



Janice K. Brewer
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

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Henry R. Darwin
Director

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:

Facility Name & Address: Page-Trowbridge Ranch Landfill
Facility EPA I.D. No.: AZD 980 665 814
Location: T9S, R14E, S½ of Sec. 27 and the N½ of S34, Gila and Salt River Base Meridian, Pinal County, at Latitude 32° 36' 50" North and Longitude 110° 53' 30" West
Land Owner: State of Arizona
Facility Operator: University of Arizona
Facility Owner: University of Arizona

University of Arizona (UA) is a public State supported university located in Tucson, Arizona. It is a generator of hazardous wastes under RCRA regulations and the Arizona Administrative Code (A.A.C.). The UA Risk Management Department maintains a hazardous waste landfill that was used to dispose of wastes generated from university activities and was closed in accordance with an approved RCRA closure plan and amendments. Post-closure care will consist of the following:

1. Inspection and maintenance of the covers of the closed landfill unit - periodic inspections will be performed to monitor final cover integrity, erosion, and woody vegetation growth. Maintenance and repair will be performed at the time of inspection or as soon as practicable to original final cover specifications and conditions.
2. Groundwater and soil vapor monitoring and reporting – an expanded groundwater detection monitoring plan will be implemented to periodically collect and analyze groundwater and soil vapor samples from on-site monitor wells and monitoring points.
3. Inspection and maintenance of the perimeter fence, access roads, warning signs, monitor wells, drainage control systems, survey monuments, soil vapor extraction system, and closed landfill unit vegetative covers - preventative and corrective maintenance and repair procedures will be performed in conjunction with the quarterly inspections of these items.

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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, HWMA, 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, K, L, M, N, and O (40 CFR § 270 Subpart C). (A copy of Title 18, Chapter 8 of these rules is found in Appendix J to this Permit.) All references to 40 CFR in this Permit refer to those regulations as adopted and modified by Article 2.

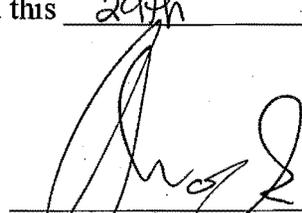
This Permit is based on the assumption that the information contained in the Permit Application is accurate, and that the closed facility will be monitored and maintained as specified in the Permit Attachments and Appendices. Any inaccuracies found in this information may be grounds for the termination, modification, or revocation and reissuance of this Permit pursuant to A.A.C. R18-8-271.D (40 CFR §§ 270.41, 270.42 and 270.43) 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 June 29, 2012, 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 29th day of June 2012

by



Amanda E. Stone, Director
Waste Programs Division
Arizona Department of Environmental Quality

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- | | |
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PART I – GENERAL PERMIT CONDITIONS

A. EFFECT OF PERMIT

The permittee is required to conduct post-closure care and groundwater monitoring in accordance with the conditions of this Permit.

There are no operating hazardous waste storage, treatment, or disposal units at the facility. Any storage, treatment, and/or disposal of hazardous waste not specifically authorized in this Permit is prohibited, unless exempted from Permit requirements.

Subject to Arizona Administrative Code (A.A.C.) R18-8-270.A and 40 CFR 270.4, compliance with this Permit generally constitutes compliance, for purposes of enforcement, with the Arizona Hazardous Waste Management Act (AHWMA). 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 (42 U.S.C. 6921 et seq.); Sections 106(a), 104 and 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 and 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 Parts 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.

1. A.A.C. means the Arizona Administrative Code (A.A.C.) Title 18, Chapter 8, Article 2 (A.A.C. R18-8-201 et seq.), updated June 30, 2010 (Permit Attachment J-1) and effective through June 30, 2012. The rules of Attachment J-1 are amended by Attachment J-2 (effective July 1, 2012).
2. AHWMA means Arizona Hazardous Waste Management Act.
3. Area of Concern or AOC defined as:
 - (a) Hazardous product storage unit or area.
 - (b) Any area where a one-time hazardous material (product or waste) spill event occurred.

- (c) Any 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).
4. CFR means the Code of Federal Regulations as adopted and modified by the June 30, 2010 supplement of *18 A.A.C. 8, Article 2*.
5. Director means the Director of ADEQ or the Director's designee or authorized representative.
6. 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 or are at the user's discretion. "Example" presents, unless otherwise specified, minimum acceptable.
7. Facility or Activity means any HWM facility or any other facility or activity including land or appurtenances thereto) that is subject to regulation under the RCRA program.
8. Hazardous constituent means (a) any constituent identified in A.A.C. R18-8-261.A (Appendix VIII of 40 CFR Part 261) that have been detected in groundwater in the uppermost aquifer underlying a regulated unit and that are reasonably expected to be in or derived from waste contained in a regulated unit, unless the Director has excluded them under (b), below.

(b) The Director will exclude an appendix VIII constituent from the list of hazardous constituents specified in this Permit if he finds that the constituent is not capable of posing a substantial present or potential hazard to human health or the environment. In deciding whether to grant an exemption, the Director will consider the following: (1) Potential adverse effects on groundwater quality, considering: (i) The physical and chemical characteristics of the waste in the regulated unit, including its potential for migration; (ii) The hydrogeological characteristics of the facility and surrounding land; (iii) The quantity of groundwater and the direction of groundwater flow; (iv) The proximity and withdrawal rates of groundwater users; (v) The current and future uses of groundwater in the area; (vi) The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater quality; (vii) The potential for health risks caused by human exposure to waste constituents; (viii) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; (ix) The persistence and permanence of the potential adverse effects; and (2) Potential adverse effects on hydraulically-connected surface water quality, considering: (i) The volume and physical and chemical characteristics of the waste in the regulated unit; (ii) The hydrogeological characteristics of the facility and surrounding land; (iii) The quantity

and quality of groundwater, and the direction of groundwater flow; (iv) The patterns of rainfall in the region; (v) The proximity of the regulated unit to surface waters; (vi) The current and future uses of surface waters in the area and any water quality standards established for those surface waters; (vii) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface-water quality; (ix) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and (x) The persistence and permanence of the potential adverse effects.

