

DUGWAY PERMIT

MODULE VII

ATTACHMENT 47

**SOLID WASTE MANAGEMENT UNIT
SWMU 192 (DPG-192)
POST-CLOSURE PLAN**

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1.0 INTRODUCTION

The objectives of this Post-Closure Plan are 1) 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) §264.117 incorporated by reference, with respect to post-closure inspection requirements; 2) outline the requirements needed to prevent exposure or contact with waste left in place at this landfill site. To meet these objectives, this Post-Closure Plan provides detailed information regarding the location, regulatory criteria, and post-closure inspections at Solid Waste Management Unit (SWMU) 192, herein referred to as DPG-192. Post-closure requirements will continue for a minimum of 30 years after closure of DPG-192. The post-closure care period may be extended or shortened, as deemed necessary Utah Admin. Code R315-265 (40 CFR §264.117(a)(2) incorporated by reference).

In accordance with Title 40 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 DPG-192, 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 information is presented.

Table 1: Summary of DPG-192 Post-Closure Information Requirements Under 40 CFR §260.14 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 Description of the Facility	Section 2.0
40 CFR §270.14(b)(4) Utah Admin. Code R315-270-14(b)(4)	Description of Security Procedures	Section 3.0
40 CFR §270.14(b)(5) Utah Admin, Code R315-270-14(b)(5)	General Inspection Schedule	Section 6.0 and Form B of Module VII
40 CFR §270.14(b)(6) Utah Admin. Code R315-270-14(b)(6)	Preparedness and Prevention	Section 3.0

Table 1 (Continued): Summary of DPG-192 Post-Closure Information Requirements Under 40 CFR §260.14 and Utah Admin. Code R315-270-28 and R315-270-14

Regulation Citation	Requirement Description	Location Requirement is Addressed
40 CFR §§270.14(b)(11)(i-ii, v) Utah Admin. Code R315-270-14(b)(11) (i-ii, v)	Facility Location Information Applicable seismic standard	Section 4.3.1
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 4.3.2
40 CFR §270.14(b)(13) Utah Admin. Code R315-270-14(b)(13)	Copy of the Closure Plan	Phase II Resource Conservation and Recovery Act (RCRA) Facility Investigation Report was approved August 25, 2009 with no comments received.
40 CFR §270.14(b)(14) Utah Admin. Code R315-270-14(b)(14)	Closure Certification and Notification	Section 2.7 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 1 (1 inch = 1000 feet [ft]).
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19) (ii)	Topographic Map 100-year floodplain area	DPG-192 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 1
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19) (iv)	Topographic Map Surrounding land uses	DPG-192 is within a military base. There are no nearby operations in the vicinity of DPG-192.
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 abutting DPG-192. The closest residential area is English Village (approximately 36 miles away). A wind rose is not deemed necessary for DPG-192.
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19) (vi)	Topographic Map Orientation of Map, North Arrow	Figure 1

Table 1 (Continued): Summary of DPG-192 Post-Closure Information Requirements Under 40 CFR §260.14 and Utah Admin. Code R315-270-28 and R315-270-14

Regulation Citation	Requirement Description	Location Requirement is Addressed
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19) (vii)	Topographic Map Legal boundaries of the hazardous waste management facility.	Figure 1
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19) (viii)	Topographic Map Access control, fence, gates	Figure 1. The site is not surrounded by a fence.
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19) (ix)	Topographic Map Injection and withdrawal wells	Figure 1
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19) (xi)	Topographic Map Barriers for drainage or flood control	Figure 1. DPG-192 is graded to drain surface water away from the engineered cover. There is a run-on diversion channel on the east side of the project site to prevent water from coming onto the site.
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(1)	Groundwater Monitoring Information Summary of Groundwater Data	Section 2.6
40 CFR §270.14(c) Utah Admin Code R315-270-14(c)(2)	Groundwater Monitoring Information Identification of uppermost aquifer	Section 2.6
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(3)	Groundwater Monitoring Information Delineation of the Waste Management Area	Section 2.6
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(4)	Groundwater Monitoring Information Extent of Plume	Section 2.6
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(5)	Groundwater Monitoring Information Detailed Plans/Engineering Report for Proposed Groundwater Program	Section 2.6
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(6)(i)	Groundwater Monitoring Information Proposed List of Parameters	Section 2.6
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(6)(ii)	Groundwater Monitoring Information Proposed Groundwater Monitoring System	Section 2.6
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(6)(iii)	Groundwater Monitoring Information Background Values	Section 2.6
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(6)(iv)	Groundwater Monitoring Information A description of the Proposed Sampling	Section 2.6.

