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ADDENDUM 1 TO THE FINAL REMEDIAL ACTION WORK PLAN FOR ORION STREET AND  
FITCH AVENUE SKEET RANGE SOIL REMEDIATION NAS BRUNSWICK ME  
10/31/2013  
USA ENVIRONMENTAL INC

31 October 2013

ADDENDUM #1 TO THE FINAL REMEDIAL ACTION WORK PLAN

Orion Street Skeet Range (OSSR) & Fitch Avenue Skeet Range (FASR) - Soil Remediation  
Former Naval Air Station, Brunswick, Maine

This addendum to the Final Remedial Action Work Plan (RAWP) is prepared in accordance with October 22, 2013 discussions between the Navy, MEDEP, and the Remedial Contractor. A meeting was conducted at the Navy Caretaker's office at the former NAS Brunswick to discuss details of the proposed field work and to review the site conditions for any final coordination prior to commencing the soil excavation operations. Ms. Sait with the MEDEP requested additional detail to be provided for clarification. The team discussed and addressed several issues during the office meeting which was followed by a site visit to insure that remediation site procedures were executed to reflect agreements between the MEDEP and Navy. The excavation work began in the same afternoon, and is scheduled to proceed expeditiously in order to complete the work prior to hard freezing temperatures. It was agreed that an addendum to the RAWP in the form of a listing of bulleted items summarizing the agreed upon procedures would be appropriate.

1. Prevention of lead contaminated soil from being worked deeper into the soil by the heavy equipment during the tree removal, scraping of the leaf litter, and removal action:

The Navy has determined that the use of heavy machinery is necessary to support a cost effective soil removal effort. Hand digging everything would be cost-prohibitive, and not possible in many areas where the surface root layer is too heavy or on the steep slopes. The following efforts will be made to minimize the mixing the shallow surface soil with deeper soil, but it cannot be completely prevented.

- During tree removal trees will be cut close to ground surface. This will help minimize the maneuvering of the equipment as tree removal progresses and while soil is being scraped out.
- The contractor will attempt to scrape without excavation of the stumps that would leave deep holes. The primary equipment proposed for removing the upper soil layer is the rubber tracked excavator utilizing a straight edge 'clean-up' bucket, which is maneuverable at numerous angles. Front end wheel loaders and/or a larger tracked excavator with straight edge bucket will be used to load the soil onto trucks.
- If scraping results in smaller stumps or heavy root disturbance, it may be necessary to remove more of the loose material, resulting in what would be considered over-excavation. In addition, the sequencing is designed such that haul trucks are not entering excavated areas.

2. Status of additional data collection at the FASR in determination of the final boundaries and expected effectiveness of lead contaminated soil removal:

Elevated levels of lead have been found at a limited area of the FASR. The Brunswick Navy Team believes that mitigation of areas with known risk should be accomplished as soon as possible to the extent practical.

- Sampling has been accomplished by the USA team to properly characterize soil for disposal. Analytical results are available and were reviewed during the meeting. ALL concentrations in the waste characterization samples were below hazardous waste criteria.
- Based on the other analysis, the disposal facility will accept all of the soil from both OSSR and FASR as 'special waste'.
- Tetra Tech conducted additional soil sampling at varying depth intervals in order to better define the depth of lead contamination within the southern area. Lead contaminated soil

within this area extends deeper than 3 inches bgs in multiple areas, and the Navy recommends removal of 6 inches of soil within the boundary provided in Figure 6 for the FASR.

- In addition to this immediate remedial action, the Navy will continue to evaluate the FASR to ensure that appropriate environmental actions are considered and executed.