(c) In making any determination under 264.93 (b), as incorporated by R18-8-264, about the use of groundwater in the area around the facility, the Director shall consider any identification of underground sources of drinking water and exempted aquifers made under 40 CFR 144.7, and any identification of uses of groundwater made pursuant to 18 AAC 9 or 11.

9. Hazardous waste means a hazardous waste as defined in R18-8-261.A (40 CFR 261.3).
10. Hazardous Waste Management facility or HWM 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 operational units.
11. IDW or Investigation Derived Waste or Investigative Derived Waste means media or solid waste generated during environmental site investigations and sampling activities including soil cuttings and other soil wastes; fluids from well drilling, aquifer testing, well purging, sampling, and decontamination; and disposable sampling and personal protection equipment.
12. Learning Sites means all existing public schools, charter schools and private schools at the K-12 level, and all planned sites for schools approved by the Arizona School Facilities Board.
13. 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.
14. QAPP or Quality Assurance Project Plan refers to the plan (or plans) containing the policies and procedures; project organization and objectives; and the quality assurance (QA) requirements and quality control activities designed to achieve the desired type and quality of environmental data necessary to support the project objectives.

15. 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.
16. Release includes the definitions of “discharge” and “disposal” as found in A.A.C. R18-8-260.A (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).
17. Shall, Must, and Will, denote a mandatory requirement.
18. Should or May denotes a recommendation or permission, respectively, which is not mandatory.
19. 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 any area at a facility at which solid wastes have been routinely and systematically released.

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 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.
 - (b) In accordance with Arizona Revised Statutes, 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.
[A.A.C. R18-8-270.A and 40 CFR 270.30(f), A.R.S. §41-1092 et seq.]

2. Permit Renewal

This Permit may be renewed as specified in Permit Condition I.E.2.

[A.A.C. R18-8-270.A and 40 CFR 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, I, and J (40 CFR 270.10, 270.13 through 270.29)

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

4 Transfers

(a) This Permit is not transferable to a new owner or operator, except after notice to the Director. The Director may modify or revoke and reissue 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). Before transferring ownership or operation of the facility during its operating life, or of a disposal facility during the post closure care period, the Permittee shall notify the new owner or operator in writing of the requirements of A.A.C. R18-8-270 (40 CFR 270) and this Permit.

(b) Any new owner or operator must submit an ADEQ Character/Background Reference Form. The Director may deny a permit to a person if any of the following applies:

- (i) The person fails to demonstrate sufficient reliability, expertise, integrity, and competence to operate a hazardous waste management facility;
- (ii) The person has been convicted of or pled guilty or no contest to, a felony in any state or federal court during the five years before the date of the Permit Modification request;
- (iii) In the case of a corporation or business entity, if any officer, director, partner, key employee, other person or business entity who holds ten percent or more of the equity or debt liability has been convicted of, or pled guilty or no contest to a felony in any state or federal court during the five years before the date of the Permit Modification request.

[A.A.C. R18-8-270.A, J, and L, and 40 CFR 270.30(1)(3); R18-8-264.A and 40 CFR 264.12(c)]

D. [reserved]

E. DUTIES AND REQUIREMENTS

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 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 and 40 CFR 270.30(a)]

2. Duty to Reapply

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 40 CFR 270.30(b)]

3. 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 and 40 CFR 270.30(c)]

4. 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 and 40 CFR 270.30(d)]

5. 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 only when necessary to achieve compliance with the conditions of this Permit.

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

6. Property Rights

This Permit does not convey any property rights of any sort, or any exclusive privilege.

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

7. Duty to Provide Information

The Permittee shall furnish to the Director, within a reasonable time, any relevant information 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 and 270.A, and 40 CFR 264.74(a) and 270.30(h)]

8. Inspection and Entry

The Permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents, as maybe required by law, 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 and RCRA, any substances or parameters at any location.

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

9. 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, or 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, and records of all data used to complete the application for this Permit for a period of at least 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 and 270.A, and 40 CFR 264.74(b) and 270.30(j)(2)]

- (c) Pursuant to A.A.C. R18-8-270.A and 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 date 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.

[A.A.C. R18-8-270.A (40 CFR 270.30(j)(3))]

- (d) 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 inform the laboratory in writing that it must operate under the conditions set forth in this Permit. For notification and certification verification purposes, a copy of that letter must be included with the final analytical report.

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

10. 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 (40 CFR 270.11).

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

11. 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 and 270.L (40 CFR 270.30(l)(1))]

(b) 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 and 270.L (40 CFR 270.30(1)(2))]

(c) Monitoring Reports

Monitoring results shall be reported at the intervals specified elsewhere in this Permit.