2.0 FACILITY DESCRIPTION

The following provides a general description of DPG-192, also known as the West Granite holding area, as required by Utah Admin. Code R315-270-14(b)(1).

2.1 DPG-192 Location and History

DPG-192 is an inactive landfill located on the northwest side of Granite Mountain, in a portion of the West Granite holding area (Figure 2) DPG-192 is bisected by a road which runs north-south through the approximate center of the site. The site is relatively flat with an average elevation 4,290 ft above mean sea level (msl). Locally, the surface of each of the backfilled disposal trenches is slightly elevated (on average approximately 1-2 ft) relative to the surrounding ground surface, and therefore, subtle mounds are present at each disposal trench.

2.2 Past Operations

As presented in the Final Phase II RCRA Facility Investigation (RFI), the trenches located at DPG-192 were used for the *in-situ* demilitarization of 36,000 Sarin gas-filled M55 rockets by open burning in place. Sixty-three trenches were excavated, sixty-one of which were used as burn pits. Reportedly, two trenches were not used. Multiple burial and burn activities were conducted in each pit from 1968 to 1969.

Between the fall of 1975 and September of 1976, material from the 61 burn pits was excavated for further treatment and eventual offsite disposal. Initially, the material was transported to Hazardous Waste Management Unit (HWMU) 7 where it was treated by a 24-hour minimum immersion in hot caustic soda solution to ensure chemical demilitarization of any possible remaining chemical agent. Then solid materials surviving this treatment were transported to nearby HWMU 9 for possible detonation or consolidation of remaining debris. Specifics regarding munitions recovery are detailed in the final operational report, Operation Report for the Disposal of Toxic Residue at West Granite Disposal Area (USA TECOM, 1977).

2.3 Previous Investigations Documentation

The detailed results of previous material, soil, groundwater sampling, and closure information including the risk assessment are available, for DPG-192, 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 R315-3-2.5(b)(13)).

Table 2: UDWMRC Library Documents Detailing DPG-192 Investigations

Document Title	Received Date	UDWMRC Library No.
Shaw Environmental, Inc., 2009a, Final Corrective Measures Study Report, Dugway Proving Ground, Dugway, Utah, March 11.	03/09	XXXX
Parsons Engineering Science, Inc. (Parsons), 2009, Final Phase II RCRA Facility Investigation, SWMU-192 Addendum, April	04/09	XXXX

Table 2: UDWMRC Library Documents Detailing DPG-192 Investigations

Document Title	Received Date	UDWMRC Library No.
Shaw Environmental, Inc., 2009b, Final Corrective Measures Implementation (CMI) Plan, Dugway Proving Ground, Dugway, Utah, December.	12/09	XXXX
Shaw Environmental, Inc., 2010, Corrective Measures Implementation Report for DPG-192, August	09/10	XXXX

2.4 Closure Activities

In compliance with Utah Admin. Code R315-265; 40 CFR §265.111 incorporated by reference, closure at DPG-192 has been completed with the construction of an engineered cover system consisting of a geomembrane-supported geosynthetic clay liner (GCL) placed over the identified waste trenches. A 4” rock cover was placed over the final engineered cover system to minimize erosion and protect the engineered cover systems integrity over time. Final approval for the DGP-192 Corrective Measures Implementation Plan (CMIP) (Shaw, 2010) was received in a letter dated May 27, 2010, from Mr. Dennis R. Downs, Utah Solid and Hazardous Waste Control Board. Appendix A includes a copy of the DGP-192 Closure Certification signed and stamped by a Utah-licensed Professional Engineer.

