WORK PLAN
for
BIRCH SWAMP ROAD SITE
WARREN, RHODE ISLAND

Submitted to:
United States Environmental Protection Agency
Region I
Contract No. 68-W-03-037
Delivery Order 0085
Shaw Project 132757

Prepared by:

Shaw Environmental, Inc.

Shaw Environmental, Inc.
88C Elm Street
Hopkinton, MA 01748

August 10, 2008

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Approved by:

_____ Date
Taylor R. Treat, Shaw Program Manager

_____ Date
John F. Kiley, Shaw Response Manager

_____ Date
Melanie Morash, USEPA Region I On-Scene Coordinator

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1.0 INTRODUCTION

This work plan was developed by Shaw Environmental Inc. (Shaw) to achieve the objectives of the United States Environmental Protection Agency's (EPA) for the Time-Critical Removal at the Birch Swamp Road Site Warren, Rhode Island. The site location is shown on Figure 1-1. This removal will be performed under EPA Contract No. 68-W-03-037, Task Order No. 0019. The work has been divided into tasks for ease of implementation. Actions to be taken and necessary resources are identified and detailed by task.

The technical and regulatory approach was developed by the EPA On-Scene Coordinator (OSC) in conjunction with Shaw's Response Manager (RM) and Program Support Groups (Program Management, Health and Safety (H&S), and Technical Services). The work plan addresses EPAs mandate to protect human health and the environment by mitigating the risks posed by conditions at this site.

1.1 SITE DESCRIPTION AND HISTORY

The Site is further identified as a portion of lots Rhode Island Department of Environmental Management (RIDEM) during sediment sampling of the Kickemuit River in 2004. RIDEM's sampling results indicated elevated levels of polychlorinated biphenyls (PCB's), heavy metals (including lead), and semi-volatile organic compounds (SVOC's) to be present in Kickemuit River sediments. The Kickemuit River is a tributary of the Kickemuit (Warren) Reservoir drinking water supply, managed by Bristol County Water Authority (BCWA). The source water protection area for this public water supply includes the land occupied by the Birch Swamp Road Site.Due to the proximity of the Birch Swamp property to the Kickemuit River (which borders the site to the east), RIDEM identified the Birch Swamp Road Site as a potential source of sediment contamination in the river and on March 27, 2006 requested that the EPA assist by investigating the Birch Swamp Road Site.

EPA conducted a Removal Site Investigation (SI) on July 3, 11, and 12, 2007. The geographic coordinates, as measured from approximate center of the property, are 41 44' 43" north latitude and 71 15' 31" west longitudes. The Site is further identified as portions of Lots 4 (the Zompa property) and 175 (the Chace property) on the Warren Tax Assessor's Map 22.

Site hazards include surface soils contaminated with metals (including, but not limited to lead) and polychlorinated biphenyls (PCB's) exceeding RIDEM's Residential Direct Exposure Criteria (R-DEC) for soil (150 ppm and 10 ppm respectively). The maximum concentrations of lead were 7,000 ppm and for PCB's it was 59 ppm.

1.2 KNOWN CONTAMINANTS OF CONCERN

During the summer of 2007 and 2008, EPA investigated the extent of lead and PCB contamination within the foot print of the property. Elevated concentrations of lead and PCB's were identified.

- The primary hazardous substances at this site are lead and PCB's.
- Specific information on hazardous substances known to be present at the site will be provided in the site specific health and safety plan.

1.3 PROJECT OBJECTIVES

The objective of this time-critical removal is to mitigate any immediate threats to human health and the environment posed by past and potential chemical releases, or by the presence of hazardous materials at the site. The following is Shaw's evaluation of the major tasks to be completed to achieve this objective:

(1) pre-mobilization (planning) activities
(2) mobilize all appropriate personnel, equipment and support facilities;
(3) site preparation activities;
(4) soil excavation
(5) soil stockpiling
(6) monitor ambient air and provide corrective measures such as dust control, foam, and temporary shelter, as appropriate;
(7) transportation and disposal of excavated soils
(8) site breakdown/demobilization.

1.4 REGULATORY FRAMEWORK

This response will be conducted under Section 104 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), Subtitle I of the Resource Conservation and Recovery Act (RCRA) as amended by SARA of 1986. All response and cleanup activities will also be conducted in accordance with the contract and with the National Contingency Plan (50 CFR Part 300) and other applicable, relevant or appropriate environmental regulations (ARARs) as provided in EPA Superfund program guidance. In the absence of federal or state promulgated regulations, "to be considered" (TBC) criteria, advisories, guidance values and proposed standards may serve as useful guidance for response actions. Project-specific federal and state laws and associated regulations will be utilized to guide response actions and disposal activities.

