

ARIZONA HAZARDOUS WASTE MANAGEMENT ACT PERMIT

In accordance with the State of Arizona Administrative Code (A.A.C.), Title 18, Chapter 8, Article 2, R18-8-260 et. seq. (hereinafter called Article 2), and pursuant to the Arizona Hazardous Waste Management Act, A.R.S. § 49-921 et. seq. (hereinafter called AHWMA), this Permit is issued to the following (hereinafter called the Permittee):

Facility Name & Address: MTR Unit 8
Luke Air Force Base
Barry Goldwater Range - East Segment

Facility EPA I.D. No.: AZ4 570 024 139

Location: Latitude: 32° 45' 12.4" N
Longitude: 112° 52' 53.9" W

Land Owner: United States Air Force

Facility Operator: United States Air Force

Facility Owner: United States Air Force

The Luke Air Force Base Munitions Treatment Range (MTR) is located on the eastern portion of Barry Goldwater Range (BGR), approximately 15 miles southwest of Gila Bend. MTR Unit 8 is a former burial pit located in the southwest portion of the MTR. The pit contains ash and munitions debris resulting from the open burning of hazardous waste munitions, as well as soils contaminated with arsenic at concentrations above the nonresidential soil remediation level of 10 ppm. A cover has been installed on MTR Unit 8 that has been engineered and constructed to ensure that there is no threat to human health or environment.

This post-closure permit establishes conditions for proper long-term management of MTR Unit 8. Post-closure care will consist of inspection and maintenance of the perimeter fence, access roads, warning signs, drainage control systems, survey monuments, and the vegetative cover. Preventative and corrective maintenance and repair procedures will be performed in conjunction with the quarterly inspections of these items.

This permit also establishes a post-closure care period. The post-closure care period is for 30 years and begins on the effective date of this permit. The Director may extend this post-closure care period if he finds that the extended period is necessary to protect human health and the environment. The Director may also shorten the post-closure care period if it is determined that the reduced period is sufficient to protect human health and the environment.

The Permittee must comply with all terms and conditions of this Permit. This Permit consists of the conditions contained herein (including those in any attachments) and the applicable regulations contained in Article 2 as specified in the Permit. This Permit does not, in any way, release the Permittee from complying with the applicable requirements of any of the provisions of Article 2, AHWMA, or any other applicable state requirement promulgated by rule or statute. Unless modified, applicable regulations are those which are in effect on the date of issuance of this Permit pursuant to A.A.C. R18-8-264, 270 and 271, and the conditions therein are specified pursuant to A.A.C. R18-8-270.A (40 CFR §270 Subpart C), K, L, M, N, O, P, and Q. All references to 40 CFR in this Permit refer to those regulations as adopted and modified by Article 2.



This Permit is based on the assumption that the information contained in the Permit Attachments is accurate, and that the closed facility will be monitored and maintained as specified in the Permit Attachments. Any inaccuracies found in this information may be grounds for the termination, modification, or revocation and reissuance of this Permit pursuant to A.A.C. R18-8-270.A (40 CFR §270.41, 270.42 and 270.43) and A.A.C. R18-8-271.D and potential enforcement action. The Permittee shall inform the Director of any deviation from or changes in the information in the application which would affect the Permittee's ability to comply with the applicable regulations or permit conditions.

This Permit is effective as of _____, 2017, and shall remain in effect for ten (10) years from this date, unless revoked and reissued, or terminated pursuant to A.A.C. R18-8-270.A (40 CFR §270.41 and 270.43) or continued in accordance with A.A.C. R18-8-270.A (40 CFR §270.51) and P (40 CFR §270.51(a)).

For the Arizona Department of Environmental Quality

Signed this _____ day of _____, 2017

By _____
Laura L. Malone, Director
Waste Programs Division
Arizona Department of Environmental Quality

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PERMIT ATTACHMENTS:

- A FACILITY DESCRIPTION
- B HYDROGEOLOGIC CHARACTERIZATION AND MONITORING REQUIREMENTS
- C POST-CLOSURE PLAN
- D PERSONNEL TRAINING
- E PROCEDURES TO PREVENT HAZARDS
- F CONTINGENCY PLAN
- G OTHER FEDERAL LAWS
- H FINANCIAL ASSURANCE
- I ARIZONA ADMINISTRATIVE CODE
- J CASOC – APPROVED WORKPLANS AND REPORTS

PART I – GENERAL PERMIT CONDITIONS

A. EFFECT OF PERMIT

The Permittee is required to conduct post-closure care and investigation for possible corrective action for solid waste management units and areas of concern in accordance with the conditions of this Permit. Any storage, treatment, and/or disposal of hazardous waste not authorized in this Permit is prohibited. Subject to Arizona Administrative Code (A.A.C.) R18-8-270.A (40 CFR §270.4), compliance with this Permit generally constitutes compliance, for purposes of enforcement, with Subtitle C of RCRA. Issuance of this Permit does not convey any property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local law or regulations. Compliance with the terms of this Permit does not constitute a defense to any order issued or any action brought under Sections 3008(a), 3008(h), 3013, or 7003 of RCRA; Sections 106(a), 104 or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq., commonly known as CERCLA), or any other law providing for protection of public health or the environment.

[A.A.C. R18-8-270.A (40 CFR §§270.4, 270.30(g))]

B. DEFINITIONS

For purposes of this Permit, terms used herein shall have the same meaning as those in A.A.C. R18-8-260 et seq. (40 CFR §§124, 260, 264, 266, 268, and 270), unless this Permit specifically provides otherwise (see alphabetized terms below). Where terms are not defined in the regulations or the Permit, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

“A.A.C.” and “C.F.R.” mean the Arizona Administrative Code (A.A.C.) Title 18, Chapter 8, Article 2 (A.A.C. R18-8-260 et seq.), effective September 5, 2015, as published at 21 Arizona Administrative Register (A.A.R.) 1246, which adopts and modifies portions of Title 40 Code of Federal Regulations Part 260 through 273 (40 CFR Part 260 through 273) (See Attachment J).

ADEQ Contact means the Arizona Department of Environmental Quality, Hazardous Waste Unit.

“AHWMA” means Arizona Hazardous Waste Management Act.

“Area of Concern” or “AOC” means a hazardous product storage unit or area; a one-time hazardous material (product or waste) spill event; a hazardous material unit or area where management may have occurred whether the potential for release may have existed, but where insufficient evidence was found during the RCRA Facility Assessment (RFA) to verify the existence of a definable Solid Waste Management Unit (SWMU).

“Director” means the Director of ADEQ or the Director’s designee or authorized representative.

“Example” means, unless otherwise specified, that the form is a blank form that is mandatory to be used or followed. This term does not convey to the Permittee that the statements are optional to be performed at the user’s discretion. “Example” presents, unless otherwise specified, minimum acceptable.

“Facility” means all contiguous land and structures, other appurtenances and improvements on the land used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal units. For the purpose of implementing corrective action under Part V of this Permit, facility means all contiguous property under the control of the owner or operator and subject to this Permit and the AHWMA.

“Hazardous constituent” means any constituent identified in Appendix VIII of 40 CFR Part 261, or any constituent identified in Appendix IX of 40 CFR Part 264.

“Hazardous waste” means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, and increase in mortality or and increase in serious irreversible, or incapacitating reversible, illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. The term hazardous waste includes hazardous constituent as defined above.

“Qualified” means that the individual or group shall have the same training, education, experience, and other necessary skills, as required by this Permit, as the person(s) or group who normally performs that function has.

“Regulated Facility” or “Regulated Unit” means any hazardous waste management facility or unit regulated under A.A.C. R18-8-264.A and 270.A, and 40 CFR §§264 and 270. As applicable, it could also mean those units defined by 40 CFR §264.90(a)(2), although those units are not Permitted herein.

“Release” includes the definitions of “discharge” and “disposal” in 40 CFR §260.10 and means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes (including hazardous constituents) into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous wastes or hazardous constituents) or into secondary containment.

“Shall,” “Must,” “Will,” or factual statements denote mandatory requirements.

“Should” or “May” denote a recommendation or permission, respectively, which is not mandatory.

“Solid Waste Management Unit” or “SWMU” means any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. SWMUs include those units defined as “regulated units” under RCRA (40 CFR §264.90(a)(2)), as well as other units which have generally been exempted from standards applicable

to hazardous waste management units, such as recycling units and wastewater treatment units, and areas contaminated by routine, systematic, and deliberate discharges from process areas.

C. PERMIT ACTIONS

1. Permit Modification, Revocation and Reissuance, and Termination

- (a) This Permit may be modified, revoked and reissued, or terminated for cause, as specified in A.A.C. R18-8-270.A, 40 CFR §§270.41, 270.42, and 270.43. The Permit may be modified by the Director at any time, following procedures outlined in A.A.C. R18-8-271.D in order to ensure compliance with applicable state and federal requirements. The filing of a request for a Permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee, does not stay the applicability or enforceability of any Permit condition.

[A.A.C. R18-8-270.A (40 CFR §270.4(a) and 270.30(f))]

- (b) In accordance with Arizona Revised Statutes (A.R.S.), Title 41, Chapter 6, Article 10, a final determination regarding any Permit Modification (the approval of the Permittee's Permit Modification request, the approval of the Permittee's Permit Modification request with changes, the denial of the Permittee's Permit Modification request, or the final decision on any agency-initiated Permit Modifications) made by the Director is an appealable agency action. Such appeals shall include the appellant's right to request an informal settlement conference (see A.R.S. §41-1092.06).

[A.A.C. R18-8-270.A, 40 CFR §§270.4(a) and 270.30(f), and A.R.S. §41-1092 et seq.]

2. Permit Renewal

This Permit may be renewed as specified in A.A.C. R18-8-270.A (40 CFR §270.30(b)) and Permit Condition I.E.2. Review of any application for a Permit renewal shall consider improvements in the state of control and measurement technology, as well as changes in applicable regulations.

[A.A.C. R18-8-270.A (40 CFR §270.30(b)), and HSWA Sec. 212]

D. [RESERVED]

E. DUTIES AND REQUIREMENTS

The following conditions apply, pursuant to A.A.C. R18-8-270.A (40 CFR §270.30):

1. Duty to Comply

The Permittee shall comply with all conditions of this Permit, except to the extent and for the duration such noncompliance is authorized by an Emergency Permit. Any Permit noncompliance, other than noncompliance authorized by an Emergency Permit, constitutes a violation of Arizona Hazardous Waste Management Act (AHWMA) and/or RCRA and is grounds for enforcement action; for Permit termination, revocation and reissuance, or modification; or for denial of a Permit renewal application.

[A.A.C. R18-8-270.A (40 CFR §270.30(a))]

2. Duty to Reapply

If the Permittee wishes to continue an activity allowed by this Permit after the expiration date of this Permit, the Permittee shall submit a complete application for a new Permit at least one hundred eighty (180) days prior to Permit expiration.

[A.A.C. R18-8-270.A (40 CFR §§270.10(h) and 270.30(b))]

3. Permit Expiration

This Permit shall be effective for a fixed term not to exceed ten (10) years. This Permit and all conditions herein will remain in effect beyond the Permit's expiration date, if the Permittee has submitted a timely, complete permit application for renewal and through no fault of the Permittee, the Director has not issued a new Permit. For purposes of this requirement a complete application for renewal must be in accordance with requirements of A.A.C. R18-8-270.A, E, F, G, H, I, and J (40 CFR §270.10, 270.13 through 270.29)

[A.A.C. R18-8-270.A (40 CFR §270.50(a), 40 CFR §270.51)]

4. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee, in an enforcement action that it would have been necessary to halt or reduce the Permitted activity in order to maintain compliance with the conditions of this Permit.

[A.A.C. R18-8-270.A (40 CFR §270.30(c))]

5. Duty to Mitigate

In the event of noncompliance with this Permit, the Permittee shall take all reasonable steps to minimize releases to the environment and shall carry out such measures, as are reasonable, to prevent significant adverse impacts on human health or the environment.