3. Clarification of the separation between the current DU-2 remediation areas and the impoundment ponds and Picnic Pond, which are referred to collectively as DU-4.:

The Navy is currently developing an investigation work plan to develop and verify a site conceptual model and risk assessment for the impoundment & Picnic Pond Drainage system. This work plan will be available for public review within the next several months. According to the Navy's current planned schedule, the field investigation will occur during the 2014 field season. However, for this remedial effort:

- The upland portion of the north embankment is included with the DU-2 remediation. The remedial contractor placed white pin flags to indicate the areas where soil removal would be extended further down the embankment, but not into the sediment of the pond. The team reviewed placement of pin flags and agreed with the extended boundaries (i.e. one in the SE corner of Area 1, one in the SW corner of Area 2, and a third along the south edge of Area 2).
- It was also clarified that in these extended areas, it is possible that the edge confirmatory samples will exceed cleanup goals', which will not result in additional excavation since the limits of excavation are at the edge of the pond.
- Additional soil samples will be collected in the area, as shown in Figure 5A, in order to obtain data in support of the Picnic Pond drainage system investigation. If the expanded excavation area encompasses the location of one or more of these proposed additional samples, the sample will not be collected.
- The actual boundaries of the excavations will be surveyed with the handheld GPS and included in the AAR.

4. Installation of backfill material and the impact this new soil layer as well as planned confirmatory samples will have on the calculation of the 95% UCL:

- The source fill has been tested, and the lead concentration is 12.5mg/kg.
- At this time, we do not anticipate needing to bring backfill on site. Without backfill, the bottom sample will be collected at 0 to 3 inches and the results will be treated as described in the work plan.
- In the event that backfill (top soil) is required in certain areas to promote re-vegetation at the OSSR, the confirmatory sample result will be evaluated to confirm that the cleanup goal is achieved, but the official 95<sup>th</sup> UCL calculated to evaluate the area will include the data from the fill material.
- At FASR, top soil material will be placed on site around existing hummocks where soil removal exposes or otherwise jeopardizes the tree roots. It is not anticipated that top soil will be spread out over most of the area, and the Navy expects to use the confirmatory bottom sample result to calculate the 95 UCL.
- In the unlikely event that top soil is placed over a notable extent of FASR or OSSR, the Navy will inform MEDEP of this change and we can discuss reevaluating how the bottom samples are treated.

5. Soil Staging and Equipment Decontamination:

The Navy will make all efforts to prevent haul trucks or equipment trailers from tracking lead contaminated soil to other areas.

- One decon area will be established within a paved parking area near clearance area 2.
- When necessary and before dispatching from the project, equipment will be steam-cleaned at the designated decon area. Steam cleaning will be employed at the decon area to remove contaminated soil that may be stuck to the equipment and minimize the amount of decon water to be collected and disposed of.
- Excavation equipment will remain within the footprint of the clearance area until it is needed at the next location.
- Equipment can be transferred from one excavation area to another without going to the decon area. Equipment will be transferred to the next location by backing a plastic lined trailer to the edge of the excavation for the equipment to drive onto the trailer without tracking onto the ground outside of the excavation. The plastic will be tied up around the tracks and bucket and the rig will move to the next location. The excavator will then be unloaded into the next clearance footprint, and the plastic rolled for reuse or disposed of with the soil load-out.
- Excavated soil will remain stock-piled within the excavation area boundaries and covered.
- Soil will be loaded from clearance areas into the trucks by bring the trucks to the edge of the clearance area and loading from the 'dirty' side.
- Although haul trucks and trailers will not enter the clearance areas directly, the wheels will still be brushed clean to minimize the potential of spreading contaminants outside of the work areas.
- Once lead contaminated soil has been removed and verified by the confirmatory sampling process, that area is considered clean. Equipment used for restoration will not require decon or the special handling described above.

#### 6. Control of Run-On and Run-Off Waters:

- The work plan addresses the use of check dams and erosion control mix (ECM) berms for the open excavation areas.
- ECM berms and check dams will be inspected after rain events and after working close to these temporary devices and repaired if damaged.
- If soils that are being removed are saturated with water, then stockpiles would be set up to allow the water to drain prior to off-site disposal.
- At the FASR, storm water appears to be discharging to the south end at a regular low rate. For the FASR storm water control:
  - A sump will be installed at the location where the water is discharging from the culvert into the clearance area.
  - This water will be pumped across the pedestrian path into the parkway utilizing a small trash pump.
  - Temporary turbidity control measures (i.e. ECM berm bordered by staked hay bales to hold the berm material in place) will be installed at the pump discharge.
  - The temporary pumping will be limited to the duration of work within that southernmost portion of the FASR where there is standing water as a result of the storm-water pipe outflow.
- Most trees within the clearance area boundaries will be left in place where they appear to be key to slope stabilization.
- Each clearance area will be restored upon completion of soil removal (i.e. replacement soil and/or slope stabilization mat installation will be performed upon completion of a particular clearance area).
- At the steep slope areas where the excavation is intended to get close to the pond sediments, there may be areas where it will be impractical to install ECM berm. In these limited areas, the excavation work on the slope may be conducted without installing ECM berms or silt fence. However, the erosion control slope stabilization mat is to be installed and properly anchored the same day.
- Work on these slope areas will not be conducted in heavy rain.

