cleanup goals for the groundwater in the aquifer. Groundwater restoration in OU-5 is dependent on control of primary source areas for the groundwater contamination and potential Non-Aqueous Phase Liquids upgradient of OU-5 in other operable units still in the RI/FS phase.

This RA is an interim remedy for containment of Contaminated Groundwater in OU-5, incorporates active measures to contain COCs within the groundwater that exceed risk-based limits, and includes the following actions:

- Contain groundwater that is contaminated above the containment levels in [Attachment B](#) to prevent further contamination of the aquifer. The contaminated groundwater will be contained using groundwater extraction and treatment;
- Remove additional contaminant mass from the contaminated groundwater on-property which is migrating off-property into OU-5 Groundwater Zones, through groundwater extraction and treatment at or near the property boundary in all contaminated layers of the aquifer;
- Treat extracted groundwater using reliable, proven treatment methods including biological treatment or resin adsorption for perchlorate, ultraviolet (UV) oxidation for N-Nitrosodimethylamine (NDMA), carbon adsorption or air stripping for residual volatile organic compounds (VOC), and oxidative destruction for less soluble VOCs and 1,4-Dioxane. EPA may approve alternative treatment methods in the future provided that they are demonstrated to be capable of meeting effluent limitations;
- Coordinate water replacement contingency planning and implementation at OU-5 with the contingency plans for OU-3;
- Implement Institutional Controls (IC), including Sacramento County review of new well drilling permits, and prohibitions on access to groundwater on the land overlaying the contaminated groundwater to restrict use of untreated groundwater within the contaminated portions of the aquifer until the final water quality objectives have been attained;
- Monitor groundwater at selected monitoring wells, drinking water wells, irrigation wells, and upgradient sentinel wells to verify and evaluate plume control and effectiveness of the remedy; and
- Manage groundwater within the hydraulic influence of the OU-5 groundwater remedy to maintain optimum water levels, to prevent adverse impact on the remedy, and to mitigate impacts on downgradient beneficial uses.

IV. Remedial Design Work Completed to Date

Since 1983, when the Site was placed on the National Priorities List, Aerojet has installed and operated numerous interim and final remedial action GETs (GETs A, B, D, E, F, F-south, E/F, Interim H, H-A, J, Interim K, K-A, L-A, L-B, and the American River Groundwater Extraction and Treatment [ARGET] system, as well as the Sailor Bar Park and Chettenham wellhead treatment systems) under directives from the Partial Consent Decree and under federal and state orders. Many of these systems are located in OU-3, and a number of them have been superseded by newer systems and are no longer in operation. The GETs are treatment systems with an array of extraction wells designed to remove VOCs, NDMA, and/or perchlorate as necessary from groundwater beneath the Site. The treatment systems at each GET vary, but generally include combinations of air-stripping

for VOC removal; UV light/chemical oxidation for removal of NDMA, most VOCs, and 1,4-dioxane; and ion exchange or biological reduction for perchlorate removal.

A number of these GETs (A, B, D, E/F, and ARGET) contained contamination that is part of OU-5. These interim remedial actions included GET D and ARGET in Zone 1, GET E/F in Zone 2 (included in OU-3), GET B in Zone 3, and GET A in Zone 4. The locations of these interim remedial actions are shown on the Composite Plume Map in [Attachment A](#). The GET A and GET B treatment facilities are now co-located at the GET B location (Building 37110).

The well array and pumping rates of these GETs may be reconfigured or expanded to improve effectiveness of the capture system in all zones of OU-5. It may not be necessary to add additional treatment systems, although improvements in treatment may be considered.

V. Remedial Design and Remedial Action for Groundwater

A. Compliance with Performance Standards

The ROD states that the expected outcomes of the Selected Interim Groundwater Remedy include the containment of groundwater contamination at the current extent of the plumes to protect uncontaminated drinking water sources, reliable long-term operation of the containment through mass removal of highly contaminated groundwater within OU-5, and reducing the time and cost to restore the aquifer to beneficial use (drinking water source) once the final Site-wide remedy is selected and assuming control of contaminant sources. Existing GET components are expected to be utilized where effective and practicable. The RAOs specified in the ROD are listed in [Section II](#) (Remedial Action Objectives) of this SOW.

Performance standards for containment of groundwater are the Containment Levels listed in [Table B-1](#) of [Attachment B](#) to this SOW. Respondents shall ensure that the locations of groundwater containment actions and compliance monitoring wells shall provide a sufficient buffer zone to allow additional actions to be taken, if necessary, to ensure compliance with the Performance Standards of this SOW. The OU-5 remedy shall operate together with current and pending groundwater remedies for OU-3 and other OUs as well as state enforcement actions (Inactive Rancho Cordova Test Site [IRCTS] and White Rock North Dump) to contain Contaminated Groundwater in all layers of the aquifer as an integral part of the remedy. The OU-5 remedy must integrate with remedies in adjacent parcels. Respondents shall provide adequate monitoring compliance and evaluation data to the Agencies at a sufficient number of monitoring wells within OU-5 to demonstrate that the remedies west and south of OU-5 are working collectively with the OU-5 remedy to meet the Performance Standards of this SOW.

Performance standards for treatment of extracted groundwater prior to discharge to on-Site surface water or non-potable uses are the substantive requirements of the National Pollution Discharge Elimination System (NPDES) permit in effect at the Site when the ROD was

signed on February 15, 2011 (see [Attachment C](#) of this SOW). Any discharge to ground on-Site shall also meet substantive requirements contained in Waste Discharge Requirements (WDR) issued by the CVRWQCB in effect at the Site when the ROD was signed or alternative WDRs that allow for the operational limits of specific GET facilities. Disposal/discharge of the treated groundwater must comply with the Applicable or Relevant and Appropriate Requirements (ARAR) contained in [Attachment D](#) of this SOW. Discharge of treated water to off-Site surface water, or other off-Site use of extracted groundwater, shall comply with all applicable federal and state water standards, including permits, in effect at the time of discharge. Discharges of treated water on-Site prior to each treatment system for the remedy selected in the ROD becoming operational and functional shall continue to comply with the discharge standards for that particular treatment system as provided in the Aerojet Partial Consent Decree in effect at the Site when the ROD was signed. If treated water is placed into a conveyance system on-Site for delivery as potable supply, Maximum Contaminant Levels (MCL) are ARARs ([Attachment D](#)) for treatment of the water on-Site. The treated groundwater shall not be injected into the subsurface unless it has been approved in writing by EPA and the CVRWQCB.

Other requirements, limits, and/or criteria for the RA related to Contaminated Groundwater are specified in the following items:

- [Attachment B](#) to this SOW (Chemicals of Concern with Containment Levels).
- [Attachment C](#) to this SOW (Effluent Discharge Limitations) and other discharge limits as described in [Section V\(A\)](#) Compliance with Performance Standards and [Section V\(E\)](#) Remedial Action.
- [Attachment D](#) to this SOW (Applicable or Relevant and Appropriate Requirements from the OU-5 Record of Decision). Note that this list of ARARs is taken directly from the ROD and applies to both Groundwater and Soil Remedial Actions.
- Groundwater Management Zone Plan (GMZP).
- Specified ICs of this SOW ([Section V\(L\)](#) Institutional Controls).
- Any additional Performance Standards developed in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW.

B. Supporting Plans and Deliverables

Respondents shall submit plans, specifications, and other deliverables for the Agencies' reviews, as specified in this SOW. One copy of each final document deliverable shall be provided to the Site Repositories in an unbound format suitable for reproduction; one copy each shall be provided to EPA, DTSC, and CVRWQCB Project Coordinators, and EPA's contractor; additional copies, if required, shall be provided. In addition, for any deliverable specified in this SOW or determined during the course of the Work (as defined in the Administrative Order) to require review or input of a water purveyor or another federal, state, or local agency, Respondents shall provide additional electronic Portable Document

Format (PDF) copies at no charge. Information presented in color must be legible and interpretable when reproduced in non-color. Final deliverables shall also be provided to the Agencies in electronic PDF unless otherwise directed by the Agencies. If requested by the Agencies, Respondents shall supply portions of final documents in modifiable electronic format. The Agencies shall be provided upon their request electronic files for any computer modeling simulations used by Respondents to generate deliverables along with any necessary software to run the applications, which is not in the public domain.

Respondents shall implement quality control procedures to ensure the quality of all reports and documents submitted to the Agencies for review. These procedures shall include but are not limited to internal technical and editorial review; independent verification of calculations; and documentation of all reviews, problems identified, and corrective actions taken.

As described in the EPA Review of Submissions section of the Administrative Order, EPA may approve, disapprove, or require modification of each deliverable under this SOW. Major deliverables described below shall be submitted according to the schedule in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW.

The following existing plans prepared for OU-3 shall be updated and revised to include OU-5. The requirements stipulated in the SOW for OU-3 (Section V(A) Supporting Plans) shall also apply to OU-5. The updated and revised plans shall be submitted for review by the Agencies and EPA's approval in accordance with the schedule contained in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW.

1. Sampling and Analysis Plans

In accordance with the Quality Assurance, Sampling, and Data Analysis section of the Administrative Order, Respondents shall prepare Sampling and Analysis Plans (SAP) for a) Remedial Design (RD) sampling, b) remedial construction sampling, and c) the long-term Operation and Maintenance (O&M) sampling for review by the Agencies and EPA's approval.

2. Construction Quality Assurance Plan

The Construction Quality Assurance Plan (CQAP) to be developed and implemented by Respondents shall ensure, with a reasonable degree of certainty, that the completed RA construction meets or exceeds all design criteria, plans and specifications, and Performance Standards of this SOW.

3. Health and Safety Plans

Respondents shall prepare and implement Health and Safety Plans (HSP) to cover the following: a) remedy design and associated design phase field activity, b) remedy

construction and associated field activities, and c) field activities after remedy construction during the long-term O&M period to ensure protection of on-site personnel and area residents from hazards posed by the RA.

4. Contingency Plans

In accordance with the RD and RA sections of the Administrative Order, Respondents shall submit a Construction Contingency Plan and an O&M Contingency Plan for actions to be taken in the event any action or occurrence during the performance of the Work causes a release or threatens to cause a release of hazardous substances or waste material from the Site creating an emergency situation that may present an immediate threat to public health or welfare or the environment. The O&M Contingency Plan shall specifically address actions to be taken if any portion of the remedy malfunctions or fails, causing a threat of release or release of COCs or Waste Materials from the Site that constitutes an emergency situation or presents an immediate threat to public health or welfare or the environment.

C. OU-5 Project Work Plan

Respondents shall submit a Project Work Plan to the Agencies for review in accordance with the schedule contained in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) contained in this SOW. The Project Work Plan shall describe the management strategy, and shall also include a step-by-step plan for completing the design and construction of the RA and for attaining and maintaining all requirements, including Performance Standards, identified in the ROD. The Project Work Plan must be approved by EPA and submitted in accordance with the schedule contained in the Work to Be Performed section of the Administrative Order.

As detailed in [Attachment E](#), the Project Work Plan shall include:

- Updated project description
- Description of the responsibility and authority of all organizations and key personnel involved with the RA
- Updated schedule and meetings
- Contracting strategy
- Plans for satisfying all permitting requirements
- Roles for design, construction, sampling, and operation of the RA
- Identification of any concerns about the quantity, quality, completeness, or usability of data upon which the design will be based
- Description of planned community relations activities to be conducted during RD or RA

- Updates to the Project Work Plan and periodic reporting to the agencies

The Project Work Plan shall address communication with interested parties, schedule, and coordination necessary to ensure achievement of the remedy Performance Standards.

D. Remedial Design

Respondents shall prepare an RD consisting of a series of GETs to extract and treat groundwater to meet all Performance Standards set forth in the ROD and this SOW. The RD shall assess the number of, and siting for, existing and proposed treatment facilities and the separation of treatment streams. Additional mass removal shall be conducted using groundwater extraction and treatment of the aquifer close to the main sources of the contamination upgradient of the OU-5 zones, together with service connections and any needed additional treatment capacity.

The groundwater treatment process shall meet the federal and state air regulations identified as Applicable or Relevant and Appropriate in the ROD ([Attachment D](#) of this SOW). If after the treatment systems are constructed, Respondents develop, sell, or lease their property which is within or directly adjacent to OU-5 (including the IRCTS), and within the area for which current federal and state air regulations require risk assessment, Respondents shall make any necessary modifications to the on-property treatment components to comply with the current air emission regulations regarding risk (such as modifications necessary due to increased population density and proximity).

RD activities shall include the preparation of clear and comprehensive design documents, construction plans and specifications, and other design activities needed to implement the Work and satisfy Performance Standards set forth in the ROD and this SOW. Plans for each specific groundwater zone may be submitted as they are completed. If individual zone plans are submitted, they shall subsequently be integrated into a complete OU-5 design document. All plans and specifications shall be developed in accordance with relevant portions of the latest revision of EPA's Superfund Remedial Design/Remedial Action Handbook (EPA 540/R-95/059), and in accordance with the schedule set forth in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW.

1. Preliminary Remedial Design

In accordance with the Remedial Design section of the Administrative Order, Respondents shall submit a Preliminary RD for review by the Agencies in accordance with the schedule contained in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW. EPA's approval is required before proceeding with further design work, unless EPA agrees otherwise. Unless modified by EPA, the Preliminary Design submittal shall include, at a minimum, the following:

- Results of treatability studies, if conducted
- Results of additional field sampling, if conducted
- Methodology and results of the effectiveness evaluation conducted on existing system components
- A detailed Design Basis Report that presents and justifies the concepts, assumptions, standards, and preliminary interpretations and calculations used in the design. The Design Basis Report shall include:
 - Volume or flow rate of water, brine, air, sludge, and other media requiring treatment or disposal;
 - A summary of water-quality or other data to be used during design, along with an analysis of whether the data confirm assumptions, recommendations, or conclusions made to date for OU-5;
 - Assumed influent quality over the design life of the treatment systems, with a description of the methodology used to develop the influent quality estimate (including discussion of the likelihood and magnitude of short-term and long-term changes in influent concentrations);
 - An explanation of how Performance Standards of this SOW for each layer of the aquifer will be met;
 - Discussion of any proposed or anticipated federal or state drinking water or ambient water quality standards that would impact the design;
 - Filtration, disinfection, corrosion control, or other treatment requirements in addition to removal of COCs;
 - Treatment technologies and/or treatment trains (for all media and by-products) and initial treatment process flow diagrams;
 - Preliminary sizing of treatment systems and other RA components;
 - Expected removal capacity of the treatment facilities for all groundwater COCs;
 - Delivery locations, rates, and pressures for the treated groundwater, and other conveyance system assumptions for discharging treated groundwater for water supplies, including siting of systems;

- Assessment of impact of the remedy on groundwater levels and measures for minimization of impact;
 - The degree of automation, planned level of operator oversight and emergency notification;
 - System control strategy, including the level of reliability (analysis of life cycle service and main component replacement times), redundancy, or specific damage prevention features needed in each major component of the RA to respond to seismic events, power outages, equipment failure, system maintenance, operator error, or deviations from design assumptions;
 - Listing and discussion of siting criteria for new extraction wells, treatment facilities, pipelines, and other facilities, along with preliminary locations and alignments; and
 - Estimate of the distance from each proposed extraction location to the location assumed in computer model simulations that were completed in support of the OU-5 containment RA. Outline computer modeling activities to achieve model calibration after monitoring wells are installed and to verify the effectiveness of the actual extraction well locations.
- Preliminary plans, drawings and sketches, and specifications of groundwater extraction, treatment, conveyance, and monitoring systems.
 - Project delivery strategy
 - A preliminary construction schedule for construction and implementation of the RA which identifies timing for initiation and completion of all critical path tasks.
 - An updated list and copies of permits, any regulatory Agency’s approval in addition to those of EPA, Memoranda of Understanding, access or use agreements, easements, leases, and properties developed or acquired to date; copies of permits, approvals, and agreements not previously supplied to the Agencies; and activities and schedules for obtaining outstanding items required before start of construction (e.g., for use of existing facilities or disposition of the treated water).
 - SAPs in accordance with the Quality Assurance, Sampling, and Data Analysis section of the Administrative Order, and [Section V\(B\)\(1\)](#) (Sampling and Analysis Plans) of this SOW.
 - CQAP in accordance with the Remedial Design section of the Administrative Order and [Section V\(B\)\(2\)](#) (Construction Quality Assurance Plan) of this SOW.
 - HSPs in accordance with the Remedial Design and Remedial Action sections of the Administrative Order, and [Section V\(B\)\(3\)](#) (Health and Safety Plans) of this SOW.
 - Contingency Plans in accordance with [Section V\(B\)\(4\)](#) (Contingency Plans) of this SOW.