[A.A.C. R18-8-270.A (40 CFR §270.30(d))]

6. Proper Operation and Maintenance

The Permittee shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the

Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance/quality control procedures. This provision requires the operation of back-up or auxiliary facilities or equivalent or better systems only when necessary to achieve compliance with the conditions of this Permit.

[A.A.C. R18-8-270.A (40 CFR §270.30(e))]

7. Property Rights

This Permit does not convey any property rights of any sort, or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or infringement of state or local law or regulations.

[A.A.C. R18-8-270.A (40 CFR §§270.4(b) and 270.30(g))]

8. Duty to Provide Information

The Permittee shall furnish to the Director, within a reasonable time, any relevant information (that is not restricted from release in accordance with the National Security Act [U.S. Code Title 50, Chapter 15]) which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittee shall also furnish to the Director, upon request, copies of records required to be kept by this Permit.

[A.A.C. R18-8-264.A (40 CFR §264.74(a)) and A.A.C. R18-8-270.A (§270.30(h))]

9. Inspection and Entry

The Permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents, as may be required by law, and in accordance with the access, escort, and safety procedures of Luke AFB, to:

- (a) Enter at reasonable times upon the Permittee's premises where a regulated waste management unit or activity is located or conducted, or where records must be kept under the conditions of this Permit;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;
- (c) Inspect at reasonable times any waste management unit, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and
- (d) Sample or monitor, at reasonable times, for the purposes of assuring Permit compliance or as otherwise authorized by AHWMA or RCRA, any substances or parameters at any location.

[A.A.C. R18-8-270.A (40 CFR §270.30(i))]

10. Monitoring and Records

- (a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity (e.g., air emissions). The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from A.A.C. R18-8-261.A, Appendix I of 40 CFR §261 or an equivalent or better method approved by the Director. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA Publication SW-846 (current edition), or an equivalent or better method, as approved by the Director.

[A.A.C. R18-8-270.A (40 CFR §270.30(j)(1))]

- (b) The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this Permit, the certification required by A.A.C. R18-8-264.A (40 CFR §264.73(b)(9)), and records of all data used to complete the application for this Permit for a period of at least three (3) years from the date of the sample, measurement, report, record, certification, or application. These periods may be extended by request of the Director at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.

[A.A.C. R18-8-264.A (40 CFR §264.74(b)) and 270.A (§270.30(j)(2))]

- (c) Each parameter test that an in-state or out-of-state laboratory can perform for Hazardous Waste analysis must be licensed (certified) by the Arizona Department of Health Services (ADHS). Additionally, if a contract laboratory is used to perform analyses, then the Permittee shall maintain documentation showing the resolution of any inconsistency between the laboratory's proposed services and the applicable conditions of this Permit.

[A.R.S. Title 36, Chapter 4.3, Article 1, §36-495.01]

- (d) Pursuant to A.A.C. R18-8-270.A (40 CFR §270.30(j)(3)), records of monitoring information shall specify:

- i. The dates, exact place, and times of sampling or measurements;
- ii. The individual(s) who performed the sampling or measurements;
- iii. The dates analyses were performed;
- iv. The individual(s) who performed the analyses;
- v. The analytical techniques or methods used; and
- vi. The results of such analyses.

11. Additional Requirements for Monitoring

In addition to the requirements for monitoring contained in Permit Condition I.E.10 (Monitoring and Records) and Permit Condition I.E.13(c) (Monitoring Reports), the Permittee shall ensure that this Permit specifies in Permit Part III.J (Inspections) and elsewhere the following:

[A.A.C. R18-8-270.A (40 CFR §270.31)]

- (a) Requirements concerning the proper use, maintenance, and installation, when appropriate, of monitoring equipment or methods;
- (b) Required monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including, when appropriate, continuous monitoring; and
- (c) Applicable reporting requirements based upon the impact of the regulated activity and as specified in A.A.C. R18-8-264.A.

12. Signatory and Certification Requirements

All applications, reports, or information submitted to or requested by the Director, his/her designee, or authorized representative, shall be signed and certified in accordance with A.A.C. R18-8-270.A and 40 CFR §270.11.

[A.A.C. R18-8-270.A (40 CFR §270.30(k))]

13. Reporting Requirements

- (a) Planned Changes. The Permittee shall give notice to the Director, as soon as possible, of any planned physical alterations or additions to the Permitted facility.

[A.A.C. R18-8-270.A (40 CFR §270.30(l)(1))]

- (b) Transfers. This Permit is not transferable to any person or any other corporation, except after notice to the Director. The Director may require modification or revocation and reissuance of the Permit to change the name of the Permittee and incorporate such other requirements as necessary pursuant to A.A.C. R18-8-270.A (40 CFR §270.40).

[A.A.C. R18-8-270.A (40 CFR §270.30(l)(3)) and A.A.C. R18-8-264.A (40 CFR §264.12(c))]

- (c) Monitoring Reports. Monitoring results shall be reported at the intervals specified elsewhere in this Permit.

[A.A.C. R18-8-270.A (40 CFR §270.30(l)(4))]

- (d) Compliance Schedules. Reports of compliance, or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance

schedule of this Permit shall be submitted no later than fourteen (14) calendar days following each schedule date.

[A.A.C. R18-8-270.A (40 CFR §270.30(1)(5))]

- (e) Annual Report. The Permittee must submit an Annual Report pursuant to, and as described in A.A.C. R18-8-264.H, (40 CFR §264.75) and 270.L (§270.30(1)(9)).
- (f) Other Noncompliance. The Permittee shall report all instances of noncompliance not required under A.A.C. R18-8-270.A (40 CFR §270.30(1)(4), (1)(5) and (1)(6)), at the time monitoring (including annual) reports are submitted. Reports shall contain the information listed in A.A.C. R18-8-270.A (40 CFR §270.30(1)(6)).

[A.A.C. R18-8-270.K and 40 CFR §270.30(1)(10)]

14. Reporting Anticipated Noncompliance

The Permittee shall give advance notice to the Director of any planned changes (e.g., physical alterations) in the Permitted facility or activity which may result in noncompliance with Permit requirements.

[A.A.C. R18-8-270.A (40 CFR §270.30(1)(2))]

15. Twenty-Four Hour Reporting

The Permittee shall immediately report to the Director any noncompliance which may endanger human health or the environment. Any such information shall be reported orally within twenty-four (24) hours from the time the Permittee becomes aware of the circumstances. The report shall include the following:

- (a) Information concerning the release of any hazardous waste that may cause an endangerment to public drinking water supplies.
- (b) Any information of a release or discharge of hazardous waste, or of a fire or explosion from the hazardous waste management facility which could threaten the environment or human health outside the facility.
- (c) The description of the occurrence and its cause shall include:
 - i. Name, address, and telephone number of the owner or operator;
 - ii. Name, address, and telephone number of the facility;
 - iii. Date, time, and type of incident;
 - iv. Name and quantity of material(s) involved;
 - v. The extent of injuries, if any;
 - vi. An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and

- vii. Estimated quantity and disposition of recovered material that resulted from the incident.

- (d) A written submission of the occurrence shall also be provided within five (5) calendar days of the time the Permittee becomes aware of the circumstances. The written submission shall contain:
 - i. A description of the noncompliance and its cause;
 - ii. The period(s) of noncompliance (including exact dates and times);
 - iii. Whether the noncompliance has been corrected; and, if not corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

The Director may waive the five (5) day written notice requirement in favor of a written report within fifteen (15) days.

[A.A.C. R18-8-270.A and L (40 CFR §270.30(l)(6))]

16. Other Information

- (a) Whenever the Permittee becomes aware that it failed to submit any relevant facts in the Permit application, or submitted incorrect information in a Permit application or in any report to the Director, the Permittee shall promptly submit such facts or information.

[A.A.C. R18-8-270.A (40 CFR §270.30(l)(11))]

- (b) Noncompliance with terms and conditions of the Permit that result in letters of warning, compliance orders from the Director, a civil consent judgment, or criminal enforcement of environmental laws by the State of Arizona shall be used to document the reliability, expertise, integrity and competence of the Permittee, pursuant to A.A.C. R18-8-270.J, and would be considered by the Director in making future changes to the Permit, pursuant to A.A.C. R18-8-270.A (40 CFR §270 Subpart D), and when issuing a new Permit as set forth in A.A.C. R18-8-270.A (40 CFR §270.51).

F. CONFIDENTIAL INFORMATION

The Permittee may claim confidential any information required to be submitted by this Permit.

[A.A.C. R18-8-270.H (40 CFR §270.12)]

G. DOCUMENTS TO BE MAINTAINED AT THE FACILITY

The Permittee shall maintain at the Luke AFB Environmental Flight, 13970 Gillespie Drive, Luke Air Force Base, AZ 85309 the following documents and all amendments, revisions and

modifications to these documents:

1. Inspection plan and schedule, as required by A.A.C. R18-8-264.A (40 CFR §264.15(b)(2)) and this Permit.
2. Personnel training documents and records, as required by A.A.C. R18-8-264.A (40 CFR §264.16(d)) and this Permit.
3. Contingency Plan, as required by A.A.C. R18-8-264.A (40 CFR §264.53(a)) and this Permit.
4. Post-Closure Plan, as required by A.A.C. R18-8-264.A (40 CFR §264.118(a)) and this Permit.
5. Operating record , as required by A.A.C. R18-8-264.A, 40 CFR §264.73 and this Permit;
6. All other documents required by Permit Condition I.E.10.

H. PERMIT MODIFICATIONS

1. General Conditions

For Permit modifications (including re-applications), the Permittee shall follow A.A.C. R18-8-270.A (40 CFR §270.42) and, as applicable:

- (a) Permit Condition I.C.1. (Permit Modification, Revocation and Reissuance, and Termination);
- (b) Permit Condition I.E.14 (Reporting Anticipated Noncompliance);
- (c) Permit Condition I.E.13(a) (Reporting Requirements - Reporting Planned Changes);
- (d) Signatory and document liability certification requirements as described in Permit Condition I.E.12 (Signatory and Certification Requirements);
- (e) Confidentiality rules, if desired, pursuant to Permit Condition I.F. (Confidential Information);
- (f) Fees required to be submitted with the application for Permit modification as required by A.A.C. R18-8-270.G;
- (g) For areas outside of the Munitions Treatment Range (MTR) Unit 8, 36 CFR §800, which requires that, prior to any excavation or earth working activity, all potentially

impacted underground utilities will be located (state law) and the Federal and State Historic Departments will be contacted; and

- (h) Procedures for updating the facility mailing list, changing the emergency contingency plan, and changing key employees.

2. Facility Mailing List

The Permittee shall obtain and use an updated current facility mailing list provided by ADEQ pursuant to A.A.C. R18-8-270.A (40 CFR §270.42) when processing all Permittee requested Permit modifications.

[A.R.S. §49-941 (A.A.C. R18-8-271.I(c))]

3. Changes to Key Employee(s)

For the following key personnel changes, the Permittee shall also submit an ADEQ Character/Background Reference Form:

[A.R.S. §49-922.C, A.A.C. R18-8-270.J (270.14(b)(20))]

- (a) Training Director - See Permit Attachment D (Personnel Training);
- (b) Signatories - See Permit Condition I.E.12 (Signatory and Certification Requirements);
- (c) Emergency Coordinators - See Permit Attachment F (Contingency Plan)

PART II – GENERAL FACILITY CONDITIONS

A. MAINTENANCE AND OPERATION OF FACILITY

The Facility is described in Permit Attachment A (Facility Description). Permittee shall maintain the facility to minimize the possibility of a fire, explosion, or any unplanned, sudden or non-sudden release of hazardous waste constituents and perchlorate to air, soil, or surface water which could threaten human health or the environment.

[A.A.C. R18-8-264.A, 40 CFR §264.31]

B. SECURITY

The Permittee shall comply with the security provisions of A.A.C. R18-8-264.A (40 CFR §264.14(b) and (c)) and those contained in Permit Attachment E (Procedures to Prevent Hazards), and summarized in III.I.

