DUGWAY PERMIT

MODULE VII

ATTACHMENT 10

HAZARDOUS WASTE MANAGEMENT UNIT
HWMU 63-2
POST-CLOSURE PLAN

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In compliance with Department of Defense physical security directives, figures are not included for public distribution

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1.0 INTRODUCTION

The objectives of this Post-Closure Plan (PCP) are to ensure that Dugway Proving Ground (DPG or Dugway) complies with the Post-Closure Permit issued by the State of Utah in accordance with Utah Administrative Code (Utah Admin. Code) R315-265 - Title 40 Code of Federal Regulations (CFR) §265.117 incorporated by reference, with respect to post-closure inspection requirements and tracking and inspections to ensure industrial site use. Groundwater monitoring related to releases from this site will be addressed in the Solid Waste Management Unit (SWMU) 180 post closure plan. In accordance with Title 40 Code of Federal Regulations (CFR) 270.28 and Utah Admin. Code R315-270-28, the post-closure plan is required to include specific information for a closed facility. As applicable to Hazardous Waste Management Unit (HWMU) 63-2, the information requirements include:

- General description of the facility;
- Description of security procedures;
- General inspection schedule;
- Preparedness and Prevention Plan;
- Facility location information (including seismic and flood plain considerations);
- Closure Plan or Closure Proposal;
- Certificate of Closure;
- Topographic map, with specific scale;
- Summary of groundwater monitoring data; and
- Identification of uppermost aquifer and interconnected aquifers.

Table 1 provides the regulatory citations for the general information requirements and the specific locations in this Post-Closure Plan where the specific information is presented.

Table 1: Summary of HWMU 63-2 Post-Closure Information Requirements Under 40 CFR §270.14 and Utah Admin. Code R315-270-28 and R315-270-14

Regulation Citation	Requirement Description	Location Requirement is Addressed
40 CFR §270.14(b)(1) Utah Admin. Code R315-270-14(b)(1)	General Facility Description	Section 2.0
40 CFR §270.14(b)(4) Utah Admin. Code R315-270-14(b)(4)	Security Procedures	Section 3.0
40 CFR §270.14(b)(5) Utah Admin, Code R315-270-14(b)(5)	General Inspection Schedule	Section 7.0, Module VII Table VII-3, and Module VII Form A
40 CFR §270.14(b)(6) Utah Admin. Code R315-270-14(b)(6)	Preparedness and Prevention	Section 4.0
40 CFR §§270.14(b)(11)(i-ii, v) Utah Admin. Code R315-270-14(b)(11)(i-ii, v)	Facility Location Information Applicable seismic standard	Section 5.0
40 CFR §§270.14(b)(11) (iii-v) Utah Admin. Code R315-270-14(b)(11)(iii-v)	Facility Location Information 100-year floodplain	Section 6.0
40 CFR §270.14(b)(13) Utah Admin. Code R315-270-14(b)(13)	Copy of the Closure Plan	Closure Report public comment ended on January 29, 2004 with no comments received

Table 1 (Continued): Summary of HWMU 63-2 Post-Closure Information Requirements Under 40 CFR §270.14 and Utah Admin. Code R315-270-28 and R315-270-14

Regulation Citation	Requirement Description	Location Requirement is Addressed
40 CFR §270.14(b)(14) Utah Admin. Code R315-270-14(b)(14)	Closure Certification and Notification	Section 9.0 and Appendix A
40 CFR §270.14(b)(16) Utah Admin. Code R315-270-14(b)(16)	Post-Closure Cost Estimate	Federal Facilities are exempt from this requirement
40 CFR §270.14(b)(18) Utah Admin. Code R315-270-14(b)(18)	Proof of Financial Coverage	Federal Facilities are exempt from this requirement
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19) (i)	Topographic Map Map Scale and Date	Figure 2 (1 inch = 1000 feet)
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19) (ii)	Topographic Map 100-year floodplain area	Section 6.0; HWMU 63-2 is not located within a verified 100-year floodplain area
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19) (iii)	Topographic Map Surface waters including intermittent streams	Figure 2. No distinct natural drainage features are evident at HWMU 63-2.
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19) (iv)	Topographic Map Surrounding land uses	There are no residential populations in the vicinity of HWMU 63-2. The closest residential area is English Village (approximately 14 miles away)
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19) (v)	Topographic Map A wind rose (i.e., prevailing windspeed and direction)	There are no residential populations in the vicinity of HWMU 63-2. The closest residential area is English Village (approximately 14 miles away). A wind rose is not deemed necessary for HWMU 63-2
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19) (vi)	Topographic Map Orientation of Map, North Arrow	Figure 2
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19) (vii)	Topographic Map Legal boundaries of the hazardous waste management facility	Legal boundaries have not been established at DPG for former HWMUs
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19) (viii)	Topographic Map Access control, fence, gates	Figure 3; Site specific access control was not deemed necessary due to remedial actions taken and DPG security restricting access for the common population
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19) (ix)	Topographic Map Injection and withdrawal wells	Figure 3; Water Supply Wells 4 and 5 are located in the vicinity of HWMU 63-2
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19) (xi)	Topographic Map Barriers for drainage or flood control	Figures 2 and 3. HWMU 63-2 features were demolished, and the HWMU was graded flat.
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(1)	Groundwater Monitoring Information Summary of Groundwater Data	Not Applicable. Post-closure groundwater monitoring is not required at HWMU 63-2.