2. Intermediate/Final Remedial Design

In accordance with the Remedial Design section of the Administrative Order, Respondents shall submit the Intermediate RD when the design effort is complete in accordance with the approved schedule contained in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW. The Intermediate Design shall fully address all Agencies' comments provided by EPA on the Preliminary Design, and if not previously addressed, be accompanied by a memorandum indicating how the comments were incorporated into the Intermediate Design. The Intermediate Design documents shall be certified by a Professional Engineer registered in the State of California.

The Intermediate RD shall serve as the Final RD if the Agencies have no further comments and EPA provides its approval. The Intermediate RD submittals shall include a capital and O&M cost estimate; reproducible drawings and specifications; and a complete set of construction drawings in full and one-half size reduction. The Final Design submittal shall include, at a minimum, the following: (1) final plans and specifications; (2) an O&M Plan; (3) the Field Sampling Plan (directed at measuring progress towards meeting performance standards and implemented in accordance with the approved RD Quality Assurance Project Plan (QAPP); and the (4) CQAP and (5) Construction Contingency Plan as described in [Section V\(B\)](#). The Final RD should also include a schedule for completion of construction, including inspection certifications to confirm that the Construction Criteria of this SOW are met.

E. Remedial Action

As approved by EPA, Respondents shall install, operate, maintain, and augment as necessary the GETs, which shall be a network of wells designed to completely contain Contaminated Groundwater and to remove COCs from the Contaminated Groundwater plume in all layers of the aquifer in the four zones of OU-5. The extraction, treatment, operation, and maintenance of groundwater treatment systems shall comply with the additional requirements listed below.

- Under all anticipated operating conditions, the GETs and their components shall be designed, operated, and maintained to reduce the concentrations of COC in the aquifer to below the containment levels set forth in [Attachment B](#) of this SOW. The groundwater extracted to achieve containment shall be remediated to the standards necessary for its reuse. On-Site surface water discharge shall meet the most stringent condition set forth in either [Attachment B](#) or [Attachment C](#) of this SOW as described in [Section V\(A\)](#) (Compliance with Performance Standards) of this SOW.
- The GETs shall comply with [Attachment D](#) of this SOW.
- Extraction, treatment, and monitoring systems shall not cause the discharge of material that is odorous or causes injury, nuisance, or annoyance to the public. GETs shall also comply with applicable noise ordinances.

- Respondents shall install and operate a monitoring program approved by EPA to evaluate and ensure that construction and implementation of the RD complies with approved plans, design documents, and Performance Standards set forth in this SOW.
- Design, construction, and destruction of extraction and monitoring wells after the effective date of this order shall comply with the substantive portions of the State Water Well Standards contained in Bulletin 74-90 and any subsequent revision thereto.
- The GETs shall be maintained in accordance with good engineering practices with adequate spare parts to ensure minimal service outages. Wellhead treatment or portable units shall have a provision for system replacement to prevent outages exceeding one week unless otherwise agreed to in writing by EPA.
- Respondents shall design the extraction wells and GETs to be capable of pumping and treating sufficient quantities of groundwater to adequately contain and extract the entire Contaminated Groundwater in all layers of the aquifer.

Respondents may submit a request for review by the Agencies and EPA's approval to terminate the pumping of extraction wells. Permanent or temporary termination of any portion of the GETs, including extraction wells designed for mass removal, can occur only at the written direction of EPA. The demonstration that data quality objectives have been achieved shall consist of at least three years of consecutive semi-annual monitoring during which none of the COCs exceed any Performance Standards of this SOW in any of the wells in the monitoring network. Monitoring shall be conducted pursuant to the SAP developed for OU-5.

Respondents shall demonstrate performance compliance through the deliverable documents acceptable to EPA as specified in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW. The RA shall provide sufficient vertical and horizontal hydraulic control in all layers of the aquifer to contain the groundwater with concentrations of COCs greater than the containment levels set forth in [Attachment B](#) of this SOW, as determined using the analytical methods approved by EPA. Respondents shall also provide documentation acceptable to the Agencies that the extraction wells will operate in a manner that ensures compliance with the Performance Standards.

In accordance with [Section V\(B\)](#) (Supporting Plans and Deliverables) and [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW, Respondents shall submit to the Agencies for review a Construction SAP with Field Sampling Plan and QAPP; CQAP; Remedial Action HSP; and Construction Contingency Plan.

Unless otherwise approved by EPA, Respondents shall not begin any phase of the construction until after EPA has approved their Final RD, Construction Contingency Plan, and Construction SAP. Field changes to the RA, as set forth in the Project Work Plan ([Attachment E](#)) and the Final RD, shall not be undertaken without review by the Agencies and EPA's approval. All Work on the RA shall be documented in enough detail to produce

as-built construction drawings after the RA is complete. Review by the Agencies and/or EPA's approval of submittals does not guarantee that the RA, when constructed, will meet the Performance Standards of this SOW.

1. Remedial Action Work Plan

Respondents shall submit a Remedial Action Work Plan to implement the approved sections of RD. The RA Work Plan shall include methodologies, plans and schedules for completion of at least the following: (1) selection of the remedial action contractor; (2) implementation of the CQAP; (3) development and submission of the groundwater monitoring plan (GMP); (4) identification of and satisfactory compliance with applicable permitting requirements; (5) implementation of the O&M Plan; (6) implementation of the Contingency Plan; and (7) development and submission of the Performance Standards assessment plan. The RA Work Plan shall also include a schedule for implementing all remedial action tasks identified in the SOW and shall identify the initial formulation of Remedial Action Project Team (including the Supervising Contractor). If further design is required for any portion of the groundwater Remedy, EPA may specifically request an addendum to the RA Work Plan.

2. Remedial Action Construction

Respondents shall implement the RA as detailed in the approved Project Work Plan, RA Work Plan (as updated), and approved Final Design. Respondents shall notify EPA within ten (10) days after Respondents conclude that construction of the Remedial Action (or a discrete portion of the RA) is complete.

3. Pre-Certification Inspection

A Pre-Certification Inspection shall be conducted by Respondents and EPA in accordance with the schedule contained in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW after Respondents complete construction and have commenced operation of the RA, or a discrete portion of the RA. If a Pre-Certification Inspection is held for a portion of the RA, one or more additional inspections shall be conducted so that the entire RA shall have been inspected. The objective of the inspection is to allow EPA to determine whether construction is complete, and the RA, or the inspected portion of the RA, is operational and functional.

4. Remedial Action Construction Completion Report

The pre-certification inspection shall be followed by a written report submitted within thirty (30) days of the inspection by a registered professional engineer and the Respondents' Project Coordinator certifying that the Remedial Action construction

has been completed in full satisfaction of the requirements of the Administrative Order. The report shall include the following:

1. A statement by a registered Professional Engineer and the Aerojet Project Coordinator that the construction of the Remedial Action has been completed in accordance with the RA Work Plan submitted under the SOW.
2. Synopsis of the work defined in the SOW (a listing of the groundwater treatment systems and extraction wells for OU-5).
3. A brief summary of the results of operational and performance monitoring completed to date.
4. The following statement by the Aerojet Project Coordinator Certifying that the submission is true, accurate and complete:

“To the best of our knowledge, after thorough investigation, we certify that the information contained in or accompanying this submission is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

5. EPA Construction Inspection

Within 60 days of submittal of the Remedial Action Construction Completion Report, EPA and Respondents shall conduct a pre-final construction inspection of the RA, or a portion of the RA. Respondents shall provide final record drawings to EPA at least ten (10) days prior to this inspection/s.

The objective of the inspection/s is to document whether the construction of the RA (or the inspected portion) has been completed in accordance with the approved work plan. Any outstanding construction items discovered during the inspection shall be identified and noted on a punch list. Respondents shall certify that the equipment is effectively meeting the purpose and intent of the specifications. Respondents shall retest where deficiencies are revealed. EPA will prepare a Pre-final Construction Inspection Report which outlines the outstanding construction items, actions required to resolve the items, completion date for the items, and an anticipated date for a Final Construction Inspection. The Pre-final Construction Inspection Report can be in the form of a punch list or letter.

If required by EPA, a Final Construction Inspection shall be conducted after completion of any work identified in the Pre-final Construction Inspection Report in accordance with the schedule contained in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW. Respondents shall coordinate with EPA to schedule any Final Construction Inspection. The Final Construction Inspection shall consist of a walk-through inspection by EPA and Respondents. The Pre-final Construction Inspection Report shall be used as a checklist, with the Final

Construction Inspection focusing on the outstanding construction items identified in the Pre-final Construction Inspection. Respondents shall confirm that outstanding items have been resolved for all items, including any items which may be found after the checklist has been developed.

Any outstanding construction items discovered by Respondents or EPA during the Final Construction Inspection to still require correction, whether or not identified on the Pre-final Construction Inspection, shall be identified and noted on a punch list. If any items are still unresolved, the inspection shall be considered to be a Pre-final Construction Inspection that may necessitate a subsequent Final Construction Inspection.

6. Interim Remedial Action Report

As specified in the approved schedule included in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW, after EPA determines that construction is completed on the entire RA and the systems are operational and functional as intended, Respondents shall submit an Interim Remedial Action Report. In the Report, a registered Professional Engineer and Respondents' Project Coordinator shall state that the construction of the RA has been completed in accordance with the RA Work Plan submitted under this SOW. The written Report shall provide a synopsis of the Work defined in this SOW, describe deviations from the RA Work Plan, include reproducible and PDF electronic file versions of as-built drawings signed and stamped by a Professional Engineer, provide actual costs of the RA, O&M to date, and a summary of the results of operational and performance monitoring completed to date. The Report shall contain the following statement, signed by a responsible corporate official of Respondents or Respondents' Project Coordinator:

“To the best of our knowledge, after thorough investigation, we certify that the information contained in or accompanying this submission is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

F. Groundwater Monitoring

The Site-wide GMP shall be updated and revised to include information for OU-5. Respondents will include sections in the updated Site-wide GMP that discuss content appropriate for a Compliance and Sentinel Well Network Plan, Compliance and Sentinel Well Installation Complete Report, Compliance Monitoring Plan, and General Monitoring Plan for OU-5, as these individual plans and reports are not required for OU-5. In addition, the updated plan will include groundwater monitoring related to Contaminated Soil Areas with waste left in place (i.e., Area C41 and Areas 32D, 34D, 35D, and 38D, as described in

the *Unilateral Administrative Order for the Performance of Remedial Design and Final Remedial Action for Soil* of the Perimeter Groundwater Operable Unit (OU-5), Aerojet Superfund Site, Sacramento County, California. The requirements for the Compliance and Sentinel Well Network Plan, Compliance and Sentinel Well Installation Complete Report, Compliance Monitoring Plan, and General Monitoring Plan stipulated in the SOW for OU-3 (Section V(A), Section V(C), Section V(H), and Section V(J), respectively) shall also apply to OU-5 and be included in the Site-wide GMP. The GMP shall include the rationale for selecting the monitoring wells to be included in the sampling events. The updated and revised plan shall be submitted for review by the Agencies and EPA's approval in accordance with the schedule contained in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW.

Respondents shall conduct sampling at the compliance monitoring wells in accordance with the approved GMP to ensure compliance with the applicable Performance Standards. Results shall be reported in the Quarterly Compliance Monitoring Reports as discussed in [Section V\(J\)](#) (Quarterly Compliance Monitoring Reports) of this SOW. Contaminant concentrations at the compliance monitoring wells and potentiometric measurements from appropriate monitoring well pairs that help to demonstrate capture will be the primary criteria for evaluating compliance.

In addition to the installation of compliance and sentinel monitoring wells, Respondents shall also install additional wells as needed to:

- further define the hydrostratigraphy, hydraulic conductivities, and to define lateral and vertical hydraulic gradients;
- further define the degree of hydraulic connection between layers of the aquifer; and
- further define the extent of contamination that requires control or capture to meet the Performance Standards of the ROD.

Additional extraction and monitoring wells may be necessary based on the OU-5 effectiveness evaluation. Respondents shall prepare and submit drilling permits for new wells to Sacramento County for review and approval prior to drilling.

G. Operation and Maintenance

O&M shall be performed in accordance with the approved O&M Plan and Manual.

1. Operation and Maintenance Plan

An O&M Plan is required for the groundwater remedy, in accordance with the Remedial Design and Remedial Action sections of the Administrative Order. Respondents shall submit the plan to EPA for review and approval in accordance with the schedule contained in [Section VI](#) (Schedule for Major Deliverables and

Other Tasks) of this SOW. The O&M Plan shall include, at a minimum, a schedule for activities and information regarding assignment of duties.

2. Operation and Maintenance Manual

Respondents shall prepare a draft O&M Manual for the entire OU-5 groundwater remedy, or for each GET included in the remedy, during the design period. A final O&M Manual shall be prepared after the final construction inspection to incorporate manufacturer/vendor information and any design modifications implemented during the RA in accordance with the schedule contained in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW. The O&M Manual shall be submitted for Agencies' reviews and EPA's approval. The O&M Manual shall include all necessary O&M information for the operating personnel, and shall provide for the following:

- System description;
- Startup and shutdown procedures;
- Description and schedule of normal O&M tasks, including equipment and material requirements, anticipated equipment replacement for significant components, availability of spare parts, provisions for remote monitoring and control, operator training and certification requirements, staffing needs, and related requirements;
- Indicators of system performance and/or maintenance (e.g., parameters to be monitored to determine timing for replacement of any items consumed during the remediation process);
- Any planned variation in groundwater extraction rate, including whether each extraction well is to be operated at a constant or variable flow rate, and a description of the magnitude and timing of any expected variation;
- Record keeping and reporting requirements, including operating and inspection logs, maintenance records, and periodic reports; and
- Description and analysis of potential operating problems (e.g., equipment failure, higher than expected contaminant concentrations), including emergency operating and response activities (noncompliance diversion or shutdown), failure notification procedures and relevant health and safety information.