1.5 REFERENCES

EPA, 2008, Action Memorandum, Request for a Removal Action, Birch Swamp road Site, Warren, Rhode Island USEPA Region I, 29 of July 2008.

2.0 PROJECT ORGANIZATION, SCHEDULE, AND RESOURCES

2.1 PROJECT ORGANIZATION

A Shaw RM will be onsite to coordinate all tasks performed by Shaw personnel and Shaw subcontractors. Key onsite project personnel are listed below.

US EPA Region I	
On-Scene Coordinator (OSC):	Melanie Morash EPA Region I/HBR 1 Congress St., Suite 1100 Boston, MA 02114-2023 Office 617.918.1298 Cell 617-571-5666
Site H&S Officer:	OSC Melanie Morash
START	
Onsite Lead:	Dennis Willette Weston Solutions, Inc. 37 Upton Drive Wilmington, MA 01887 Office 978.552.2100 Cell 978.621.8658
Shaw Environmental, Inc.	
Response Manger (RM):	John F. Kiley Shaw Environmental, Inc. 88C Elm Street Hopkinton, MA 01748 800.242.4644
T&D Coordinator	Gary Benham Shaw Environmental, Inc. 88C Elm Street Hopkinton, MA 01748 800.242.4644
Subcontractors:	To be determined

2.2 PROJECT COMMUNICATIONS

Clear and constant communication with the OSC, from work plan development through project completion, is vital to the safe, efficient, and cost-effective execution of this cleanup. Ongoing communications will include routine formal and informal project briefings with the OSC, as required. Briefings will provide status reports to track progress, costs and variances

requiring additional planning. The OSC will be consulted at all decision points that require EPA input. Decision points may include, but are not limited to: site resources; technical approach options; schedule; cost or billing issues; cleanup levels; analytical data review; and transportation and disposal (T&D) planning.

The RM will be the OSC's point of contact for all onsite activities, and is empowered to commit resources on behalf of the company. A phone and pager list will be developed and used to maintain communications throughout the project. The RM will also maintain communication with Shaw's Program Support Groups on an as-needed basis to discuss resources, upcoming tasks, required technical support, and other issues. Shaw is aware that the OSC is the project lead with respect to external communications and will defer all questions by others to the OSC.

2.3 PROJECT SCHEDULE

The proposed project schedule is to mobilize the site on the week of August 25, 2008 and begin with tree and brush removal. Concurrent with the clearing a rental box van (utilized as office/storage), portable toilets, heavy equipment and support equipment will be mobilized. During the week of August 25, 2008 the crew will start mobilizing and proceed to do non-intrusive work in preparation for excavation. Excavation will begin the week of September 1, 2008 and should be completed on or before October 15, 2008. Sufficient resources will be allocated to compress the project into the shortest possible schedule. Reducing the schedule will allow for optimum utilization of administrative and support resources and result in significant cost savings. The schedule also incorporates overlapping tasks to optimize onsite time and prevent multiple mobilizations.

2.4 PROJECT RESOURCES

The proposed project resources table is presented in Table 2-1. Resources will be effectively utilized throughout the project because tasks will be performed concurrently and/or the resources will be shared between tasks. This will also minimize mobilization, labor, and equipment costs. Shaw plans to initially mobilize two laborers and three equipment operators. The excavators and loader will serve as the primary pieces of heavy equipment used to perform the excavation.

Table 2.1 - Anticipated Project Resource Requirements

The Salem Heights Site- Salem, Massachusetts

No	UOM	Description
Personnel		
1	ea	Response Manager
2	ea	Equipment Operator
4	ea	Laborers (specific tasks)
1	ea	T&D Coordinator
1	ea	FC/T (Project Business Administrator)
Equipment & Materials		
1	ea	Excavator, tracked
1	ea	Loader, rubber tired
1	ea	Cell phone
1	ea	Rental box truck
8	rl	Polyethylene sheeting, 6-mil
1000	ft	Orange barricade fence
100	ea	5 ft metal fence posts
10	rl	Caution tape
2	ea	Scrub brushes
2	ea	Shovel, flat, lh, steel
2	ea	Shovel, pointed, steel
1	ea	Sledge hammer
1	ea	Spud bar
2	bu	Sorbent pads
2	bu	Sorbent booms
2	ea	Spade, lh, steel
1	ea	SPILL CONTROL KIT - 17-H drum w/ 3 bags sorbent material (speedi-dri or other clay base), bundle of sorbent pads; heavy duty plastic trash bags; roll of 6-mil polyethylene sheeting; brass shovel; broom; acid neutralizer (bisodium sulfate or other material); base neutralizer; sorbent booms, 3" round, 3 bales;
2	ea	Street broom, heavy bristle
Personal Protective Equipment		
1	ea	Biohazard kit
1	ea	Burn kit (gels, bandages, acid neutralizer, caustic neutralizer, etc.)
5	cs	Duck boot, latex
48	rl	Duct tape
1	ea	Emergency eye wash