Table 1 (Continued): Summary of HWMU 63-2 Post-Closure Information Requirements Under 40 CFR §270.14 and Utah Admin. Code R315-270-28 and R315-270-14

Regulation Citation	Requirement Description	Location Requirement is Addressed
40 CFR §270.14(c) Utah Admin Code R315-270-14(c)(2)	Groundwater Monitoring Information Identification of uppermost aquifer	Not Applicable. Post-closure groundwater monitoring is not required at HWMU 63-2.
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(3)	Groundwater Monitoring Information Delineation of the Waste Management Area	Not Applicable. Figure 2; Post-closure groundwater monitoring is not required at HWMU 63-2.
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(4)	Groundwater Monitoring Information Extent of Plume	Not Applicable. Post-closure groundwater monitoring is not required at HWMU 63-2.
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(5)	Groundwater Monitoring Information Detailed Plans/Engineering Report for Proposed Groundwater Program	Not Applicable. Post-closure groundwater monitoring is not required at HWMU 63-2.
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(6)(i)	Groundwater Monitoring Information Proposed List of Parameters	Not Applicable. Post-closure groundwater monitoring is not required at HWMU 63-2.
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(6)(ii)	Groundwater Monitoring Information Proposed Groundwater Monitoring System	Not Applicable. Post-closure groundwater monitoring is not required at HWMU 63-2.
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(6)(iii)	Groundwater Monitoring Information Background Values	Not Applicable. Post-closure groundwater monitoring is not required at HWMU 63-2.
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(6)(iv)	Groundwater Monitoring Information A description of the Proposed Sampling	Not Applicable. Post-closure groundwater monitoring is not required at HWMU 63-2.

2.0 FACILITY DESCRIPTION

The following provides a general description of HWMU 63-2, also known as the Carr Facility Septic Tank and Leachfield at Dugway Proving Ground (DPG or Dugway), as required by Utah Admin. Code R315-270-14(b)(1) (Figures 1 and 2).

2.1 HWMU 63-2 LOCATION AND HISTORY

HWMU 63-2, known as the Carr Facility Septic Tank and Leachfield, is located on the western boundary of the Carr Facility, about 400 feet (ft) east of Durand Road and 1,300 ft west of the facility's main entrance (Figure 3). HWMU 63-1, the Building 3445 Septic Tank and Leachfield, is located approximately 2,700 ft east of HWMU 63-2. The elevation in the HWMU 63-2 area is approximately 4,355 ft above mean sea level (msl). HWMU 63-2 consists of approximately 1,000 linear ft of an old 8-inch diameter vitrified clay sewer pipeline, an inactive septic tank, and an associated leachfield. Based on available aerial photographs, HWMU 63-2 became operational before 1953. Because specific information regarding the construction date of the septic tank and leachfield is not available, it is assumed that HWMU 63-2 became operational in 1942, when operations at DPG commenced. The septic tank and leachfield were in operation until approximately 1992 when lagoons designed to treat sewage from the Carr Facility became operational.

