



Statement of Work

Revegetation of Sites under the Long Term Stewardship Program

Title: Revegetation of Sites under the Long Term Stewardship Program

Revision Number: 0

Date: August 28, 2013

**Statement of Work for
*Revegetation of Sites under the Long Term Stewardship Program***

Revision 0

August 28, 2013

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

* Approval for Technical Content

INTRODUCTION / BACKGROUND

The Department of Energy's near-term cleanup objective is to significantly reduce the footprint of active cleanup operations within the next five years for the Hanford Reach National Monument and the River Corridor. The Hanford Long Term Stewardship (LTS) Program is responsible for ensuring the protectiveness of the remedy is maintained and managing the land once the cleanup objectives are achieved.

The immediate focus of the LTS program is on the River Corridor area and the transition of the geographic areas into the LTS Program as cleanup and restoration is completed. The LTS program is responsible to ensure sites that are revegetated under CERCLA by the cleanup contractors meet the minimum success criteria specified in the Biological Resources Management Plan (BRMaP). Sites that do not meet the minimum success criteria must be rectified.

OBJECTIVE

Perform supplemental revegetation activities on sites under the LTS program as needed to meet the vegetative and diversity requirements specified in the BRMaP.



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DESCRIPTION OF WORK – SPECIFIC

During the course of remediation of hazardous or contaminated waste sites on the Hanford Reservation under CERCLA, large areas of land are stripped of their native vegetation, dug out to remove all contaminants then backfilled and revegetated with native species. The purpose of this subcontract is to complete supplemental revegetation activities as needed on sites that do not meet the minimum success criteria as defined in the BRMaP.

The SUBCONTRACTOR shall provide the equipment, fuel, labor and materials (as specified) necessary to rip and smooth compacted soils, mix and uniformly broadcast seed, fertilize, ring roll, lay down straw mulch, crimp into the soil surface to prevent wind erosion, irrigate, and plant shrub seedlings on previously revegetated areas around the 100-F Area on the Hanford site.

Area specific tasks will be developed to specify which areas needs which additional supplemental plantings eg, grass or forb seeds, seedlings, etc. The subcontractor will perform the area specific revegetation elements on a site specific basis as determined MSA Subject Matter Expert.

The Subcontractor shall provide the planting materials as prescribed in area specific revegetation areas. Subcontractor material include:

Shrub Seedlings

- 4 cubic inch
 - Propagated from seeds collected within 50 miles of the Hanford site
 - Grown in the Pacific Northwest
 - Propagated in Ray Leach tubes
 - Seedlings shall be either jelly rolled or in place bags
 - Each jelly roll or plastic bag shall have the same number of plants per container
 - Containers shall be delivered in boxes with set number of plants per box and with each box labeled with species and number of plants
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- Sagebrush
 - Bitterbrush
 - Hopsage

Grass Seeds

- Sandberg's Bluegrass
- Sand Dropseed
- Bottlebrush Squirreltail



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- Grass seeds shall be certified and source identified from a location within 50 miles of the Hanford site.
- All grass seeds shall be planted at a Pure Live Seed (PLS) rate

Forbs

- Munro's globemallow *Sphaeralcea munroana*
- Carey's balsamroot *Balsamorhiza careyana*
- Cusion fleabane *Erigeron poliospermus*
- Shaggy fleabane *Erigeron pumilus*
- Hoary aster *Machaeranthera canescens*
- Pale evening primrose *Oenothera pallida*
- Yarrow *Achillea millifolium*
- Slender hawksbeard *Crepis atribarba*
- Turpentine springparsley *Pterixia terebinthina*
- Snow Buckwheat *Eriogonum niveum*
 - Forb seeds shall be source identified from a location within 50 miles of the Hanford site.
 - Forbs will be either seeded or planted as seedlings.
 - 4 cubic inch
 - Propagated from seeds collected within 50 miles of the Hanford site
 - Grown in the Pacific Northwest
 - Propagated in Ray Leach tubes
 - Seedlings shall be either jelly rolled or in place bags
 - Each jelly roll or plastic bag shall have the same number of plants per container
 - Containers shall be delivered in boxes with set number of plants per box and with each box labeled with species and number of plants

Mulch

- Straw Mulch (application rate 2 ton/ac)
 - Straw shall be from a certified, source identified native seed crop
- Wood Fiber Mulch (application rate 2,000 lbs/ac)

Fertilizer

- Fertilizer application shall be applied at a rate of 120 lbs per acre, when specified by the BTR.

