



STATEMENT OF WORK
200 West Pump & Treat Facility Chemicals

Part 1 Statement of Work for
Soil & Groundwater Operations
200 WEST PUMP & TREAT FACILITY CHEMICALS
200W Pump & Treat

Revision 0
09/08/2021
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STATEMENT OF WORK

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1.0 INTRODUCTION / BACKGROUND

This Contract is issued for the performance of the 200 West Pump & Treat in support of Central Plateau Cleanup Company (CPCCo) (Buyer) work scope for the period (10/01/2021 to 09/30/2024). Buyer is a prime contractor to the Department of Energy (DOE) and all work on this Statement of Work shall be performed in support of the Buyer's contract with DOE.

This statement of work identifies the Contractor's scope as it relates to the support of 200 West Pump & Treat System facility chemical treatment process.

Additionally, specific unique work environment/conditions/circumstances which may be encountered during execution of the work scope include providing:

- The ability to make JIT (just in time) deliveries
- The ability to change chemical formulations (e.g. solution strength) to support treatment optimization
- Estimated near term annual operational chemical usage volumes
- Estimated long term annual operational chemical usage volumes

2.0 DESCRIPTION OF WORK – GENERAL

Contractor employee(s) shall be responsible for independently planning, organizing and performing a wide variety of hazardous and non-hazardous specialized administrative/technical duties in support of the successful completion of goals and deliverables and in accordance with all provisions of the Contract.

Specifically, CPCCo requires a Contractor to provide delivery of chemicals for the 200 West Pump & Treat Facility. CPCCo requires a Contractor to provide "just-in-time" delivery of the chemicals supplied under this contract. The Contractor shall furnish all necessary labor, technical and professional services, supervision, materials, tools, equipment, consumables, transportation, and payment of any applicable taxes to perform all operations necessary and required to perform scope as directed by CPCCo. In addition, CPCCo requires a Contractor to provide the following:

- In-house staff with at least 10 years' experience in chemical supply chains, logistics, product quality, and ability to advise on alternative chemical products and to assist in problem solving as issues arise.
- Testing services to evaluate the impact of new products on select materials of construction using test protocol supplied by CPCCo.

3.0 DESCRIPTION OF WORK – SPECIFIC

The work products and services to be provided, including any specific CPCCo standards and requirements, required for the successful completion of this work activity. On an as-needed basis, the Contractor will provide and deliver:

- 100 wt% Nalco 3DT120 or CL50
- 50 wt% Citric Acid
- 12.5 wt% Sodium Hypochlorite
- 93 wt% Sulfuric Acid

3.1 Task Description / Just-In-Time Chemical Inventory

Contractor shall stock, locally warehoused and ready for shipment, chemicals as listed in Attachment 1, Table 1. Normal chemical delivery shall be within one week of request. On occasion, delivery shall be to the 200W Pump and Treat (P&T) facility within 48 hours of request with the exception of sulfuric acid. Current inventory of chemicals to be provided to BTR if requested.

Note: The basis of estimating the Just-In-Time chemical volumes needed is a 30-day supply of each chemical (except Sulfuric Acid) with the treatment system operating at a processing rate up to 3,750 gallons per minute. The Just-In-Time chemical quantities/volumes are shown in Attachment 1 - Table 1.

3.2 Acceptance Criteria

Work products and services provided shall meet all applicable Buyer procedures for control and review of work products and pertinent regulatory requirements, as required by this Contract and incorporated provisions.

Further specific Acceptance Criteria applicable to this scope includes:

- Contractor shall provide the Buyers Technical Representative (BTR) or 200W Pump and Treat Engineering (2WPT Engineering) with Certificate of Analysis (on applicable chemicals) and Delivery Tickets for the product included in each shipment (See Section 3.5 for engineering email).
- The contractor shall provide Safety Data Sheets (SDS) for new products or changes from suppliers to the BTR and 2WPT Engineering for evaluation and inclusion in the CPCCo Chemical Management System (See Section 3.5 for engineering email).
- The contractor shall prepare reports of chemical inventory levels to show quantities/volumes of chemicals, locally-warehoused and accessible by the BTR for “stand-by” supply of each chemical required for a 30 day operational period. The BTR may verify inventories monthly or quarterly, as required to assure adequate inventories.
- Contractor shall ensure all chemical totes have Globally Harmonized System (GHS) compliant labels prior to delivery.

3.3 Special Requirements

- Delivery tanker trucks are required for the work scope.