H. Obligation to Perform Further Response Actions and Submission of Plans

As outlined in the Failure to Obtain Performance Standards and Additional Response Action sections of the Administrative Order, if EPA determines that Performance Standards have not been met or that further response actions are required to protect human health and the environment, Respondents shall submit a work plan within thirty (30) days after receiving

EPA's notice that additional action is required. Respondents shall implement the plan approved by EPA in accordance with the provisions of the Administrative Order.

I. Remedial Performance Effectiveness Evaluation

As described in the Work To Be Performed section of the Administrative Order, "EPA may review the Site to assure that the Work performed pursuant to this Order adequately protects human health and the environment. Until such time as EPA certifies completion of the Work, Respondent(s) shall conduct the requisite studies, investigations, or other response actions as determined necessary by EPA in order to permit EPA to conduct the review under Section 121(c) of CERCLA. As a result of any review performed under this paragraph, Respondent(s) may be required to perform additional work or to modify work previously performed."

The Respondents shall conduct effectiveness evaluations of the interim groundwater remedy for OU-5 to ensure that the remedy is implemented in the most effective and efficient manner and compliant with the RAOs outlined in [Section II](#) (Remedial Action Objectives). The effectiveness evaluations shall include a thorough review of the containment of COCs by the OU-5 remedy and shall encompass the topics covered in both the EPA Capture Zone Guidance ([EPA 2008](#)) and the U.S. Army Corps of Engineers Remedial Systems Evaluation worksheets appropriate to the RD implemented ([USACE 2011](#)). After the data have been collated and reviewed, and a preliminary analysis performed, a meeting shall be held with the Agencies to discuss the findings of the effectiveness evaluation and recommendations for improvements to the implementation of the remedy.

These evaluations shall be conducted on an annual basis for the first four years after the RD is approved by EPA, because a number of GETs in OU-5 have been operating for several years, so portions of the probable RD have already been implemented. After this time, the frequency of the effectiveness evaluations shall be determined by EPA based on the quality of the remedial performance. The Respondents may expand the scope of the OU-3 effectiveness evaluation, described in the Findings of Fact section of the OU-3 Administrative Order, to include the evaluation of OU-5, or may conduct a separate evaluation for each operable unit, with EPA approval.

Remedial Performance Evaluation Reports shall be provided in accordance with the schedule contained in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW, and shall be coordinated with the schedule for the performance evaluation reports for OU-3. The annual Performance Evaluation Reports shall be comprehensive and contain sufficient information for an assessment of whether the containment is effective or if changes, such as alteration of pumping rates or additional wells, should be made to improve performance of the remedy.

Each report shall include summaries of compliance monitoring activities from the previous reporting period including summaries from [Section V\(J\)](#) (Quarterly Compliance Monitoring

Reports) of this SOW; updated potentiometric maps with postings of measured hydraulic heads; field data used to demonstrate hydraulic containment; contaminant trend plots for monitoring and sentinel wells; estimates of plume containment using log-linear kriging methods; maps illustrating contaminant plume isocontours and the interpreted extent of contamination; appropriate groundwater modeling results required to demonstrate compliance with this SOW, including a detailed description and explanation of improvements made to the groundwater flow model in the preceding year such as geologic framework and model calibration; summaries of relevant operating and field data, including mass removal for groundwater; any preliminary calculations and supporting data used to evaluate compliance; descriptions of the nature of, duration of, and response to any noncompliance; and any other requirements outlined in [Section V\(F\)](#) (Groundwater Monitoring) of this SOW.

Initially, at a minimum, individual contaminant contour maps shall be prepared indicating the concentrations and extent of perchlorate, NDMA, and trichloroethylene (TCE) in each layer of the aquifer. Contaminant mass removal shall be presented in tables. Additional contaminant isocontour maps shall be prepared if requested by the Agencies to indicate the extent of migration and concentration levels of any or all of the other seventeen (17) COCs. Assumptions made in averaging, excluding, truncating, or otherwise selecting or manipulating the data to be used in preparing the contour maps shall be clearly stated.

J. Quarterly Compliance Monitoring Reports

The Quarterly Compliance Monitoring Reports that are required for OU-3 may be modified to include the information for OU-5 rather than producing two separate documents. Electronic submittal of these reports is required. The Quarterly Compliance Monitoring Reports shall include: measured contaminant concentrations at compliance monitoring wells; charts showing contaminant concentrations *versus* time at compliance monitoring wells; assessments and statements as to whether Performance Standards of this SOW are being satisfied at compliance monitoring wells; predictions, if appropriate, of possible future occurrences of noncompliance; relevant preliminary calculations and supporting data used to evaluate compliance; and any other relevant requirements outlined in the GMP.

The Quarterly Compliance Monitoring Reports shall be in accordance with the schedule contained in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW. The reports shall be based on data obtained using the O&M SAP for OU-3 and OU-5. The fourth quarter report shall provide a yearly summary with trends for groundwater remediation progress and provide recommendations for system modifications/adjustments. The Quarterly Compliance Monitoring Reports shall include analyses for all the COCs contained in [Attachment B](#) of this SOW, unless EPA directs the addition or deletion of COCs. The Quarterly Compliance Monitoring Reports are to include plots, in each layer of the aquifer, for perchlorate, NDMA, TCE, and any other COC(s) requested by EPA. At a minimum, until concentrations are within an order of magnitude of the containment levels, contaminant plots shall show at least four concentration contours for each contaminant

agreed to by EPA, one of which will be the containment level set forth in [Attachment B](#) of this SOW.

K. Groundwater Management Zone Plan

Respondents shall create a GMZP for OU-5 to minimize adverse effect on groundwater levels and prevent interference with the remedy. The GMZP shall be submitted for review by the Agencies and EPA's approval in accordance with the schedule contained in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW. The GMZP shall be retained or integrated with another document, depending on the results of effectiveness evaluations. Relevant information for OU-5 may be integrated into the existing GMZP prepared for OU-3, or a separate plan may be prepared with EPA approval.

The GMZP shall model and assess in each affected aquifer layer any operational restrictions on existing water supply wells which may be required to prevent any adverse effect on the sphere of influence of the remedy extraction wells and to minimize adverse effects to groundwater levels. The GMZP shall also establish the areas (by aquifer layer) where new water supply wells shall not be installed to prevent adverse effect on the remedy. The GMZP shall be developed as part of the RA Work Plan and implemented as part of the Work Plan. Respondents shall coordinate with water purveyors and local regulatory Agencies to develop an assessment of total use impact on the aquifer when generating the GMZP.

L. Institutional Controls

Respondents shall execute the following ICs for OU-5 groundwater as further defined and described below:

- Respondents shall record with the County Recorder and implement a Declaration of Covenants and Environmental Restrictions Related to Groundwater, restricting access to Contaminated Groundwater from land within OU-5 for those parcels owned by the Respondents.
- Respondents shall provide annual public notification of OU-5 Contaminated Groundwater.

1. Declaration of Covenants

Within thirty (30) days of a written request from EPA or thirty (30) days prior to the transfer of property within OU-5 that is not subject to existing EPA-approved Institutional Controls, whichever is the earlier date, Respondents shall submit for review by the Agencies and then record after obtaining EPA's approval a Declaration of Covenants and Environmental Restrictions Related to Groundwater for land to be developed within OU-5. The Declaration of Covenants and Environmental Restrictions will include the following restrictions: a) No extraction of groundwater unless required by the RA; b) No recharge of groundwater or operation of injection

wells unless and until permitted in writing by EPA and CVRWQCB; c) No extraction of groundwater that is encountered during excavation or construction for more than 24 hours, unless there is a sustained rain event or an extended period of groundwater extraction is expressly permitted in writing by the CVRWQCB; and d) Agencies' rights of access. The Declaration of Covenants Related to Groundwater shall be substantially in the form of the covenant attached to this SOW as [Attachment F](#), subject to review, approval, and further modification by EPA.

These restrictions shall be implemented pursuant to California Civil Code Section 1471(c) whereby Respondents covenant to impose these restrictions. The Declaration of Covenants will be binding on the Respondents' successors and assigns as covenants running with the land. The Declaration of Covenants shall include a designation that the State of California is a "covenantee" and, that EPA is a "covenantee" or, alternatively, subject to EPA's discretion, a "third party beneficiary," allowing EPA, without acquiring an interest in real property, to maintain the right to enforce the Institutional Controls or obtain access pursuant to the Institutional Control. Respondents shall record with the County Recorder the Declaration of Covenants. Respondents shall give written notice of the contaminated groundwater to each buyer, lessee, renter and mortgagee of any of these lands and every lease, deed, mortgage or instrument conveying any part of these lands shall expressly provide that it is subject to this Declaration of Covenants.

Respondents shall duly execute this IC for OU-5 groundwater and submit it in accordance with the schedule contained in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW. Respondents shall provide the Agencies each year with an Annual ICs Status Report detailing the status of all ICs for OU-5. Relevant information for OU-5 may be integrated into the Annual IC Status Report prepared for OU-3 or a separate report may be prepared at the discretion of Respondents.

2. Public Notification

Respondents shall publish an annual Public Notification of Extent of OU-5 Contaminated Groundwater in two local newspapers that provides the location of information on the OU-5 area of Contaminated Groundwater above the containment levels, the requirement for a permit for any well within OU-5, and the point of contact for a permit. Respondents shall obtain EPA approval of the format. If approved by EPA, Respondents may provide notification to the local community using an electronic information format acceptable to the EPA. This notification may be combined with the notification currently required for OU-3.

M. Certification of All Work Complete Report

As specified in the Remedial Action section in the Administrative Order and the schedule included in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW, Respondents shall submit a Certification of All Work Complete Report after all phases of the Work (including O&M) under the Administrative Order have been performed for review by the Agencies and EPA's approval. In the Certification of All Work Complete Report, a registered Professional Engineer and Respondents' Project Coordinator shall state that the Work has been completed in full satisfaction of requirements of the Remedial Action section of the Administrative Order. The written report shall provide a synopsis of the Work defined in this SOW, describe deviations from the RA Work Plan, provide actual costs of the RA (and O&M), and provide a summary of the results of operational and performance monitoring that have been completed. The report shall contain the following statement, signed by a responsible corporate official of Respondents or Respondents' Project Coordinator:

“To the best of our knowledge, after thorough investigation, we certify that the information contained in or accompanying this submission is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

The Certification of All Work Complete Report may be combined with that required for OU-3, or may be for OU-5 only, at the discretion of the Respondents and depending on the respective dates of completion of work for the two OUs.

N. Replacement Water Supply

Respondents have been ordered to prepare water replacement contingency plans under the Administrative Order for OU-3. Respondents shall prepare plans for water replacement contingencies in OU-5 consistent with the requirements for OU-3, and shall implement the plans as necessary. The scope of existing plans for OU-3 may be extended to OU-5 groundwater zones as appropriate and necessary.

O. Site Security

Respondents shall fence and otherwise secure all Site remedy components to prevent access by the public to these components and to minimize potential vandalism during the performance of the RA. Warning signs with a telephone number to call for further information shall be posted along fencing protecting OU-5 components. Security components (fences, signs, locks, etc.) shall be maintained in good condition to perform their function until EPA agrees they are no longer required. Security components shall be installed as construction progresses.

P. Dust Control

Respondents shall ensure that no visible air emissions occur at or beyond facility fence lines at all times during the performance of the RA. Respondents shall implement dust control measures which are submitted for review by the Agencies and approved by EPA. Respondents shall take corrective measures to comply with local ordinances and regulations.

Q. Off-Site Rule Disposal Notification

Any groundwater discharged to a sewer shall meet the requirements of the Public-Owned Treatment Works (POTW). If wastes from OU-5 treatment facilities are disposed of to other than a POTW, Respondents shall comply with the Off-Site Rule contained in Section 300.440 of the National Contingency Plan for the disposal of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-generated waste.

In accordance with the Remedial Action section of the Administrative Order, six months prior to disposal of wastes generated by Respondents' CERCLA activities to any off-site facility for disposal, Respondents shall provide EPA and the receiving state, in accordance with federal and state law and California Title 27, disposal notification containing the following: 1) the name of the Site/facility to receive the waste, with address and phone number, 2) quantity and description of the waste, 3) Resource Conservation and Recovery Act classification of the waste with basis for the classification, 4) expected date for shipment off-Site, 5) the regulatory status of the receiving site (i.e., Subtitle C or D permitted), 6) method of transportation, 7) confirmation that the site is approved under the Off-Site Rule, and 8) the date of the last EPA inspection.

R. Modification of SOW or Related Work Plans

If EPA determines that it is necessary to modify the work specified in the SOW and/or in work plans developed pursuant to the SOW to achieve and maintain the Performance Standards or to carry out and maintain the effectiveness of the remedy set forth in the ROD, and such modification is consistent with the scope of the remedy set forth in the ROD, then EPA may issue such modification in writing and shall notify Settling Defendants of such modification. If Settling Defendants object to the modification they may, within 30 days after EPA's notification, seek dispute resolution under the Record Review paragraph in the Administrative Order.

S. Remedy Review

As required by the EPA Periodic Review section of the Administrative Order, over the remedy period Respondents shall support EPA by providing technical and documentation support for periodic remedy reviews in accordance with Comprehensive Five-Year Review Guidance, EPA OSWER 9355.7-03B-P (June 2001 or latest revision). Respondents shall perform any necessary studies and investigations required by EPA to assess remedy

protectiveness. The remedy will be reviewed at least every five years or earlier, if deemed appropriate by EPA.