All materials shall be submitted for approval to the BTR at least 30 days prior to work initiation.

REQUIREMENTS

General



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For any work performed on the Hanford Site or any MSA controlled facility, the provisions of the [On Site Services Special Provisions - SP-5](#), will apply to Subcontractor personnel.

Specific Requirements for Seeding

- Daily report and count sheet shall include information including; daily completion for all items listed on Attachment A, plus pounds of seed, fertilizer, and irrigation applied to each waste site during the shift. The Daily report shall also include a list with a number of employees per type and number of hours worked, equipment and usage hours. The count sheet and report shall be submitted to BTR at the beginning of each shift for the previous work shift.
- Ensure even seed distribution across the entire area to be revegetated, all seed material shall be distributed at the specified seeding rate identified by BTR. There shall not be more than 10% excess seed remaining upon completion of all seeding.
- All broadcast seeds shall be covered with either wood fiber or straw mulch as identified in area specific instructions from BTR and crimped by the end of shift or irrigated with 2,000 gallons of water per acre upon completion of mulch distribution at no charge to the Contractor.
- All straw bales shall be dispersed over the seeded area prior to demobilization from the site, no unused bales shall be left on site.

Specific Requirements for Seedling Planting

- Daily shrub installation counts shall be included on the Daily report. The counts shall identify the vendor, species, and number of shrubs planted per **waste site**, not reactor area for the previous operational shift.
- Shrubs shall be planted at least 5 ft apart, **no exceptions**.
- Each shrub shall be placed in the planting hole, not dropped from waist height into the planting hole.
- Each planter shall ensure the seedlings are handled carefully and maintain the integrity of the seedling plug, ie boxes and bags of plants shall be handled with care.
- Each plug shall be planted to ensure the entire root structure and soil plug is installed **straight down**, completely buried, and heeled into place, as to eliminate any air pockets around the root structure. Each plant shall be planted with soil placed around the roots and not rocks. Should an auger be used to create a hole for planting, the hole shall not be drilled deeper than the shrub plug root structure, if a hole is drilled too deep it must be filled with soil, not rocks to eliminate the air pocket prior to installing the plant.
- The canopy of the plug shall be positioned in an upright stance upon completion of each installation.
- Each plug plant shall have the roots planted straight down.
- Only one plug shall be planted per hole – no exceptions.
- Do not plant plugs within 50 ft of any road.



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- Do not plant any plug within 100 ft of any ground water monitoring well or above ground pipeline
- Seedlings shall be planted parallel to roadways.
- Seedlings shall be planted to reduce the appearance of linear lines.
- If the planting location is too rocky with little to no sand/soil move to better planting location, areas skipped should be identified and the BTR may advise staff to skip those small areas.
- If seedlings are in poor quality, the SUBCONTRACTOR shall set the plants aside and report the finding to the BTR.

4.1 Engineering Requirements

N/A

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

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

As a minimum, the Subcontractor shall:

- Thoroughly review the defined scope of work;
- Identify hazards and ES&H requirements;
- Analyze hazards and implement controls;
- Perform work within controls; and
- Provide feedback on adequacy of controls and continue to improve safety management.

The Subcontractor shall make staff from each discipline available to participate in the development of the project specific Activity Job Hazard Analysis (AJHA).

APPLICABLE ES&H REQUIREMENTS

	Number	Title
1.	MSC-MP-32219	10 CFR 851 MSA Worker Safety and Health Program Description



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2.	MSC-MP-003	Integrated Environment, Safety, Health Management System Description
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4.3 Quality Assurance (QA) Requirements

N/A

4.4 Government Property

The Subcontractor will not use or be issued Government-owned property under this scope of work.