- Tanker truck should have the capability to blow down the transfer line hose once the transfer is completed.
- Transfer hose lines shall be free of obstructions and leaks.
- It must be identified in the technical proposal as to whether the tanker trucks are equipped with built-in compressors
- Other methods may be specified or approved by CPCCo on a case by case basis.
- Totes will be purchased by CPCCo and will be for CPCCo use only.
 - All chemical totes shall be 275 gallon Schultz IBC (or equal approved by the BTR)
 - The tote vent shall have a 1-inch female cam lock couplings,
 - Unless otherwise specified, the main outlet for all totes shall have a 2-inch male Cam lock coupling
 - The main outlet for all totes containing Sodium Hypochlorite shall have a 1-inch male Cam lock coupling.
- The contractor must provide the chemicals in the concentrations listed in section 3.0. If these exact concentrations cannot be provided, any alternate concentrations must be reviewed and approved by 2WPT Engineering in advance of procurement.
- Bulk Sulfuric Acid shall be delivered using a 2-inch female “Cam lock” fitting.
- The date of manufacture shall be identified on all totes.
- Fall protection systems on tanker truck or installed ground operated valves to vent tank without needing to climb on top of the tank.
- Storage of bulk sulfuric acid to provide QC sampling results prior to delivery (See Section 3.5 for engineering email).

3.4 Contractor Oversight

On occasion, CPCCo will visit and oversee preparation, mixing, and/or packaging of the chemicals at the contractor’s facility. The objective of the visit is to assess potential for cross-contamination, cleanliness of equipment and containers, chemical testing, accuracy of data/information management, etc.

3.5 Sampling/Testing Requirements

- Each chemical delivered will have various types of sampling requirements that may include the following:
 - Contractor Quality Control (QC) testing frequency shall be such that each lot, batch, or bulk amount of chemical shall be tested. Each lot, batch, formulation, etc. shall be assigned a unique identifier that matches it to the testing results and matches to individual totes or tank truck deliveries. The QC

test results will be provided in advance of delivery in the form of a COA (See Section 3.5 for engineering email).

- Contractor Quality Assurance (QA) testing, on a less frequent basis, a sample will be split with one portion analyzed by the contractor QC and other portion sent to an offsite certified laboratory for comparison. The contractor shall select, compensate, and coordinate with the certified off-site laboratory so that the QA is completely managed by the contractor. Laboratory certification shall be provided to 2WPT Engineering. The contractor will report the results of the QA sampling to 2WPT Engineering by e-mail (See Section 3.5 for engineering email). This QA component ensures the contractor testing is accurate without incurring excessive offsite analytical testing cost.
- A Certificate of Analysis (COA) shall be provided prior to shipment and approved by 2WPT Engineering by e-mail. Send to [Samuel S Cartmell@rl.gov](mailto:Samuel_S_Cartmell@rl.gov), [Gabe L Slape@rl.gov](mailto:Gabe_L_Slape@rl.gov), and [Byron G Miller@rl.gov](mailto:Byron_G_Miller@rl.gov). One of these individuals will review the COA and authorize shipment via a responding e-mail. If the proper specifications are not met, the issue must be resolved prior to shipment.
- The chemical totes shall be identified such that they can be matched to the specific COA and to other supplemental analytical laboratory data (as necessary) by lot number, formulation number, or other method.

3.6 Sampling/Testing Requirements Sulfuric Acid

| | |
|--|-----|
| QC Sampling and COA approval prior to shipment | Yes |
| QA Sampling for impurities and report provided to 2WPT Engineering prior to shipment | No |

3.6.1 QC Sampling and COA Approval

Certification of acid strength must be provided in advance of each shipment via a COA.

- Concentration of H₂SO₄ by titration (93 wt% minimum)

3.6.2 QA Sampling for Impurities

The following QA tests shall be performed on a sample collected from every shipment of sulfuric and sampled for the below analytes at the detection levels listed. Testing shall be performed by a lab accredited by the Washington State Department of Ecology or by the National Environmental Laboratory Accreditation Program using Method 3120 B or SM 3111 or equal, Standard Methods for the Examination of Water and Wastewater. Samples shall be collected before delivery and results are provided to CPCCo within 6 weeks of delivery.

| <u>Metal</u> | <u>Desired Detection Limit (mg/L)</u> |
|--------------|---------------------------------------|
| Antimony | 0.10 |
| Arsenic | 0.10 |
| Barium | 0.05 |
| Bismuth | 0.005 |
| Cadmium | 0.05 |
| Chromium | 0.05 |
| Copper | 0.05 |
| Iron | 0.02 |
| Lead | 0.05 |
| Manganese | 0.05 |
| Mercury | 0.002 |
| Nickel | 0.10 |
| Selenium | 0.10 |
| Zinc | 0.05 |