VI. Schedule for Major Deliverables and Other Tasks

ACTIVITY ¹	DUE DATE (Unless Otherwise Approved by EPA)
Unilateral Administrative Order for OU-5 Groundwater Effective Date	
PLANNING DOCUMENTS/COORDINATION	
Notice of Intent to Comply	On or before September 26, 2011
Notification of Project Manager/ Qualifications	<p>Ten (10) days after Effective Date of the Unilateral Administrative Order for OU-5 Groundwater</p> <p>If candidate disapproved by EPA, within thirty (30) days of EPA's notification of disapproval submit list of candidates/qualifications</p> <p>Twenty-one (21) days after EPA's letter regarding acceptable candidates, notify EPA of the Project Manger selected from EPA's approved candidates on list</p>
Site-wide Groundwater Monitoring Plan	<p>No later than one year after Effective Date of the Unilateral Administrative Order for OU-5 Groundwater. Updated annually-</p> <p>If required, a revised plan is due fourteen (14) days after receipt of EPA's comments</p>
OU-5 Project Work Plan	<p>Thirty (30) days after Effective Date of the Unilateral Administrative Order for OU-5 Groundwater</p> <p>If required, a revised plan is due fourteen (14) days after receipt of EPA's comments</p>
Monthly Progress Report/s required by Section XV of the Unilateral Administrative Order for OU-5 Groundwater and Attachment E (Project Work Plan Section 1. Updated Project Description) to this SOW	On or before the Fifteenth (15th) day of each month following Effective Date of the Unilateral Administrative Order for OU-5 Groundwater until EPA notifies Respondents of Certification of Completion
Groundwater Management Zone Plan	<p>One-hundred-eighty (180) days after Effective Date of the Unilateral Administrative Order for OU-5 Groundwater</p> <p>If required, a revised plan is due fourteen (14) days after receipt of EPA's comments</p>
Annual IC Status Report	By end of January each year until EPA approves removal of ICs
Failure to Attain Performance Standards Work Plan required by Paragraph 76 of the Unilateral Administrative Order for OU-5 Groundwater	Thirty (30) days after notification letter by EPA

ACTIVITY ¹	DUE DATE (Unless Otherwise Approved by EPA)
Additional Response Actions Work Plan required by Section XII of the Unilateral Administrative Order for OU-5 Groundwater and Section V(H) (Obligation to Perform Further Response Actions and Submission of Plans) of this SOW	Thirty (30) days after notification letter by EPA
REMEDIAL DESIGN	
Notification of Supervising Contractor Selection for EPA’s review and revised Quality Management Plan (QMP) submission – revise existing QMP to include OU-5	Ten (10) days after Effective Date of the Unilateral Administrative Order for OU-5 Groundwater If required, a revised contractor list is due thirty (30) days after receipt of EPA’s comments
Preliminary Remedial Design Submittal with Design Basis Report and Construction Contingency Plan (required by order)	Within ninety (90) days of EPA’s approval of Project Work Plan if a phased approach to the remedy is used; otherwise, within one-hundred-eighty (180) days If required, a revised plan is due fourteen (14) days after receipt of EPA’s comments
Intermediate Remedial Design Submittal – addresses agency comments on Remedial Design	Ninety (90) days after EPA’s approval of Preliminary Design Submittal
Remedial Action Work Plan	Within 30 days after EPA approval of the Final Design. Update, as required
Final Design Submittal (if needed)	If required by EPA, thirty (30) days after EPA’s comments on the Intermediate Design Submittal
REMEDIAL ACTION	
List of Remedial Action Contractors/Titles/Qualifications	Ten (10) days after EPA approves the Remedial Design (Intermediate or Final)
Contractor Solicitation Documents	Five (5) days after publishing solicitation documents
Pre-Certification Inspection for Completion of the Remedial Action	Thirty (30) days after Remedial Action construction is complete and operation has commenced
Remedial Action Construction Completion Report	Thirty (30) days after Pre-Certification Inspection
Interim Remedial Action Report (with certification)	Draft due two hundred seventy (270) days after Pre-Certification Inspection If required, a revised Report is due thirty (30) days after receipt of EPA’s comments
Compliance Action Plan	Within fourteen (14) days of receipt of compliance monitoring data indicating noncompliance If required, a revised report is due fourteen (14) days after receipt of EPA’s comments
OPERATION AND MAINTENANCE	
Operation and Maintenance (O&M) Plan	Draft due sixty (60) days after construction of system If required, a revised plan is due thirty (30) days after receipt of EPA’s comments

ACTIVITY ¹	DUE DATE (Unless Otherwise Approved by EPA)
O&M Manual	Draft manual must be completed ninety (90) days after EPA's approval of Preliminary Design Submittal but need not be submitted to the Agencies. Prefinal/final manual is due to the Agencies thirty (30) days after the Pre-Certification Inspection If required by EPA, the final manual revision is due twenty-one (21) days after receipt of EPA's comments.
O&M Contingency Plan as required by Section V(B) (Supporting Plans and Deliverables) of this SOW	Draft plan ninety (90) days after EPA's approval of Preliminary Design Submittal and final plan thirty (30) days after Pre-Certification Inspection
Off-Site Rule Disposal Notification	One-hundred-eighty (180) days prior to any off-site disposal other than a POTW
PERFORMANCE EVALUATION	
Remedial Performance Evaluation Reports	Due annually, four-hundred-fifty (450) days after Remedial Design is approved, for first four years; frequency thereafter to be determined by EPA
Quarterly Compliance Monitoring Reports	Due quarterly, beginning one-hundred-eighty (180) days after EPA's approval of the O&M SAP submitted as part of Final Design If required, revised plan due fourteen (14) days after receipt of EPA's comments
Direct Potable Reuse Supplemental Monitoring	Two (2) quarters prior to direct water supply discharge and then annually unless modified by EPA
NPDES Permit (Any Off-Aerojet Property Surface Discharge)	Application to CVRWQCB one-hundred-eighty (180) days prior to start of discharge
NPDES Monitoring and Reports	As specified in the National Pollution Discharge Elimination System Permit
Periodic Review (Remedy Protective)	At least every five (5) years unless required earlier by EPA, after submission of the Interim Remedial Action Report per Section 121(c) of CERCLA
INSTITUTIONAL CONTROLS	
Notice and Copy of Property Transfer Documents	Sixty (60) days prior to transfer of any real property, provide notice of transfer to EPA and copies of transfer documents; provide transferee with notice of the Unilateral Administrative Order for OU-5 Groundwater and any ICs, including Declaration of Covenants and Environmental Restrictions for the property to be transferred
Declarations of Covenants and Environmental Restrictions	Within thirty (30) days of a written request from EPA or thirty (30) days prior to the transfer of property within OU-5 that is not subject to existing EPA-approved Institutional Controls, whichever is the earlier date, submit for review by the Agencies Record with Official Records of Sacramento County, State of California, within fifteen (15) days of EPA's approval
Public Notification of OU-5 Extent of Contaminated Groundwater	Ninety (90) days after Effective Date of the Unilateral Administrative Order for OU-5 Groundwater, then annually in combination with OU-3 information as a Site-wide notification in format approved by EPA until remedy completion

ACTIVITY¹	DUE DATE (Unless Otherwise Approved by EPA)
SUPPORTING PLANS	
Remedial Design Health and Safety Plan; Sampling and Analysis Plan with Quality Assurance Project Plan and Field Sampling Plan	Remedial Design Health and Safety Plan within 30 days of selection of an approved Project Manager with remaining documents submitted within one-hundred-fifty (150) days of selection of an approved Project Manager
Laboratory protocols	At least thirty (30) days before beginning analysis
Remedial Action Health and Safety Plan; Sampling and Analysis Plan with Quality Assurance Project Plan and Field Sampling Plan; and Construction Quality Assurance Plan	Submit Health and Safety Plan within 30 days after EPA approval of the Final Design Submit other plans as a part of the Intermediate Design
O&M Health and Safety Plan; Sampling and Analysis Plan with Quality Assurance Project Plan and Field Sampling Plan	Submit as a part of the Intermediate Design
CERTIFICATIONS REQUIRED BY SECTIONS IX AND XXIII OF THE ADMINISTRATIVE ORDER	
Certification of All Work Complete Report	Thirty (30) days after the Respondents conclude that all phases of the Work have been fully performed, that the Performance Standards have been attained, and that all O&M activities have been completed
FINANCIAL SECURITY REQUIRED BY SECTION XXIII OF THE ADMINISTRATIVE ORDER	
Financial Security – Performance Guarantee	Within sixty (60) days after Effective Date of the Unilateral Administrative Order for OU-5 Groundwater
CERTIFICATES	
Certification of General Liability and Automobile Liability Insurance Coverage	At least seven (7) days prior to commencing any work at the Site

Notes:

1. Estimated time, in calendar days.

VII. References

The following list, although not comprehensive, provides citations for many of the regulations and guidance documents that apply to the RD/RA process. Respondents shall review these guidance documents (latest edition/revision) and shall use the information provided therein in performing the RD/RA and preparing all deliverables under this SOW.

- “A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems.” U.S. Environmental Protection Agency (EPA), January 2008 (EPA/600/R-08/003).
- “Close Out Procedures for National Priorities List Sites,” EPA, Office of Emergency and Remedial Response, January 2000 (EPA 540-R-98-016).
- “Comprehensive Five-Year Review Guidance,” EPA, June 2001 (EPA 540-R-01-007).
- “EPA NEIC Policies and Procedures Manual,” EPA, May 1978, revised May 1986.
- “EPA Requirements for Quality Assurance Project Plans,” EPA, November 1999 (EPA QA/R-5, Interim Final).
- “Guidance for the Data Quality Objectives Process,” EPA, August 2000 (EPA QA/G-4, Final).
- “Guidance for Quality Assurance Project Plans,” EPA, February 1998 (EPA QA/G-5, Final).
- “Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites,” EPA, Office of Emergency and Remedial Response (Draft), OSWER Directive No. 9283.1-2.
- “Interim Final Guidance on Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties,” EPA, Office of Emergency and Remedial Response, OSWER Directive No. 9355.5-01. April 1990 (EPA 540/G-90/001).
- “Methods for Monitoring Pump-and-Treat Performance,” EPA, Office of Research and Development, June 1994 (EPA 600/R-94/123).
- “National Oil and Hazardous Substances Pollution Contingency Plan, Final Rule,” 40 CFR Part 300.
- “Preparation of a U.S. EPA Region 9 Field Sampling Plan for Private and State-Lead Superfund Projects,” EPA, April 1990 (No. 9QA-06-89).
- “Superfund Remedial Design/Remedial Action Handbook,” EPA, Office of Emergency and Remedial Response, June 1995 (EPA 540/R-95/059).
- U.S. Army Corps of Engineers. 2011. USACE Remediation System Evaluation (RSE) Checklists (http://www.environmental.usace.army.mil/rse_checklist.htm)