Based on a review of the as-built drawings and field observations, the HWMU 63-2 pre-cast septic tank was approximately 42 ft in length, 12 ft wide, and extended one foot above the ground surface. The tank consisted of two main compartments. The first compartment was approximately 30 ft long, and sloped to a maximum depth of 10 ft, four inches near the inlet. The second compartment was approximately 12 ft long, with a maximum depth of approximately five ft. The two-part pre-cast concrete septic tank was covered by three 24 square-inch doors to provide access, and a two-inch plank deck over several two- by six-inch joists. The tank was separated into two compartments by a two-inch thick and 30-inch long redwood baffle which was installed to prevent floating solids from building up and plugging the end of the outlet pipe.

2.2 PAST OPERATIONS

Influent from the buildings was conveyed to the septic tank through an underground 8-inch diameter vitrified clay pipe (VCP) installed at a depth of approximately five ft below ground surface (bgs). The clarified effluent then passed through a four-inch diameter sewage siphon, through a four-inch cast iron (CI) pipe, and finally though an eight-inch diameter effluent outlet VCP. An as-built drawing also depicts a separate four-inch diameter overflow CI pipe that was connected to the same eight --inch diameter effluent VCP. This eight-inch diameter effluent VCP was installed at a depth of approximately five ft bgs.

The leachfield, which is connected to the septic tank by the eight-inch VCP, reportedly included an array of approximately 12 parallel two-foot wide drainage trenches which were filled with cobbles (Figure 4). The drainage trenches are located approximately 80 ft northwest of the septic tank and are installed at ten-ft spacings at a minimum depth of four ft bgs. Each drainage trench is reportedly 100 ft in length and was installed at a 0.3 percent (%) slope. According to the potholing activities conducted during the HWMU 63-2 investigation, the trenches consist of a one-foot radius of river rock encompassed by native soils, which extend to a minimum depth of six ft bgs. The top four ft consist of backfill material.

While active, HWMU 63-2 received wastes from several buildings in the Carr Facility (except the Toxic Agent Transfer Building, which was serviced by HWMU 63-1), including offices, shops, a change house, and the Cold Transfer Building. According to an engineering drawing of the HWMU 63-2 sewage system, a persistent (nerve agent [VX]) storage building, a nonpersistent (Tabun [GA] and Sarin [GB]) storage building, a service and filling station, and a decontamination building were served by the septic tank and leachfield. It is believed that sanitary wastes comprised the bulk of the wastes. However, there is evidence that chemical and solvent wastes were disposed in the sanitary sewer system, although actual documentation of the types and quantities disposed of was not available. Past disposal practices in other areas (such as Baker Area and Ditto) suggest that laboratory wastes, including solvents, alcohols, and acids, may have been placed in the Carr Facility sanitary sewer system that fed to HWMU 63-2. In addition, as late as 1982 approximately 30 gallons of residues from dry cleaning solvents were sent annually to Carr for disposal in an unspecified manner. Some or all components may have been disposed in the HWMU 63-2 sanitary sewer system.

During pre-Consent Order activities in 1989, evidence of a new sewer pipeline, parallel to both the pipeline leading to HWMU 63-2 and the southwestern boundary fence, was observed. This pipeline extends to the new Carr Facility sewage lagoon, which replaced HWMU 63-2 in 1992. The new Carr Facility sewage lagoon is located outside the Carr Facility fence northwest of the leachfield. During the pipeline investigation, it was observed that a portion of the HWMU 63-2 influent pipeline was being used for operating the sewage lagoon. The influent pipeline was grouted and abandoned at a manhole located approximately 675 ft southeast from the septic tank. From that point to the tank, the pipeline was no longer in use. The manhole and the piping upstream of the manhole were in operation based on field observations.

2.3 PREVIOUS INVESTIGATIONS DOCUMENTATION

The detailed results of previous material, soil, and groundwater sampling, and closure information including the risk assessment are available, for HWMU 63-2, in the Utah Division of Waste Management and Radiation Control (UDWMRC), formerly the Division of Solid and Hazardous Waste (DSHW), public documents listed below in Table 2 (Utah Admin. Code R315-270-13(b)(13)).