3.7 Sampling/Testing Requirements Anti-Scalant

| | |
|---|-----|
| QC Sampling and COA approval prior to shipment | No |
| Quarterly QA Sampling for impurities and report provided to 2WPT Engineering within 6 weeks | Yes |
| Annual QA sampling and report provided to 2WPT Engineering within 6 weeks | No |

The following QA tests shall be performed quarterly on TRT Anti-Scalant (Nalco CL-50 or 3DT120) and sampled for the below analytes at the detection levels listed. Testing shall be performed by a lab accredited by the Washington State Department of Ecology or by the National Environmental Laboratory Accreditation Program using Method 3120 B or SM 3111 or equal, Standard Methods for the Examination of Water and Wastewater. Samples shall be collected before delivery and the results shall be provided to the BTR and 2WPT Engineering personnel within six weeks of delivery.

| <u>Metal</u> | <u>Desired Detection Limit (mg/L)</u> |
|--------------|---------------------------------------|
| Antimony | 0.10 |
| Arsenic | 0.10 |
| Barium | 0.05 |
| Bismuth | 0.005 |
| Cadmium | 0.05 |
| Chromium | 0.05 |
| Copper | 0.05 |
| Iron | 0.02 |
| Lead | 0.05 |
| Manganese | 0.05 |

| | |
|----------|-------|
| Mercury | 0.002 |
| Nickel | 0.10 |
| Selenium | 0.10 |
| Zinc | 0.05 |

3.8 Sampling/Testing Requirements Sodium Hypochlorite

| | |
|---|-----|
| QC Sampling and COA approval prior to shipment | No |
| Quarterly QA Sampling for impurities and report provided to 2WPT Engineering within 6 weeks | Yes |
| Annual QA sampling and report provided to 2WPT Engineering within 6 weeks | No |

The following QA tests shall be performed quarterly on Sodium Hypochlorite and sampled for the below analytes at the detection levels listed. Testing shall be performed by a lab accredited by the Washington State Department of Ecology or by the National Environmental Laboratory Accreditation Program using Method 3120 B or SM 3111 or equal, Standard Methods for the Examination of Water and Wastewater. Samples shall be collected before delivery and the results shall be provided to the BTR and 2WPT Engineering personnel within six weeks of delivery.

| <u>Metal</u> | <u>Desired Detection Limit (mg/L)</u> |
|--------------|---------------------------------------|
| Antimony | 0.10 |
| Arsenic | 0.10 |
| Barium | 0.05 |
| Bismuth | 0.005 |
| Cadmium | 0.05 |
| Chromium | 0.05 |
| Copper | 0.05 |
| Iron | 0.02 |
| Lead | 0.05 |
| Manganese | 0.05 |
| Mercury | 0.002 |
| Nickel | 0.10 |
| Selenium | 0.10 |
| Zinc | 0.05 |

3.9 Sampling/Testing Requirements Citric Acid

| | |
|---|-----|
| QC Sampling and COA approval prior to shipment | No |
| Quarterly QA Sampling for impurities and report provided to 2WPT Engineering within 6 weeks | Yes |

| | |
|---|----|
| Annual QA sampling and report provided to 2WPT Engineering within 6 weeks | No |
|---|----|

The following QA tests shall be performed quarterly on Citric Acid and sampled for the below analytes at the detection levels listed. Testing shall be performed by a lab accredited by the Washington State Department of Ecology or by the National Environmental Laboratory Accreditation Program using Method 3120 B or SM 3111 or equal, Standard Methods for the Examination of Water and Wastewater. Samples shall be collected before delivery and the results shall be provided to the BTR and 2WPT Engineering personnel within six weeks of delivery.

| <u>Metal</u> | <u>Desired Detection Limit (mg/L)</u> |
|--------------|---------------------------------------|
| Antimony | 0.10 |
| Arsenic | 0.10 |
| Barium | 0.05 |
| Bismuth | 0.005 |
| Cadmium | 0.05 |
| Chromium | 0.05 |
| Copper | 0.05 |
| Iron | 0.02 |
| Lead | 0.05 |
| Manganese | 0.05 |
| Mercury | 0.002 |
| Nickel | 0.10 |
| Selenium | 0.10 |
| Zinc | 0.05 |

3.10 Organizational Interfaces

The Contractor shall interface with various Buyer (and other) organizations through the Buyer’s Contract Specialist (or designee), as required.