[A.A.C. R18-8-270.A and 270.L (40 CFR 270.30(1)(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) Other Noncompliance

The Permittee shall report all instances of noncompliance not required under A.A.C. R18-8-270.A and 40 CFR 270.30(1)(4), (1)(5) and (1)(6), at the time monitoring reports are submitted. Reports shall contain the information listed in A.A.C. R18-8-270.A and 40 CFR 270.30(1)(6).

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

12. Twenty-Four Hour Reporting

The Permittee shall report to the Director any noncompliance which may endanger health or the environment. Any such information shall be reported orally as soon as possible but not later than 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. 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.
- (c) 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 (40 CFR 270.30(l)(6))]

13. Other Information

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 and 270.L (40 CFR 270.30(l)(11))]

F. CONFIDENTIAL INFORMATION

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

[A.A.C. R18-8-270.A and H (40 CFR 270.12)]

G. DOCUMENTS TO BE MAINTAINED

The Permittee shall maintain, until post-closure is completed as approved by the Director and certified by an independent, Arizona Registered Professional Engineer (P.E.), the following documents and all amendments, revisions and modifications to these documents:

1. Post-Closure Plan (Permit Attachment B), as required by A.A.C. R18-8-264.A, 40 CFR 264.15(b), 40 CFR 264.118(a), and this Permit;

2. Contingency Plan (Permit Attachment F), as required by A.A.C. R18-8-264.A, 40 CFR 264.53(a) and this Permit;
3. Personnel training documents and records, as required by A.A.C. R18-8-264.A, 40 CFR 264.16(d), and this Permit;
4. All other documents required by Permit Condition I.E.9 (Monitoring and Records).
5. Expanded Groundwater Detection Monitoring Plan (EGDMP) and EGDMP Quality Assurance Project Plan (QAPP) (Attachments G and H, respectively), and all monitoring records as required by A.A.C. R18-8-264.A, 40 CFR 264.98, and this Permit.

These documents shall be maintained at the University of Arizona Risk Management Department, 1610 N. Vine Avenue, Tucson, Arizona.

H. PERMIT MODIFICATIONS

1. General Conditions

For Permit Modifications (including re-application), the Permittee shall follow A.A.C. R18-8-270.A and 40 CFR 270.42 and A.A.C. R18-8-270.G for any fees to be submitted with the application for Permit Modification.

2. Facility Mailing List

The Permittee shall obtain from ADEQ and use an updated facility mailing list, pursuant to A.A.C. R18-8-270.A and 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) Signatories – See Permit Condition I.E.10 (Signatory and Certification Requirements);

(b) Emergency Coordinator – See Permit Attachment F (Contingency Plan).

[A.R.S. 49-922.C; A.A.C. R18-8-270.J, and 40 CFR 270.14(b)(20)]

PART II – POST-CLOSURE

A. MAINTENANCE AND OPERATION

The facility is described in Permit Attachment A. The facility shall be maintained and operated to minimize the possibility of an unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents 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. POST-CLOSURE CARE AND USE OF THE PROPERTY

1. Post-Closure Care

Throughout the post-closure care period, the Permittee shall:

- (a) Maintain the integrity and effectiveness of the final covers of the landfill units, including making repairs to the caps as necessary to correct the effects of settling, subsidence, erosion, or other events;
- (b) Maintain and monitor the groundwater monitoring system and comply with Permit Attachments G and H;
- (c) Prevent run-on and run-off from eroding or otherwise damaging the final covers; Inspections and maintenance of the perimeter fence and warning signs; monitoring wells; run-on and run-off control systems; and vegetative covers on the closed landfill units.
- (d) Protect and maintain surveyed benchmarks used in complying with 40 CFR 264.309.
[A.A.C. R18-8-264.A (40 CFR 264.117(a)(1), 40 CFR 264.310(b))]
- (e) Operate and maintain the soil vapor extraction (SVE) System as described in Section 3 of the Permit application (“Groundwater Monitoring”) and the Expanded Groundwater Detection Monitoring Plan (Permit Attachment G) and Operation and Maintenance Manual for the SVE System (Permit Attachment C).
[A.A.C. R18-8-270.M, N, and O (40 CFR 270.32)]

2. Post-Closure Care Period

The Permittee shall provide care in accordance with the Post-Closure Plan (Permit Attachment B) and Operation and Maintenance Manual for the SVE System (Permit Attachment C) for at least 30 years after the effective date of this Permit.

[A.A.C. R18-8-270.A (40 CFR 270.32)]

3. Integrity of the 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 or any other components of any containment system, or the function of the facility's monitoring system, unless approved by the Director in accordance with 40 CFR 264.117(c).

[A.A.C. R18-8-264.A (40 CFR 264.117(c))]

C. POST-CLOSURE PLAN

1. The Post-Closure Plan (Permit Attachment B) is part of this Permit.

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

2. The Permittee shall amend the Post-Closure Plan (Permit Attachment B) in accordance with Permit Condition I.C.1. of this Permit and the requirements of 40 CFR 264.118(d) whenever necessary or required to do so by the Director.

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

D. POST-CLOSURE NOTICE

1. The Permittee has submitted to the local zoning authority and/or the authority with jurisdiction over local land use, and to the Director, a record of the type, location, and quantity of hazardous wastes disposed within each cell of the facility. For hazardous wastes disposed before January 12, 1981, the Permittee has identified the type, location, and quantity of the hazardous wastes to the best of the Permittee's knowledge and in accordance with any records the Permittee has kept. The Permittee shall update these records whenever necessary.