C. GENERAL INSPECTION REQUIREMENTS

1. The Permittee shall follow the inspection schedule set in Permit Attachment C (Post-Closure Plan) and summarized in III.J.
2. The results shall be recorded on Exhibit C-1 (Inspection Form) in Permit Attachment C (Post-Closure Plan).
3. The Permittee shall verify site security and remedy any deterioration or malfunction discovered by an inspection, as required by A.A.C. R18-8-264.A (40 CFR §264.15(c)).
4. Records of inspection shall be kept, as required by A.A.C. R18-8-264.A (40 CFR §264.15(d)).

D. PERSONNEL TRAINING

The Permittee shall conduct personnel training, as required by A.A.C. R18-8-264.A (40 CFR §264.16). This training program shall follow the outline contained in Permit Attachment D (Personnel Training). The Permittee shall maintain training documents and records, as required by A.A.C. R18-8-264.A (40 CFR §264.16(d) and (e)).

E. PREPAREDNESS AND PREVENTION

1. Required Equipment

At a minimum, the Permittee shall maintain at the facility the equipment set forth in Permit Attachment E (Procedures to Prevent Hazards) and Permit Attachment F (Contingency Plan).

[A.A.C. R18-8-264.A (40 CFR §264.32)]

2. Testing and Maintenance of Equipment

The Permittee shall test and maintain the equipment specified in Permit Condition II.E.1, as necessary, to ensure its proper operation in time of emergency.

[A.A.C. R18-8-264.A (40 CFR §264.33)]

3. Arrangements with Local Authorities

The Permittee shall maintain arrangements with state and local authorities, as required by A.A.C. R18-8-264.A (and 40 CFR §264.37). If state or local officials refuse to enter into preparedness and prevention arrangements with the Permittee, the Permittee must document this refusal in the operating record. All correspondence related to these arrangements must be kept with the contingency plan.

[A.A.C. R18-8-264.A (40 CFR §264.52(c))]

F. CONTINGENCY PLAN

1. Implementation of Plan

(a) The Permittee shall immediately carry out the provisions of the Contingency Plan (Permit Attachment F) and follow the emergency procedures described in A.A.C. R18-8-264.A and C (40 CFR §264.56) whenever there is a fire, explosion, or release of hazardous waste or constituents which could threaten human health or the environment.

[A.A.C. R18-8-264.A (40 CFR §264.51(b))]

(b) As part of remedial action taken in response to a fire, release or explosion of hazardous materials, the Permittee shall sample and analyze, to detect the extent and depth of any soil contamination. The sampling and analytical methods used must be consistent with those published in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA publication SW-846 (most current edition). A report of the sampling and analysis must be kept on file. The report shall include:

- i. The number of samples taken;
- ii. The location and size of each sample;
- iii. The depth of each sample;
- iv. The specific analytical methods used;
- v. A description of the sampling tools, containers, filling, sealing, and preservation methods; and

Each parameter test that the in-state or out-of-state laboratory can perform for hazardous waste analysis must be licensed (certified) by the Arizona Department of Health Services.

[A.R.S. Title 36, Chapter 4.3, Article 1, Section 36-495.01]

If the samples indicate that there is soil contamination, then the report must also include the following information:

- vi. Description of the statistical methods used;
 - vii. Soil type and permeability information;
 - viii. Groundwater depth and quality information; and
 - ix. Procedures for establishing background contaminant concentrations.
- (c) If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, he/she must immediately notify the Director, and either the government official designated as the on-scene coordinator for that geographical area, or the National Response Center in accordance with A.A.C. R18-8-264.A and F (40 CFR §264.56(d)).

2. Copies of Plan

The Permittee shall maintain and distribute copies of the Contingency Plan pursuant to 40 CFR §264.53.

[A.A.C. R18-8-264.A (40 CFR §264.53)]

3. Amendments to Plan

The Permittee shall review and immediately amend, if necessary, the Contingency Plan. Any amendment shall be subject to Permit Condition I.H.

[A.A.C. R18-8-264.A (40 CFR §264.54)]

4. Emergency Coordinator

- (a) The emergency coordinator (EC) must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of wastes handled, the location of all records within the facility, the facility layout, and the authority to commit the resources needed to carry out the contingency plan.
- (b) A list of persons authorized to act as an EC is found in Permit Attachment F (Contingency Plan). A training EC shall be available at all times in case of an emergency. Any changes to the names, addresses, and phone numbers of all persons

qualified to act as an EC shall be supplied to the Director as a Class 1 Permit Modification request, in accordance with Permit Condition II.G.3 above.

[A.A.C. R 18-8-264.A (40 CFR §264.52(d) and 40 CFR §264.55)]

G. RECORD KEEPING AND REPORTING

In addition to the record keeping and reporting requirements specified elsewhere in this Permit, A.A.C. R18-8-264.A, and 40 CFR §264.77, the Permittee shall do the following:

1. Operating Record

The Permittee shall keep a written operating record at the Luke Air Force Base Environmental Flight, 56 CES/CEIE, 13970 Gillespie Drive, Luke Air Force Base, AZ 85309.

The following information shall be recorded as it becomes available and maintained in the operating record of the facility until completion of post-closure care period:

- (a) Summary reports and details of all incidents that require implementing the contingency plan;
[A.A.C. R18-8-264.A (40 CFR §264.73(b)(4))]
- (b) Records and results of inspections (except these data need be kept only ten years);
[A.A.C. R18-8-264.A (40 CFR §264.73(b)(5))]
- (c) Monitoring, testing or analytical data, and corrective action;
[A.A.C. R18-8-264.A (40 CFR §264.73(b)(6))]
- (d) Monitoring, testing or analytical data where required by statute, regulation or Part I.E.10 of this Permit; and

2. Availability, Retention, and Disposition of Records

The retention period of all records required in this document is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by ADEQ.

PART III – POST-CLOSURE

A. POST CLOSURE CARE, USE OF PROPERTY, AND PERIOD OF CARE

1. Post-Closure Care

Post-Closure Care subject to A.A.C. R18-8-264.A (40 CFR §264.117) shall consist of at least:

- (a) Preventing run-on and run-off from eroding or otherwise damaging the surface of the MTR Unit 8;
- (b) Inspection of the Solid Waste Management Unit (SWMU) 2 for potential threats to human health and/or the environment resulting from a release of hazardous waste;
- (c) Inspection and maintenance of the cover on the MTR Unit 8; and
- (d) Inspections and maintenance of the:
 - i. The MTR Unit 8 chain link security fence, animal exclusion fence and warning signs;
 - ii. Any run-on and run-off control systems and vegetative cover for the MTR Unit 8;
 - iii. The Solid Waste Management Unit (SWMU) 2 signs and fence.
- (e) Protect and maintain surveyed benchmarks used in complying with 40 CFR 264.309.

2. Integrity of Final Cover

Post-closure use of the portion of property on or in which hazardous waste remains after closure shall never be allowed to disturb the integrity of the final cover, liner(s), or any other components of any containment system, or the function of the facility's monitoring system. New future uses must be reviewed and approved by ADEQ and must not adversely impact the integrity or function of the closure system.

3. Post-Closure Care Period

The Permittee shall provide care in accordance with the Post-Closure Plan (Permit Attachment C) for at least 30 years after the date of completing closure. However, the Permittee may petition ADEQ to allow some or all of the requirements for post-closure care to be discontinued or altered before the end of the 30-year period. The petition shall include evidence demonstrating the secure nature of the facility that makes continuing the specified post-closure requirement (s) unnecessary (e.g., no detected leaks and none likely to occur, characteristics of the waste, application of advanced technology, or alternative disposal, treatment, or reuse techniques). Alternatively, ADEQ may require the Permittee to continue one or more of the post-closure care and maintenance requirements contained in the facility's

Post-Closure Plan for a specified period of time. ADEQ may do this if they find there has been noncompliance with any applicable standards or requirements, or that such continuation is necessary to protect human health or the environment. At the end of the specified period of time, ADEQ will determine whether to continue or terminate post-closure care and maintenance at the facility. The Permittee may petition ADEQ for an extension or reduction of the post-closure care period based on cause. These petitions will be considered by ADEQ at the time the Post-Closure Plan is submitted and at five-year intervals after the completion of closure.

[A.A.C. R18-8-264.A (40 CFR §§264.117 through 264.120)]

B. POST CLOSURE PERMIT MODIFICATIONS

The Permittee may request approval from ADEQ to amend the Permit at any time. Any amendments to the Permit must be submitted to ADEQ for review and approval 60-days prior to implementing any changes. Modifications shall be made according to Permit Condition I.C.1 of this Permit.

[A.A.C. R18-8-264.A (40 CFR §264.118(d))]

C. SURVEY PLAT

The survey plat prepared in accordance with A.A.C. R18-8-264.A (40 CFR §264.116) is included in Permit Attachment A, Exhibit A-3 (Figure 2) of this Post-Closure Permit.

D. POST-CLOSURE NOTICES

1. Before the Permittee transfers ownership of the facility to another person, The Permittee shall ensure that a notation is recorded on the property deed (or an equivalent instrument which is normally examined during title search). In accordance with A.A.C. R18-8-264.A (40 CFR §264.119(b)) and ARS §49-152 (Soil remediation standards; restrictions on property use) this recordation will in perpetuity notify a potential purchaser of the property that:
 - (a) The land has been used to manage hazardous wastes;
 - (b) Its use is restricted under 40 CFR Part 264, Subpart G regulations; and
 - (c) The survey plat and record of the type, location, and quantity of hazardous wastes disposed of within each cell or other hazardous waste disposal unit of the facility required by A.A.C. R18-8-264.A, §§264.116 and 264.119(a) has been filed with the Range Management Office and with ADEQ.

2. If, at any time, the Permittee or any subsequent owner or operator of the land upon which the hazardous waste disposal unit is located intends to close the disposal unit by removing the waste; waste residues; the liner; and all contaminated underlying and surrounding soils, then he shall request a modification to this Post-Closure Permit in accordance with the applicable requirements of A.A.C. R18-8-270.A (40 CFR Part 270) and 271.A (40 CFR Part 124). The

Permittee or any subsequent owner or operator of the land shall demonstrate in writing to ADEQ that the removal of the hazardous wastes will satisfy the criteria of A.A.C. R18-8-264.A (40 CFR §264.117(c) and 40 CFR §264.119(c)).

E. CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE

No later than 60 days after completion of the established post-closure care period for the facility, the Permittee must submit to ADEQ by registered mail a certification that the post-closure care period for the hazardous waste disposal unit was performed in accordance with the specifications in the submitted Post-Closure Plan (Permit Attachment C). The certification must be signed by the Permittee and an independent, registered professional engineer registered in the State of Arizona. The certification shall be submitted with documentation supporting the independent registered professional engineer's certification.

[A.A.C. R18-8-264.A (40 CFR §264.120)]

F. FINANCIAL ASSURANCE

The Permittee is exempt from the requirements for financial assurance during the post-closure period pursuant to A.A.C. R18-8-264.A (40 CFR §264.140(c)) because the owner is the Federal government. Upon transfer of ownership of the property to a new owner not eligible for an exemption to the financial assurance requirements, the new owner shall be required to maintain financial assurance during the post-closure period and comply with all applicable financial assurance requirements of A.A.C. R18-8-264.A, L, M, and N (40 CFR §264 Subpart H).

G. SPECIAL CONDITIONS

1. Disposal Prohibition

MTR Unit 8 is a closed hazardous waste disposal facility. No additional solid or hazardous wastes may be disposed on-site.

2. Non-potable Water Supply

If an on-site water supply is used for controlling dust and fires, cleaning equipment or other purposes and does not meet all health standards for drinking water, all faucets or taps connected to that supply shall be clearly labeled in English, "Polluted -- Not Safe for Human Use," and in Spanish, "Peligro, Contaminacion, No Usar."

3. Public Water Supply

If a public water supply is used at the facility, the service connections shall be protected from contamination.