3.11 Materials and Equipment

Contractor is responsible for providing all equipment, tools, materials, supplies, and each and every item of expense. The following equipment and materials is a non-inclusive list:

- All industrial safety equipment for Contractor personnel (e.g., eye protection, hard hats, steel-toed footwear, gloves, face shields, splash protection).
- Appropriate hearing protection for all contractor personnel.
- Fire extinguishers.
- Cellular telephone or other communication device capable of initiating emergency notifications at remote work sites.
- All equipment required for the off-loading of bulk chemicals.
- Chemical protective equipment (e.g., chemical compatible gloves, splash protection goggles, full face shield, rubber boots, chemical resistant jacket and pants).

3.12 Delivery of Materials, Supplies, and Site Coordination Requirements

Regarding deliveries of materials and supplies, and the coordination of Subcontractors while on the CPCCo Site, the Contractor shall:

- Coordinate deliveries with BTR in advance.
- Arrange for badging through the Contract Specialist.
- Communicate any special hazards associated with the delivery or the work (e.g., safety, security)
- Meet the CPCCo contact at the designated rendezvous point. The individual designated to meet the Contractor is called the DPOC or POC (Delivery Point of Contact or Point of Contact).
- Comply with DPOC direction to the specified work location.
- Conduct a walk down of the work location with the DPOC upon request.

The DPOC will be physically present at the delivery site for the entire time a delivery or work is being executed to ensure that it is performed safely and in accordance with Contract requirements. Alternate arrangements may only be made with the approval and concurrence of the CPCCo BTR.

At completion of the delivery or work, delivery driver will exit the Site in a timely manner as directed by the DPOC.

Delivery tanker trucks and chemical totes are required for portions of this work scope. Other methods may be specified or approved by CPCCo on a case by case basis. Contractor personnel will be required to wear PPE during offloading operations as required by facility specific work packages.

4.0 TECHNICAL REQUIREMENTS

Contractor shall perform in accordance with the terms and conditions of this Contract, Buyer’s internal policies and procedures, and quality assurance provisions, including safety programs, laws, orders, permits, rules, confidentiality of information and intellectual property safeguards.

4.1 Procedures

The following latest version of the procedures included below, are hereby incorporated into and made a part of this SOW, as applicable. They shall have the same force and effect as if written into the body of the SOW.

| | |
|-------------------|--|
| DOE-0359 | <i>Hanford Site Electrical Safety Program(HSESP)</i> |
| CPCC-PRO-SH-40078 | <i>Appendix F, Safety Program</i> |
| CPCC-PRO-SH-40410 | <i>Hazard Communication Program</i> |
| CPCC-PRO-SH 40516 | <i>Chemical Management</i> |

4.2 Electrical Safety Requirements

Services under the management of the Contractor shall be performed in accordance with *CPC-PRO-SH-40078 – Contractor Safety Processes, Appendix F – Safety Program Specifications for Contractors, Section 3.11*, which flows down the 10 CFR 851 and Hanford site requirements to the Contractor.

For the purpose of worker safety, electrical equipment must be per DOE -0359 Hanford Site *Electrical Safety Program Requirements*. Electrical equipment and industrial control panels delivered or brought on to the site in performance of the contract must be labeled by an organization currently recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL). All equipment installed as part of the contract must comply with the National Electric Code (NEC), NFPA 70 and, where applicable, ANSI C2 (NESC).

4.3 Fire Prevention Requirements

- A. All services under the management of the Contractor shall be performed in accordance with *CPC-PRO-SH-40078, Contractor Safety Processes, Appendix F*.
- B. All vehicles that require a portable fire extinguisher must be secured in an approved manner (vehicle mounting bracket designed for the specific extinguisher or stowed in a secured equipment container).
- C. In the case of a fire, immediately contact the Hanford Site Fire Department at 509-373-0911.

4.4 Transportation of Hazardous Materials

Requirements in the applicable sections of 49 CFR, parts 171-178 apply to transportation of a hazardous material in commerce and to each person who transports a hazardous material in commerce. Transportation of a hazardous material in commerce begins when a carrier takes physical possession of the hazardous material for the purpose of transporting it and continues until the package containing the hazardous material is delivered to the destination indicated on a shipping document. Transportation of a hazardous material in commerce includes the following:

- Movement of a hazardous material
- Loading of packaged or containerized hazardous material onto a transport vehicle
- Emptying a hazardous material from the bulk packaging after the hazardous material has been delivered to the consignee when performed by carrier personnel or in the presence of carrier personnel.
- Empty trucks of hazardous materials.