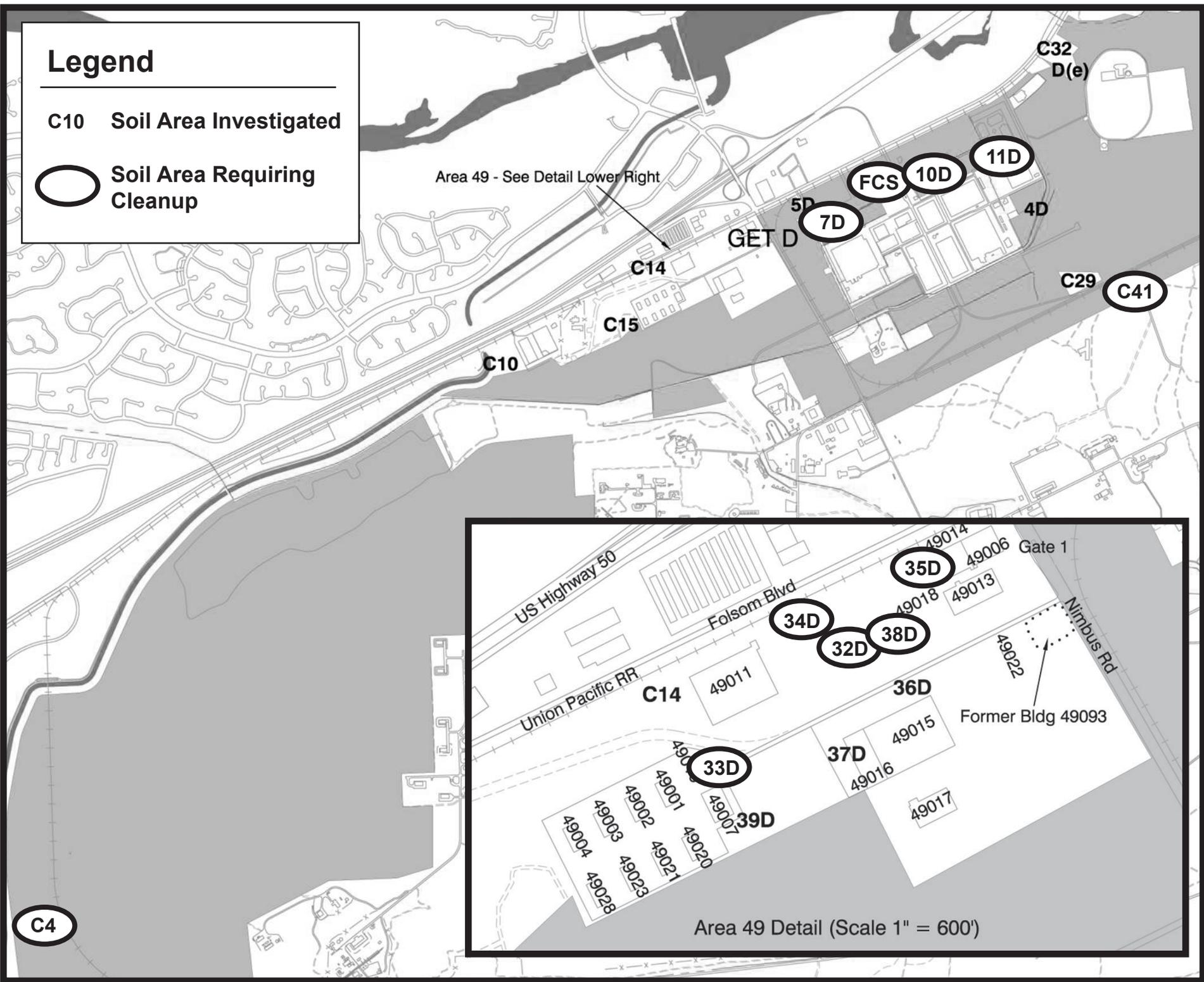
ATTACHMENT A
APPROXIMATE EXTENT OF CONTAMINATION AS OF 2006-2008

Legend

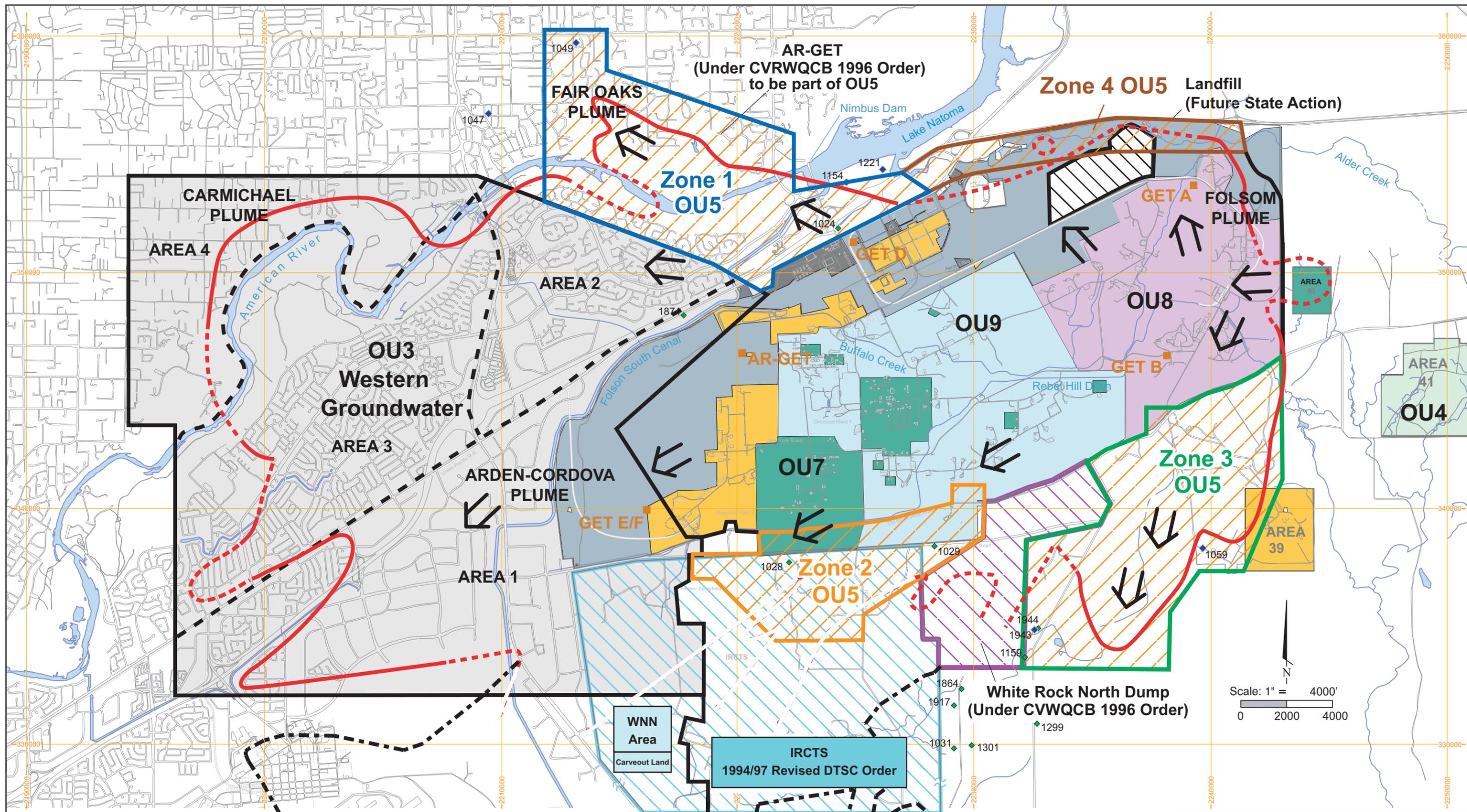
C10 Soil Area Investigated

 Soil Area Requiring Cleanup

Area 49 - See Detail Lower Right



Area 49 Detail (Scale 1" = 600')



- Approximate Extent of Contaminants of Concern with Concentrations Greater than Cleanup Levels
- Treatment System Location
- ← General Groundwater Flow Direction
- ◆ Domestic Well
- ◆ Water Supply Well
- OU3 Remediation Areas 1-4
Note: GET A, B, D and AR are part of OU5.

- OU3 - in RD/RA
- OU6 - Boundary OU
- OU5 - Soil Medium
- OU5 - Groundwater
- Carveout Lands
- IRCTS Composite Plume

- Zone 1 - OU5
- Zone 2 - OU5
- Zone 3 - OU5
- Zone 4 - OU5

- Cavitt Ranch OU4
- Island OU7
- Central OU9
- Eastern OU8

**U.S. EPA REGION IX
AEROJET GENERAL CORP.
SUPERFUND SITE**

Composite Plume Map

ATTACHMENT B
CHEMICALS OF CONCERN WITH CONTAINMENT LEVELS

TABLE B-1: GROUNDWATER CHEMICALS OF CONCERN WITH CONTAINMENT LEVELS FOR OU-5
Statement of Work for Remedial Design and Remedial Action, Attachment 2 to the Administrative Order,
Perimeter Groundwater Operable Unit (OU-5), Aerojet Superfund Site, Sacramento County, California

Chemicals of Concern in Groundwater	Containment Level (µg/L or ppb)	
Non-Metal Anion		
Perchlorate	6	CA Drinking Water Standard (MCL)
SVOCs		
N-Nitrosodimethylamine	0.003	CA Public Health Goal
VOCs		
Trichloroethene	5	Federal MCL
1,1,2,2-Tetrachloroethane	1	CA MCL
1,1,2-Trichloroethane	5	Federal MCL
1,1-Dichloroethene	6	CA MCL
1,2-Dichloroethane	0.5	CA MCL
cis-1,2-Dichloroethene	6	CA MCL
trans-1,2-Dichloroethene	10	CA MCL
1,4-Dioxane	1	CDPH Notification Level
Bromodichloromethane*	80*	Federal MCL
Carbon tetrachloride	0.5	CA MCL
Chloroform*	80*	Federal MCL
Dibromochloromethane*	80*	Federal MCL
Methylene chloride	5	Federal MCL
Tetrachloroethene	5	Federal MCL
Vinyl chloride	0.5	CA MCL

Notes:

* The Federal MCL establishes a limit of 80 µg/L for the sum of the concentrations of all four major trihalomethanes: chloroform, bromodichloromethane, dibromochloromethane, and bromoform.

µg/L Microgram per liter
CA California
CDPH California Department of Public Health
MCL Maximum Contaminant Level
ppb Part per billion
SVOC Semivolatile organic compound
VOC Volatile organic compound

ATTACHMENT C
EFFLUENT DISCHARGE LIMITATIONS

**TABLE C-1: SUBSTANTIVE REQUIREMENTS IN CURRENT (NOVEMBER 2010) NPDES
EFFLUENT LIMITATIONS AT AEROJET SITE**

Statement of Work for Remedial Design and Remedial Action, Attachment 2 to the Administrative Order,
Perimeter Groundwater Operable Unit (OU-5), Aerojet Superfund Site, Sacramento County, California

Effluent Discharge Limitations		
Constituents	Daily Maximum in µg/L	Monthly Average in µg/L
Volatile Organic Compounds ¹	0.7	0.50 ²
Perchlorate	6	4
1,4-Dioxane	6	3
N-Nitrosodimethylamine	0.010	0.002

Notes:

- 1 All volatile organic compounds listed in United States Environmental Protection Agency Methods 8010 and 8020.
- 2 The monthly average concentration of each constituent shall not exceed 0.5 µg/L.

µg/L Microgram per liter

ATTACHMENT D
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS FROM THE
OU-5 RECORD OF DECISION

TABLE D-1: DESCRIPTION OF ARARS FOR SELECTED REMEDY

Statement of Work for Remedial Design and Remedial Action, Attachment 2 to the Administrative Order, Perimeter Groundwater Operable Unit (OU-5), Aerojet Superfund Site, Sacramento County, California

Authority	Medium	Requirements	Status	Synopsis of Requirements	Action to be Taken to Attain Requirements
Chemical-Specific ARARs					
Federal Regulatory Requirement	Groundwater (GW)	Federal Safe Drinking Water Maximum Contaminant Levels (MCL); 42 U.S.C. § 300(f), et seq.; 40 C.F.R. Part 141 (2010)	Relevant & Appropriate (R&A)	MCLs have been adopted for a number of common organic and inorganic contaminants. These levels regulate the concentrations of contaminants in public drinking water supplies and may be relevant and appropriate for final RODs restoring groundwater aquifers potentially used for drinking water. MCLs are Relevant and Appropriate as performance standards for on-Site treatment of water delivered for potable end use.	MCLs are Relevant and Appropriate Standards for on-Site treatment of water placed into an on-Site conveyance system for potable end use. Where there are no federal MCLs for the contaminants, e.g., NDMA and 1,4-dioxane, the treatment standards are based on State MCLs or values developed by the State of California for drinking water. See Table 2.7 of the OU-5 ROD.
State Regulatory Requirement	GW	California Safe Drinking Water Act, Cal. Health & Safety Code § 116365; 22 CCR §§ 64431 & 64444	R&A	The State has promulgated MCLs for some of the COCs that are more stringent than federal MCLs.	More stringent State MCLs are Relevant and Appropriate Standards for on-Site treatment of water for potable end use. Where there are no State MCLs for the contaminants, such as NDMA and 1,4-dioxane, the treatment standards are based on CA PHG or Drinking Water Notification Levels. See Table 2.7 of the OU-5 ROD.

TABLE D-1: DESCRIPTION OF ARARs FOR SELECTED REMEDY (CONTINUED)

Statement of Work for Remedial Design and Remedial Action, Attachment 2 to the Administrative Order, Perimeter Groundwater Operable Unit (OU-5), Aerojet Superfund Site, Sacramento County, California

Authority	Medium	Requirements	Status	Synopsis of Requirements	Action to be Taken to Attain Requirements
Chemical-Specific ARARs (Continued)					
Federal Regulatory Requirement	Soil	EPA's Regional Screening Levels (RSL) (2010)	To Be Considered (TBC)	EPA has developed regional screening levels that are risk-based levels that are used to screen sites that may require additional investigation or possible remediation. RSLs may also be considered in setting soil cleanup levels or groundwater cleanup levels in the absence of promulgated MCLs for contaminants.	RSLs are considered in setting soil cleanup levels, including soil vapor levels, to be protective for residential, commercial or industrial land use scenarios. Groundwater cleanup values are based on MCLs, CA PHGs or CA Drinking Water Notification Levels as listed in Table 2.7 of the OU-5 ROD.
California PHGs, California Environmental Protection Agency, and OEHHA	GW	California Calderon-Sher SDWA of 1996, California Health and Safety Code § 116365	TBC	OEHHA has adopted PHGs for chemicals in drinking water. PHGs are levels of drinking water contaminants at or below which adverse health effects are not expected.	In the absence of MCLs for NDMA, the state PHGs adopted by OEHHA have been considered during selection of performance standards for groundwater containment.
CDPH Drinking Water Notification Levels	GW	California Health & Safety Code § 116455	TBC	CDPH has established drinking water notification levels (formerly known as action levels) based on health effects, but in some cases they are based on organoleptic (taste and odor) values for chemicals without MCLs.	In the absence of MCLs for 1,4-Dioxane, the drinking water notification levels established by CDPH have been considered during selection of performance standards for groundwater containment.

TABLE D-1: DESCRIPTION OF ARARs FOR SELECTED REMEDY (CONTINUED)

Statement of Work for Remedial Design and Remedial Action, Attachment 2 to the Administrative Order, Perimeter Groundwater Operable Unit (OU-5), Aerojet Superfund Site, Sacramento County, California

Authority	Medium	Requirements	Status	Synopsis of Requirements	Action to be Taken to Attain Requirements
Chemical-Specific ARARs (Continued)					
State Regulatory Requirement	GW	Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins (2009 revisions), adopted in accordance with CA Water Code, Division 7, Sections 13240 and 13050 (Porter-Cologne Act); Chapters II & III	Applicable	Those portions of the Basin Plan which set out the designated uses (i.e., beneficial uses) and the water quality objectives based upon such uses are applicable requirements.	The designated use for the aquifer at the Aerojet Site is municipal and aquatic water supply. The containment levels for the contaminated groundwater and surface water comply with the Basin Plan's water quality objectives based upon such use.
State Regulatory Requirement	GW	SWRCB Resolution No. 88-63 (Sources of Drinking Water Policy)	Applicable	Designates all ground and surface waters of the State as drinking water except where the Total Dissolved Solids (TDS) are greater than 3,000 ppm, the well yield is less than 200 gpd from a single well, the water is a geothermal resource or in a water conveyance facility, or the water cannot reasonably be treated for domestic use using either best management practices or best economically achievable treatment practices.	The aquifers under the Aerojet Site have been identified as sources of drinking water.

TABLE D-1: DESCRIPTION OF ARARs FOR SELECTED REMEDY (CONTINUED)

Statement of Work for Remedial Design and Remedial Action, Attachment 2 to the Administrative Order, Perimeter Groundwater Operable Unit (OU-5), Aerojet Superfund Site, Sacramento County, California

Authority	Medium	Requirements	Status	Synopsis of Requirements	Action to be Taken to Attain Requirements
Location-Specific ARARs					
Federal Regulatory Requirement	Flood-plain and wetland protection	Executive Orders Nos. 11990 & 11988	TBC	Require avoidance of adverse effects, minimization of potential harm, and restoration and preservation of natural and beneficial values of flood plains.	Constructing groundwater treatment facilities in a 100-year flood plain will be avoided. If it cannot be avoided, the potential harm to the flood plain shall be minimized.
Federal Regulatory Requirement	Within 100-year flood plain	40 C.F.R. §264.18(b) (2010) and 22 CCR §66264.18(b)	Applicable	A RCRA facility located in a 100-year flood plain must be designated, constructed, operated and maintained to prevent washout of any hazardous waste by a 100-year flood	Because any new treatment facilities in OU-5 may generate hazardous waste, any such facility constructed within a 100-year flood plain must comply with this requirement.
Federal Regulatory Requirement	Sites on or eligible for inclusion on the National Register of Historic Places	National Historic Preservation Act (16 U.S.C. §§ 470, et seq.); 36 C.F.R. Part 800 (2010)	Applicable	Provides for protection of sites with historic places and structures. Federal agencies are required to take into account their undertakings on historic properties and afford the State Historic Preservation Office a reasonable time to comment.	Applicable if a federal undertaking (cleanup) could adversely affect historic properties which are included in or eligible for inclusion in the National Register of Historic Places. The proposed remedial alternatives are not expected to alter or destroy any known prehistoric or historic archeological features in OU-5 of the Aerojet Site. However, because there is always a possibility that buried historic or prehistoric remains could be discovered during such actions, this requirement would require action to address such areas.

TABLE D-1: DESCRIPTION OF ARARs FOR SELECTED REMEDY (CONTINUED)

Statement of Work for Remedial Design and Remedial Action, Attachment 2 to the Administrative Order, Perimeter Groundwater Operable Unit (OU-5), Aerojet Superfund Site, Sacramento County, California

Authority	Medium	Requirements	Status	Synopsis of Requirements	Action to be Taken to Attain Requirements
Location-Specific ARARs (Continued)					
Federal Regulatory Requirement	Endangered species or threatened species	Substantive portions of the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 et seq.); 50 C.F.R. Part 200 and 50 C.F.R. Part 402 (2010)	Applicable	Federal agencies are required under Section 7 of the ESA to ensure that their actions do not jeopardize the continued existence of a listed species or result in destruction of adverse modification of its critical habitat (16 U.S.C. § 1536). If the proposed action may affect the listed species or its critical habitat, consultation with the USFWS may be required (50 C.F.R. § 402.14). Additionally, Section 9 of the ESA prohibits the illegal taking of a listed species (16 U.S.C. § 1538(a)(1)).	Two endangered floral species are known to occur within Sacramento County: the Sacramento Orcutt grass (<i>Orcuttia Viscinda</i>) and the Boggs Lake hedge hyssop (<i>Gratiola Heterospala</i>). Four listed wildlife species are expected to occur within 25 miles of the Aerojet Site: Bald Eagle, Peregrine Falcon, Giant Garter Snake, and the Valley Elderberry Longhorn Beetle. The Aerojet Site may be a habitat for the Burrowing Owl, a species of concern in CA. Any action that may impact or threaten to impact an endangered species shall comply with this requirement.
State Regulatory Requirement		CA Endangered Species Act, Cal. Fish & Game Code § 2080	Applicable	Prohibits the illegal taking of plant and animal species designated as either threatened or endangered in the State of California	See Federal ESA above.
Federal Regulatory Requirement	Listed migratory birds	Migratory Bird Treaty Act; 16 U.S.C. §§ 703, et seq.	Applicable	Prohibits the illegal taking of migratory birds	The Aerojet Site may be a habitat for the Burrowing Owl, a species of concern in CA.
Federal Regulatory Requirement	Areas affecting stream or river	Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) and 40 §302 (2010)	Applicable	Restrictions on diversion, channeling, or other activity that modifies a stream or river and affects fish or wildlife.	Applicable if a water body will be controlled or modified by the action.