4. Private Water Supply

If a private water supply is used at the facility, it shall meet all health standards for drinking water. If a private water supply does not meet health standards for drinking water, all faucets or taps connected in that supply shall be clearly labeled in English, "Polluted -- Not Safe for Human Use," and Spanish, "Peligro, Contaminacion, No Usar."

H. SECURITY

The Permittee shall comply with the security provisions of the Procedures to Prevent Hazards (Permit Attachment E) and A.A.C. R18-8-264.A, 40 CFR 264.14(b) and (c), including:

1. The Permittee shall maintain a burrowing animal exclusion fence to prevent animals from digging into the cap and potentially compromising its integrity.
2. The Permittee shall maintain the 6-foot chain-link fence, along accessible portions of the installation enclosing the facility.
3. The Permittee shall maintain a gate for providing access to the facility. This gate shall be kept locked at all times when the Permittee's personnel or representatives are not at the facility.
4. The Permittee shall maintain signs at all entrances to the regulated unit in both English and Spanish with the legend "Danger Unauthorized Personnel Keep Out" in accordance with Permit Attachment E (Procedures to Prevent Hazardous).

[A.A.C. R 18-8-264.A (40 CFR 264.14, 264.117(b))]

I. INSPECTIONS

1. Frequency

The Permittee shall, on a routine basis, inspect the disposal unit site for final cover integrity, and check for erosion and deterioration. Inspections shall look for any discharges or releases of hazardous waste or hazardous constituents or for any potential release that may pose a threat to human health and the environment. The Permittee shall conduct these inspections in accordance with Section C.2 of the Post-Closure Plan (Attachment C). The facility may request a longer interval between inspections for ADEQ's approval. Such a request shall be accompanied with data or records of past inspections demonstrating that a longer interval of inspection will not be detrimental to the environment. ADEQ may require more frequent inspections if past records or data so warrant. Any changes to the frequency or content of inspections made at the request of the Permittee shall comply with Permit Condition I.C.1. In accordance with A.A.C. R18-8-270.A (40 CFR §270.42, Appendix I, Section B.4), any request to change the frequency or content of inspections at the facility shall be considered to

be a Class 2 permit modification request.

2. Inspection Procedures

The Permittee shall follow the procedures referenced in Permit Part II and Attachment C for inspecting all access roads, perimeter-fencing and signage, the MTR Unit 8 covers, all drainage structures, and survey monuments. The Permittee shall ensure that any debris from training and emergency disposal activities does not enter the disposal unit.

The Permittee shall keep the Post-Closure Plan at the Luke AFB Environmental Flight located on 13970 Gillespie Drive, Luke Air Force Base, AZ 85309 along with other documents required to be maintained by this Permit.

3. Remedial Actions

The Permittee shall quickly remedy any deterioration or malfunction of equipment or structures which has been identified during an inspection. The Permittee shall ensure that remedial actions are performed in such a way that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action shall be taken immediately. Permittee shall provide ADEQ written notification within five business days of such immediate remedial actions.

4. Records

The Permittee shall keep records of inspections in an inspections log or summary. The Permittee shall keep these records for at least ten years from the date of inspection. At a minimum, these records shall include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

PART IV – GROUNDWATER MONITORING

A. CONDITIONAL EXEMPTION

Subject to Permit Condition IV.B, below, and in accordance with A.A.C. R-18-8-264.A (40 CFR §264.90(b)(4)), groundwater monitoring is not required for the facility. Information concerning existing groundwater quality in and surrounding the facility is contained in Permit Attachment B (Hydrogeologic Characterization and Monitoring Requirements).

B. FUTURE APPLICABILITY

ADEQ shall require the Permittee to comply with the groundwater monitoring provisions of A.A.C. R18-8-264.A (40 CFR §264 Subpart F) if the Director finds that waste or waste constituents have migrated or if the waste or waste constituents threaten to migrate to the groundwater. ADEQ will notify the Permittee by certified mail of this finding and decision to require compliance with the groundwater monitoring requirements. Within 90 days of such notification, the Permittee shall submit to ADEQ a permit modification request and groundwater detection monitoring plan for the Director's approval.

PART V – CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS –

SCHEDULE OF COMPLIANCE

A. AUTHORITY

RCRA Section 3004(u) and (v), as amended by the HSWA, and A.A.C. R18-8-264.A (40 CFR §264.101 and 40 CFR Subpart S §264.552) requires that Permits issued after November 8, 1984, address corrective action for releases of hazardous waste, including hazardous waste constituents, from any SWMU at the facility, regardless of when the waste was placed in the unit.

When the Permittee discovers a new SWMU or an area of concern (AOC) at the facility, or determines a release has occurred, the facility is governed by the conditions of this Permit Part (hereinafter referred to as the “Corrective Action Schedule of Compliance” or “CASOC”).

B. SUMMARY OF PREVIOUS AND CURRENT CORRECTIVE ACTION ACTIVITIES

A RCRA Facility Assessment (RFA) was conducted, and a final report summarizing the findings and recommendations was prepared by ADEQ. Potential releases of hazardous materials or wastes to local soils were noted in the RFA. Four (4) SWMUs and two (2) AOCs were identified in the RFA as requiring further investigation. The status of these are described below:

1. **SWMU 1: MTR**

The MTR consists of eight former treatment units including two burn boxes (Units 3 and 4), three burn beds (Unit 1, 2 and 5), a burn furnace/kettle (Unit 6), an open burn pit (Unit 7), and a burial pit (Unit 8). Units 1, 2, 3, 6, and 7 were closed in 1995 under ADEQ Consent Order D-210-94 and Units 4 and 5 were closed in 2000 under ADEQ Consent Order Z-87-98. Unit 8 closed and installed a hazardous waste landfill cap in 2000 under ADEQ Consent Order Z-87-98 requiring a Post Closure Permit for facility monitoring, which is the subject of this permit.

2. **SWMU 2: Auxiliary Air Field 6**

Auxiliary Air Field 6 (Williams Air Field no. 6) is an inactive airfield located on the northeastern part of the range approximately 6 miles southwest of Gila Bend, 2.5 miles south of Interstate 8, and 3 miles west of Arizona 85 and seven miles north of the MTR. Two locations around the airfield have been used for open burning and open detonation (OB/OD) activities (SWMU 2-2 and SWMU 2-3) and one for munitions burning furnace (SWMU 2-1). Evidence of past OB/OD activity included casing remnants, munitions residue, metal fragments and shards as well as large areas of disturbed desert devoid of natural vegetation.

SWMU 2-2 is a discrete area located in the southeast portion of Auxiliary Air Field 6 and reportedly was formerly used for thermal treatment of munitions including pyrotechnics, cartridge actuated devices, and 20 millimeter ammunition. ADEQ acknowledged completion of Corrective Action for the southeast open burn and open detonation (SE OB/OD) treatment

site in a letter dated March 23, 2012.

SWMUs 2-1 and 2-3 are located near Unit 8 of the MTR at the Barry M. Goldwater Range-East. Luke AFB submitted an initial Draft Final RFI Work Plan for Auxiliary Field 6, SWMU 2-1, Munitions Burning Furnace, and SWMU 2-3, Northwest OB/OD, in March 2015. ADEQ approved the work plan on September 28, 2015. Investigation and corrective action for SWMUs 2-1 and 2-3 have begun and are ongoing as accessibility to the range permits, with expected completion of the fieldwork in April 2017 and expected completion of the final report in February 2018.

The Permittee shall address the release of hazardous waste(s), hazardous waste constituents, and hazardous waste decomposition byproducts (including perchlorates) in a SP in accordance with Permit Condition V.M.

3. SWMU 3: White Phosphorus Detonation Area

The White Phosphorus Detonation Area is a discrete area located within the MTR. The unit was formerly used for thermal treatment of white phosphorus.

The Permittee addressed the release of hazardous waste(s), hazardous waste constituents, and hazardous waste decomposition byproducts in a RFI in accordance with Permit Condition V.M. ADEQ completed a final review of the RFI Plan Report submitted by Luke AFB on November 12, 2009, and determined the RFI report satisfactorily demonstrated that no hazardous waste remains onsite and that hazardous constituents and constituents of concern in the soils do not exceed applicable residential Soil Remediation Levels or Groundwater Protection Levels.

4. SWMU 4: Open detonation Area

The Open Detonation Area is located within the MTR 3. The area was used in the past for the treatment of waste munitions. It is currently used solely for emergency response activities exempt under 40 CFR 264.1(g)(8) and training exercises exempt under 40 CFR 266.202(a)(1)(i). This area will not be investigated until the Barry M. Goldwater Range closes but must adhere to 40 CFR 264 Subparts C and D per 40 CFR 264.1(g)(8)(ii).

5. AOC 1: North Tactical Range Munitions Burial Site (AC42)

The North TAC munitions burial site was identified in the Preliminary Assessment but, since it was on an active range, it was not recommended for any further investigation. Based on some historical information, ADEQ subsequently completed a pre-RFA site visit to investigate the possibility of past OB/OD activity at the site. The site visit observations indicated the site may have been used for OB/OD treatment warranting further definitive investigation.

ADEQ conducted an assessment for AC 42 and acknowledged completion of RFA on November 15, 2006. ADEQ has not made any determination at this time if additional RCRA investigation is necessary but intends to complete an update to the existing RFA report for

the Barry East facility.

6. AOC 2: Flash Burn Demilitarization/Recycling Operation

The Flash Burn Operation is a demilitarization and recycling process to recover scrap metal from routine military range clearing. The Flash Burn Operation (FBO) is permitted for air emission control by Maricopa County Air Quality. Upon reasonable notice, the Permittee shall permit ADEQ access to the FBO to perform routine inspections. The Flash Burn Operation was confirmed as exempt from RCRA Subtitle C permitting, therefore no RFI or SP is required at this time for this AOC.

C. SPECIFIC CORRECTIVE ACTION REQUIREMENTS

There are no specific corrective action requirements, other than the outstanding actions to be taken as identified in Permit Condition V.B (Summary of Previous and Current Corrective Action Activities).

[A.A.C. R18-8-264.A (40 CFR §264.101), A.A.C. R18-8-270.A, M, N, and O (40 CFR §270.32), and A.A.C. R18-8-270.A (40 CFR §270.33)]

D. GENERAL CORRECTIVE ACTION REQUIREMENTS

1. Record keeping

In accordance with Permit Condition I.E.10 (Monitoring and Records), all raw data, such as laboratory reports, drilling logs, bench-scale or pilot-scale data, and other supporting information gathered or generated during activities undertaken pursuant to this CASOC shall be maintained at the facility during the term of this Permit, including any reissued Permits, or six years after the Corrective Action, whichever is latest.

2. Reporting, Notifications and Submittals

(a) The Permittee shall submit to the Director signed quarterly or monthly progress reports, as specified by the Director, of all activities (i.e., SWMU Assessment, Interim Corrective Measures, RCRA Facility Investigation, Corrective Measures Study) conducted pursuant to the provisions of this CASOC, beginning no later than (90) calendar days after the Permittee is first required to begin implementation of any requirement herein, and shall contain:

- i. A description of the work completed;
- ii. Summaries of all findings, including summaries of laboratory data;
- iii. Summaries of all problems or potential problems encountered during the reporting period and actions taken to correct the problems; and
- iv. Projected work for the next reporting period with a detailed schedule for this work.

(b) Copies of other reports (e.g., inspection reports), drilling logs and laboratory data

shall be made available to the Director upon request.

- (c) The Director may require the Permittee to conduct new or more extensive assessments, investigations, or studies, as needed, based on information provided in these progress reports or other supporting information. These assessments, investigations or studies may be required following review of the Permittee's RCRA Facility Investigation Reports, Corrective Measures Study Work Plan (see V.J.3), or Corrective Measures Study Report (see V.J.6), or Corrective Measures Implementation (CMI) Program Plan (See V.L), which will be submitted as Class 1 Permit Modification requests requiring Director approval.
- (d) The Permittee shall ensure that all plans, reports, notifications, and other submissions to the Director required by this Permit are signed, certified, and submitted in accordance with Permit Condition I.C (Permit Actions), I.E.12 (Signatory and Certification Requirements), and other applicable conditions. Technical work submitted to the Director shall be stamped by a Professional Geologist and/or Engineer, as appropriate, registered in the State of Arizona.