[A.A.C. R18-8-264.A (40 CFR 264.119(a))]

2. In accordance with Arizona law, the Permittee has recorded (and shall update whenever necessary), a notation on the deed to the facility property, or on another instrument that is normally examined during a title search, that will in perpetuity notify any potential purchaser of the property that

- (a) The land has been used to manage hazardous waste;
- (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 within each cell of the facility have been filed with the Director and the local zoning authority.

[A.A.C. R18-8-264.A (40 CFR 264.119(b)(1))]

3. The Permittee has submitted a certification to the Director, signed by the Permittee, that he has recorded the notation specified in Permit Condition II.D.2, including a

copy of the document in which the notation has been placed. The Permittee shall update this certification whenever deemed necessary.

[A.A.C. R18-8-264.A (40 CFR 264.119(b)(2))]

4. If the Permittee wishes to remove hazardous wastes and hazardous waste residues, the liner, if any; or contaminated soils, then the Permittee shall request a modification to this Permit in accordance with the applicable requirements in 40 CFR Parts 124 and 270. The Permittee shall demonstrate that the removal of hazardous wastes will satisfy the criteria of 40 CFR 264.117(c).

[A.A.C. R18-8-264.A (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 each hazardous waste disposal unit, the Permittee must submit to the Director by registered mail a certification that the post-closure care period for the hazardous waste disposal units was performed in accordance with the specifications in the submitted Post-Closure Plan (Permit Attachment B). The certification must be signed by the Permittee and an independent, registered professional engineer registered in the State of Arizona. Documentation supporting the engineer's certification must be furnished to the Director.

[A.A.C. R18-8-264.A and 40 CFR 264.120]

F. SECURITY

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

1. The Permittee shall maintain the 6-foot chain-link fence topped with 45-degree barbed wire, enclosing the facility.
2. The Permittee shall maintain three 24-foot rolling gates for providing access to the facility. These gates shall be kept locked at all times when the Permittee's personnel or representatives are not at the facility.
3. The Permittee will maintain signs at all entrances in both English and Spanish with the legend "Danger--Unauthorized Personnel Keep Out."

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

G. INSPECTIONS

The Permittee shall inspect the facility during the post-closure care period in compliance with the procedures specified the Post-Closure Plan (Permit Attachment B). All records of inspections and remedial actions shall be retained in the Operating Record throughout the post-closure care period. Any deterioration or malfunction discovered by an inspection will be remedied in compliance with A.A.C. R18-8-264.A and 40 CFR 264.15(c). Records of inspections shall be kept as required by A.A.C. R18-8-264.A and 40 CFR 264.15(d).

[A.A.C. R 18-8-264.A (40 CFR 264.15)]

H PERSONNEL TRAINING

The Permittee shall ensure that all personnel performing functions involving hazardous waste, groundwater monitoring, soil vapor monitoring, inspections, and maintenance are properly trained for the duties performed as required by A.A.C. R18-8-264.A and 40 CFR 264.16. This training program shall follow the Training and Qualifications Plan (Permit Attachment E). The Permittee shall maintain training documents and records, as required by A.A.C. R18-8-264.A and 40 CFR 264.16(d) and (e).

[A.A.C. R 18-8-264.A and R18-8-270.A (40 CFR 264.16 and 40 CFR 270.14(b)(12))]

I. CONTINGENCY PLAN

1. Implementation of Plan

The Permittee shall immediately carry out the provisions of the Contingency Plan (Permit Attachment F) and follow the emergency procedures described by A.A.C. R18-8-264.A and G, and 40 CFR 264.56 whenever there is a release, fire, or explosion involving hazardous waste or hazardous materials or to a situation that poses the risk of such an occurrence which could threaten human health or the environment.

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

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 trained emergency coordinator shall be available at all times in case of an emergency. Any change to the names, addresses, and phone numbers of all persons qualified to act as emergency coordinators listed in the Contingency Plan shall be supplied to the Director as a modification pursuant to Permit Condition I.H.

[A.A.C. R18-8-264.A (40 CFR 264.55)].

5. List of Learning Sites

The Permittee must maintain a contact list of Learning Sites within 1.0 mile of the facility, verified annually. The list shall include the Learning Site name, address, telephone number, and the name of a primary contact at each Learning Site. Upon

implementation of the emergency provisions of the Contingency Plan, the Permittee shall make this information available to the fire department. This list shall also be included in the Contingency Plan.

[A.A.C. R18-8-270.A (40 CFR 270.32)]

J. 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 maintain a written operating record at the facility or at the location specified in Permit Condition I.G.

[A.A.C. R18-8-264.A (40 CFR 264.73)]

K. DOCUMENTS TO BE SUBMITTED

Prepare and add a new EGDMP QAPP (Permit Attachment H) within 90 days of Permit issuance.

[A.A.C. R18-8-264.A (40 CFR 264.98)]

PART III – GROUNDWATER AND SOIL VAPOR MONITORING

A. DETECTION MONITORING PLAN

The Permittee shall conduct groundwater and soil vapor monitoring, well field measurements, sampling, analysis, additional actions, and reporting according to parameters and frequencies specified in Section 3 of the Permit application (“Groundwater Monitoring”) and the Expanded Groundwater Detection Monitoring Plan [EGDMP] (Permit Attachment G) and the EGDMP Quality Assurance Project Plan [QAPP] (Permit Attachment H).

1. If the Permittee believes the groundwater detection monitoring program no longer satisfies the requirements of the regulations, the Permittee shall, within 90 days of the determination, submit a Permit Modification request requiring the Director’s approval, to make any appropriate changes to the program that will satisfy the regulations. The Permit Modification request shall be submitted in accordance with Permit Condition I.H.