TABLE D-1: DESCRIPTION OF ARARs FOR SELECTED REMEDY (CONTINUED)

Statement of Work for Remedial Design and Remedial Action, Attachment 2 to the Administrative Order, Perimeter Groundwater Operable Unit (OU-5), Aerojet Superfund Site, Sacramento County, California

Authority	Medium	Requirements	Status	Synopsis of Requirements	Action to be Taken to Attain Requirements
Location-Specific ARARs (Continued)					
State Regulatory Requirement	Streambed or riverbed alterations	Substantive Requirements of Cal. Fish & Game Code § 1602	Applicable	Prohibits substantial diversion or obstruction of the natural flow of, or a substantial change of the bed or channel of a river, stream, or lake. Prohibits the deposit or disposal of debris or waste where it may pass into any river, stream, or lake.	Applies to grading and filling activity.
State Regulatory Requirement	Restrictions relating to land and groundwater	Cal. Civ. Code §1471; 22 CCR § 67391.1(a), (d) (2010)	R&A	Substantive requirements for placing an environmental restrictive covenant on contaminated land in the State of California.	Require Aerojet to record environmental restrictive covenants on contaminated land and to name EPA as a third-party beneficiary in the covenants.
Action-Specific ARARs					
Federal Regulatory Requirement	Dredge and Fill	33 U.S.C. §§ 1251, et seq. and 40 C.F.R. Parts 230 & 231 (2010)	R&A	Regulates discharge of dredged or fill material into waters of the United States, including wetlands.	Substantive portions applicable. Permit is not required for on-Site activities.
Federal Regulatory Requirement	Generation of waste from construction and operation due to Remedial Action selected	40 C.F.R. Part 261(2010) and 22 CCR § 66261 (2010)	Applicable	Establishes procedures and numeric limits for identification and management of characteristic hazardous wastes, listed hazardous wastes, and State-only (non-RCRA) hazardous wastes.	These requirements are applicable to management of waste materials generated as a result of construction of the selected Remedial Action or operation of a groundwater treatment plant.

TABLE D-1: DESCRIPTION OF ARARs FOR SELECTED REMEDY (CONTINUED)

Statement of Work for Remedial Design and Remedial Action, Attachment 2 to the Administrative Order, Perimeter Groundwater Operable Unit (OU-5), Aerojet Superfund Site, Sacramento County, California

Authority	Medium	Requirements	Status	Synopsis of Requirements	Action to be Taken to Attain Requirements
Action-Specific ARARs (Continued)					
Federal Regulatory Requirement	Generation of waste from construction and operation due to Remedial Action selected	40 C.F.R. §262.11 (2010) and 22 CCR §66262.11 (2010)	Applicable	Requires waste generators to determine if wastes are hazardous wastes and establishes procedures for such determinations	These requirements are applicable to management of waste materials generated as a result of construction of the selected Remedial Action or operation of a groundwater treatment plant.
Federal Regulatory Requirement	Storage of hazardous wastes for treatment or disposal off-Site	40 C.F.R. §262.34 and 22 C.C.R. §66262.34 (2010)	Applicable	Specifies maximum amounts and maximum periods for accumulation of hazardous waste on-site under generator status	These requirements are potentially applicable to management of waste materials generated as a result of construction of the Remedial Action and operation of any groundwater treatment plant if these waste materials are hazardous wastes.
Federal Regulatory Requirement	Shipment of hazardous substances off-Site	42 U.S.C. § 9621(d)(3); 40 C.F.R § 300.440 (2010) (“Offsite Rule”)	Applicable	Hazardous substances from a CERCLA response action that must be transferred off-Site for disposal or treatment must be transferred to a facility in compliance with RCRA, TSCA, and other applicable federal and state law.	Applicable to hazardous wastes from treatment facilities and to wastes from Remedial Actions that must be disposed of off-Site.

TABLE D-1: DESCRIPTION OF ARARs FOR SELECTED REMEDY (CONTINUED)

Statement of Work for Remedial Design and Remedial Action, Attachment 2 to the Administrative Order, Perimeter Groundwater Operable Unit (OU-5), Aerojet Superfund Site, Sacramento County, California

Authority	Medium	Requirements	Status	Synopsis of Requirements	Action to be Taken to Attain Requirements
Action-Specific ARARs (Continued)					
Federal Regulatory Requirement	Discharge to inland surface water	National Toxics Rule, 40 C.F.R. §§ 131.6 & 131.38 (2010) (CA Toxics Rule)	Applicable	Establishes the appropriate aquatic and human health criteria for priority toxic pollutants in inland surface waters and enclosed bays and estuaries. Included in the National Rule are EPA-promulgated specific criteria for certain water bodies in California, the presence or discharge of which could reasonably be expected to interfere with maintaining designated uses.	May be applicable for off-Site discharge subject to NPDES permits and for on-Site discharge subject to substantive requirements of an NPDES permit.
State Regulatory Requirement	Discharge to surface water	Section IV-16 (Policy for Application of Water Quality Objectives) of the Basin Plan for Sacramento River and San Joaquin River Basins (2009 rev.)	TBC	Allows for the use of mixing zones as part of a determination of whether water quality is being maintained in the receiving water.	This requirement may be a performance standard if treated water is discharged to surface water.
Federal Regulatory Requirement	Discharge to surface water	National Pollutant Elimination Discharge System (NPDES) Permit 40 C.F.R. Parts 122 and 125 and 23 CCR 2235 et seq.	Applicable	Establishes treatment and monitoring requirements for discharges to surface water.	Discharge to surface water on-Site will comply with the substantive requirements of an NPDES Permit (See Table 2.15 of the OU-5 ROD); discharge to surface water off-Site will require an NPDES Permit.

TABLE D-1: DESCRIPTION OF ARARs FOR SELECTED REMEDY (CONTINUED)

Statement of Work for Remedial Design and Remedial Action, Attachment 2 to the Administrative Order, Perimeter Groundwater Operable Unit (OU-5), Aerojet Superfund Site, Sacramento County, California

Authority	Medium	Requirements	Status	Synopsis of Requirements	Action to be Taken to Attain Requirements
Action-Specific ARARs (Continued)					
Federal Regulatory Requirement	Storm-water management	40 C.F.R. Part 122.26 (2010) and 23 CCR §2235 et seq. (2010)	Applicable	Establishes monitoring and pollutant control requirements for storm water from industrial activities.	The substantive requirements would be applicable if construction activities associated with the Remedial Action disturb an area of 5 acres or greater.
Federal Regulatory Requirement	Air	Air Emission Standards for Process Vents; 40 C.F.R. §§ 265.1030-1035 (2010); 22 CCR §§ 66265.1030-66265.1035	R&A	Applies to treatment, storage, and disposal facilities with process vents associated with solvent extraction, air- or steam-stripping operations managing RCRA hazardous wastes with organic concentrations of at least 10 ppm. These operations must reduce total organic emissions below specified device to reduce total organic emissions by 95 percent by weight.	The requirements are relevant and appropriate for groundwater extraction and air-stripping operations for the remedy where organic concentrations are at least 10 ppm.
State Regulatory Requirement	Air	Sacramento Metropolitan Air Quality Management District Rules Cal. Health & Safety Code, §§ 39602, 39606, 40001 Rule 402 Nuisance Rule 403 Fugitive Dust Rule 404 Particulate Matter Rule 441 Org	Applicable	Limits emissions of dust, particulates, and organic solvents to the air.	May apply to Remedial Actions involving ground-disturbing activities and to emissions from treatment facilities.

ATTACHMENT E
OU-5 PROJECT WORK PLAN

ATTACHMENT E OU-5 PROJECT WORK PLAN

The Project Work Plan shall include:

1. Updated Project Description

The Project Work Plan shall include a description of the Work to be implemented by Respondents. The Work shall include a description of the location, installation, and monitoring of compliance and sentinel wells. The Project Work Plan shall also include, where applicable, information on extraction locations; treatment technologies; discharge of the treated water (i.e., recipients, delivery locations, delivery pressures, and delivery rates); locations of major project components; existing equipment and facilities to be used as part of the Remedial Action (RA); and other key aspects of the project. The Project Work Plan shall briefly discuss the condition, anticipated longevity, and any limitations in the use of each existing facility, and shall provide for written quarterly progress reports. The Remedial Design (RD)/RA monthly progress report/s shall comply with Progress Reports section of the Administrative Order and provide for the following: (a) describe the actions which have been taken toward achieving compliance with this Administrative Order during the previous quarter; (b) include all results of sampling and tests and all other data received or generated by Respondents or its contractors or agents and not previously submitted to the United States Environmental Protection Agency (EPA); (c) describe all work planned for the next quarter with schedules relating such work to the overall project schedule for RD/RA completion; and (d) describe all problems encountered and any anticipated problems, and actual or anticipated delays, and solutions developed and implemented to address any actual or anticipated problems or delays. If requested by EPA or the State Agencies, Respondents shall also provide briefings for EPA and the State Agencies to discuss progress. The reporting frequency may be revised by EPA. Respondents shall perform the necessary tasks including coordination efforts among regulatory Agencies, water purveyors, landowners and all other parties, public meetings, and presentations to achieve the Perimeter Groundwater Operable Unit (OU-5) remedy.

2. Description of the Responsibility and Authority of All Organizations and Key Personnel Involved With the Remedial Action

The Project Work Plan shall include a description of the responsibilities and qualifications of key personnel expected to direct or play a significant role in the RD, RA, or Operation and Maintenance of the OU-5 Remedy, including Respondents' Project Coordinator, Designer, Construction Contractor, Construction Quality Assurance personnel, and Resident Engineer. The Work Plan shall define lines of authority and provide brief description of duties.

3. Updated Schedule and Meetings

The Project Work Plan shall identify the initiation and completion dates for each required design activity, construction activity, inspections and deliverable required by the Administrative Order and this Statement of Work (SOW). The Project Work Plan at a minimum shall be consistent with the schedule included as [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW or an expedited schedule for phased implementation to achieve cleanup sooner. The Work Plan shall also identify the approximate timing of meetings and other activities (not identified in [Section VI](#) [Schedule for Major Deliverables and Other Tasks] of this SOW), which may require participation by the Agencies.

The schedule shall provide for monthly coordination meetings that may be decreased in frequency as deemed appropriate by EPA after consultation among the Agencies. The coordination meetings shall address project status, problems, solutions, and schedule. Respondents shall prepare and distribute coordination meeting summary minutes to the Agencies in accordance with the schedule contained in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW after any meeting to document all decisions made, issues outstanding, schedule changes, planned follow up, and assignments.

4. Contracting Strategy

The Project Work Plan shall briefly describe the planned contracting strategy, including a brief description of the process for evaluation and approval of construction changes, for review by the Agencies and EPA's approval of significant changes.

5. Plans for Satisfying All Permitting Requirements and Acquiring Property, Leases, Easements, or Other Access

The Project Work Plan shall list all permits, approvals, Memoranda of Understanding (MOU), access or use agreements, property development or acquisition, leases, and easements required for implementation of the RA (extraction and monitoring wells, treatment facilities, distribution piping, and any surface water discharge point[s]).

Where normally required, permits must be obtained for all off-site activities, such as permits from the California Department of Public Health for domestic use of treated water. Respondents are not required to obtain permits for on-site remedial activities, but must comply with all substantive requirements, including local building codes. If permits will not be obtained for an on-site activity where a permit is normally required, Respondents shall describe all consultative or coordination activities planned to identify and satisfy the substantive requirements. Discharges to water bodies off-site shall be subject to National Pollution Discharge Elimination System permitting.

6. Roles for Design, Construction, and Operation of the Remedial Action

The Project Work Plan shall describe the roles and responsibilities of Respondents, participating water producers and regulatory Agencies, and other parties expected to play a significant role in the design, construction, and operation of the RA. The Work Plan shall summarize and provide copies of MOUs and draft or final agreements between Respondents and water producers and any third parties expected to participate in implementation of the RA or to receive water that is, or contains, water extracted as part of the RA. If legally-binding agreements are not in place, the Work Plan shall describe commitments made to date and planned efforts to secure necessary commitments, including a schedule. If the participation of a third party is uncertain, the Work Plan shall describe alternatives to be implemented in the event that the party does not fulfill its planned role. Possible third party roles include agreeing to the use of existing equipment (e.g., groundwater extraction wells, water treatment facilities, pipelines, groundwater recharge facilities), treatment facilities operation, and acceptance of treated groundwater.

7. Identification of Any Concerns About the Quantity, Quality, Completeness, or Usability of Water Quality or Other Data Upon Which the Design Will Be Based

Respondents shall describe in the Project Work Plan additional data collection efforts, if any, required for completion of the RD. Respondents shall consider whether any data are needed to verify that critical design assumptions remain valid (e.g., the areas of Contaminated Groundwater requiring hydraulic containment). If additional data are required, Respondents shall propose a schedule amendment of the OU-5 Sampling and Analysis Plan (or Addendum) and implementation of the Plan. At a minimum, Respondents shall address the following: 1) interaction of OU-5 remedy with existing and pending groundwater remedies bordering OU-5 to the west and south to contain contamination in all layers of the aquifer; 2) ensuring that the containment boundary contains the Contaminated Groundwater in all layers of the aquifer; and 3) optimization of extraction well locations to prevent further degradation of the aquifer layers.

8. A Description of Planned Community Relations Activities to Be Conducted During Remedial Design or Remedial Action

In accordance with the Work to be Performed section of the Administrative Order, Respondents shall cooperate with the Agencies in providing to the public information regarding the remedial work. As requested by the Agencies, Respondents shall aid in the preparation of such information and dissemination to the public. Respondents shall participate in public meetings which may be held or sponsored by the Agencies to explain activities at or relating to the Site (e.g., preparation of drawings, visual aids, presentations to existing Community Advisory Groups, presentations to permitting or reviewing authorities, obtain and pay for adequate meeting room space

including any insurance requirements, assistance in mailing list updates, and public meeting support for any amendment of the proposed plan/Record of Decision, including paying for a stenographer to prepare meeting transcripts, both draft for EPA review and comment and final of transcript (6 hardcopies and electronic version), and technical support as requested for response to public comment, etc.).

9. Updates to the Project Work Plan and Periodic Reporting to the Agencies

The Project Work Plan shall describe provisions for reporting progress to the Agencies consistent with the schedule included in [Section VI](#) (Schedule for Major Deliverables and Other Tasks) of this SOW or an expedited schedule for phased implementation to achieve cleanup sooner and the Compliance Monitoring Plan components of the groundwater monitoring plan to be prepared in accordance with [Section V\(F\)](#) (Groundwater Monitoring) of this SOW. The Project Work Plan shall also describe how the Work Plan will be updated as needed to document changes, provide for possible phased implementation, or provide information not available at the time the Work Plan and the quarterly progress report are submitted.