Table 2.1 - Anticipated Project Resource Requirements

The Salem Heights Site- Salem, Massachusetts

No	UOM	Description
2	ea	Face shield
2	ea	Face shield bracket
1	ea	Fire blanket
3	ea	Fire extinguisher, 20-lb
1	ea	Fire extinguisher, 20-lb, ABC
1	ea	First-Aid kit
12	ea	Glove, leather
1	ea	50 ft sections hose, garden
TBD	Ea	MSDS sheets for each identified waste material
8	ea	Posters
5	Ea	Rain suit, 3XL
TBD	Ea	Cover-alls, 3XL
24		Signage
1	Cs	P-100 cartridges
10	Cs	Tyvek 4XL
1	Cs	Rubber sample gloves

3.0 SCOPE OF WORK

The following sections describe Shaw's approach for completing the project scope of work. This approach has been developed from information obtained at the premobilization site walk with the OSC and task order requirements.

3.1 TASK 1 - PREMOBILIZATION ACTIVITIES

Prior to mobilization, Shaw will complete tasks that will affect the overall success of the project. The tasks include: (1) review the Statement of Work and conduct a site visit with the OSC; (2) assemble the project team and hold a project kick off meeting; (3) prepare and submit a Work Plan; (4) review the EPA Health and Safety Plan; (5) establish the sequence of site activities; (6) identify and procure required materials, services, and resources; (6) identify underground utilities and other sensitive site features.

3.2 TASK 2 - MOBILIZATION AND SITE SETUP

Personnel, equipment and materials will mobilize from the Shaw Hopkinton, Massachusetts facility. A rental box van used both as an office and storage will be mobilized to the site. Telephone service will be mobile phones. Portable toilets will be placed onsite to provide sanitary facilities. Site security will be provided as directed by the OSC.

A site air-monitoring program will be implemented by a subcontractor (TBA) prior to starting the soil removals and continue through the excavation and soil transport stage. The HASP (under separate cover) addresses this issue with specific tasks, methods and action levels. Upon arrival at the site the Shaw crew will be required to read and sign the site-specific health and safety plan (HASP), read and sign the site-specific Conflict of Interest (COI) acknowledgement, and all other pertinent forms. A daily H&S/operations meeting will be conducted prior to commencement of site activities.

Shaw-owned or rented equipment to be used at this site will be inspected and photographed to document existing conditions upon arrival. Shaw reserves the right to refuse delivery based upon this inspection. All equipment will be clean and in good working order. The condition of all safety and other equipment such as lights (all functional), backup alarms (functional), fire extinguishers (present with current inspection), tires (in good condition), hoses and lines (in good condition with no leaks), etc., will be documented during the inspection.

3.3 TASK 3 - SITE PREPARATION

3.3.1 Delineate Work Zones

Site work zones will be clearly delineated.

3.3.2 Erosion Control and Surface Water Control

Silt fence and hay bales will be installed on the downgradient edges of excavation areas as outlined in the E&S Plan, to prevent offsite migration of eroded sediment into nearby residential properties.

Silt fence and haybales will be inspected weekly and after every adverse weather event. Any damage will be repaired within 24 hours of being noted during inspection.

The access road will be lined with a combination of silt fence and green metal mesh fencing. In some areas a combination of silt fence and hay bales will be utilized. All areas receiving either silt fence and/or silt fence and hay bales will be addressed in the Site Erosion and Sediment Plan. The metal mesh fencing will protect against domesticated animals belonging to residents being accidentally struck by vehicles using the access road. The metal mess fence will also keep access road vehicles from damaging plantings, bushes, trees and stone walls belonging to residents' property adjacent to the access road.