[A.A.C. R18-8-264.A (40 CFR 264.98(h))]

2. The soil vapor extraction (SVE) system and soil vapor monitoring points supplement the groundwater sampling results in assessing potential threats to groundwater quality and assessing whether additional actions are needed. If the Permittee believes the soil vapor monitoring program no satisfies this requirement, the Permittee shall submit a Permit Modification request requiring the Director’s approval, to make any appropriate changes to the program. The Permit Modification request shall be submitted in accordance with Permit Condition I.H.

[A.A.C. R18-8-270.A (40 CFR 270.32)]

3. Any changes to the EGDMP and EGDMP QAPP must be made as a Permit Modification request, requiring the Director’s approval, and submitted in accordance with Permit Condition I.H.

B. WELL LOCATIONS, INSTALLATION, AND CONSTRUCTION

1. The Permittee shall design, install, and maintain a groundwater monitoring system to comply with applicable requirements of A.A.C. R18-8-264.A (40 CFR 264 Subpart F) and as specified below.

- (a). The Permittee shall maintain groundwater monitoring wells at the locations specified on Table 1 in the EGDMP (Permit Attachment G). Well locations will be added as directed by ADEQ, or at the discretion of the Permittee, using installation methods and procedures approved by the Director. Wells may only be removed from the network or modified following the Director’s written approval.

- (b). All wells removed from the groundwater monitoring system shall be abandoned in accordance with procedures approved by the Arizona

Department of Water Resources. Well abandonment methods and certification shall be submitted to ADEQ within 90 days from the date the well is removed from the network.

2. The Permittee shall design, install, and maintain a soil vapor monitoring system to comply and as specified below.
 - (a). The Permittee shall maintain the soil vapor monitoring system consisting of the SVE system and the soil vapor monitoring wells, and the soil vapor monitoring points as shown on Figure 1 and Tables 1 and 2 of the EGDMP (Permit Attachment G). Well locations or monitoring points will be added as directed by ADEQ, or at the discretion of the Permittee, using installation methods and procedures approved by the Director. Wells may only be removed from the network or modified following the Director's written approval.
 - (b). All wells or monitoring points removed from the soil vapor monitoring system shall be abandoned in accordance with procedures approved by the Arizona Department of Water Resources. Well abandonment methods and certification shall be submitted to ADEQ within 90 days from the date the well is removed from the network.

[A.A.C. R18-8-270A (40 CFR 270.32)]

C. GROUNDWATER SAMPLING AND ANALYSIS

The Permittee shall follow the following techniques and procedures when obtaining and analyzing groundwater samples to provide a reliable indication of groundwater quality.

[A.A.C. R18-8-264.A (40 CFR 264.97(d) and (e))]

1. Groundwater samples shall be collected from the wells identified in Table 1 of the EGDMP (Permit Application G). Groundwater samples shall be collected, preserved, and shipped in accordance with the procedures specified in the EGDMP and EGDMP QAPP (Permit Attachments G and H).
2. The Permittee shall ensure that the groundwater samples are collected semi-annually (typically spring and fall) in accordance with the EGDMP (Permit Attachment G).
3. Groundwater samples shall be tracked and controlled using the chain-of-custody procedure specified in the EGDMP and EGDMP QAPP (Permit Attachments G and H).
4. Samples shall be analyzed according to the EGDMP and EGDMP QAPP (Permit Attachments G and H) or the most current final version of EPA Test Methods for Evaluating Solid Waste SW-846. For those constituents that have established Maximum Contaminant Levels (MCL), Preliminary Remediation Goals (PRG), or Arizona Health-Based Guidance Level (HBGL), the analytical method chosen must

be capable of achieving a Practical Quantitation Limit (PQL) below the established MCL, PRG, or HBGL.

5. Depth to water level measurements will be collected at each sampling event at all wells identified in Table 1. Water level measurements will be performed in accordance with the specifications of the EGDMP (Permit Attachment G).
6. Changes in groundwater quality will be assessed and further actions taken pursuant to Section 3 of the Permit application ("Groundwater Monitoring") (Permit Attachment G).

D. SOIL VAPOR SAMPLING AND ANALYSIS

The Permittee shall follow the following techniques and procedures when obtaining and analyzing soil vapor samples to provide a reliable indication of soil vapor concentrations.

[A.A.C. R18-8-270.A (40 CFR 270.32)]

1. Soil vapor samples shall be collected from the monitoring points identified in Tables 1, 2, and 5 of the EGDMP (Permit Attachment G). Samples shall be collected, preserved, and shipped in accordance with the procedures specified in the EGDMP and EGDMP QAPP (Permit Attachments G and H).
2. The Permittee shall ensure that the soil vapor samples are collected semi-annually (typically spring and fall) in accordance with the EGDMP (Permit Attachment G).
3. Soil vapor samples shall be tracked and controlled using the chain-of-custody procedure specified in the EGDMP and EGDMP QAPP (Permit Attachments G and H).
4. Samples shall be analyzed for volatile organic compounds according to the EGDMP and EGDMP QAPP (Permit Attachments G and H).
5. Soil vapor concentrations shall be compared to thresholds and additional actions taken pursuant to Section 3 of the Permit application ("Groundwater Monitoring") (Permit Attachment G).