If any of the information required is not known at the time the Project Work Plan must be submitted, and omitting the information from the Work Plan will not prevent compliance with any other requirements of this SOW, Respondents may submit the information at a later date. If any information is omitted, Respondents shall note in the Work Plan that the missing information was not available and specify when it will be submitted.

ATTACHMENT F
TEMPLATE FOR GROUNDWATER DECLARATION OF COVENANTS

DRAFT

Recording Requested By:

Aerojet-General Corporation

When Recorded, Mail To:

[_____]

[Groundwater only properties]

[_____]

(Space above this line reserved for County Recorder's use.)

Assessor Parcel Number(s): Portion of

[_____]

DECLARATION OF COVENANTS AND ENVIRONMENTAL RESTRICTIONS RELATED TO GROUNDWATER

This Declaration of Covenants and Environmental Restrictions Related to Groundwater (this **“Declaration”**) is dated, for reference purposes, as of the ____ day of _____, _____, and is executed, on the dates set forth with the signatures below, by and among Aerojet-General Corporation (**“Covenantor”**), the California Regional Water Quality Control Board for the Central Valley Region (the **“Regional Board”**), and the United States of America and its assigns (the Regional Board and the United States of America, collectively, **“Covenantees”**) (Covenantor and Covenantees, collectively, the **“Parties”**).

WITNESSETH:

WHEREAS, Covenantor owns real property situated in Sacramento County (the **“County”**), California more fully described in **Exhibit “A”** attached hereto and incorporated herein by this reference (the **“Property”**); and

WHEREAS, the Property is part of the Aerojet Superfund Site (the **“Site”**), which the U.S. Environmental Protection Agency (the **“USEPA”**), pursuant to section 105 of the Comprehensive Environmental Response, Compensation and Liability Act (**“CERCLA”**), 42 U.S.C. section 9605, placed on the National Priorities List (the **“NPL”**), set forth at 40 C.F.R. Part 300, by publication in the Federal Register on September 8, 1983; and

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WHEREAS, the Parties' Partial Consent Decree (the "**PCD**") was entered on June 23, 1989 in the consolidated actions No. CIVS 86-0063-EJG and No. CIVS 86-0064-EJG in the United States District Court for the Eastern District of California; and

WHEREAS, the groundwater and associated contaminated media beneath the surface of the Property contain "hazardous materials," as that term is defined in section 25260 of the California Health and Safety Code, "waste," as that term is defined in section 13050 of the California Water Code, and "hazardous substances," as that term is defined in section 9601(14) of CERCLA (the "**Groundwater Contamination**"); and

WHEREAS, the Property was investigated by Covenantor under oversight of, and accepted by, the USEPA, the Regional Board and the California Department of Toxic Substances Control ("DTSC") (collectively, the "**Regulatory Agencies**") under the PCD. As a result of that investigation, USEPA determined in its decision document entitled "Interim Record of Decision for Groundwater and Final Record of Decision for Soil for the Perimeter Groundwater Operable Unit (OU-5)" dated February 15, 2011 ("**PGOU ROD**") (which determination was concurred with by the Regional Board and DTSC) that (i) all continuing sources of Groundwater Contamination are outside the area of the Property and (ii) other than the restrictions described herein at section 1.3, no further remedial action is required for unrestricted use of the Property; and

WHEREAS, in order to protect present and future public health and safety and the environment, and in order to facilitate further investigation, monitoring, and remediation of the Groundwater Contamination, while maximizing the potential for development and use of the Property for all purposes, the Parties have agreed to impose upon the Property certain covenants and restrictions, including access rights, subject to various limitations and conditions designed to facilitate development and use of the Property, all as set forth in this Declaration, all of which covenants, restrictions, limitations, and conditions are intended to be, and shall be, binding on successors in title to the Property as covenants running with the land; and

WHEREAS, pursuant to California Civil Code section 1471, and under the circumstances described in the foregoing recitals, Covenantor has the right and power to impose upon its title to the Property, for the benefit of, and to be enforceable by, Covenantees and Covenantor, and to be binding upon Covenantor and its successors and assigns, covenants related to said Groundwater Contamination, including covenants to do, or refrain from doing, acts upon the Property as specified in this Declaration, and the Parties intend this Declaration to be executed, delivered, and recorded in the Official Records in compliance with the requirements of, and pursuant to, said section 1471.

NOW, THEREFORE:

ARTICLE I
DEVELOPMENT, USE, AND CONVEYANCE
OF THE PROPERTY

1.1 Declaration. In reference to the facts and circumstances set forth in the foregoing "Whereas" clauses, Covenantor does hereby declare and covenant that:

(a) Subject to all of the terms and conditions set forth in this Declaration, the Property shall be subject to the Environmental Restrictions (defined below) and Covenantees' Right of Access (defined below), and Covenantor does give, grant, and convey to Covenantees and reserve unto itself the perpetual right to enforce said Environmental Restrictions and Covenantees' Right of Access as beneficiaries thereof; and

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(b) The Property and every portion thereof shall be improved, held, used, occupied, leased, sold, hypothecated, encumbered, and/or conveyed subject to said Environmental Restrictions and Covenantees' Right of Access.

1.2 Necessity. The Parties agree that the Environmental Restrictions (defined below), Covenantees' Right of Access (defined below), and other provisions of this Declaration are reasonably necessary to protect present and future public health and safety and the environment; to reduce impediments to remediation of the Contaminated Groundwater; to allow remedial measures for the Groundwater Contamination to be studied and implemented; and to avoid potential harm to persons or property that may result from hazardous materials that are found in the Contaminated Groundwater.

1.3 Environmental Restrictions and Covenantees' Right of Access. The following covenants, conditions, and restrictions set forth in subparts (a) through (d) of this section 1.3 (collectively, the “**Environmental Restrictions**”) and the following access rights set forth in subpart (e) of this section 1.3 (collectively, the “**Covenantees' Right of Access**”) apply to the use of the Property, run with the land, and are binding upon Covenantor and its successors in interest who hold title to all or any portion of the Property (collectively, “**Owners**”) and upon those persons entitled by ownership, leasehold, or other legal relationship to the right to possession or occupancy of any portion of the Property (collectively, “**Occupants**”):

(a) No Extraction. No Owners or Occupants of the Property or any portion thereof shall drill, bore, otherwise construct, or use a well for the purpose of extracting water for any use, including, but not limited to, domestic, potable, or industrial uses, unless and until expressly permitted in writing by Covenantor and the Regional Board.

(b) No Recharge. No Owners or Occupants of the Property or any portion thereof shall install, operate, or maintain a recharge or sedimentation control basin that is designed to infiltrate water (a “**Recharge Activity**”) unless and until expressly permitted in writing by Covenantor and the Regional Board as follows:

(1) Recharge Waiver Request. For purposes of this section 1.3(b), the term “**Recharge Waiver Request**” means a written application signed by an Owner or Occupant or its authorized agent or contractor that sets forth (A) the legal description and, if available, street address of the affected portion of the Property; (B) the name, mailing address, telephone number, and other pertinent information about the Owner of that portion, all persons holding mortgages, deeds of trust, or other monetary encumbrances upon that portion, and the contractor or contractors, if any, expected to conduct the Recharge Activity; (C) a detailed description of the nature (including projected infiltration rate) and period of the proposed Recharge Activity; and (D) such other pertinent information as Covenantor and/or the Regional Board shall request; and

(2) Review of Requests. Upon receipt of a Recharge Waiver Request, Covenantor and the Regional Board shall consider such Recharge Waiver Request and issue their written approvals or denials thereof, which approvals, if issued, may include appropriate conditions subject to which the proposed Recharge Activity shall be conducted. Approval shall be granted for any Recharge Activity that does not interfere with, or adversely impact, remediation of the Groundwater Contamination and is otherwise undertaken in accordance with applicable law.

(c) No Injection. No Owners or Occupants of the Property or any portion thereof shall install, operate, or maintain any injection wells for any use unless and until expressly permitted in writing by Covenantor and the Regional Board.

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(d) Excavations. No Owners or Occupants of any portion of the Property shall conduct sustained extraction of the groundwater that is encountered during excavations for the construction of buildings or other improvements (“**Construction Dewatering**”) unless and until expressly permitted in writing by Covenantor and the Regional Board as follows:

(1) Request for Approval of Construction Dewatering. For purposes of this section 1.3(d), the term “**Request for Approval of Construction Dewatering**” means a written application signed by an Owner or Occupant or its authorized agent or contractor that sets forth (A) the legal description and, if available, street address of the affected portion of the Property; (B) the name, mailing address, telephone number, and other pertinent information about the Owner of that portion, all persons holding mortgages, deeds of trust, or other monetary encumbrances upon that portion, and the contractor or contractors, if any, expected to conduct the Construction Dewatering; (C) the plans and specifications for the proposed Construction Dewatering, including, but not limited to, the projected start and completion dates for the proposed Construction Dewatering; and (D) such other pertinent information as Covenantor and/or the Regional Board shall request; and

(2) Review of Requests. Upon receipt of a Request for Approval of Construction Dewatering, Covenantor and the Regional Board shall consider such Request for Approval of Construction Dewatering and issue their written approvals or denials therefor, which approvals, if issued, may include appropriate conditions subject to which the proposed Construction Dewatering shall be conducted. Approval shall be granted for any Construction Dewatering that does not interfere with, or adversely impact, remediation of the Groundwater Contamination and is otherwise undertaken in accordance with applicable law.

(e) Covenantees' Right of Access. Subject to future restriction to certain areas of the Property as set forth in section 4.3 of this Declaration, Covenantor hereby grants to Covenantees a right of access (“**Covenantees' Right of Access**”) to the Property, at all reasonable times, for the following purposes only:

(1) Implementing, or overseeing the implementation of, “response actions,” as defined in CERCLA, in any “records of decision,” as defined in CERCLA, or orders issued by either Covenantee respecting the Groundwater Contamination;

(2) Verifying any data or information respecting Groundwater Contamination submitted to Covenantees or either of them;

(3) Verifying that no action is being taken on the Property respecting the Groundwater Contamination in violation of any of the Environmental Restrictions or any of the other terms of this Declaration or of any federal or California environmental laws or regulations;

(4) Monitoring “response actions,” as defined in CERCLA, on the Property respecting Groundwater Contamination and conducting investigations related to the Groundwater Contamination on or near the Property, including, without limitation, sampling of air, water, sediments, soils, and specifically, without limitation, obtaining split or duplicate samples; and

(5) Conducting periodic reviews of the remedial action respecting the Groundwater Contamination, including, but not limited to, reviews required by applicable statutes and/or regulations.

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1.4 Reserved Rights of Covenantor. Subject to the rights of Covenantees hereunder, Covenantor hereby reserves unto itself all rights and privileges respecting ownership, use, and development of the Property.

1.5 Notice Requirement. Covenantor, in accordance with California Health and Safety Code section 25359.7, agrees to give written notice of the Groundwater Contamination to each buyer, lessee, renter, and mortgagee of all or any part of the Property. Additionally, every lease, deed, mortgage, or other instrument conveying any interest in all or any part of the Property shall expressly provide that it is subject to this Declaration.

ARTICLE II ENFORCEMENT

2.1 Remedies Available. Covenantees and Covenantor shall be entitled to enforce the terms of this Declaration, including, but not limited to, the Environmental Restrictions and Covenantees' Right of Access, by resort to specific performance, injunction, and other appropriate legal process. Any forbearance, delay, or omission to exercise rights under this Declaration in the event of a breach of any term of this Declaration shall not be deemed to be a waiver by Covenantees or Covenantor of such term or of any subsequent breach of the same or any other term, or of any rights of Covenantees or Covenantor under this Declaration.

2.2 Removal of Offending Improvements. Failure of an Owner or Occupant to comply with any of the Environmental Restrictions, as set forth in section 1.3 of this Declaration, shall be grounds for either of the Covenantees and/or Covenantor, by reason of this Declaration, to have the authority to require that the Owner modify or remove the improvements constructed in violation of that section. Violations of this Declaration shall be grounds for Covenantor and/or either or both Covenantees to file civil actions against the Owner as provided by law.

2.3 Waiver of Certain Defenses. Covenantor hereby waives any defense of laches, estoppel, or prescription.

2.4 Covenantor's Title. Covenantor hereby covenants that Covenantor is lawfully seized of fee simple title to the Property, that Covenantor has a good and lawful right and power to sell and convey it or any interest therein, that the Property is free and clear of encumbrances, except encumbrances shown in the Official Records, and that Covenantor will forever warrant and defend Covenantor's title thereto and quiet possession thereof.

2.5 Administrative Jurisdiction. The federal agency having administrative jurisdiction over the interests acquired by the United States by this Declaration is the USEPA.

ARTICLE III DURATION, TERMINATIONS, MODIFICATIONS, ASSIGNMENTS, AND TRANSFERS

3.1 Duration. Unless terminated in accordance with the provisions of this Article III, the Environmental Restrictions and Covenantees' Right of Access shall continue in perpetuity.

3.2 Terminations and Modifications. Any Owner or, with the Owners' written consent, any Occupant may apply in writing to Covenantor and to Covenantees for a termination or modification of all or some portion of the Environmental Restrictions and/or Covenantees' Right of Access as applied to that Owner's portion of the Property as follows:

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(a) Any such application shall set forth reasons why the purposes of this Declaration can continue to be accomplished if and when such termination or modification is granted and shall have attached to it a copy of the instrument that the Owner or Occupant wants Covenantor and Covenantees to execute in order to effect such termination or modification;

(b) The decision whether or not to grant the termination or modification, what conditions may be attached thereto, and the exact language of the instrument effecting such termination or modification shall be in the discretion of both Covenantor and Covenantees, provided they shall not act arbitrarily or capriciously;

(c) Applications for a termination or modification may be granted only with the consent of both Covenantor and Covenantees, except that any amendment or modification done pursuant to section 4.3(b) of this Declaration may be made with the consent of Covenantor and the Regional Board only and without the consent of the USEPA;

(d) Whenever any such termination or modification is granted, Covenantor and Covenantees shall execute, acknowledge, and deliver an appropriate instrument to effect such termination or modification in form that is recordable in the Official Records, which instrument may be in the form provided by the applicant or in such other form as Covenantor and Covenantees shall determine;

(e) Any such termination or modification shall be effective upon recordation in the Official Records of said instrument as executed and acknowledged by Covenantor and Covenantees, with no other act or documentation required to effect such termination or modification; and

(f) No participation by, or consent from, any Owner or Occupant whose portion or portions of the Property are not directly affected by the termination or modification shall be necessary although Covenantor and/or Covenantees may, at their election, seek and receive information, opinions, or other participation about the proposed termination or modification from or by any or all other Owners or Occupants of the Property or any portion thereof.

3.3 Assignment to the Regional Board. Upon completion of “remedial action” (as that term is defined in CERCLA) respecting the Groundwater Contamination, the Regional Board agrees to accept an assignment of any covenant granted by this Declaration to the USEPA. Any such assignment and acceptance thereof shall be in writing and effective when it is recorded in the Official Records.