7. Staking and Grade Control:

USA's Site Manager is in charge of monitoring the excavation process for adherence to the proposed depths of excavation. 3 inches of soil is to be removed at the OSSR and 6 inches of soil is to be removed for remediation of the lead impacted soil at the FASR.

- Sidewall checks will be conducted frequently due to the variations in terrain and the need for constant monitoring.
- Grade stakes will be installed at manageable intervals to mark the top of the soil layer for verification of the removed soil depth.
- At the FASR, There are hummocks located throughout the FASR clearance area. Hummocks that do not have large trees growing out the tops will be removed. Otherwise, they will be hand excavated to remove the soil from the tree bases. So this simply requires constant monitoring by the on-site managers to insure the appropriate amount of soil is being removed.

8. Leaf and Duff Layers:

- It has been determined that attempting to remove the leaf and duff layer will be problematic, and is a risk to the integrity of the unexcavated top soil layer. Therefore, the bulk of this layer will be excavated and loaded out with the soil.
- Where practical, particularly for remaining small branches from the tree removal process, some of the material can be brushed aside and out of the clearance footprint utilizing the excavation equipment.
- If practical, this excess material may be piled for access to spread back onto the excavation area as a final restoration measure.

9. Accuracy of the Global Positioning System unit:

- The ProXRT has sub-meter accuracy, and accuracy depends on a number of factors, such as satellite positions, tree canopy, and time allowed for an accurate fix on a position.
- The remedial contractor will conduct a 'track log' to record the actual boundary of each area cleared. A track log is performed with the active GPS constantly recording the position, resulting in a recorded path. In this case, it will be a path of the clearance area boundary.

10. Use of Liners for Haul Trucks:

- The remedial contractor site manager will assess the conditions (i.e. integrity of the truck beds and gates) and make the final determination if lining is necessary to prevent leakage of contaminated soil or silty soil, particularly in wet conditions.
- Soils classified as *Special Waste* shall be managed and transported in accordance with requirements specified in <http://www.maine.gov/dep/waste/transpinstall/nonhaztransp.html>. More specifically, the requirements state that
  - all non-hazardous waste transported must be properly contained during transportation to prevent a discharge to the environment;
  - all non-hazardous waste transported within the State of Maine must be transported to solid waste facilities which are duly licensed or are exempt from licensing;
- As a result, lining of waste disposal containers shall be accomplished if necessary to prevent a discharge to the environment.
- All Soils exhibiting hazardous waste characteristics shall be transported in sealed containers to comply with RCRA and other State of Maine requirements.

11. Confirmatory Sampling of Excavation Area:

- In the unanticipated event that the excavation extends beyond 12 inches below adjacent ground surface, a sidewall sample will be collected, as appropriate, at the same frequency as perimeter samples.
- The SOP will be updated to indicate that the samples will be homogenized. The Navy will use Tetra Tech's SOP for soil collection as requested. For clarification all soil from the 12 inch x 12 inch sample location is to be removed from the ground for homogenizing.

12. Site Restoration:

Requirements for site restoration and planting will be different from site to site.

- Biodegradable jute mat will be installed and pinned in place on all sloped areas.
- Areas 3, 4, 5 & 6 will have a native vegetation seed mix applied and a mix of hard-wood and pine tree seedlings planted spaced about 10-ft (random, not in rows).
- Areas 2 & 3 will require seed mix, but will require fewer trees due to the number of trees to be left standing.
- FASR will be seeded only. Trees will not need to be planted due to the number of trees left in place and the cut hardwoods will re-grow. The seed is intended to provide vegetative re-growth on the hummocks, which will be re-built using imported soil. The rebuilt hummocks will then be wrapped with jute mat to keep them from washing down and promote vegetative growth from the seed mix.