E. REPORTING AND RECORDKEEPING

1. The Permittee shall enter all monitoring, testing, and analytical data obtained pursuant to this Permit in the operating record. The data must include all computations and data validation.
[A.A.C. R18-8-264.A (40 CFR 264.73(b)(6))]
2. The Permittee shall submit to ADEQ a semi-annual report providing water level, groundwater quality data, and soil vapor monitoring data collected in the previous six months. This report shall be submitted to ADEQ no later than 90 days after each

semi-annual sampling event. The report shall be prepared pursuant to the specific requirements of Section 3 of the Permit application ("Groundwater Monitoring") (Permit Attachment G).

[A.A.C. R18-8-270.A (40 CFR 270.32)]

F. MANAGEMENT OF IDW

1. All Investigation-Derived Waste (IDW) must be collected, containerized, and stored in closed containers. To the greatest extent possible, fluids, soils, and solid wastes such as Personal Protection Equipment must be containerized separately from each other. Soil shall be placed in roll-off containers or drums. Fluids shall be placed in drums or tanks. PPE, disposable sampling equipment, and other refuse that are not classified as hazardous waste and are generated during field work shall be placed in sealed containers.
2. If kept on site, containers of IDW shall be stored in a secure location, with the containers labeled with information needed for future handling purposes. Permittee shall record the date, type, and quantity of IDW for inclusion in the facility operating reports. In no event shall IDW remain stored in containers on site for greater than ninety (90) calendar days.
3. Permittee shall perform a waste determination on all IDW. The determination may be based on laboratory analysis, MSDS or other similar information provided by the manufacturer, or by using generator knowledge.
4. IDW shall be removed for disposal within ninety (90) calendar days of generation. IDW fluids shall be transported in closed containers. IDW soils will be transported in closed containers or in covered loads so as to minimize loss. IDW solid waste (other than soils) shall be kept in sealed containers and transported to a landfill or commercial solid waste receptacle as appropriate.

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

**PART IV – CORRECTIVE ACTION FOR SOLID WASTE
MANAGEMENT UNITS – SCHEDULE OF COMPLIANCE**

A. AUTHORITY

RCRA Section 3004(u), as amended by the HSWA, and A.A.C. R18-8-264.A (40 CFR 264.101 and 40 CFR Subpart S) requires that Permits issued after November 8, 1984, address corrective action for releases of hazardous waste and hazardous waste constituents from any Solid Waste Management Unit (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 will be governed by the conditions of this Permit Part (hereinafter referred to as the “Corrective Action Schedule of Compliance” or “CASOC”).

B. SUMMARY OF PREVIOUS CORRECTIVE ACTION ACTIVITIES

1. Interim Measures Investigations Required by 2001 Post-Closure Permit

In July and August 2002, Weston Solutions, Inc. (Weston) conducted a soil investigation to determine the nature and extent of VOCs, SVOCs, and organochlorine pesticides in soil surrounding the landfill. They also collected soil vapor samples around the perimeter of both landfill units and for analysis of target VOCs

In November 2003, Hydro Geo Chem, Inc. (HGC) conducted a further investigation by installing six soil vapor monitoring points in three soil borings around the landfill.

2. Interim Measures SVE System Installation and Operation

A soil vapor extraction (SVE) system was installed at the landfill as an interim measure in June 2006. Additional soil vapor samples have been collected at the six monitoring points in 2006 through 2010. Continued operation of the SVE system is controlled by Permit Conditions found in Permit Part III (Groundwater and Soil Vapor Monitoring).

3. Interim Measures Risk Assessments

HGC conducted a preliminary screening risk assessment for the landfill in 2005. AMEC conducted a human health risk assessment in 2009.

C. **SPECIFIC CORRECTIVE ACTION REQUIREMENTS [reserved]**

D. **GENERAL CORRECTIVE ACTION REQUIREMENTS**

1. **Record Keeping**

As stated in Permit Condition I.E.9 (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, or alternate location specified in the Permit, during the term of this Permit.

2. **Reporting, Notifications and Submittals**

(a) The Permittee shall submit to the Director signed quarterly progress reports of all activities conducted pursuant to the provisions of this CASOC. These reports 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.

(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.

(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.E.10 (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. **Contamination that has Migrated Beyond the Facility Boundary**

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. Any determination by the Director requiring the Permittee to address such releases will be made as a Permit Modification request, requiring the Director's approval.

4. Quality Assurance and Control

When performing Corrective Action, the Permittee shall meet the minimum requirements below for any sampling and sample testing:

(a) Sample Collection and Management

A sampling plan submitted by the Permittee shall include all elements of EPA SW-846, and A.A.C.R18-8-260 et seq. (40 CFR Part 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; and
- (iv) Sample management procedures for the field notebook, collection form, preservatives and capping, and other chain-of-custody components.

(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

In addition, the Permittee shall:

- (i) Inform the Director's Project Coordinator which laboratories will be used by the Permittee.
- (ii) Ensure that all laboratories used by the Permittee for its 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 licensed 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 that sampling plans contain 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. Sampling plans must demonstrate the use of representative samples and must include parameters sufficient to identify migration of hazardous waste and hazardous constituents to the environment.

5. Project Coordinator

The Permittee's Project Coordinator shall be responsible for overseeing the implementing of corrective action at the Facility in accordance with this CASOC 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. NOTIFICATION AND ASSESSMENT OF NEWLY IDENTIFIED SWMU(s) OR AOC(s)

1. Notification of Newly Identified SWMU(s) or 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 the groundwater monitoring, field investigations, environmental audits, or other means, no later than fifteen (15) calendar days after its 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

After such notification, the Director may require in writing, that the Permittee prepare a SWMU Assessment Plan and a proposed schedule of implementation and completion of the SWMU Assessment Plan 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 the Director approval.