3.4 Successive Owners and Occupants. An Owner or Occupant's rights and obligations under this Declaration terminate upon transfer, expiration, or termination of the Owner or Occupant's interest in the Property, except that liability for acts or omissions occurring prior to transfer shall survive. The Owner or Occupant's successor in interest, if any, shall take that interest subject to this Declaration and be bound by the obligations hereunder applicable to Owners and Occupants until a later transfer, expiration, or termination of that interest occurs.

ARTICLE IV SUBDIVISIONS AND BOUNDARY LINE ADJUSTMENTS

4.1 Subdivisions. Concerning subdivisions of all or any portion of the Property:

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(a) Approval of Tentative Maps. Except as provided in subpart (e) of this section 4.1, prior to submission to the County of any substantial change to the tentative subdivision map, for the Property previously submitted to the County, such proposed change shall be presented to Covenantor and to the Regional Board for their review and written approval to the extent such change pertains to the location, configuration, and size of:

(1) Those portions of the Property shown on such map as designated to serve as permanent roadways to be offered for dedication to the County, including both areas for vehicular travel and contiguous areas, if any, for meridians and pedestrian sidewalks (collectively, the **“Permanent Roadways”**);

(2) Any lots or parcels shown on such map (collectively, **“Well Lots”**) on which any wells, pumping stations, equipment, pipelines, and related facilities, designed for the monitoring, extraction, removal, transport, injection, or recharge of groundwater (collectively, the **“Wells, Pipelines, and Related Facilities”**) are located; and

(3) All creeks, ditches, and other channels, whether natural or artificial, that drain, are used for the drainage of, or are designed to drain, surface waters (collectively, the **“Creeks and Ditches”**) shown on that tentative subdivision map; provided that:

(4) No other parts of any tentative subdivision map shall be subject to such review and approval by Covenantor or the Regional Board;

(b) Submittal to the County. No substantial change to such previously submitted tentative subdivision map for any portion of the Property shall be submitted to the County for approval unless and until it has been approved in writing by Covenantor and the Regional Board in the manner required by subpart (a) of this section 4.1;

(c) The County's Notice List. The Owner proposing any subdivision of any portion of the Property shall arrange for Covenantor and the Regional Board to be included on all lists maintained by the County of persons to whom the County shall send notices of hearings and other matters concerning the processing of subdivision maps for the Property or any portion thereof;

(d) No Variance on Final Maps. No final subdivision map for any portion of the Property shall be different than its precedent tentative subdivision map as approved by Covenantor and the Regional Board with respect to the location, configuration, or size of Permanent Roadways, Well Lots, if any, and Creeks and Ditches, if any, shown thereon (except for any difference(s) deemed by the County to be in substantial compliance with the precedent tentative subdivision map) unless Covenantor and the Regional Board have approved in writing such difference;

(e) Further Subdivision. If and when a final subdivision map with respect to any portion of the Property (a **“Subdivided Portion”**) is recorded in the Official Records, then, for any further subdivision of that Subdivided Portion, the Owner thereof shall not be required to comply with any of the provisions of this Article IV so long as such further subdivision does not alter (except for any alteration(s) deemed by the County to be in substantial compliance with the precedent subdivision map) the location, configuration, or size of any of the Permanent Roadways, Well Lots, if any, or Creeks and Ditches, if any, located within that Subdivided Portion; and

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(f) No Waiver of Rights. Nothing in this section 4.1 or any other provision of this Declaration limits, or shall be construed to limit, in any way, the statutory, administrative, and constitutional rights of Covenantor and Covenantees to participate in any and all public hearings conducted by the County with respect to, and to provide to the County, whether at a hearing or otherwise, any comments or suggestions that Covenantor or the Regional Board may want to offer concerning, any subdivision map for the Property or any portion thereof.

4.2 Boundary Line Adjustments. Concerning boundary line adjustments affecting all or any portion of the Property:

(a) Application of the Subdivision Procedures. If any such boundary line adjustment would alter the location, size, or configuration of any Permanent Roadway, any Well Lot, or any Creeks and Ditches, then that boundary line adjustment shall be deemed to be a subdivision governed by the provisions of section 4.1 of this Declaration. Other boundary line adjustments are not governed by the provisions of said section 4.1 except that an Owner may, at its option, elect to have any boundary line adjustment governed by the provisions of said section 4.1, which election shall be done in the form of written notice from the Owner addressed to Covenantor and the Regional Board; and

(b) Treated as a Subdivision. Upon the giving of any such written notice, then, for all purposes of this Declaration, Covenantor and Covenantees shall enjoy the rights, powers, and benefits respecting such boundary line adjustment the same as would apply if subdivision maps were being used, including, but not limited to, the following results:

(1) Deemed Lots and Parcels. The reconfigured parcels, as set forth in the boundary line adjustment, shall be deemed Lots and Parcels under the provisions of this Declaration;

(2) Deemed Subdivided Portion. That portion of the Property affected by the boundary line adjustment shall be deemed a Subdivided Portion under the provisions of this Declaration; and

(3) Constriction of Covenantees' Right of Access. The area encumbered by Covenantees' Right of Access shall become constricted as set forth in section 4.3 of this Declaration.

4.3 Effect of Final Subdivision Maps. Notwithstanding the other provisions of this Article IV or any other provision of this Declaration, when and if a final subdivision map respecting any portion of the Property is recorded in the Official Records, then, and from and after such recordation, with respect to that Subdivided Portion:

(a) Constriction of Covenantees' Right of Access. Covenantees' Right of Access shall encumber only, and the burdens thereof shall be confined to, those portions of that Subdivided Portion designated on such final subdivision map as Permanent Roadways and those portions or all of any Well Lot or Well Lots or Creeks and Ditches designated on such final subdivision map, and shall no longer encumber any other part of that Subdivided Portion, including, but not limited to, the other Lots and Parcels located therein; and

(b) Automatic Effect. Such constriction of the areas encumbered by Covenantees' Right of Access shall happen automatically, without the need for any further instrument or document, for that Subdivided Portion, the moment the final subdivision map therefor is recorded in the Official Records. Nonetheless, Covenantor and the Regional Board shall, if requested to do so, confirm such constrictions by executing, acknowledging, and

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delivering, in form recordable in the Official Records, such instruments and documents as may be reasonably requested to constitute such confirmation, including, but not limited to, an amendment to, or modification of, this Declaration; provided that such request is submitted by the Owner of the Subdivided Portion to Covenantor and the Regional Board either before, or within ninety (90) days after, such final subdivision map is recorded in the Official Records.

4.4 Roadway and Utility Uses. Covenantor and Covenantees agree that:

(a) Definition of Roadway and Utility Uses. Permanent Roadways will be used by and for vehicles and pedestrians to cross the Property and for ingress and egress to, from, and among the Lots and Parcels and public streets adjacent to the Property and for utility lines, including, but not limited to, sewer, telephone, cable television, natural gas, electricity, and water, as well as incidental uses related thereto, such as, but not limited to, traffic signals, manholes, vaults, signs, transformers, pipelines, valves, meters, switches, hydrants, sprinkler controls, conduits, coverings, berms, fences, lighting, landscaping, and related facilities (collectively, the **“Roadway and Utility Uses”**), regardless when or whether any offers of dedication thereof are accepted by the County; and

(b) Reasonable Accommodation. The Roadway and Utility Uses, whether public or private, shall reasonably accommodate and not unreasonably interfere with, hinder, or impede Covenantees' rights under Covenantees' Right of Access.

4.5 Flexibility Respecting Well and Pipeline Locations. Covenantor and Covenantees anticipate having flexibility in planning for, choosing, and approving sites for Wells, Pipelines, and Related Facilities, and therefore, Covenantor has determined, and Covenantees have approved the determination, that such sites, as well as access to and from such sites, can be confined generally, but not necessarily exclusively, to Permanent Roadways, given the quantity of area for Permanent Roadways expected by the Parties to be set forth on subdivision maps of portions of the Property; and that the Parties will be able to maximize the number of Wells, Pipelines, and Related Facilities positioned entirely within the Permanent Roadways, and to minimize (possibly to zero) the number of Wells, Pipelines, and Related Facilities that encumber any Lot or Parcel.

ARTICLE V MISCELLANEOUS PROVISIONS

5.1 Recitals of Facts and Representations. Each of the Parties hereby represents and warrants that it knows of nothing indicating that any of the statements of fact set forth in the “Whereas” clauses at the beginning of this Declaration (which are incorporated herein by this reference) is false, incomplete, or misleading as written and believes that all of said statements of fact are accurate, complete, and not misleading as written.

5.2 Municipal Incorporation. If all or any portion of the Property is or becomes incorporated as a city or becomes annexed to a city, then, and from and after such date of incorporation or annexation, all references in this Declaration to “the County” with respect to Subdivision Maps, offers of dedication of Permanent Roadways, and other matters shall be deemed to be references to such city.

5.3 Covenants Running with the Land. The provisions of section 2.4 are personal covenants burdening Covenantor personally, and benefiting Covenantees personally, and are not intended, and shall not be, covenants running with the land. All of the other terms and

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conditions set forth in this Declaration, including, but not limited to, the Environmental Restrictions and Covenantees' Right of Access:

(a) Are intended to be covenants running with the land that shall be binding upon the Owners and Occupants, as Covenantor's successors in title, pursuant to section 1471 of the California Civil Code; and

(b) Shall, pursuant to said section 1471, run with the land, pass with each and every portion of the Property, and apply to and bind the respective successors in interest thereof, for the benefit of Covenantees and Covenantor personally, and not as owners of any other land.

5.4 Concurrence of Owners and Occupants Presumed. All Owners and Occupants shall be deemed by their purchase, leasing, or possession of any portion of the Property to be in accord with all of the provisions of this Declaration and to agree that the terms and conditions of this Declaration, including, but not limited to, the Environmental Restrictions and Covenantees' Right of Access, must be adhered to, for the benefit of Covenantees and Covenantor, and that the interests of the Owners and Occupants shall be subject to all of the terms and conditions of this Declaration, including, but not limited to, the Environmental Restrictions and Covenantees' Right of Access contained herein, regardless whether a copy of this Declaration has been referenced in, or incorporated into, any given deed, lease, or other instrument of transfer or conveyance.

5.5 No Admission of Responsibility for Ground Water Contamination. Nothing in this Declaration shall be construed: (a) to impose upon Covenantor, or to constitute an assumption by Covenantor of, any responsibility for the characterization, analysis, monitoring, or clean-up of the Groundwater Contamination; or (b) as an admission or acknowledgment that Covenantor is a person responsible for such characterization, analysis, monitoring, or clean-up of the Groundwater Contamination.

5.6 No Waiver of Statutory Rights. Nothing in this Declaration shall be construed as a waiver of, or as imposing any limitation or condition upon exercise of, and the Parties do not intend hereby to waive, any rights of Covenantees or either of them under any federal, state, local, or common law, including, but not limited to, CERCLA, the California Health and Safety Code, and the California Water Code, which unwaived rights include, but are not limited to, rights of access to properties when and where the statutory and regulatory conditions to exercise thereof have been satisfied.

5.7 Severability of Provisions. If any provision of this Declaration is unenforceable, it shall be deemed not a part of this Declaration, and the other remaining provisions shall remain fully enforceable and shall be interpreted to accomplish, as closely as may be lawful, the intentions of the Parties as expressed by the entirety of this Declaration.

5.8 No Dedication Intended. No gift or public dedication or right of access or use by the general public of or to any portion of the Property is intended to be offered, conveyed, or declared by this Declaration, and this Declaration does not offer, convey, or declare any such gift or public dedication or right of access or use by the general public.

5.9 Notices. Whenever any person gives or serves any written notice, demand, or other communication with respect to this Declaration, each such notice, demand, or other communications shall be deemed effective (a) when delivered, if personally delivered to the person being served, whether or not that person is an official of a governmental agency; or (b) three (3) business days after deposit in the mail if mailed by the United States mail, postage paid certified, return receipt requested:

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If to: "Covenantor"
Aerojet-General Corporation
Post Office Box 13222
Sacramento, California 95813
Attn: Director of Real Estate

If to: "Regional Board"
Aerojet Project Manager
Regional Water Quality Control Board
3443 Routier Road, Suite A
Sacramento, California 95827-3003

If to: "USEPA"
Aerojet Project Manager
United States Environmental Protection Agency
Region IX, Superfund
75 Hawthorne Street
San Francisco, California 94105

5.10 Recordation. This Declaration shall be recorded by Covenantor in the Official Records within ten (10) days of the date of execution hereof, and after such recordation, Covenantor shall deliver to each of the Covenantees a copy of this Declaration showing the recording information inserted by the County Recorder in the upper right-hand corner of the first page hereof.

5.11 Code References. All references to sections in any California or United States code or statute include successor provisions.

5.12 Interests of Covenantees. Notwithstanding any other provision of this Declaration, nothing in this Declaration shall be construed as granting or conveying, and the Parties do not intend to have any provision of this Declaration grant or convey, to Covenantees or either of them title to, or any real estate interest in, the Property or any portion thereof, except the benefit and burden, if any, of the Environmental Restrictions and the Covenantees' Right of Access, and the other covenants and provisions set forth in this Declaration that are applicable to Covenantees, all as covenants running with the land as set forth in this Declaration.

5.13 Controlling Law. The interpretation and performance of this Declaration shall be governed by applicable laws of the United States and of California.

5.14 Liberal Construction. Any general rule of construction to the contrary notwithstanding, this Declaration shall be liberally construed to accomplish the purposes of the Parties as set forth herein.

5.15 Entire Agreement. This Declaration sets forth the entire agreement of the Parties with respect to the rights and obligations created or set forth herein and supersedes all prior discussions, negotiations, understandings, and agreements relating thereto, all of which are merged herein.

5.16 No Forfeiture. Nothing contained in this Declaration shall be construed to result in a forfeiture or reversion of Covenantor's title to the Property in any respect.

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5.17 Captions and Headings. The captions and headings in this Declaration have been inserted solely for convenience of reference and are not part of this Declaration and shall have no effect upon construction or interpretations.

5.18 Counterparts. The Parties may execute this Declaration in two (2) or more counterparts, which shall, in the aggregate, be signed by all Parties; each counterpart shall be deemed an original of this Declaration as against any Party who has signed it. In the event of any disparity between counterparts produced, the counterpart recorded in the Official Records shall be controlling.

IN WITNESS WHEREOF, the Parties execute this Declaration as of the dates set forth with their signatures below, and this Declaration is effective as of the date it is recorded in the Official Records.

Covenantor: Aerojet-General Corporation

By: _____

Title: Authorized Agent

Date: _____

Covenantee: State of California
Regional Water Quality Control Board,
Central Valley Region

By: _____

Title: Executive Officer

Date: _____

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Covenantee: U.S. Environmental Protection Agency, on
behalf of the United States of America

In accordance with Section 104(j) of CERCLA, 42 U.S.C. § 9604(j), as amended, the Regional Administrator, Region IX, of the United States Environmental Protection Agency agrees to and accepts this Declaration.

By: _____

Title:

Date: _____