

DUGWAY PERMIT

MODULE VII

ATTACHMENT 21

**SOLID WASTE MANAGEMENT UNIT
SWMU 215
POST-CLOSURE PLAN**

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1.0 INTRODUCTION

The objective of this Post-Closure Plan is to ensure that Dugway Proving Grounds (DPG) 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. To meet this objective, this Post-Closure Plan provides detailed information regarding the location, regulatory criteria, and post-closure inspections at Solid Waste Management Unit (SWMU) 215, herein referred to as DPG-215. Post-closure requirements will continue for a minimum of 30 years after closure of DPG-215. 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 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-215, 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 DPG-215 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 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, Module VII Table VII-3, and Module VII Form B
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-215 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)(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)(14) Utah Admin. Code R315-270-14(b)(14)	Copy of the Closure Proposal	Phase II Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) was approved on 09/20/2004. No public comments were received.
40 CFR §270.14(b)(16) Utah Admin. Code R315-270-14(b)(16)	Closure Certification and Notification	Section 2.7 and Appendix A.
40 CFR §270.14(b)(18) Utah Admin. Code R315-270-14(b)(18)	Post-Closure Cost Estimate	Federal Facilities are exempt from this requirement.
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19)(i)	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)(ii)	Topographic Map Map Scale and Date	Figure 2 (1 inch = 1000 feet (ft)).
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19)(iii)	Topographic Map 100-year floodplain area	Section 4.0; DPG-215 is not located within a verified 100-year floodplain area.
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19)(iv)	Topographic Map Surface waters including intermittent streams	Figure 2
40 CFR §§270.14(b)(11)(i-ii, v) Utah Admin. Code R315-270-14(b)(11)(i-ii, v)	Topographic Map Surrounding land uses	DPG-215 is within a military base. There are no nearby operations in the vicinity of DPG-215.
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-215. The closest residential area is English Village (approximately 26 miles away). A wind rose is not deemed necessary for DPG-215.
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	Figure 2
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19)(viii)	Topographic Map Access control, fence, gates	Figure 2. The site is not enclosed by a fence.

Table 1 (Continued): Summary of DPG-215 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)(19) Utah Admin. Code R315-270-14(b)(19)(ix)	Topographic Map Injection and withdrawal wells	Figure 2
40 CFR §270.14(b)(19) Utah Admin. Code R315-270-14(b)(19)(xi)	Topographic Map Barriers for drainage or flood control	Figure 3. DPG-215 is graded to drain surface water away from the engineered covers. There are no barriers to drainage or flood control.
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(1)	Groundwater Monitoring Information Summary of Groundwater Data	Final Phase II RFI Report, Section 2.2.4
40 CFR §270.14(c) Utah Admin Code R315-270-14(c)(2)	Groundwater Monitoring Information Identification of uppermost aquifer	Final Phase II RFI Report, Section 2.2.1
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(3)	Groundwater Monitoring Information Delineation of the Waste Management Area	Figure 3
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(4)	Groundwater Monitoring Information Extent of Plume	Final Phase II RFI Report, Section 2.2.4
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(5)	Groundwater Monitoring Information Detailed Plans/Engineering Report for Proposed Groundwater Program	Post-closure groundwater monitoring at DPG-215 is not required.
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(6)(i)	Groundwater Monitoring Information Proposed List of Parameters	Post-closure groundwater monitoring at DPG-215 is not required.
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(6)(ii)	Groundwater Monitoring Information Proposed Groundwater Monitoring System	Post-closure groundwater monitoring at DPG-215 is not required.
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(6)(iii)	Groundwater Monitoring Information Background Values	Post-closure groundwater monitoring at DPG-215 is not required.
40 CFR §270.14(c) Utah Admin. Code R315-270-14(c)(6)(iv)	Groundwater Monitoring Information A description of the Proposed Sampling	Post-closure groundwater monitoring at DPG-215 is not required.

2.0 FACILITY DESCRIPTION

The following provides a general description of DPG-215, as required by Utah Admin. Code R315-270-14(b)(1) (Figures 1 and 2).