3. Content and Submittal of SWMU Assessment Plan

Within sixty (60) calendar days after receipt of the Director's request for a SWMU Assessment Plan, the Permittee shall prepare and submit a SWMU Assessment Plan

for determining 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 and hazardous constituents from such unit(s) occurred, is likely to have occurred, or is likely to occur. The SWMU Assessment Plan 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 and hazardous constituents from the newly discovered SWMU(s) to the environment.

4. Review and Approval or Disapproval of SWMU Assessment Plan

After the Permittee submits the SWMU Assessment Plan, the Director shall either approve or disapprove the plan in writing. If the Director disapproves of the SWMU Assessment Plan, the Director shall either:

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

5. Implementation of the SWMU Assessment Plan

The Permittee shall implement the SWMU Assessment Plan within fifteen (15) calendar days of receiving written approval.

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

The Permittee shall submit a SWMU Assessment Report (SAR) to the Director no later than thirty (30) calendar days from completion of work specified in the approved SWMU Assessment Plan. 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 SWMU Assessment Plan. 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; and
- (f) The results of any sampling and analysis required for the purpose of determining whether releases of hazardous waste and hazardous constituents have occurred, are occurring, or are likely to occur from the unit.

7. SAR Approval and Determination of Further RFI Action

- (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 for such investigations. If the Director determines that investigations are needed, the Director shall incorporate his determination into the SAR approval. The SAR and SAR Approval shall constitute approval of the Permittee's Class 1 Permit Modification request. The final approved SAR shall then be incorporated into Permit Attachment I (CASOC – Approved Work Plans and Reports).
- (b) The RFI Work Plan described in Condition IV.E.7(a) will be reviewed for approval pursuant to Condition H (RCRA Facility Investigation Work Plan and Report), 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.

F. 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 and hazardous constituents from its historic or current operations, discovered during the course of groundwater monitoring, field investigation, environmental auditing, or other activities undertaken after commencement of the RFI, no later than fifteen (15) calendar days after their 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 RFI.

In the event the Permittee identifies a current and/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 an Interim Measures (IM) Work Plan, pursuant to Condition IV.G of this Permit (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 Permit Attachment I (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 IV.H (RCRA Facility Investigation Work Plan and Report) of this Permit.

G. INTERIM MEASURES

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, 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. Interim stabilization measures consistent with final remedy may be deployed during ongoing investigations. The following factors should be considered in this determination:

- (a) Time required to develop and implement a final remedy;
- (b) Actual and potential exposure to the environment (e.g., animals, ecosystems) and/or human receptors;
- (c) Actual and potential contamination of drinking water supplies and sensitive ecosystems;
- (d) Potential for further degradation of the medium absent interim measures;
- (e) Presence of hazardous waste in containers that may pose a threat of release;

- (f) Presence and concentration of hazardous waste (including hazardous constituents) in soils having potential to migrate to ground or surface water;
- (g) Weather conditions that may affect the current levels of contamination;
- (h) Risks of fire, explosions, or accident; and
- (i) 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 Interim Measures (IM) Work Plan shall be developed that will include, but not be limited to, the following elements:
 - (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) Either the Director or the Permittee shall develop the IM Work Plan as follows:
 - (i) The Director may notify the Permittee in writing of the need to perform specific interim measures. If the Permittee concurs, the Permittee shall begin to implement the interim actions within fifteen (15) calendar days after receiving notification. Interim Measures do not require a public comment period until the measures are incorporated into the Corrective Measures Study (CMS) Work Plan and Report Described in Condition IV.I of this Permit.
 - (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 or 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 notify the Permittee of the revisions. The approved IM Work Plan constitutes approval of the Class 1 Permit Modification request specified in Condition IV.G.2.(b)(ii). The final approved IM Work Plan shall then be incorporated into Permit Attachment I (CASOC – Approved Work Plans and Reports).

4. Implementation of the IM Work Plan

The Permittee shall implement interim actions within fifteen (15) calendar days after receiving approval or notification of any revisions requested by the Director.

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

1. Submittal of RFI Work Plan

An RFI Work Plan may be required by the Director in the future to address updated information (e.g., newly-identified SWMUs) needed to determine potential or actual impacts on human health and the environment.

2. Content and Submittal of RFI Work Plan

Within sixty (60) days after receiving a request from the Director, the Permittee shall submit a complete RFI Work Plan to the Director. The RFI Work Plan shall be submitted as a Class 1 Permit Modification request, requiring the Director's approval. The Work Plan shall address in detail SWMUs, releases of hazardous waste, including hazardous constituents, and media of concern which require further investigations.

- (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) 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 implementation 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 listed in Condition D.4 of this Permit Part (Quality Assurance and Control), including formats for documenting and

tracking data and other results of investigation, and health and safety procedures.

3. Review and Approval or Disapproval of RFI Work Plan

The Director shall review the RFI Work Plan 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 IV.H.2.

The Director shall also review for approval as part of the RFI Work Plan any plans developed addressing further investigations of newly identified SWMUs (Condition F of this Permit Part).

If approved, the RFI Work Plan will be incorporated into Permit Attachment I (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 Permit Attachment I (CASOC – Approved Work Plans and Reports).

4. Implementation of RFI Work Plan

No later than thirty (30) 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.