3.3.3 Pre-excavation Safety Protocol

All excavations will be conducted in a safe manner. The following tasks will be performed prior to beginning the excavations:

- all excavation areas will be thoroughly inspected for tripping hazards;
- all excavation areas will also be evaluated for the presence of utilities using existing site plans, public utility information sources, and utility location services;
- excavation area limits and underground utilities will be clearly marked (as available) prior to all intrusive activities;
- access to all excavation areas will be restricted to authorized personnel only using temporary fencing, caution tape, traffic cones, and warning signs;
- perimeter air monitoring stations will be established as directed by the OSC and appropriate monitoring and/or air sampling instrumentation will be placed;
- appropriate baseline air monitoring will be conducted while the EZ, CRZ, and support zone are established;
- support equipment and supplies will include fire extinguishers, spill/release control materials, dust control/vapor suppression equipment and supplies, and Level C personal protective equipment (PPE);
- excavation and support crew members will be briefed on their individual roles and responsibilities;
- excavation and support crew members will be instructed in the site-specific use of Level C personal protective equipment;
- Communications will be clear and concise; and,
- Task-specific Job Safety Analysis (JSA) sheets will be reviewed at a task operational meeting.

3.4 Task 4 – Soil Excavation

Excavated soil will be stockpiled according to contaminant type and level as determined by OSC. Soil stockpiles will be sampled and profiled. When the soil is removed from site it will be loaded into trucks and taken off site to an EPA approved site.

The soils that are excavated will be placed in stockpiles. These stockpiles will be constructed by first placing 6 mil poly on the ground where the soil will be placed. The area of soil placement will be encircled with a row of silt fence keyed in to comply with the Erosion and Sedimentation Plan (E&S Plan), then hay bales will be placed as called for in the E&S Plan. The piles will be kept damp to suppress any dust during working hours and at the end of each work day the piles will be covered with 12 mil blue tarps. The tarps will be secured with additional weight to protect them from being removed by the wind.

3.4.1 Soil Removal Procedures

All soil destined for off-site disposal or recycling will be fully characterized in accordance with the requirements of the selected disposal/recycling facility. Post excavation soil samples may also be collected at the direction of the OSC.

When the soil is excavated it will be placed in stockpiles according to PA/SI sampling results provided by the OSC. Before this activity is started some preliminary sampling will have to be done to test for leachability of the lead-contaminated soils. As the results of these samples are known it will allow us to better stockpile soils according to non-hazardous, hazardous or in the case of above 50 ppm PCB's TSCA waste.

All truck traffic used in soil removal activities will follow the Traffic Control Plan as well as the Work Plan.

3.4.2 Equipment Decontamination

All equipment will be decontaminated on an as-needed basis as well as prior to first use, between each work site, and prior to demobilization. Decontamination may be conducted using pressure washers, brushes, shovels or other appropriate methods. A decontamination pad and a tire scrubber will be utilized as out lined in the Traffic Control Plan.

3.6 TASK 6 - TRANSPORTATION AND DISPOSAL

The T&D Coordinator will conduct a final review of the revised waste inventory. All field testing and analytical data will be used to prepare the T&D Request for Quotes (RFQs). The RFQs will be sent to several disposal vendors who in the past have shown the ability to handle the types of waste efficiently. Site walks for the bidders may be scheduled before the bid due date

to familiarize the potential vendors with the site conditions and project requirements. The bidders will be requested to provide pricing for soil disposal.

Upon bid receipt, the T&D Coordinator will verify the CERCLA status of each disposal facility and will award a contract to the lowest qualified bidder. The disposal vendor will be required to have a representative onsite to oversee the load out. The onsite T&D subcontractor representative will inspect all trucks, review the shipping paperwork, make any corrections necessary, and present it to the OSC for signature.

Vehicles used to transport wastes will be inspected upon arrival at the site for cleanliness, proper placards, and tarpaulins. Once loading is complete, the onsite subcontractor representative will inspect the transport vehicle for cleanliness, to ensure that covers and tarpaulins are securely in place and tied down, and for placement of proper DOT placards.

3.7 TASK 7 - SITE RESTORATION

All soil removal areas will be backfilled with approved soil to grade and vegetated appropriately. The areas impacted by contaminated soil removal will be restored according to the site restoration section of the Site Erosion and Sediment Plan.

Samples of all fill materials will be collected and analyzed for constituents of concern, including, but not limited to, lead and PCBs. Analytical results of offsite soils will be reviewed by the OSC to evaluate whether the material is acceptable for use at the Site. Backfilled areas will be reseeded or otherwise restored following a plan developed by our site environmental engineer.

3.8 TASK 8 - DEMOBILIZATION

Upon completion of all tasks in the Work Plan, Shaw personnel will decontaminate all equipment and remove all temporary facilities and utilities. Contaminated equipment will be cleaned using appropriate measures such as high-pressure washing. All decontamination wash water and PPE will be containerized, sampled, and profiled for offsite disposal. Rented equipment will be returned to its respective vendor. Site sanitary will be maintained until all remediation-derived waste is removed from the site. All Shaw personnel and equipment will be dispatched back to their original offices.