2.1 DPG-215 LOCATION AND HISTORY

DPG-215, occupies a total of 5.7 acres on the North and South sides of Pigeon Loft Road, approximately one mile southwest of the intersection with Stark Road (Figure 2). The site is located approximately 1.7 miles northeast of DPG-213 and 2.7 miles north of DPG-014. The topography of this site is relatively flat with a mean elevation of 4,307 feet (ft) above mean sea level (msl).

DPG-215 was divided into two distinct areas based on previous site investigations. Area 1 is a former landfill site that consisted of a backfill trench and two metal drum stands. Partially buried debris, including metal piping and scrap metal, is visible on the surface of the trench. Expanded ordnance and explosive (OE) debris was observed on the ground surface during field operations. Area 2, located 300 ft southeast of Area 1, consisted of two foundations and a barren area. The northern most foundation is believed to have been the remnants of a former pigeon loft. The history of the second foundation is unknown. Since the results of the site-attribution analysis for Area 2 indicated that there were no site-related chemicals in soil (Parsons, 2003), clean closure has been recommended for Area 2 of DPG-215.

DPG-215 is currently inactive and consists of approximately 2.5 acres of disturbed area associated with the backfilled trench and pigeon loft.

2.2 PAST OPERATIONS

A pigeon loft, where live pigeons were housed for use in downrange test operations, was formerly present at DPG-215. Additional site history is unknown, including details regarding disposal dates and activities.

2.3 PREVIOUS INVESTIGATIONS DOCUMENTATION

The detailed results of previous soil and groundwater sampling and closure information including the risk assessment are available for DPG-215 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 R315-270-14(b)(13)).

Table 2: UDWMRC Library Documents Detailing DPG-215 Investigations

Document Title	Received Date	UDWMRC Library No.
Parsons, 1999. <i>Final Phase I RCRA Facility Investigation, Investigation Report, Revision 1</i> . September.	09/99	DPG00007
Parsons, 2003. <i>Final Phase II RCRA Facility Investigation Report, SWMU-215 Addendum</i> . December.	05/04	DPG00394
Shaw Environmental, 2006a. <i>Corrective Measures Study Report, Firm Fixed-Price Remediation at Landfill Sites, Dugway Proving Ground, Dugway, Utah</i> . July.	07/06	DPG00528
Shaw Environmental, 2006b. <i>Corrective Measures Implementation Plan, Firm Fixed-Price Remediation at Landfill Sites, Dugway Proving Ground, Dugway, Utah</i> . November.	11/06	DPG00521
Shaw Environmental, Inc., 2007. <i>Final Corrective Measures Implementation Report For DPG-215</i> .	02/07	DPG00573 Volume 4

2.4 CLOSURE ACTIVITIES

In accordance with Utah Admin. Code R315-265; 40 CFR §265.111 incorporated by reference and the Corrective Measures Implementation (CMI) Plan (Shaw, 2006b), closure at DPG-215 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 trench. The closure activities are described in the CMI Report (Shaw, 2007). Appendix A includes a copy of the DPG-215 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 §265, Subpart N, 254.310) for the closure and post-closure of DPG-215, 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-215 included:

- Installation of the final engineered cover system; and
- Final grading of the site, including enhancement of drainage features, to help control erosion and minimize long-term maintenance requirements.

These measures will prevent human contact with the waste and provide for protection of groundwater. A general post-closure site inspection checklist for landfill sites (Form B) designed to insure that these objectives are maintained is presented in Module VII.

2.5 HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT

To meet interim status a risk closure requirements risk assessment of DPG-215 is not required.

2.6 SURFACE WATER AND GROUNDWATER

There are no defined surface water features within or near DPG-215. The general direction of surface water drainage in the area surrounding this unit is to the northwest, towards the axis of Dugway Valley.

Based on the nature and extent of contamination as defined in the RFI and the downrange GMA, post closure groundwater monitoring is not required at SWMU 215.

2.7 CLOSURE NOTIFICATIONS

The Certification of Closure (Appendix A) was verified by the Executive Secretary of the Utah Solid and Hazardous Waste Control Board in October 2007.