3. On-Site and Off-Site Access

The Permittee shall demonstrate good faith and best efforts towards gaining access to off-site property not owned by the Permittee.

4. Contamination that has Migrated Beyond the Facility Boundary, if Applicable

The Permittee shall implement corrective actions beyond the Facility boundary where necessary to protect human health and the environment, unless the Permittee demonstrates to the satisfaction of the Director that, despite the Permittee's best efforts, as determined by the Director, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the Facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis.

5. Quality Assurance and Control

When performing Corrective Action, the Permittee shall follow the guidance specified below for any sampling and sample testing:

(a) Sample Collection and Management

The Permittee shall submit a Sampling Plan that includes all elements of EPA SW-846, and A.A.C. R18-8-260 et seq. (40 CFR §260 et seq.), not limited to:

- i. Specifying the sampler and sampler procedure for use;
- ii. Specifying sampling points based on a statistical basis, logic, and strategy;
- iii. Trip blanks, duplicates, spikes, splits, and other field control samples;

- iv. Sample management procedures for the field notebook, collection form, preservatives and capping, and other chain-of-custody components;
- v. Guidance in the EPA Technical Enforcement Guidance Document (TEGD - 09/86)
- vi. Guidance in the ADEQ Quality Assurance Program Plan (QAPP), dated May 24, 2000;
- vii. A.A.C. R18-8-261.A (40 CFR §261.4(d)) “Samples”; and
- viii. A.A.C. R18-8-268.A (40 CFR §268) “Land Disposal Restrictions.”

(b) Laboratory Analysis and Chain-of-Custody

Throughout all sample analysis activities, the Permittee shall ensure the use of Director-approved quality assurance, quality control, and chain-of-custody procedures contained in the:

- EPA Technical Enforcement Guidance Document (TEGD - 09/86); and
- ADEQ QAPP, dated January 12, 2015.

In addition, the Permittee shall:

- i. Inform the Director’s Project Coordinator (See Permit Condition V.D.8), in advance, which laboratories will be used by the Permittee, and ensure that the Director’s personnel and authorized representatives have reasonable access to the laboratories used for analysis.
- ii. Ensure that laboratories used by Permittee for analyses participate in a quality assurance/quality control program equivalent to that described in EPA SW-846. As part of such a program, and upon request by the Director, such laboratories shall perform analyses of a reasonable number of known samples provided by the Director to demonstrate the quality of the analytical data.
- iii. Ensure that the laboratory used is certified by the Arizona Department of Health Services (ADHS) to perform the specific analyses for the specific analyte(s) of concern.

(c) Evaluation of Sampling Data

The Permittee shall ensure the Sampling Plan contains provisions for review of all field and laboratory QA/QC notes and results, and shall use EPA SW-846 to evaluate all data developed in compliance with this Permit. The Sampling Plan must demonstrate that the sampling and analysis program, if applicable, is capable of yielding representative samples and must include parameters sufficient to identify migration of hazardous waste (including hazardous constituents and perchlorates) to the environment.

6. Noncompliance, Delayed, or Inadequate Information

This CASOC contains requirements for plans, reports, schedules, duties, and other information submittals applicable to the Permittee. Any noncompliance with approved plans and schedules, failure to submit required information, delayed or inadequate performance of duties, or falsification of any submitted information, shall be termed noncompliance with this Permit. Noncompliance by the Permittee is grounds for termination pursuant to Permit Condition I.E.1 (Duty to Comply). To avoid noncompliance with established schedules, extensions of due dates for submittals may be granted by the Director upon written request in accordance with the modification processes established in Permit Condition V.D.7 (Document Approval and Permit Modification).

7. Document Approval and Permit Modification

- (a) All plans and schedules required by the conditions of this CASOC are, upon approval of the Director, incorporated herein by reference and become an enforceable part of this Permit.
- (b) If the Director determines that further actions beyond those provided in this CASOC, or changes to that which is stated herein, are warranted, the Director shall modify this Permit according to the process described in Permit Condition I.C (Permit Actions) and Permit Condition I.H (Permit Modifications).
- (c) Modifications that are initiated and finalized by the Director according to this procedure shall not be subject to administrative appeal. Modifications to this CASOC do not constitute a reissuance of the Permit.

8. Project Coordinator

The Permittee will assign a Project Coordinator within 30 days of a written request by ADEQ. The Permittee's Project Coordinator shall be responsible for overseeing the implementing of corrective action at the Facility in accordance with this Part of the Permit and for designating a person to act in his/her absence. ADEQ will also designate a Project Coordinator. All communications between the Permittee and ADEQ, and all documents, reports, approvals, and other correspondence concerning the activities performed pursuant to this Permit shall be directed through the Project Coordinators. The Permittee must provide at least seven (7) calendar days written notice to ADEQ prior to changing the Project Coordinator.

E. STATEMENT OF PURPOSE

The corrective action objectives contained in this Part of the Permit are to perform a RCRA Facility Investigation (RFI) to determine fully the nature and extent of any release of hazardous waste (including hazardous constituents and perchlorates) at or from the facility and to perform any

activities necessary to correct actual or potential threats to human health and /or the environment resulting from the past or current release or potential release of hazardous waste (including hazardous constituents and perchlorates) at the facility.

F. NOTIFICATION AND ASSESSMENT OF NEWLY-IDENTIFIED SWMU(S)

1. Notification of Newly-Identified SWMU(s) of AOC(s)

The Permittee shall notify the Director in writing of any newly-identified SWMUs or AOCs (i.e., a unit not specifically identified during the RFA), discovered during the course of any groundwater monitoring, field investigations, environmental audits, or other means, no later than fifteen (15) calendar days after discovery. The notification shall include, at a minimum, the location of the SWMU or AOC and all available information pertaining to the nature of the release (e.g., media affected, hazardous constituents released, magnitude of release).

2. Request for SWMU Assessment Plan (SAP)

After such notification, the Director may require that the Permittee prepare a written SWMU Assessment Plan (SAP) and a proposed schedule of implementation and completion of the SAP for any additional SWMU(s) or AOC(s) discovered subsequent to the issuance of this Permit. This plan will be submitted as a Class 1 Permit Modification request requiring Director approval.

Note: The SWMU Assessment is equivalent in scope to the RFA. The SWMU Assessment differs from the RFA, however, in that the RFA was conducted by EPA, EPA contractor, and/or the State prior to Permit issuance, whereas the SWMU Assessment will be conducted by the Permittee.

3. Content and Submittal of SWMU Assessment Plan

Within ninety (90) calendar days after receipt of the Director's request for a SAP, the Permittee shall prepare and submit a SAP for determining the past and present operations at the unit, as well as any sampling and analysis of groundwater, land surface and subsurface strata, and surface water or air, as necessary to determine whether a release of hazardous waste including hazardous constituents from such unit(s) occurred, is likely to have occurred, or is likely to occur. The SAP must demonstrate that the sampling and analysis program, if applicable, is capable of yielding representative sampling and must include parameters sufficient to identify migration of hazardous waste including hazardous constituents from the newly discovered SWMU(s) to the environment. This plan will be submitted as a Class 1 Permit Modification request requiring Director approval. The SAP should address the following methods and objectives:

(a) Objectives of a SWMU Assessment

The SWMU Assessment shall meet the objectives:

- i. Identifies all SWMU's that have operated (or are currently operating) at the facility, including past and present unit operations of:
 - a. Location of all SWMU's on a topographic map;
 - b. Type and function of the unit;
 - c. General unit dimensions, structures described, capacities, any drawings;
 - d. Period during which the unit was or is operating;
 - e. Specifics on all wastes that have been or are being managed at the SWMU to the extent available;
 - f. Migration pathways (e.g., hydrogeologic and geologic setting, atmospheric conditions); and
 - g. Exposure potential to human health and the environment.
- ii. Screens out SWMU's not a current/potential threat to human health and the environment.
- iii. Collects all existing information on releases including sampling and analysis of groundwater, land surface/subsurface strata, surface water or air, and any other evidence as necessary to determine whether a release of hazardous waste (including hazardous constituents and perchlorates) from such unit(s) has occurred, is likely to have occurred, or is likely to occur. Any sampling and analysis must meet Permit Condition V.D.5 (Quality Assurance and Control).
- iv. Identifies which SWMU's, releases and suspected releases of hazardous wastes (including hazardous constituents and perchlorates), and media of concern need further investigation and interim corrective action.
- v. In addition, the SWMU Assessment must discuss:
 - a. Facility operations (e.g., wastes generated, and treatment, storage, and/or disposal methods);
 - b. Any emission controls in place;
 - c. Any actions taken (both investigatory and remedial) at the site related to corrective action; and
 - d. Relevant communications with regulating agencies.

(b) Phases of the SWMU Assessment

The SWMU Assessment Plan shall address the 3 phases that accomplish these objectives:

- i. Preliminary Review (PR) - The gathering and evaluation of existing file and other information available.

- ii. Visual Site Inspection (VSI) - On-site collection of visual data to obtain potential or actual release information.
- iii. Sampling Visit (SV) - If PR/VSI is not adequate after its completion, the Sampling Visit fills in all data gaps remaining.

4. Review and Approval/Disapproval of SWMU Assessment Plan

After the Permittee submits the SAP, the Director shall either approve or disapprove the SAP in writing. If the Director disapproves of the SAP, the Director shall either:

- (a) Notify the Permittee in writing of the SAP deficiencies and specify a due date for submittal of a revised SAP, or
- (b) Revise the SAP and notify the Permittee of the revisions. This Director-revised SAP becomes the approved SAP, and constitutes the approval of the Class 1 Permit Modification request specified in Condition F.2 above.
- (c) The approved SAP shall be incorporated into a Permit Attachment J (CASOC - Approved Work Plans and Reports).

5. Implementation of the SWMU Assessment Plan

The Permittee shall implement the SAP within (15) calendar days of receiving written approval or in compliance with an alternate schedule in the Director approved SAP.

6. Content and Submittal of SWMU Assessment Report (SAR)

The Permittee shall submit a SWMU Assessment Report (SAR) to the Director no later than forty-five (45) calendar days from completion of work specified in the approved SAP or in compliance with an alternate schedule in the Director approved SAP. The Report will be submitted as Class 1 Permit Modification request, requiring the Director's approval. The SAR shall describe all results obtained from the implementation of the approved SAP. At a minimum, the SAR shall provide the following information for each newly identified SWMU:

- (a) The location of the newly identified SWMU in relation to other SWMUs;
- (b) The type and function of the unit;
- (c) The general dimensions, capacities, and structural description of the unit, including any available drawings;
- (d) The period during which the unit was operated;
- (e) The specifics on all wastes that have been or are being managed at the SWMU, to the extent available;

- (f) The results of any sampling and analysis required for the purpose of determining whether releases of hazardous waste including hazardous constituents have occurred, are occurring, or are likely to occur from the unit.
- (g) Migration pathways (e.g., hydrogeologic and geologic setting, atmospheric conditions); and
- (h) Exposure potential to human health and the environment.

7. SAR Approval and Determination of Further RFI Actions

- (a) Based on the results of the SAR, the Director shall determine the need for further investigations at specified unit(s) covered in the SWMU Assessment, and may require the Permittee to prepare an RFI Work Plan or a Site Assessment Plan (SP) [see Condition V.M (Site Assessment and Remedy) of this Permit part] for such investigations. If the Director determines that investigations are needed, the Director shall incorporate his determination into the SAR approval. The SAP and SAR Approval shall constitute approval of the Permittee's Class 1 Permit Modification request. The final approved SAR shall then be incorporated into a Permit Attachment J (CASOC - Approved Work Plans and Reports).
- (b) The RFI Work Plan or SP described in Condition V.F.7.(a) will be reviewed for approval pursuant to Condition V.I (RCRA Facility Investigation Work Plan and Reports) or Condition V.M (Site Assessment and Remedy) of this Permit Part, as specified by the Director. The RFI Work Plan will be submitted to the Director as a Class 1 Permit Modification request, requiring the Director's approval.