Table 2: UDWMRC Library Documents Detailing HWMU 63-2 Investigations

Document Title	Received Date	UDWMRC Library No.
Ebasco Services Incorporated, 1993. *Final Nature and Extent Investigation Plan No. 7 – SWMUs 55, 63, 90, and 124*. April.	5/03/1993	DSHW-1993-004604
Foster Wheeler Environmental Corporation (FWEC), 1995. *SWMU Closures at Dugway Proving Ground, Interim Report, Volume 4, Appendix F-Results of Data Validation.*	10/04/1995	DPG00027
IT, 2000. *Final Work Plan & Sampling and Analysis Plan for HWMU 63-2 Carr Facility Septic Tank and Leachfield, Revision 0*. June.	6/27/2000	DSHW-2000-005667
Shaw Environmental, Inc., 2004. *Final Closure Report For HWMU 63-1 Building 3445 Septic Tank and Leachfield & For HWMU 63-2 Carr Facility Septic Tank and Leachfield*. September.	09/17/04	DPG00370

2.4 CLOSURE ACTIVITIES

Dugway has completed closure actions for HWMU 63-2, and the site meets the risk-based closure criteria for future industrial use, as specified in Utah Admin. Code R315-101. The remedial activities performed at HWMU 63-2 are described in detail in the Final Closure Report (Shaw, 2004). The remedial investigation completed at HWMU 63-2 included soil and groundwater sampling. Monitoring well 063MW06 was confirmed to be present in the leachfield and was sampled. In addition, during the investigation the dimensions of the septic tank were confirmed, the sewer line in the vicinity of the septic tank was videologged and pothole trenching was performed in and around the leachfield. The pothole trenching was performed to confirm the spacing of the drainage lines in the leachfield, confirm the composition of the drainlines, and establish the limits of the leachfield. Remedial activities included decontamination of the septic tank, demolition of the above-grade portion of the septic tank and backfilling the below-grade portion of the septic tank with removed material that was sampled. In addition, imported fill material certified to be clean was added so that the void was completely filled. No waste is present at HWMU 63-2. The sample results were evaluated in human health and ecological risk assessments as discussed below.

2.5 HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT

Human health and ecological risk assessments were conducted and indicated that the remaining residual contamination at HWMU 63-2 does not pose an unacceptable risk as defined in Utah Admin. Code R315-101. The industrial cancer risk is less than 1E-04 and the Hazard Index is less than one. Ecological risks are expected to be minimal. Since no waste is present at HWMU 63-2, there is not any potential for escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, surface waters, or to the atmosphere. The human and ecological risk assessments are presented in the Final Closure Report (Shaw, 2004). A continuing source of groundwater contamination is not present in soil.

2.6 SURFACE WATER AND GROUNDWATER

No surface water features are evident in the area of HWMU 63-2. The nearest surface water feature is the northern branch of Government Creek which trends to the northwest and passes the Carr Facility at its southern corner (Figure 2)

The groundwater in the shallow zone at this site is non-potable with TDS values for samples collected from wells completed in the shallow aquifer are approximately 3,000 to 8,000 milligrams per liter (mg/L). In accordance with Utah Admin. Code R317-6-3.7, groundwater with TDS values above 3,000 mg/L to 10,000 mg/L is classified as non-potable, Class III.

HWMU 63-2 has been combined with SWMU 180 for groundwater monitoring under the Carr GMA.

2.7 CLOSURE NOTIFICATIONS

The Certification of Closure (Appendix A) verified by the Executive Secretary of the Utah Solid and Hazardous Waste Control Board on March 18, 2005.

Federal facilities are exempt from submitting notifications to the local zoning authority as required by Utah Admin. Code R315-264-116 and R315-264-119.

3.0 SECURITY REQUIREMENTS

HWMU 63-2 is located within a federal, military installation (Dugway Proving Ground). As such, access to the installation is restricted for the common population. Dugway's Base Security shall monitor access to HWMU 63-2.

4.0 PREPAREDNESS AND PREVENTION MEASURES

All wastes have been removed from HWMU 63-2. The Dugway Emergency Response and Contingency Plan of this Permit, where applicable to this site, shall be used to announce and respond to emergency conditions. At a minimum the site inspector should have a radio or phone and a First Aid kit available during inspections.

5.0 SEISMIC STANDARD

HWMU 63-2 is not located within 200 ft of any active faults. Although Utah is tectonically active, most of the earthquake activity occurs about 55 miles to the east along the Wasatch Range Foothills.

A geologic map completed in a 1988 study by the United States Geological Survey (Barnhard and Dodge, 1988), was used to determine the distribution, relative age, and amount and extent of surface rupture on Quaternary fault scarps, in the area of HWMU 63-2.

The USGS study (Barnhard and Dodge, 1988) concluded that morphologic and geologic data collected along the fault scarps in the area indicate that all were formed during the later Pleistocene era and there is not any clear evidence of Holocene surface rupture. Several faults inferred on geophysical evidence are located at Dugway; however, there is no evidence of displacement during Holocene time.