The final cover system, as designed and constructed, satisfies the requirements of Utah Admin. Code R315-265 (by reference 40 CFR Part 265, Subpart N, §265.310) for the closure and post-closure of DPG-192, namely:

- Provide long-term minimization of migration of liquids through the closed landfill;
- Function with minimum maintenance;
- Promote drainage and minimize erosion or abrasion of the cover;
- Accommodate settling and subsidence so that the integrity of the cover is maintained; and
- Achieve a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

In meeting the above performance standards, the major closure activities completed at DPG-192 included:

- Installation of the final engineered cover system;
- Installation of 4” minus rock cover over the final engineered cover system to minimize erosion;
- Installation of a run-on diversion channel to prevent water from flowing onto the site;
- Installation of two settlement monuments to monitor subsidence over time;
- Installation of warning signs around DPG-192; and
- Final grading of the site, including enhancement of drainage features, to help mitigate erosion and minimize long-term maintenance requirements during post-closure.

These measures will minimize human contact with the waste and provide protection of groundwater. An inspection checklist designed to insure that these objectives are maintained is presented in Module VII as Form B.

The investigative and closure activities performed at DPG-192 are described in detail in the CMIR (Shaw, 2010) and the Final Phase II RFI report, SWMU-192 Addendum (Parsons, 2009).

2.5 Human Health and Ecological Risk Assessment

Human health and ecological risk assessments, evaluating the extent of residual contamination at DPG-192, and its potential impact on the environment, were previously published in the RFI (Parsons, 2009). The risk assessments were performed in accordance with Utah Admin. Code R315-101, and indicated that the site soils and groundwater currently did not qualify for no further action (NFA) status based on hypothetical residential land use. However, there are no industrial soil or groundwater chemicals of concern (COCs) assuming actual/potential land use (i.e., industrial scenario). Soil-to-groundwater analyses indicated that future impacts to groundwater from 2,4,6-trinitrotoluene, RDX, nitroglycerin, and MPA were possible, hence groundwater sampling at SWMU-192 for these compounds may be conducted under the Downrange Regional Groundwater Management Plan (Parsons, 2007d).

The sampling results for the decontamination pads indicated the areas were un-impacted by site activities and no further action was deemed necessary for site closure.

The results of the ecological risk assessment resulted in two soil COCs showing potential hazards for populations of ecological receptors. The landfill cover system installed at DPG-192 is part of the corrective action in this regard, and should ensure protection of ecological receptors in the future.

2.6 Surface Water and Groundwater

Surface water samples were not collected during Phase I or Phase II investigations. No surface water or temporary ponding of water has been observed at this relatively flat site.

The Phase II RFI indicated that additional groundwater evaluation would be completed as part of the regional ground water approach under the Final Hydrogeological Assessment and Regional Groundwater Management Plan, Volume III, Downrange Groundwater Management Area (GMA) (Parsons, 2006). Studies are currently being underway to evaluate groundwater conditions at SWMU 192 and whether formal incorporation of SWMU 192 into the Downrange GMA is required. It is anticipated that these studies will be completed during the latter part of 2011. The results of this study will be presented in a separate report. If further monitoring is warranted, A GMA Change Request Form will be completed to change the text of the Downrange GMA and will include new corrective action objectives and monitoring or other requirements as needed.

Due to the overall low quality of groundwater in the western Dugway region, potable water resources have not been developed in the Granite Mountain area. Groundwater quality at DPG-192 is Class IV (saline) per Utah Admin. Code R317-6-3 (Division of Water Quality, 2002), with calculated TDS measurements ranging from approximately 29,700 to 64,700 milligrams per liter (Parsons, 2007). Depth to groundwater at DPG-192 averaged approximately 16 ft bgs. Water well WW32, located approximately 1.5 miles north of DPG-192, provides water only for hand washing and toilet flushing purposes at the United States (US) Air Force Strategic Training Range Complex, located west of Granite Mountain. Well WW10, located approximately 3.5 miles northeast of DPG-192, is used for dust suppression and range support only. Wells WW32 and WW10 are screened in deeper groundwater at depths ranging from 135 to 172 ft bgs (Parsons, 2007).