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-215:

1. DPG-215 is located within a federal, military installation (DPG). As such, the installation is restricted for the common population.
2. At DPG-215, signs are present warning against unauthorized entry.
3. Security facilities are to be maintained and inspected throughout the post-closure care period. The security facilities (i.e., posted signs) will be inspected and the frequency of inspection is sated in Table 4. Dugway shall report to the UDWMRC any decrease of Dugway's Base Security, which could affect the security conditions as applicable to DPG-215.
4. Damaged or missing security facilities shall be noted in the inspection checklist. 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-215 has been closed under the DPG RCRA part B Permit requirements and specifications of the CMI Plan for Landfill Sites (Shaw, 2006). 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.

4.2 ROUTINE SITE INSPECTIONS

During its Post-Closure period general inspections of the former DPG-215 site shall be conducted annually by November 1st to ensure that the integrity of the engineered cap is maintained and to verify the Dugway Dig Permit process as described in Module VII.I has been followed. 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 post-closure 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.

4.2.1 Protective Soil Layer Inspections

Maintenance of the protective soil layer is an essential step in ensuring that not more than 1 millimeter of water per year migrates through the cover and preserving the integrity of the final cover system. During each site visit, observations will be made to ensure that the protective soil layer is functioning as designed (i.e., protecting the underlying GCL). Repairs to the protective soil layer may include removal of vegetation species having tap roots greater than 12 inches, regrading through the placement of fill in areas

where a potential for ponding water on the cover exists due to settlement, or repair and stabilization of areas that have been eroded.

If signs of soil erosion are excessive (for example, cracks or rills greater than two inches wide) or continual (recurring in the same area), corrective action may be necessary. Significant cracks or rills that have the potential to impact the functionality of the cover system will be documented on the inspection forms. Corrective action may include filling in the eroded or cracked area, regrading slopes, establishing vegetation (if soil salinity is favorable) or adding mulch to the soil surface. Soil samples will be collected in accordance with Field Work Variance 119350-02-006 (August 6, 2009) and analyzed for salinity as a contingency in case erosion control is necessary in the future.

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 Settlement Marker Inspections

During each visit, the settlement marker installed during closure (Figure 4) will be inspected to determine if any damage has made its use questionable as a reference point. If missing or badly damaged, it will be replaced as soon as possible after discovery of the problem.

As part of the routine inspection, settlement marker location and elevation will 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 DPG-215 settlement marker (SM-215) have been summarized in Table 3. In addition, the survey coordinates for locations around the perimeter of the cover system, shown on Figure 4, are presented for future reference.

Table 3: DPG-215 Survey Coordinates

Description / Pt. Location	Northing (ft)	Easting (ft)	Elevation^a (ft above msl)
Survey Monument (SM-215)	7,213,005	1,175,947	4,309.0
7000	7,212,938	1,175,926	4,308.2
7001	7,212,939	1,175,954	4,308.1
7002	7,212,986	1,175,983	4,308.0
7003	7,213,053	1,175,950	4,308.2
7004	7,213,030	1,175,927	4,307.9

^a The locations and elevations represent design coordinates. The final elevation is provided in the 2008 Biennial report.

Table 4 summarizes the Post-Closure Inspection Schedule for DPG-215, and lists the items to be inspected. Inspection personnel shall note any problems found and shall inform appropriate Dugway representatives.

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 soil cover at DPG-215. Module VII provides a general post-closure site 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

Dugway Proving Ground is located in Seismic Zone 2 with a maximum acceleration of 0.2 gravity force (Hunt, 1984). DPG-215 is not located within 200 ft of any active faults. Although Utah is tectonically active, most of the earthquake activity occurs about 65 miles to the east along the Wasatch Range Foothills.

A geologic map completed in a 1988 study by the United States 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-215.

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. Survey monuments will be resurveyed to determine any horizontal or vertical movement of the cap.

4.3.2 Floods or Major Storms

DPG-215 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.