G. NEWLY-DISCOVERED RELEASES AND THREATS TO HEALTH AND THE ENVIRONMENT

1. Notification Requirements

The Permittee shall notify the Director, in writing, of any release(s) of hazardous waste (including hazardous constituents and perchlorates) discovered during the course of groundwater monitoring, field investigation, environmental auditing, or other activities undertaken after commencement of the RFI or the SP [see Condition M (Site Assessment and Remedy) of this Permit part], no later than fifteen (15) calendar days after discovery. Such newly-discovered releases may be from newly-identified units, from units for which, based on the findings of the RFA, the Director had previously determined that no further investigation was necessary, or from units investigated as part of the RFI or the SP.

In the event the Permittee identifies a current or potential threat to human health or the environment, the Permittee shall immediately notify the Director orally, and in writing within seven (7) calendar days, summarizing immediacy and magnitude of these threats.

2. Interim Measures for Current or Potential Threats

Within forty-five (45) calendar days of notifying the Director, the Permittee shall submit to the Director for approval an Interim Measures (IM) Work Plan, pursuant to Permit Condition V.H (Interim Measures) that identifies interim measures which mitigate this threat and are consistent with, and integrated into, any long term solution at the facility. The Work Plan shall be submitted as a Class 1 request, requiring the Director's approval. The approved IM Work Plan constitutes approval of the Permit Modification request. The approved IM Work Plan shall be incorporated into a Permit Attachment J (CASOC – Approved Work Plans and Reports).

3. Further Investigations

The Director may require further investigation of newly identified release(s). A plan for such investigation will be submitted by the Permittee as a Class 1 Permit Modification request, requiring the Director's approval. The Plan shall be reviewed pursuant to Condition V.I (RCRA Facility Investigation Work Plan and Report) or Condition V.M (Site Assessment and Remedy) of this Permit, as specified by the Director.

H. INTERIM MEASURES (IM)

1. Determination that Interim Measures are Needed

If during the course of any activity initiated under this CASOC, the Director or Permittee determines that a release or potential release of hazardous waste (including hazardous constituents and perchlorates) from a SWMU poses an actual, imminent, or potential threat to human health or the environment, the Director and Permittee may determine that interim measures are necessary. These interim stabilization measures may be deployed while investigations proceed that are consistent with the final remedy. The following factors should be considered in this determination:

- i. Time required to develop and implement a final remedy;
- ii. Actual and potential exposure to the environment (e.g., animals, ecosystems) and/or human receptors;
- iii. Actual and potential contamination of drinking water supplies and sensitive ecosystems;
- iv. Potential for further degradation of the medium absent interim measures;
- v. Presence of hazardous waste in containers that may pose a threat of release;
- vi. Presence and concentration of hazardous waste (including hazardous constituents and perchlorates) in soils having potential to migrate to ground or surface water;
- vii. Weather conditions that may affect the current levels of contamination;

- viii. Risks of fire, explosion, or accident; and
- ix. Other situations that may pose threats to human health and the environment.

2. Specifying Interim Measures and Actions

- (a) When it is determined that interim measures are needed, an IM Work Plan shall be developed that include, but not be limited to, the following elements from EPA-530/SW-88-028 (RCRA Corrective Action Plan (CAP)), EPA-530/SW-88-029 (RCRA Corrective Action Interim Measures Guidance), and/or EPA-625/4-91-029 (Stabilization Technologies of RCRA Corrective Action):
 - i. What interim measures need to be taken;
 - ii. Specific action(s) that must be taken to implement the interim measure;
 - iii. Schedule for their implementation; and
 - iv. Parameters or measurements by which to judge the completion of the measures.
- (b) Director or the Permittee shall develop the IM Work Plan as follows:
 - i. The Director may notify the Permittee in writing of the requirement to perform specific interim measures. The Permittee shall begin to implement the interim actions within fifteen (15) calendar days after receiving notification. The Director shall modify the CASOC according to Permit Condition I.H (Permit Modifications) and V.D.7 (Document Approval and Permit Modification) to incorporate these measures. Interim Measures (IM) do not require a public comment period until the measures are incorporated into the Corrective Measures Study (CMS) Work Plan and Report described in Permit Condition V.J.
 - ii. The Director may notify the Permittee in writing that the Permittee is required to develop an IM Work Plan. In this event, the Permittee shall submit the IM Work Plan within thirty (30) calendar days after request. The IM Work Plan shall be submitted as a Class 1 Permit Modification request, requiring the Director's approval.

3. Review and Approval/Disapproval of IM Work Plan

After the Permittee submits the IM Work Plan, the Director shall either approve or disapprove the IM Work Plan in writing. If the Director disapproves the IM Work Plan, the Director shall either:

- (a) Notify the Permittee in writing of the IM Work Plan's deficiencies and specify a due date for submittal of a revised Plan, or

- (b) Revise the IM Work Plan (this revised Work Plan becomes the approved IM Work Plan) and notifies the Permittee of the revisions. The approved IM Work Plan constitutes approval of the Class 1 Permit Modification request specified in Condition V.H.2(b)(ii). The final approved IM Work Plan shall then be incorporated into a Permit Attachment J (CASOC – Approved Work Plans and Reports).

4. Implementation of the IM Work Plan

The Permittee shall begin to implement interim actions within fifteen (15) calendar days after receiving approval or notification of any revisions requested by the Director. If the Director does not comment on the Work Plan within forty-five (45) calendar days of receipt of the Work Plan, the Permittee may implement interim measures in accordance with the IM Work Plan.

I. RCRA FACILITY INVESTIGATION (RFI) WORK PLAN AND REPORTS

1. Submittal of RCRA Facility Investigation (RFI) Work Plan

The Permittee has submitted an RFI Work Plan as described in Permit Condition V.B (Summary of Previous and Current Corrective Action Activities). For those SWMU's and AOC's that the Director has specified – either within this CASOC or pursuant to this CASOC (e.g. an RFI call-in) – must comply with Permit Condition V.I, and based on the RFA and other relevant information available, the Permittee shall submit an RFI Work Plan designed to address the information needed to determine potential or actual impacts on human health and the environment. Additional RFI Work Plans may be required at future times in order to address updated information needed to determine potential or actual impacts on human health and the environment.

2. Content and Submittal of RCRA Facility Investigation Work Plan

On or before ninety (90) calendar days after receiving a request from the Director, including those SWMU's identified in Permit Condition V.B (Summary of Previous and Current Corrective Action Activities) or after any receipt of an RFI call-in, the Permittee shall submit a Preliminary Work Plan (PWP) to the Director. The PWP shall be submitted as a Class 1 Permit Modification request, requiring the Director's approval. It shall contain a project schedule overview identifying and describing critical tasks, the tentative funding cycle, and the due dates for submission of Draft RFI Work Plans to address those units, releases of hazardous waste (including hazardous constituents and perchlorates), and media of concern which require further investigation. The RFI shall include Tasks I, II, and III of the Corrective Action Plan (CAP). Task III (RFI Work plan) shall incorporate the CAP's Task VII facility submission summary, providing a schedule for all remaining tasks required under the RFI (CAP Tasks IV through VI). Task VII reporting requirements shall be followed throughout the RFI process. The Permittee may eliminate those specific portions of the CAP

which are not applicable to the nature of the releases at the facility. EPA OSWER Directive 9502.00-6D (May 1989) RFI Guidance, or equivalent should be consulted.

- (a) The Work plan shall describe the objectives of the investigation and the overall technical and analytical approach to completing all actions necessary to characterize the nature, direction, rate, movement, and concentration of releases of hazardous waste (including hazardous constituents and perchlorates) from specific units or groups of units, and their actual or potential receptors. The Work plan shall detail all proposed activities and procedures to be conducted at the facility, the schedule for implementing and completing such investigations, the qualifications of personnel performing or directing the investigations, including contractor personnel, and the overall management of the RFI.
- (b) The Plan shall discuss sampling and data collection, quality assurance and data management procedures of Permit Condition V.D.5 (Quality Assurance and Control), including formats for documenting and tracking data and other results of investigations, and health and safety procedures.

3. Review and Approval/Disapproval of RFI Work Plan

After the Permittee submits the RFI Work Plan, the Director shall review it for proper content and those RFI Work Plan elements applicable to the facility. After review, the Director will either approve or disapprove the RFI Work Plan in writing. If the Director disapproves the RFI Work Plan, the Director shall either:

- (a) Notify the Permittee in writing of the RFI Work Plan's deficiencies and specify a due date for submittal of a revised RFI Work Plan; or
- (b) Revise the RFI Work Plan and notify the Permittee of the revisions. This modified RFI Work Plan becomes the approved RFI Work plan and constitutes approval of the Class 1 Permit Modification request in V.I.2.

The Director shall also review for approval as part of the RFI Work Plan any plans developed addressing further investigations of newly-identified SWMU's (Permit Condition V.F), or addressing new releases from previously-identified units (Permit Condition V.G). The Director shall modify the Corrective Action Schedule of Compliance (CASOC) according to procedures in Permit Condition V.D.7 (Document Approval and Permit Modification).

If approved, the RFI Work Plan will be incorporated into a Permit Attachment J (CASOC – Approved Work Plans and Reports). If the Director approves the RFI Work Plan, the Permittee shall, within ninety (90) calendar days of receipt of approval, send a Class 1 Permit Modification notice to all individuals on the facility mailing list maintained by the Director in accordance with R18-8-270.A and 270.I(c)(1)(ix) and (x) [40 CFR 124.10(c)(1)(ix) and (x)]. The notice shall include a summary of the approved RFI Work Plan and describe the change made to a Permit Attachment J (CASOC – Approved Work Plans and Reports).

4. Implementation of RCRA Facility Investigation Work Plan

No later than fifteen (15) calendar days after the Permittee has received written approval from the Director for the RFI Work Plan, the Permittee shall begin implementing the RCRA Facility Investigation according to the schedules and procedures specified in the RFI Work Plan. If the Director does not comment, within forty-five (45) calendar days of Director's receipt of the RFI Work Plan, the Permittee shall implement the RFI Tasks according to the schedule of implementation contained in the RFI Work Plan.

5. Content and Submittal of RFI Final Reports

Within sixty (60) calendar days after the completion of the RFI Work Plan or other schedule approved by the Director, the Permittee shall submit:

(a) An RFI Interim or Final Report.

The RFI Interim or Final Report shall be submitted as a Class 1 Permit Modification request, requiring the Director's approval. The RFI Interim or Final Report shall describe the procedures, methods, and results of all facility investigations of SWMU's and their releases, including information on the type and extent of contamination at the facility, sources and migration pathways, and actual or potential receptors. The RFI Interim or Final Report shall present all information gathered under the approved RFI Work Plan. The RFI Interim or Final Report must contain adequate information to support further corrective action decisions at the facility.

(b) [RESERVED]

(c) As Applicable, Determination of No Further Action with Modification.

Based on results of the RFI and other relevant information, the Permittee may submit an RFI-Based Determination of No Further Action (NFA) with a proposed Class 3 Permit modification to the Director requesting termination of any Corrective Action required. The NFA Determination and proposed Class 3 Permit modification (processed pursuant to Permit Conditions I.A and V.D.7) must contain information demonstrating that there are no releases of hazardous wastes (including hazardous constituents and perchlorates) from SWMU's at the facility that pose a threat to human health and the environment. It must also include information required in 40 CFR §270.42(c), which incorporates by reference 40 CFR §270.13 through §270.21, §270.62, and §270.63, and state if:

- i. Contamination is found to be non-existent;
- ii. Contaminant levels and subsequent risks are insignificant compared to existing background levels (i.e. levels are naturally occurring);
- iii. Contamination results from releases originating from outside the facility;

- iv. Groundwater is neither a current or potential source of drinking water, impacts potentially vulnerable Class I ground waters, nor is potentially usable for other human purposes;
- v. Contamination is located adjacent to industrialized, non-residential areas.