2.7 Closure Notifications

The Certification of Closure (Appendix A) was received and verified by the Executive Secretary of the Utah Solid and Hazardous Waste Control Board on December 12, 2011.

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

The following security conditions are applicable to DPG-192:

1. DPG-192 is located within a federal, military installation (DPG). As such, the installation is restricted for the common population.
2. In addition at DPG-192, signs are present warning against unauthorized entry.
3. Security facilities will be maintained and inspected throughout the post-closure care period. The security facilities (i.e., posted signs) to be inspected and the frequency of inspection are listed on the Post-Closure Inspection Schedule. Dugway shall report to the UDWMRC any decrease of Dugway's Base Security, which could affect the security conditions as applicable to DPG-192.
4. Damaged security facilities shall be noted in the general site inspection checklist (Form B of Module VII). Repairs shall be completed as soon as practicable after the problem is discovered, in compliance with Utah Admin. Code R315-264-15(c).

4.0 POST-CLOSURE OPERATIONS AND INSPECTIONS

4.1 Introduction

DPG-192 has been closed under the DPG RCRA part B Permit requirements and specifications of the CMI Plan (Shaw, 2009). Disturbance of the waste will not be allowed. To ensure that the area is not reused or developed, annual site inspections and a biennial Post-Closure Report shall be required. Removal and reuse of soil from this site will not be allowed unless under an excavation permit approved by the Dugway Proving Ground Environmental Program Office (EPO). Soil excavation at this site must be coordinated through the DPG EPA and the DPG Dig Permit Process (Module VII.F.4).

4.2 Routine Site Inspections

During its post-closure period, general inspections of DPG-192 shall be conducted annually by November 1st to ensure that the integrity of the engineered cap is maintained. Any modifications to the frequency of inspections will be in accordance with amendments submitted in the form of proposed permit modifications.

Site inspections will consist of a complete walkthrough and visual inspection of the covered areas as well as surface water drainage features. A general site inspection checklist for landfill sites is included in Module VII as Form B. Completed inspection forms shall be filed with the Dugway Environmental Office.

At a minimum the site shall be visually inspected to ensure the following conditions are maintained at the site:

- No noticeable sliding (slope failure);
- No noticeable damage to the rock covering from burrowing animals;
- No noticeable depressions or ponding water are present;
- No excessive soil erosion is evident on the cap surface or at the cap edges;
- No weeds or trees (with deep taproots) are present that may penetrate the cap;
- Signs are in good condition;
- Presence of ordnance or large pieces of explosives;
- Drainage swales and roads are functioning as planned with no significant erosion or ponding; and
- The survey monuments are undamaged and there is no significant subsidence of the landfill cap.

4.2.1 Protective Rock Layer Inspections

Maintenance of the protective rock layer is an essential step in ensuring that the integrity of the final cover system is preserved. During each site visit, observations will be made to ensure that the protective rock layer is intact and functioning as designed (i.e., protecting the underlying GCL).

For most routine repairs, corrective action should be initiated as soon as possible after identifying the problem or as directed by DPG. If the corrective action requires substantial effort and/or a technical plan, a brief plan will be prepared to summarize the problem, the potential impacts, and the time-frame in which corrective action will be implemented and the planning involved.

4.2.2 Survey Monument Inspections

During each visit, the survey monuments will be inspected to determine if any damage has made their use questionable as a reference point. If missing or badly damaged, they will be replaced as soon as possible after discovery of the problem.

As part of the routine inspection, the survey monuments locations and elevations should be surveyed at least once per year for the first two years after construction. Once a settlement of 0.1 ft or less has been measured for two consecutive years, surveys can be scaled back to once every five years. The baseline northing, easting, and elevation of the survey monuments (SM-1 and SM-2) will be presented in the first Post-Closure Inspection Report. In addition, the final grading and drainage plan, shown on Figure 3, is presented for future reference.