During the capping of DPG-215, the site was graded so that surface water from precipitation flows away from the capped area and to the northwest in the direction of the natural drainage flow. Most of the surface water evaporates rather than percolating 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 cap to ensure its integrity within 72 business hours of the event. A general post-closure site inspection checklist for landfill sites (Form B) is included in Module VII. A major storm is defined in this plan as a storm with 1 inch of precipitation 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, firefighting methods such as using foam or smothering with soil will be considered and used, as appropriate. Following the incident, Dugway will perform a thorough inspection of the landfill cap using the general post-closure site inspection checklist for landfill sites (Form B) included in Module VII, to ensure that the integrity of the soil cover has not been compromised and waste has not been exposed. If there is fire damage, DPG will implement corrective actions to ensure that contaminants are contained and human health is protected.

Table 4: DPG-215 Post-Closure Inspection Schedule

Inspection/ Monitoring Item	Method of Documentation	Frequency of Inspection
Landfill Caps	General Post-Closure Site Inspection Checklist for Landfill Sites (Module VII, Form B)	Annual
Salinity Testing	General Post-Closure Site Inspection Checklist for Landfill Sites (Module VII, Form B)	In accordance with Field Work Variance 119350-02-006
Settlement Markers	General Post-Closure Site Inspection Checklist for Landfill Sites (Module VII, Form B)	Annual / 5 year intervals
Signs	General Post-Closure Site Inspection Checklist for Landfill Sites (Module VII, Form B)	Annual
Drainage	General Post-Closure Site Inspection Checklist for Landfill Sites (Module VII, Form B)	Annual

4.4 INSPECTION FOLLOW-UP

Copies of completed general post-closure 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-215 (Shaw, 2007), post-closure inspection is required. Groundwater monitoring is not required for DPG-215.

5.1 NON-COMPLIANCE REPORTING

The conditions at DPG-215 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 condition 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 Hazardous Waste Management Units (HWMUs) and SWMUs undergoing post-closure care by March 1, of the reporting year. The first Post-Closure report for DPG-215 shall be due no later than March 1, 2008. Specifically for DPG-215, 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 5 summarizes the requirements for the Biennial Post-Closure Report for DPG-215 and reporting for any non-compliance.

Table 5: 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 UDWMRC no later than March, of the year the report is due. Reporting years are even numbered years beginning with March 2008, for the duration of the Post-Closure Monitoring Period.

Table 5: Summary Table of Required Submittals (Continued)

Required Submittals	Frequency and Submittal Date
<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.
- Division of Water Quality (DWQ), 2002. *Division of Water Quality Administrative Rules for Groundwater Quality Protection R317-6 Utah Administrative Code*.
- Hunt, Roy E, 1984. *Geotechnical Engineering Investigation Manual*. New York, McGraw-Hill.
- Parsons Engineering Science, Inc. (Parsons), in preparation, 2007. *Final Hydrogeological Assessment and Regional Groundwater Management Plan, Volume III, Downrange Groundwater Management Area, Dugway Proving Ground, Dugway, Utah*.
- Parsons, 2003. *Final Phase II RCRA Facility Investigation Report, SWMU-215 Addendum*. December.
- Parsons, 1999. *Final Phase I RCRA Facility Investigation, Investigation Report, Revision 1*. September.
- Shaw Environmental (Shaw), 2006. *Corrective Measures Implementation Plan, Firm Fixed-Price Remediation at Landfill Sites, Dugway Proving Ground, Dugway, Utah*. November.
- Shaw, 2007. *Final Corrective Measures Implementation Report, for DPG-215, Dugway Proving Ground, Utah*.
- Stephens, J.C., and C.T. Sumsion. 1978. *Hydrologic Reconnaissance of the Dugway Valley—Government Creek Area, West-Central Utah: State of Utah Department of Natural Resources Technical Publication No. 59, 42 p.*
- Utah Department of Environmental Quality (UDEQ), 1992. *RCRA Facility Assessment of Solid Waste Management Units at Dugway*.

APPENDIX A


COPY OF CERTIFICATION OF CLOSURE

CERTIFICATION OF CLOSURE

The Corrective Measures Implementation Report for DPG-215 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-215. 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,

Scott Reed
Directorate of Environmental Programs
Dugway Proving Ground



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