6. Review and Approval/Disapproval of RFI Interim or Final Report

The Director shall review the RFI Interim or Final Report submittal (and NFA Determination, if applicable), and either approve or disapprove the Report and NFA Determination in writing.

- (a) If the Director disapproves the RFI Report, the Director shall notify the Permittee in writing of the Report's deficiencies and specify a due date for submittal of the revised Report.
- (b) RFI Interim or Final Report without NFA Determination: If the Director approves the Report, the approval constitutes approval of the Permit Modification request of Condition V.I.5(a). The Permittee shall, within ninety (90) calendar days of receipt of approval, send a Class 1 Permit Modification notice to all individuals on the facility mailing list maintained by the Director in accordance with A.A.C. R18-8-271.A and 271.I(c)(1)(ix) and (x) [40 CFR 124.10(c)(1)(ix) and (x)]. The notice shall include a summary of the approved RFI Interim or Final Report and describe the change made to a Permit Attachment J (CASOC – Approved Work Plans and Reports).
- (c) RFI Interim or Final Report with NFA Determination: If, based upon review of the Permittee's NFA Determination and proposed Class 3 Permit Modification request, the results of the RFI, and other information (including comments received during the public comment period), the Director determines that releases or suspected releases which were investigated either are non-existent or do not pose a threat to human health and the environment, the Director may grant the requested modification. However, the NFA approval does not preclude the Director from initiating other modifications to the CASOC according to procedures in 40 CFR §270.41 (Director-initiated Permit Modifications) that may rescind the determination or require the Permittee to perform:
 - i. Continued or periodic monitoring of air, soil, groundwater, or surface water, when site-specific circumstances indicate that releases of hazardous wastes (including hazardous constituents and perchlorates) are likely to occur, if necessary to protect human health and the environment;
 - ii. Further investigations, studies, or remediation at a later date, if new information or subsequent analysis indicates a release or likelihood of a release from a SWMU is likely to pose a threat to human health or the environment.

Upon approval of the RFI Interim or Final Report with NFA Determination and Class 3 Permit Modification request, the RFI Interim or Final Report and NFA

Determination will be incorporated into a Permit Attachment J (CASOC – Approved Work Plans and Reports).

J. CORRECTIVE MEASURES STUDY (CMS) PLAN AND REPORT

1. Call-In of the Corrective Measures Study (CMS)

If the Director has reason to believe, after review of the RFI Final Report, that a SWMU has released concentrations of hazardous constituents and perchlorates in excess of any action level, or determines that contaminants present at levels below those action levels pose a threat to human health and the environment given site-specific exposure conditions, the Director may require a Class 1 Permit Modification for a Corrective Measures Study (CMS) and shall notify the Permittee in writing. The Director's written notice:

- (a) Shall include a streamlined CMS analysis based on type and extent of environmental problems at the facility which addresses priority problems;
- (b) Shall identify such perchlorates and hazardous constituent(s) exceeding action levels and those determined to threaten human health and environment given site-specific exposure conditions;
- (c) Shall specify CMS size and scope (how many alternatives are to be evaluated), focusing on plausible remedial options scaled to fit the complexity of the situation. A large and complex cleanup will likely require analysis of a full range of remedial alternatives. In other cases, the appropriate effective and protective remedy may be self-evident; and
- (d) May specify remedial alternatives to be evaluated by the Permittee during CMS.

2. Content and Submittal of CMS Plan

The Permittee shall submit a Class 1 Permit Modification request requiring Director approval to the Director within forty-five (45) calendar days after notification of the requirement to conduct a CMS, with a preliminary CMS Plan identifying and describing specific investigation, evaluation and remedial alternatives in compliance with the Directors CMS notice. The preliminary plan shall also include the tentative funding schedule and a due date, not to exceed an additional 60 days, for submission of a final CMS Plan. The CMS Plan shall provide the following information:

- (a) Description of general approach to investigate and evaluate potential remedies;
- (b) Definition of the overall study objectives;
- (c) The specific plans and factors for evaluating remedies to ensure compliance with remedy standards, as stated in Permit Condition V.K (Remedy Selection);
- (d) The schedules for conducting the study; and

- (e) Proposed format for presentation of the information.

The CMS Plan shall be based on CAP Tasks VIII, IX, and X. The CMS Plan shall incorporate the CAP Task XI facility submission summary, providing a schedule for all remaining tasks required under the CMS (CAP Tasks VIII through X). Task XI reporting requirements shall be followed throughout the RFI process. Permittee may eliminate specific portions of the CAP which are not applicable to the nature of the releases at the facility. Obvious solutions will not need an exhaustive CMS/Remedy Selection.

3. Review and Approval/Disapproval of CMS Plan

The Director should review the CMS Plan to ensure it contains all necessary content.

- (a) If the Director disapproves the CMS Plan, the Director shall either:
- iv. Notify the Permittee in writing of the Plan's deficiencies and specify a due date for submittal of a revised Plan, or
 - v. Revise the CMS Plan and notify the Permittee of the revisions. This modified CMS Plan becomes the approved CMS Plan.
- (b) If the Director approves the CMS Work Plan, the Permittee shall, within ninety (90) calendar days of receipt of approval, send a Class 1 Permit Modification notice to all individuals on the facility mailing list maintained by the Director in accordance with R18-8-270.A and 270.I(c)(1)(ix) and (x) [40 CFR 124.10(c)(1)(ix) and (x)]. The notice shall include a summary of the approved CMS Work Plan and describe the change made to a Permit Attachment J (CASOC – Approved Work Plans and Reports).

4. Implementation of Corrective Measures Study (CMS) Plan

No later than fifteen (15) calendar days after the Permittee has received written approval from the Director for the CMS Plan, the Permittee shall begin to implement the CMS Plan according to the schedules and procedures specified in the CMS Plan. If the Director does not comment on the CMS Plan, within forty-five (45) calendar days of submittal of the CMS Plan, the Permittee shall implement the CMS tasks according to the schedule of implementation and procedures contained in the CMS Plan.

5. Content and Submittal of CMS Final Report

Within sixty (60) calendar days after the completion of the CMS tasks, or in accordance with an alternate plan in the Director-approved CMS Plan, the Permittee shall submit a Class 1 Permit Modification request requiring Director approval and a draft CMS Final Report. The draft CMS Final Report must contain adequate information to support the Director in the remedy selection decision-making process and shall include, at a minimum:

- (a) A summary of results of investigations, and any bench-scale or pilot tests conducted for each remedy studied;
- (b) A description and evaluation of each remedial alternative which passed through the initial screening of corrective measure technologies;
- (c) All information gathered under the approved CMS Plan. To streamline, performance standards should be specified rather than detailed design specifications; and
- (d) The recommended corrective measure(s), and a justification for selection of the recommended corrective measure(s).

6. Review and Approval/Disapproval of CMS Final Report and Remedy

The Director shall approve, approve with modifications, or disapprove the draft CMS Final Report and will advise the Permittee of the determination in writing. The Director shall select the remedy according to Permit Condition V.K (Remedy Selection Based on Results of Approved CMS Final Report). In all cases, the Director may require the Permittee to evaluate additional remedies or particular elements of the proposed remedies.

- (a) If the Director disapproves the draft CMS Final Report, the Director shall notify the Permittee in writing of deficiencies in the Report and specify a due date for submittal of a revised draft CMS Final Report thirty (30) calendar days after notification, or in accordance with an alternate timeframe agreed upon with the Director.
- (b) Within forty-five (45) calendar days of receipt of the Director's approval, or approval with modifications, of the proposed corrective measure(s), the Permittee shall submit to the Director a final CMS report consistent with Director's written notification.
- (c) If the Director approves or approves with modifications the CMS Report, the approved CMS Report constitutes approval of the Permit Modification request of Condition V.J.5). The CMS Report will be incorporated into a Permit Attachment J (CASOC – Approved Work Plans and Reports). If the Director approves the CMS Report, the Permittee shall, within ninety (90) calendar days of receipt of approval, send the Class 1 Permit Modification notice to all individuals on the facility mailing list maintained by the Director in accordance with R18-8-270.A and 270.I(c)(1)(ix) and (x) [40 CFR 124.10(c)(1)(ix) and (x)]. The notice shall include a summary of the approved CMS Report and describe the change made to a Permit Attachment J (CASOC – Approved Work Plans and Reports).
- (d) Within forty-five (45) calendar days of receipt of the Director's approval, or approval with modifications, of the proposed corrective measure(s), the Permittee shall also submit a Corrective Measures Implementation (CMI) Program Plan for the remedy selected pursuant to Permit Condition V.L (Corrective Measures Implementation).

K. REMEDY SELECTION BASED ON RESULTS OF APPROVED CMS FINAL REPORT

1. Remedy Standards

Based on results of the CMS and any further evaluations of additional remedies, the Director shall select a remedy from the remedial alternatives evaluated in the CMS that will:

- (a) Protect human health and the environment;
- (b) Meet the concentration levels of hazardous constituents and perchlorates in each medium that the remedy must achieve to be protective of human health and the environment;
- (c) Control the course(s) of release(s) so as to reduce or eliminate, to the maximum extent practicable, further releases that might pose a threat to human health and the environment; and
- (d) Meet all applicable waste management requirements.

2. Technical Evaluation Factors of Remedy

In approving the recommended remedy(s) which meets the standards for remedies established above, the Director shall consider the following evaluation factors, as appropriate:

(a) Long-term reliability and effectiveness.

To establish the degree of certainty that the remedy will prove successful, evaluate the:

- i. Magnitude of residual risks in terms of amounts and concentrations of waste remaining following remedy implementation, considering the persistence, toxicity, mobility and propensity to bio-accumulate of such hazardous wastes (including hazardous constituents and perchlorates);
- ii. Type and degree of long-term management required, including monitoring, operation and maintenance;
- iii. Exposure potential of humans and environmental receptors to remaining wastes, considering potential threats to human health/environment associated with excavation, transportation, re-disposal or containment;
- iv. Long-term reliability of the engineering and institutional controls, including uncertainties associated with land disposal of untreated wastes and residuals;
- v. Potential need for replacement of the remedy.

(b) Reduction of toxicity, mobility, and volume.

The degree to which a potential remedy employs treatment that reduces toxicity, mobility or volume of hazardous wastes (including hazardous constituents and perchlorates) that shall be considered include:

- i. The treatment processes the remedy(s) employs and materials it would treat;
- ii. Amount of hazardous wastes (including hazardous constituents and perchlorates) that would be destroyed or treated;
- iii. The degree to which the treatment is irreversible; and
- iv. The residuals that will remain following treatment, considering the persistence, toxicity, mobility and propensity to bio-accumulate of such hazardous wastes (including hazardous constituents and perchlorates).

(c) Short-term effectiveness.

Assess potential remedy(s) for short-term effectiveness considering:

- i. Magnitude of reduction of existing risks;
- ii. Short-term risks that might be posed on the community, workers, or environment during implementation of such remedy, including potential threats to human health and the environment associated with excavation, transportation, re-disposal or containment; and
- iii. Time until full protection is achieved.

(d) Implementability.

The ease or difficulty of implementing a potential remedy(s) may be assessed by considering the following types of factors:

- i. Degree of difficulty associated with constructing the technology;
- ii. Expected operational reliability of the technologies;
- iii. Need to coordinate/obtain necessary approvals and permits from other agencies;
- iv. Availability of necessary equipment and specialists; and
- v. Available capacity, location of needed treatment, storage and disposal services.

(e) Cost.

The types of costs assessed include:

- i. Capital, and Operation and Maintenance costs;
- ii. Net present value of capital and operation and maintenance costs; and
- iii. Potential future remedial action costs.