Table 3 summarizes the Post-Closure Inspection Schedule for DPG-192, 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: DPG-192 Post-Closure Inspection Schedule

Inspection / Monitoring Item	Method of Documentation	Frequency of Inspection
Landfill Cap	Inspection Checklist (Module VII, Form B)	Annual, by November 1 st
Survey Monument	Inspection Checklist (Module VII, Form B)	Annual, by November 1 st / 5 year intervals
Signs	Inspection Checklist (Module VII, Form B)	Annual, by November 1 st
Drainage Swales	Inspection Checklist (Module VII, Form B)	Annual, by November 1 st

4.3 Contingency Inspections

This section provides information about emergency response inspection procedures to be implemented in the event of any natural disaster in the DPG area that may affect the final engineered cover at DPG-192. Module VII includes a general inspection checklist for landfill sites (Form B).

The Dugway Emergency Response and Contingency Plan (Part B 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.

4.3.1 Earthquakes

DPG is located in Seismic Zone 2 with a maximum acceleration of 0.2 gravity force (Hunt, 1984). DPG-192 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 U.S. Geological Survey (USGS) (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 DPG-192.

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 DPG; however, there is no evidence of displacement during Holocene time.

In the event of a 6.5-magnitude or higher earthquake centered within 50 miles of the site, qualified personnel will visually inspect the landfill cap for signs of damage as soon as it is safe and practical to do so. Any damage to the landfill cap will be repaired to ensure the integrity of the cap. If the landfill cap has sustained extensive damage, Dugway will implement corrective actions to ensure that contaminants are contained and human health is protected. Post-earthquake site inspection records will be submitted to the Dugway Environmental Department.

Following an earthquake, the landfill and landfill cap will also be inspected for lateral shifting of debris. The survey monument will be resurveyed to determine any horizontal or vertical movement of the cap.

4.3.2 Floods or Major Storms

DPG-192 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 DPG. There are no permanent streams or other surface water bodies on DPG.

Surface water runoff generated from precipitation flows through drainage swales constructed or enhanced during the capping of DPG-192. Most of the surface water evaporates rather than percolates into the ground. Like other arid regions, DPG 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.

In the event of a flood or major storm, Dugway will inspect the landfill caps at DPG-192 to ensure their integrity within 72 business hours of the event. A checklist is included in Module VII (Form B). A major storm is defined in this plan as a storm with one inch of rain or more over a 24-hour period. Any damage to the landfill cap will be repaired as soon as possible to ensure the integrity of the cap.

4.3.3 Fires

In the event of a surface fire near the landfill cap, the Dugway fire department will be notified and the Dugway integrated contingency plan will be implemented. In the event of a landfill fire, if the cap is observed to have been breached, other firefighting methods (such as using foam or smothering with dirt) will be considered and used, as appropriate. Following the incident, Dugway will perform a thorough inspection of the landfill cap using the checklist included in Module VII (Form B), to ensure that the integrity of the soil cover has not been compromised and waste is not exposed. If there is fire damage, Dugway will implement corrective actions to ensure that contaminants are contained and human health is protected.

4.4 Inspection Follow-Up

Copies of completed site inspection checklists (Module VII, Form B) 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.

5.0 SUBMITTALS/REPORTING

Based on the evaluation presented in the CMIR for DPG-192 (Shaw, 2010), post-closure inspection is required. Additional groundwater sampling has been performed, results are pending. Future groundwater monitoring, if necessary, will be performed and reported via the Downrange GMA program.

5.1 Non-Compliance Reporting

The conditions at DPG-192 are such that the impact to human health and the environment is very unlikely. Hazardous wastes are no longer managed at the site. Nonetheless, if there is any type of

non-compliance with any condition of this Permit, notifications shall be submitted per Permit conditions VII.C.5.

5.2 Biennial Post-Closure Report

In accordance with Utah Admin. Code R315-270-30(1)(9), a Biennial Post-Closure Report shall be prepared for all Dugway closed HWMUs and SWMUs undergoing post-closure care by March 1, of the reporting year. The first Post-Closure Report for DPG-192 shall be due by March, 2012. Specifically for DPG-192, the Biennial Post-Closure Report shall include, at a minimum, the following:

- General site description and conditions;
- Areas of cap repair; and
- Inspection records.