6.0 FLOODPLAIN STANDARD

HWMU 63-2 is not located within a 100-year verified floodplain. The National Flood Insurance Rate Map, identifying the boundary of the 100-year flood, does not include Dugway. These are no permanent streams or other surface water bodies on Dugway.

Surface water from precipitation flows through well-established drainage channels into the flat plain and evaporates. Like other arid regions, Dugway is subject to flash flooding following high-precipitation events. Flash floods have occurred only four times in the history of the installation, in 1944, 1952, 1973, and 1983. The major area affected during flash floods has been the Government Creek drainage channel, which has overflowed and caused minor inundation of roads at the Ditto Technical Center. One of the drainage channels of Government Creek is located near HWMU 63-2 (Figure 2).

7.0 POST-CLOSURE OPERATIONS AND INSPECTIONS

7.1 INTRODUCTION

HWMU 63-2 has been closed under a continued industrial use scenario, which prohibits residential use in the areas formerly occupied by the site. To ensure that the area is not reused or developed for residential purposes, annual site inspections and a biennial post-closure report shall be required.

7.2 GROUNDWATER MONITORING

Groundwater monitoring is addressed in the Carr GMA as referenced in permit condition in VII.Q.

7.3 ANNUAL INSPECTIONS

General site inspections of the former HWMU 63-2 site shall be conducted annually before November 1st to ensure that the former site remains under industrial use and to verify the Dugway Dig Permit process as described in Module VII.I has been followed. The general post-closure site inspection checklist for industrial use sites should be used. This checklist is included in Module VII as Form A. Completed inspection forms shall be filed with the Dugway Environmental Office.

The site shall be visually inspected to ensure the following conditions are maintained at the site:

- There is no evidence of land use other than for industrial purposes within the former site boundary; and
- There is no evidence of soil disturbance.

Table 3 summarizes the Post-Closure Inspection Schedule for HWMU 63-2, and lists the items to be inspected and potential problems. Inspection personnel shall note any problems found and shall inform appropriate Dugway representatives.

Table 3: HWMU 63-2 Post-Closure Inspection Schedule

Inspection/Monitoring Item	Method of Documentation	Frequency of Inspection
1) Land use for industrial purposes only. 2) Dugway's Base Security (Range Control) continues to monitor access to HWMU 63-2.	General Post-Closure Site Inspection Checklist for Industrial Use Sites (Module VII Form A)	Annual inspections shall be conducted no later than November 1st, of each year.

7.4 INSPECTION FOLLOW-UP

Copies of completed general post-closure site inspection checklists for industrial use sites (Module VII Form A) shall be forwarded to the Dugway Environmental Office. The Point-of-Contact for the Dugway Environmental Office is as follows:

Environmental Programs Compliance Representative
Dugway Proving Ground Environmental Program Office
Dugway Proving Ground, UT 84022
Telephone: (435) 831-3560

The Dugway Environmental Office shall notify the appropriate personnel to implement corrective action as needed.

Corrective action shall be initiated as soon as practical but no longer than 30 days of discovery. If the corrective action will require more than 30 days, a schedule of the correction will be provided to the Director for approval. If the corrective action requires substantial effort, a technical plan shall be prepared to summarize the problem, illustrate potential impacts, and clarify the proposed plan for action. Routine corrective actions will be recorded on the site inspection form in the comments with the date of the correction. This will ensure proper tracking of the resolution.

8.0 SUBMITTALS/REPORTING

Based on the evaluation presented in the Final Closure Report for HWMU 63-2, post-closure inspection is required for HWMU 63-2. Groundwater monitoring is not required.

8.1 NON-COMPLIANCE REPORTING

The conditions at HWMU 63-2 are such that the impact to human health and the environment is very unlikely. No wastes remain at the site. Hazardous wastes are no longer managed or maintained at the site. Nonetheless, if there is any type of non-compliance with any condition of this Permit, notifications shall be submitted per Permit Condition VII.C.5.

8.2 BIENNIAL POST-CLOSURE REPORT

In accordance with Utah Admin. Code R315-270-30(l)(9), a Biennial Post-Closure Report shall be prepared for all Dugway closed HWMUs and SWMUs undergoing post-closure care. Post Closure Reports shall be submitted to UDWMRC no later than March 1st, of the following year that the report is due. The first Post-Closure reporting year is 2007 for HWMU 63-2. This report shall be submitted no later than March 1st of 2008. Specifically for HWMU 63-2, the Biennial Post-Closure Report shall include, at a minimum, the following:

- General site description and conditions; and
- Inspection records.