In addition, the carrier must also meet the Federal Motor Carrier Safety Regulations as prescribed by:

U.S Department of Transportation Federal Motor Carrier Safety Administration 49 CFR Parts 40, 382, 383, 385, 387, 390-397.

4.5 Work Management Requirements

Work shall be performed in accordance with existing CPCCo procedures, policies, guidance documents, etc. No work shall be performed that is out of scope to the contract. If work is

determined to be out of scope or questionable, work shall be stopped, issue/concern defined and evaluated. Revision to contract shall be prepared.

Requirements for coordinating, scheduling, and releasing work will be determined and specified by the BTR, and (if any) the facility organization associated with the activity.

4.6 Cleaning, Cleanliness, and Foreign Material Exclusion Requirements

Contractor shall maintain cleanliness and foreign material exclusion by proper management of utilized materials to prevent intrusion of foreign materials. Contractor shall store and maintain materials, components, etc. in such a condition that damage is not encountered and meet manufacturer and CPCCo requirements.

5.0 PERSONNEL REQUIREMENTS

5.1 Training and Qualification

- A. Task specific or unique training or qualifications required for this task includes:
 - a. CPCCo General Employee Training (CGET) or Hanford Site Orientation.
 - b. Special hazard training (i.e., Hazardous Material Transportation)
- B. The Contractor is expected to provide appropriately trained and qualified staff to perform the type of work associated with their skill of craft at the Hanford site.
- C. Buyer will provide Contractor staff task or facility specific training as required for site and facility access and safe performance of assigned tasks.
- D. Testing requirements for personnel who will be working in substance Testing Designated Positions.

5.2 Security and Badging Requirements

For any on site work, general site access badging is required.

- Special clearance requirements will be provided, if applicable.

5.3 Site Access and Work Hours

- A. Work shall be done on a 4 x 10 schedule. The standard workday shall consist of ten (10) hours of work between 6:00 AM and 4:30 PM, with one-half hour designated as an unpaid period for lunch. No work occurs on the non-working Fridays. If schedule alternative is required BTR will communicate to Contractor's contact.

6.0 ENVIRONMENTAL, SAFETY, HEALTH, AND QUALITY REQUIREMENTS

The Contractor shall perform work safely, in a manner that ensures adequate protection for employees, the public, and the environment, and shall be accountable for the safe performance of work. The Contractor shall comply with, and assist Buyer in complying with Environmental, Safety, Health, and Quality (ESH&Q) requirements of all applicable laws, regulations and directives.

Materials supplied or purchased for use in performance of this Contract, to the maximum extent practical, shall be environmentally preferred as described in 40 CFR 247 and including Biobased products as designated by the USDA. www.biopreferred.gov

The following project-specific ESH&Q requirements are applicable to this scope of work in addition to the requirements identified in the Contract [General Provisions](#) and, when work is being conducted on site, the additional ESH&Q requirements in [SP-5](#) (*Special Provisions – On Site Services*) shall be followed.

7.0 MEETINGS AND SUBMITTALS

7.1 Meetings

After contract award, the contractor shall participate in a Project Kickoff Meeting, which may be a conference call, an internet meeting, or a meeting to be held at CPCCo's Site. The time, date, and agenda for the meeting will be provided to the Contractor by CPCCo.

The Contractor shall interface with various CPCCo (and other) organizations through CPCCo's Contract Specialist (or designated BTR for in-scope work), as required, or at points and frequency determined by the Contract Specialist.

7.2 Submittals

None

8.0 DELIVERABLES, PROJECT CONTROLS, MILESTONES, AND PERFORMANCE SCHEDULE REQUIREMENTS

- A. Deliverables include: Chemical mixtures with associated documentation as identified in Section 3.0.

ATTACHMENT 1

Table 1. Just-in-Time Chemicals Inventory

| Chemical | Lead Time (Delivery) | Type of Unit | # of Units on Standby | Volume per Unit (Gal) | Total Vol. on Standby (Gal) |
|-------------------------------------|-----------------------------|---------------------|------------------------------|------------------------------|------------------------------------|
| Anti-Scalant (Nalco 3DT120 or CL50) | 2 - 3 Weeks | Tote | 2 | 275 | 550 |
| Citric Acid | 1 Week | Tote | 1 | 275 | 275 |
| Sodium Hypochlorite | 1 Week | Tote | 3 | 275 | 990 |
| Sulfuric Acid | 1 Week | Truck | N/A | N/A | N/A |