PERSONNEL REQUIREMENTS

5.1 Training and Qualifications

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

The following types of training qualifications are required:

- Hanford General Employee Training (HGET)

5.2 Security and Badging Requirements

For any on site work, see Special Provisions – On Site Services SP-5 for details.

Subcontractor employees will be required to submit to vehicle searches and not personally carry or transport certain prohibited articles. All subcontractor staff working on the Hanford Site will be required to wear a Hanford Site security badge.

5.3 Work Location / Potential Access Requirements

5.4 Site Access and Work Hours

The Hanford Site operates on the standard 8/9's schedule. The standard work day shall consist of nine (9) hours of work between 7:00 AM and 4:30 PM with one-half hour designated as an unpaid period for lunch. An eight (8) hour work day is substituted on alternate working Fridays, and no work occurs on the alternate non-working Friday. A 4/10 schedule is available with BTR approval. Any overtime must be approved by the BTR prior to being worked.

MEETINGS / SUBMITTAL

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



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DELIVERABLES AND PERFORMANCE SCHEDULE REQUIREMENTS

7.1 Deliverables

Subcontractor shall complete site specific the revegetation elements as identified and scheduled by the BTR.

7.2 Schedule

Start Date: TBD

Completion Date: TBD

SPECIAL REQUIREMENTS

Reports

- **PROGRESS REPORT PREPARATION** - Prepare a summary progress report each reporting period, show actual progress versus scheduled progress. Scheduled progress is given by baseline project schedule. Show actual progress in the form of percentages completed for activities or resources.



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Attachment A

Item No.	Description	Units	Unit Price	Units	Unit Price
1.0	Field Operatons				
1.1	Rip Compacted Soils	1-5 acres	Acre	> 5 acres	
	Broadcast Seeding Mechanical	1-5 acres	Acre	> 5 acres	
	Broadcast Seeding Manual	1-5 acres	Acre	> 5 acres	
	Irrigation (1,000 gallons per acre)	1-5 acres	Acre	> 5 acres	
	Mechinical Straw Mulch	1-5 acres	Acre	> 5 acres	
	Crimping	1-5 acres	Acre	> 5 acres	
	Planting of Shrubs	Per Plant			
2.0	Material Costs				
	Sagebrush Seedling	1-500 plants		>500 plants	
	Bitterbrush Seedling	1-500 plants		>500 plants	
	Hopsage Seedling	1-500 plants		>500 plants	
	Sandberg's Bluegrass	Per PLS	Pound		
	Sand Dropseed	Per PLS	Pound		
	Bottlebrush squireltail	Per PLS	Pound		
	Munro's globemallow <i>Sphaeralcea munroana</i>	Per PLS	Pound		
	Munro's globemallow <i>Sphaeralcea munroana</i>	1-500 plants		>500 plants	
	Carey's balsamroot <i>Balsamorhiza</i>	Per PLS	Pound		



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<i>careyana</i>		
Carey's balsamroot <i>Balsamorhiza careyana</i>	1-500 plants	>500 plants
Cusion fleabane <i>Erigeron poliospermus</i>	Per PLS Pound	
Cusion fleabane <i>Erigeron poliospermus</i>	1-500 plants	>500 plants
Shaggy fleabane <i>Erigeron pumilus</i>	Per PLS Pound	
Shaggy fleabane <i>Erigeron pumilus</i>	1-500 plants	>500 plants
Hoary aster <i>Machaeranthera canescens</i>	Per PLS Pound	
Hoary aster <i>Machaeranthera canescens</i>	1-500 plants	>500 plants
Pale evening primrose <i>Oenothera pallida</i>	Per PLS Pound	
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Snow Buckwheat <i>Eriogonum niveum</i>	Per PLS Pound	
Snow Buckwheat <i>Eriogonum niveum</i>	1-500 plants	>500 plants
Straw Mulch	Per Ton	
Wood Fiber Mulch	Per Ton	
Fertilizer, Triple 16, 7S	Per 100 lbs	