8.3 REQUIRED SUBMITTALS

Table 4 summarizes the requirements for the Biennial Post-Closure Report for HWMU 63-2 and reporting for any non-compliance.

Table 4: Summary Table of Required Submittals

Required Submittals	Frequency and Submittal Date
Biennial Post-Closure Report	Post-Closure Reports shall be submitted to the UDWMRC no later than March 1st, of the year the report is due. Reporting years are odd numbered years beginning with March 2007, for the duration of the Post-Closure Monitoring Period.

Required Submittals	Frequency and Submittal Date
Non-Compliance Reporting	
1. Anticipated Non-Compliance (VII.C.5.).	1. 30 days advance notice of any change which may result in noncompliance
2. 24-hour Notification for information concerning the non-compliance, which may endanger public drinking water supplies or human health or the environment (VII.C.5.).	2. Orally within 24 hours of discovery
3. Five-day written notification for information concerning the non-compliance, which may endanger public drinking water supplies or human health or the environment. The Director may waive the 5-day notice, in favor of a 15-day notice (VII.C.5.).	3. Within 5 days of discovery
4. Written notification for information concerning the non-compliance, which does not endanger human health or the environment (VII.C.5.).	4. Submitted when the Biennial Post Closure Reports are submitted.

9.0 POST-CLOSURE CERTIFICATION

No later than 60 days after post-closure activities are completed and approved by the Director, Dugway representatives shall submit a certification to the Board, signed by Dugway and an independent professional engineer registered in the State of Utah, stating why post-closure care is no longer needed.

10.0 REFERENCES

Barnhard, T.P. and R.L. Dodge, 1988. *Map of Fault Scarps Formed on Unconsolidated Sediments, Tooele 1º x 2º quadrangle, Northwestern Utah*, United States Geological Survey.

Ebasco Services Incorporated (Ebasco), 1993. *Final Nature and Extent Investigation Plan No. 7 – SWMUs 55, 63, 90 and 124*. April.

Foster Wheeler Environmental Corporation (FWEC), 1995. *SWMU Closures at Dugway Proving Ground, Interim Report, Volume 4, Appendix F-Results of Data Validation.*

FWEC, 1999. *Dugway Proving Ground Closure Plan, Module 3, HWMU 63 Final*. January.

IT. Corporation, (IT), 2000. *Final Work Plan & Sampling and Analysis Plan for HWMU 63-2 Carr Facility Septic Tank and Leachfield, Revision 0.* June.

Parsons Environmental Science, Inc. (Parsons), 2004. *Final Hydrogeological Assessment and Regional Groundwater Monitoring Plan, Volume I, Ditto GMA.* Dugway Proving Ground, Utah. October.

Shaw Environmental, Inc. (Shaw) 2004. *Final Closure Report, for HWMU 63-1 Building 3445 Septic Tank and Leachfield & 63-2 Carr Facility Septic Tank and Leachfield, Dugway Proving Ground, Utah*. September.

APPENDIX A

COPY OF
CERTIFICATION OF CLOSURE

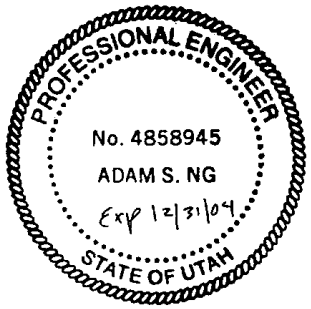
CERTIFICATION OF CLOSURE

The Closure Certification Report for Hazardous Waste Management Unit (HWMU) 63-2 at Dugway Proving Ground, Utah has been prepared by Shaw Environmental in accordance with the closure requirements specified under the Utah Administrative Code (UAC) 315-7-14 and 40 Code of Federal Regulations 265, Subparts G. The requirements of UAC 315-101 form the basis for the risk-based criteria in the closure of HWMU 63-2.

In accordance with 40 CFR 265.115, the signature and seal certify that a licensed professional has reviewed the Closure Report in accordance with the above referenced regulatory requirements.

Respectfully submitted,

Scott Reed
Directorate of Environmental Programs
Dugway Proving Ground



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