L. CORRECTIVE MEASURES IMPLEMENTATION (CMI) PROGRAM PLAN

1. Content and Submittal of CMI Program Plan

Within forty-five (45) calendar days after receipt of the Director's Remedy Selection, the Permittee shall submit a Class 1 Permit Modification requiring Director approval and a draft Corrective Measures Implementation (CMI) Program Plan (CAP Task XII). The draft CMI Program Plan shall incorporate the CAP Task XV facility submission summary, and provide a schedule for all remaining tasks required under the CMI (CAP Tasks XIII through XV). Task XV reporting shall be followed during the CMI process. Permittee may eliminate those portions of the CAP which are not applicable to the nature of releases at the facility. All Corrective Action requirements of 40 CFR §264.99(h) and §264.100 shall be addressed, not limited to:

- (a) Details of specific remedies (i.e. remove-and-treat or treat-in-place) to be taken which achieve compliance with the standards, and a description of remedy's technical features that are necessary to achieve the standards, not limited to:
 - i. Requirements for quality sampling and analysis, including a plan for CMI groundwater monitoring that demonstrates an effective post-closure compliance/assessment monitoring program;
 - ii. Requirements for removal, decontamination, closure, or post-closure of units, equipment, devices or structures used to implement remedy; and
 - iii. Requirements for achieving compliance with concentration limits and levels.
- (b) Basic standards including, but not limited to:
 - i. Perchlorates and hazardous constituent list;
 - ii. All concentration levels or limits of hazardous constituents and perchlorates in each medium (i.e. soil, groundwater) that the remedy must achieve to protect human health and the environment;
 - iii. Compliance points and compliance period; and
 - iv. Management of hazardous waste.
- (c) A schedule for initiating and completing all major technical features and milestones of the remedy; and required length of Corrective Actions taken, including when CMI groundwater monitoring is initiated in lieu of post-closure groundwater compliance or assessment monitoring; and
- (d) Requirements for submission of semi-annual reports, other information, and modifications if above regulations cannot be met.

2. Review and Approval/Disapproval of CMI Program Plan

The Director shall approve, approve with modifications, or disapprove the draft CMI Plan and will advise the Permittee of its determination in writing.

- (a) If the Director disapproves of the CMI Program Plan, the Director shall notify the Permittee in writing of deficiencies in the CMI Program Plan and specify a due date for submittal of a revised CMI Program Plan thirty (30) calendar days after notification.
- (b) If the Director approves (or approves with modifications) the CMI Program Plan, the CMI Program Plan will be incorporated into a Permit Attachment J (CASOC – Approved Work Plans and Reports). If the Director approves the CMI Program Plan, the Permittee shall, within ninety (90) calendar days of receipt of approval, send the Class 1 Permit Modification notice to all individuals on the facility mailing list maintained by the Director in accordance with R18-8-270.A and 270.I(c)(1)(ix) and (x) [40 CFR 124.10(c)(1)(ix) and (x)]. The notice shall include a summary of the approved CMI Program Plan and describe the change made to a Permit Attachment J (CASOC – Approved Work Plans and Reports). The Director’s approval of the CMI Program Plan constitutes approval of the Permit Modification request.
- (c) Within forty-five (45) calendar days of receipt of Director’s approval, or approval with modifications, of the proposed corrective measure(s), the Permittee shall submit to the Director a final CMI Program Plan consistent with the Director’s written notification.

3. Implementation of CMI Program Plan

No later than fifteen (15) calendar days after the Permittee has received written approval from the Director for the CMI Program Plan, the Permittee shall begin to implement the CMI Program Plan according to the schedules and procedures specified in the CMI Program Plan. If the Director does not comment, within forty-five (45) days of receipt of the draft CMI Program Plan, the Permittee shall implement the CMI tasks according to the schedule of implementation contained in the CMI Program Plan.

M. SITE ASSESSMENT AND REMEDY

Site Assessment and Remedy may be required to assess and possibly remedy sites consisting of suspected historic releases of small areal extent and for which no groundwater contamination has occurred or threatens to occur. Site Assessment and Remedy shall consist of a Site Assessment Plan (SP) and, if necessary, a Remedial Plan (RP). At the Director’s discretion the permittee may be required to follow the provisions of the RFI, CMS and CMI processes (Permit Conditions I through L of this Permit Part) if, during performance of the SP or RP, extensive contamination is found, or if it is found that groundwater may be impacted by the historic release.

1. Site Assessment Plan

Any SP submitted by the Permittee in accordance with V.M shall be submitted as a Class 1 Permit Modification request requiring Director approval. The SP shall contain the following:

- (a) A description of the purpose for the SP.
- (b) A general description of the site including a site diagram or drawing. Identify as applicable:
 - i. Property boundaries;
 - ii. Buildings and fences;
 - iii. Process and maintenance areas;
 - iv. Active and inactive waste generation, handling treatment, storage, disposal, and spill areas;
 - v. Water wells, dry wells, sumps, storm sewers, industrial and sanitary sewers, septic tanks, surface waters (including intermittent washes, discharges or irrigation ditches, canals, etc);
 - vi. Depth to ground water;
 - vii. Soil coverings (asphalt, concrete, vegetation, etc);
 - viii. Topography and drainage patterns.
- (c) Identity of each waste which has been stored, treated, or disposed at the site, and the identity of each hazardous constituent and perchlorates, present in that waste.
- (d) The method(s) used to determine sample locations and depths (random, systematic, biased, or combination) and a rationale for the number of samples taken.
- (e) A diagram showing the number, type, and location of samples.
- (f) Detailed sampling procedures describing:
 - i. Contents of the field notebook;
 - ii. Sampling equipment used;
 - iii. Sample sizes;
 - iv. Use of any sample compositing;
 - v. Sample containers, labels, and seals;
 - vi. Field and trip blanks;
 - vii. Sample preservatives;
 - viii. Quality assurance procedures (blind field duplicates, use of a check lab, chain of custody);

- ix. Sample packaging and shipment;
 - x. Reserved samples (samples to be taken but not immediately analyzed);
 - xi. Backfilling and grouting of sample borings;
 - xii. Equipment decontamination procedures, including disposal of spent solutions;
- (g) Analytical parameters and the rationale for choosing such parameters.
- (h) Provision for expanding the SP if contamination is found to have migrated.
- (i) Provision for the submittal of a Site Assessment Report within 60 days of performance of the SP, providing the following information:
- i. A summary of results, significant observations, and conclusions;
 - ii. A discussion of the sampling followed for each site, including a description of:
 - a. The sampling procedures used;
 - b. The equipment used for sampling;
 - c. The analytical procedures and methods used;
 - d. The analytical equipment used;
 - e. The quality assurance procedures used;
 - iii. The procedures used to prevent hazards and protect field personnel;
 - iv. The equipment used to prevent hazards and protect field personnel;
 - v. Drawings and photographs where appropriate;
 - vi. Description of any deviations from the approved SP;
 - vii. Data generated from sampling and analysis activities performed pursuant to the plan, including field notes, manifests, bills of lading, LDR forms, laboratory submittal forms, chain-of-custody forms, laboratory reports, and drilling logs;
- (j) Provision for the submittal of a Remedial Plan, if any hazardous constituents or perchlorates are found above the applicable soil remediation standards of Title 18, Chapter 7, Article 2 or if any hazardous constituents or perchlorates may be expected to migrate to groundwater.
- (k) Provision for a request of a Finding of No Further Action from the Director, if no hazardous constituents or perchlorate are found above the applicable soil remediation standards of Title 18, Chapter 7, Article 2, or if no hazardous constituents or perchlorates may be expected to migrate to groundwater.
- (l) The final approved SP shall be incorporated into a Permit Attachment J (CASOC – Approved Work Plans and Reports).

2. Remedial Plan

Any Remedial Plan (RP) shall be submitted by the Permittee in accordance with V.M shall be submitted as a Class 1 Permit Modification request requiring Director approval. The RP shall contain the following:

- (a) A description of the process to be used in the removal of all hazardous waste, hazardous waste constituents, and perchlorates and/or soils determined to be contaminated with hazardous waste, hazardous waste constituents, or perchlorates;
- (b) An estimate of the amount of waste or soils to be generated, including a site map indicating the location and vertical and horizontal extent of the area to be remediated;
- (c) Identification of the personnel to be used during the remediation, including the name of the project officer who will be responsible for managing the site;
- (d) A provision for a site safety plan which will be enforced during the remediation. At a minimum, the site safety plan should specify the precautions to be taken and monitoring to be performed which ensures the safety of the site workers and the surrounding community;
- (e) The method(s) used to determine sample locations and depths (random, systematic, biased, or combination) and a rationale for the number of samples taken;
- (f) A diagram showing the number, type, and location of samples to be taken;
- (g) Detailed sampling procedures describing:
 - i. Contents of the field notebook;
 - ii. Sampling equipment used;
 - iii. Sample sizes;
 - iv. Use of any sample compositing;
 - v. Sample containers, labels, and seals;
 - vi. Field/trip blanks;
 - vii. Sample preservatives;
 - viii. Quality assurance procedures (blind field duplicates, use of a check lab, chain of custody);
 - ix. Sample packaging and shipment;
 - x. Reserved samples (samples to be taken but not immediately analyzed);
 - xi. Backfilling and grouting of sample borings;
 - xii. Equipment decontamination procedures, including disposal of spent solutions;
- (h) Analytical parameters and the rationale for choosing such parameters;

- (i) The chain of custody procedures to be followed;
- (j) If the remediation may be expected to include the storage of hazardous waste or soils contaminated with hazardous constituents or perchlorates on-site, the storage method, location, and expected duration must be detailed. The description must specify the precautions to be taken to protect the facility and surrounding community from exposure to the waste or soils contaminated with hazardous constituents or perchlorates;
- (k) If the remediation entails excavation, the steps which will be taken to limit access to the excavated area must be described;
- (l) If the remediation entails the use of imported back-fill, provisions for documenting that the back-fill is clean;
- (m) The decontamination procedures and disposal techniques to be employed for all decontaminated solutions and personal protective equipment;
- (n) The disposal method and identification of the disposal site(s) of all hazardous wastes and contaminated soils generated during the remediation;
- (o) A schedule for performance of the remedy, including provision for prior ADEQ notification (5 days);
- (p) Provisions for amendment of the RP should the conformational sampling indicate the presence of hazardous waste, hazardous waste constituents, or perchlorates are found above the applicable soil remediation standards of Title 18, Chapter 7, Article 2 or if any hazardous constituents or perchlorates may be expected to migrate to groundwater;
- (q) Documentation that the site has been flagged (i.e., “blue staked”) prior to remediation;
- (r) Provisions for the submission of a Remedial Report within 90 days of completion of the remedy providing:
 - i. A summary of results, significant observations, and conclusions;
 - ii. A discussion of the sampling followed for each site, including a description of:
 - a. The sampling procedures used;
 - b. The equipment used for sampling;
 - c. The analytical procedures and methods used;
 - d. The analytical equipment used;
 - e. The quality assurance procedures used;
 - iii. The procedures used to prevent hazards and protect field personnel;
 - iv. The equipment used to prevent hazards and protect field personnel;
 - v. Drawings and photographs where appropriate;
 - vi. Description of any deviations from the approved RP;

- vii. Data generated from the remedy and confirmatory sampling and analysis activities performed pursuant to the RP, including field notes, manifests, bills of lading, LDR forms, laboratory submittal forms, chain-of-custody forms, laboratory reports, and drilling logs;
- (s) Provision for a request of a Finding of No Further Action from the Director, through a Class 1 Permit Modification request, if no hazardous constituents or perchlorates remain above the applicable soil remediation standards of Title 18, Chapter 7, Article 2, and if no hazardous constituents or perchlorates may be expected to migrate to groundwater;
- (t) The final approved RP shall be incorporated into a Permit Attachment J (CASOC – Approved Work Plans and Reports).

3. Notification

Within thirty (30) calendar days of submittal of the RP to the Director, the Permittee shall send a notice of the RP to all persons on the facility mailing list maintained by the Director in accordance with R18-8-270.I (40 CFR 124.10) and to appropriate units of state and local government. The notice shall briefly describe the RP and provide facility and ADEQ contacts.