5. Content and Submittal of RFI Final Report

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) RFI Final Report

The RFI Final Report shall be submitted as a Class 1 Permit Modification request, requiring the Director's approval. The RFI Final Report shall describe the procedures, methods, and results of all facility investigations of SWMUs 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 Final Report shall present all information gathered under the approved RFI Work Plan. The RFI Final Report must contain adequate information to support further corrective action decisions at the facility.

(b) Determination of No Further Actions with Modification

Based on the results of the RFI and other relevant information, the Permittee may submit an RFI-based determination of No Further Action with a proposed Class 3 Permit Modification request to the Director requesting termination of any Corrective Action required. The NFA determination and proposed Class 3 Permit Modification, will be processed pursuant to requirements of Permit Parts I.C.1 and I.H) must contain information demonstrating that there are no releases of hazardous wastes and hazardous constituents from SWMUs at the facility that pose a threat to human health and the environment. It must also include information required in R18-8-270.A (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 less than background levels (i.e. levels are naturally occurring);
- (iii) Contamination results from releases originating from outside the facility or from a source not related to the Permittee's historic operations or current remediation efforts at the site;
- (iv) Groundwater is neither a current or potential source of drinking water, impacts potentially vulnerable Class I groundwaters, nor is potentially usable for other human purposes;
- (v) Contamination is located adjacent to industrialized, non-residential areas.

6. Review and Approval or Disapproval of RFI Final Report

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

- (a) If the Director disapproves the 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 Final Report without NFA Determination: If the Director approves the Report, the approval constitutes approval of the Permit Modification request of Condition IV.H.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 Final Report and describe the change made to Permit Attachment I (CASOC – Approved Work Plans and Reports).
- (c) RFI 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) 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 Final Report with NFA Determination and Class 3 Permit Modification request, the RFI Final Report and NFA Determination will be incorporated into Permit Attachment I (CASOC – Approved Work Plans and Reports).

I. CORRECTIVE MEASURES STUDY

1. Call-in of the Corrective Measures Study

If the Director has reason to believe, after review of the RFI Final Report, that a SWMU has released concentrations of hazardous constituents in excess of any action level, or determines that contaminations 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 so notify the Permittee in writing.

2. Content and Submittal of the CMS Work Plan

The Permittee shall submit a Class 1 Permit Modification request requiring the Director's approval and CMS Work Plan to the Director within forty-five (45) calendar days after notification of the requirement to conduct a CMS. The CMS Work 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 IV.J (Remedy Selection);
- (d) The schedules for conducting the study; and
- (e) Proposed format for presentation of the information.

3. Review and Approval or Disapproval of CMS Work Plan

The Director shall review the CMS Work Plan to ensure it contains all necessary contents.

- (a) If the Director disapproves the CMS Work Plan, the Director shall either:
 - (i) Notify the Permittee in writing of the Work Plan's deficiencies and specify a due date for submittal of a revised Work Plan, or
 - (ii) Revise the CMS Work Plan and notify the Permittee of the revisions. This modified CMS Work Plan becomes the approved CMS Work Plan, and the approval to the Permit Modification request specified in Condition IV.I.2).

- (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 Permit Attachment I (CASOC – Approved Work Plans and Reports).

4. Implementation of CMS Work Plan

The Permittee shall implement the CMS Work Plan no later than fifteen (15) calendar days after the Permittee has received written approval from the Director for the CMS Work Plan. The CMS shall be conducted in accordance with the approved CMS Work Plan.

5. Content and Submittal of CMS Report

Within ninety (90) days after completion of the CMS tasks, the Permittee shall submit a Class 1 Permit Modification request requiring the Director's approval and the CMS Report. The CMS 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 with Performance standards streamlined;
- (d) The recommended corrective measure(s), and a justification for selection of the corrective measure(s) recommended.

6. Review and Approval or Disapproval of CMS Report and Remedy

The Director shall approve, approve with modifications, or disapprove the CMS Report and will advise the Permittee of the determination in writing. The Director shall select the remedy according to Condition J (Remedy Selection) of this Permit Part. In all cases, the Director may require the Permittee to evaluate additional remedies or particular elements of the proposed remedies.

- 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;
- Type and degree of long-term management required, including monitoring, operation and maintenance;
- 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;
- Long-term reliability of the engineering and institutional controls, including uncertainties associated with land disposal of untreated wastes and residuals;
- 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) that shall be considered include:

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

(c) Short-term effectiveness.

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

- Magnitude of reduction of existing risks;
- 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

- 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:

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

(e) Cost.

The types of costs assessed include:

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

K. 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 request, requiring Director's approval and a draft Corrective Measures Implementation (CMI) Program Plan. 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 or assessment monitoring program;
 - (ii) Requirements for removal, decontamination, closure, or post-closure of units, equipment, devices or structures used to implement remedy;
 - (iii) Requirements for achieving compliance with concentration limits and levels;
- (b) Basic standards including, but not limited to:
- (i) List of hazardous constituents;
 - (ii) All concentration levels or limits of hazardous constituents in each medium (i.e. soil, groundwater) that the remedy must achieve to protect human health and environment;
 - (iii) Compliance points and compliance period;
 - (iv) Management of hazardous waste.
- (c) A schedule for initiating and completing all major technical features and milestones of 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;
- (d) Requirements for submission of semi-annual reports, other information, and modifications if above requirements cannot be met.

2. Review and Approval or 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.
- (b) If the Director approves (or approves with modifications) the CMI Program Plan, the CMI Program Plan will be incorporated into Permit Attachment I (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 Permit Attachment I (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.