5.3 Required Submittals

Table 4 summarizes the requirements for the Biennial Post-Closure Report for DPG-192 and reporting for any non-compliance issues.

Table 4: Summary Table of Required Submittals

Required Submittals	Frequency and Submittal Date
<u>Biennial Post-Closure Report</u>	Post-Closure Reports shall be submitted to the Division of Solid and Hazardous Waste no later than March, of the year the report is due. Reporting years are even numbered years beginning with March 2012, for the duration of the Post-Closure Monitoring Period.
<u>Non-Compliance Reporting</u>	
Anticipated Non-Compliance	30 days advance notice of any change which may result in noncompliance
24-hour Notification for information concerning the non-compliance, which may endanger public drinking water supplies or human health or the environment.	Orally within 24 hours of discovery
Five-day written notification for information concerning the non-compliance, which may endanger public drinking water supplies or human health or the environment including evidence of groundwater contamination, significant data quality issues, or a request for reduced monitoring frequency. The Director may waive the 5-day notice, in favor of a 15-day notice	Within 5 days of discovery
Written notification for information concerning the non-compliance, which does not endanger human health or the environment.	Submitted when the Biennial Post Closure Reports are submitted.

6.0 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.

7.0 REFERENCES

- Barnhard, T.P. and R.L. Dodge, 1988, Map of Fault Scarps Formed on Unconsolidated Sediments, Tooele 1° x 2° quadrangle, Northwestern Utah, United States Geological Survey.
- Hunt, Roy E., 1984, Geotechnical Engineering Investigation Manual, McGraw-Hill Book Company, New York.
- Parsons Engineering Science, Inc., 2002, Final Phase II RCRA Facility Investigation Risk Assumptions Document, Version 2, Denver, May 31.
- Parsons Engineering Science, Inc., 2006, Final Hydrogeological Assessment and Regional Groundwater Management Plan, Volume III, Downrange Groundwater Management Area, Dugway Proving Ground, Dugway, Utah.
- Shaw, 2006a, Final Corrective Measures Study Report, Firm Fixed-Price Remediation, Landfill Sites, Dugway Proving Ground, Dugway, Utah. July.
- Shaw, 2006b, Final Corrective Measures Implementation Plan (CMI Plan), Firm Fixed-Price Remediation at Landfill Sites, Dugway Proving Ground, Dugway, Utah, August.
- Shaw Environmental, Inc., 2010, Corrective Measure Implementation Plan for DPG-192, August.
- Utah Division of Solid and Hazardous Waste, 2001, Administrative Rules for Cleanup Action and Risk-Based Closure Standards, Utah Department of Environmental Quality, R315-101, Utah Administrative Code.
- Utah Division of Water Quality, 2002, Administrative Rules for Ground Water Quality Protection, Utah Department of Environmental Quality, R317-6, Utah Administrative Code.

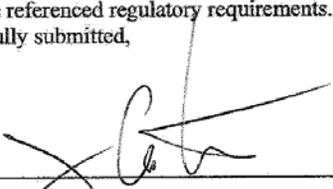
APPENDIX A

COPY OF
CERTIFICATION OF CLOSURE

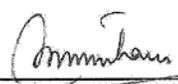
CERTIFICATION OF CLOSURE

The Closure Certification Report for DPG-192 at Dugway Proving Ground, Utah has been prepared by Shaw Environmental in accordance with the closure requirements specified under the DPG Part B RCRA Permit and the CMI Plan. The requirements of UAC R315-101 form the basis for the risk-based criteria in the closure of DPG-192. The site has been managed in accordance with the specifications in the approved CMI Plan, except for re-vegetation (Section 2.4.5).

In accordance with the DPG Part B RCRA Permit, the signature and seal certify that a licensed professional has reviewed the Corrective Measures Implementation Report in accordance with the above referenced regulatory requirements.
Respectfully submitted,



Jeff Carter
Directorate of Environmental Programs
Dugway Proving Ground



Sunil Kishnani, P.E.
Utah Registered Civil Engineer No. 6027103
Shaw Environmental, Inc.

