

**STATE OF ARIZONA
SIGNIFICANT AMENDMENT TO
AQUIFER PROTECTION PERMIT NO. P-101448
PLACE ID 3222, LTF 47334**

1.0 AUTHORIZATION

In compliance with the provisions of Arizona Revised Statutes (A.R.S.) Title 49, Chapter 2, Articles 1, 2 and 3, Arizona Administrative Code (A.A.C.) Title 18, Chapter 9, Articles 1 and 2, A. A. C. Title 18, Chapter 11, Article 4 and amendments thereto, and the conditions set forth in this permit, Tucson Electric Power Company is hereby authorized to operate the discharging facilities at the Springerville Generating Station, located approximately 15 northeast of the Town of Springerville, Apache County, Arizona, over groundwater of the Little Colorado River Plateau Basin, in Sections 27, 28, 33, and 34, Township 11 North, Range 30 East of the Gila and Salt River Base Line and Meridian.

This amendment replaces the original permit and all previous amendments listed in Section 5.0 becomes effective on the date of the Water Quality Division Director's signature and shall be valid for the life of the facility (operational, closure, and post-closure periods), unless suspended or revoked pursuant to A.A.C. R18-9-A213. The permittee shall construct, operate and maintain the permitted facilities:

1. Following all the conditions of this permit including the design and operational information documented or referenced below, and
2. Such that Aquifer Water Quality Standards (AWQS) are not violated at the applicable point(s) of compliance (POC) set forth below, or if an AWQS for a pollutant has been exceeded in an aquifer at the time of permit issuance, that no additional degradation of the aquifer relative to that pollutant, and as determined at the applicable POC, occurs as a result of the discharge from the facility.

1.1 PERMITTEE INFORMATION

| | | |
|-------------------------------------|--|---|
| Facility Name: | Springerville Generating Station (SGS) | |
| Permittee: | Mailing Address: | Facility's Street Address: |
| Tucson Electric Power Company (TEP) | TEP Springerville Generating Station P.O. Box 2222 Springerville, Arizona 85938 | 12 miles northeast of Springerville on Hwy 180, and then 12 miles east on County Road #4162 |
| Facility Contact: | Reland Kane Environmental Superintendent | (928) 337-2997 |
| Emergency Telephone Number: | Plant Operations (602) 745-3234 | |
| Latitude: | 34° 19' 08" | Longitude: 109° 09' 40" |
| Legal Description: | Sections 27, 28, 33, and 34, Township 11 North, Range 30 East of the Gila and Salt River Base Line and Meridian. | |

1.2 AUTHORIZING SIGNATURE

Joan Card, Director
Water Quality Division
Arizona Department of Environmental Quality
Signed this ____ day of _____, 2009

THIS AMENDMENT SUPERCEDES ALL PREVIOUS AMENDMENTS

2.0 SPECIFIC CONDITIONS [A.R.S. §§ 49-203(4), 49-241(A)]

2.1 Facility / Site Description [A.R.S. § 49-243(K)(8)]

The Springerville Generating Station (SGS) is a three-unit pulverized coal-fired, steam electric generating facility with a combined net generating output of 1160-megawatts. TEP is the operator of the SGS and owner of the property and SGS Unit 1. San Carlos Resources, a wholly owned subsidiary of TEP, is the owner of Unit 2. TEP began commercial operations at the SGS in 1985 with Unit 1 and commenced operation of Unit 2 in 1990. Springerville Unit 3 commenced operations in 2006 and is owned by Tri-State Generation and Transmission Association. The proposed Unit 4 is currently planned for a net generating output of 400 megawatts and is owned by the Salt River Project and will be operated by TEP. The site occupies a total area of 14,355 acres, which includes the main power plant area, ash disposal area, and the east and west production well fields.

This area-wide permit is for the operation of surface impoundments associated with Units 1, 2, 3 and 4 and utilized for industrial wastewater, a wastewater treatment plant, a coal storage area retention pond, a fire training facility, and an ash landfill. Process wastewater produced from plant operations is recycled within the plant and routed through various process wastewater collection systems and storage reservoirs. Domestic wastewater is managed on-site at the SGS with the operation of a domestic wastewater treatment plant and two sewage ponds.

This area-wide permit also authorized the closure of several existing discharging facilities that are no longer in operation. These “closed” facilities are described in the following section, Section 2.1.1. The closure requirements for operational facilities are stipulated in Section 2.9 of this permit.

The site includes the following 35 permitted discharging facilities:

| Facility | Status | Latitude ¹ | Longitude |
|---|--------|-----------------------|-------------------|
| Make-Up Reservoir A | Active | 34° 19' 06" North | 109° 09' 33" West |
| Make-up Reservoir B | Active | 34° 19' 08" North | 109° 09' 33" West |
| Sludge Settling Reservoir A | Active | 34° 19' 08" North | 109° 09' 15" West |
| Sludge Settling Reservoir B | Active | 34° 19' 08" North | 109° 09' 17" West |
| Sludge Settling Reservoir D | Active | 34° 19' 08" North | 109° 09' 19" West |
| Recoverable Water Reservoir A | Active | 34° 19' 06" North | 109° 09' 31" West |
| Recoverable Water Reservoir B | Active | 34° 19' 08" North | 109° 09' 31" West |
| Cooling Tower (CT) Blowdown Reservoir A | Active | 34° 19' 08" North | 109° 09' 25" West |
| CT Blowdown Reservoir B | Active | 34° 19' 08" North | 109° 09' 25" West |
| Process Water Collection Reservoir | Active | 34° 19' 07" North | 109° 09' 29" West |
| Evaporation Pond 1 | Active | 34° 19' 22" North | 109° 09' 15" West |
| Evaporation Pond 2 | Active | 34° 19' 20" North | 109° 09' 22" West |
| Evaporation Pond 3 | Active | 34° 19' 23" North | 109° 09' 08" West |
| Evaporation Pond 4 | Active | 34° 19' 25" North | 109° 09' 13" West |
| Evaporation Pond 5 | Active | 34° 19' 28" North | 109° 09' 13" West |
| Evaporation Pond 6 | Active | 34° 19' 32" North | 109° 09' 10" West |
| Wastewater Treatment Plant | Active | 34° 19' 05" North | 109° 10' 23" West |
| Sewage Pond 1 | Active | 34° 19' 17" North | 109° 09' 23" West |

¹ Latitude/Longitude is provided in NAD 83. The North American Datum of 1983 (NAD 83) is "The *horizontal control datum* for the United States, Canada, Mexico, and Central America, based on a geocentric origin and the *Geodetic Reference System 1980*."

| Facility | Status | Latitude ¹ | Longitude |
|---|----------|-----------------------|-------------------|
| Sewage Pond 2 | Active | 34° 19' 16" North | 109° 09' 24" West |
| Ash Landfill | Active | 34° 18' 05" North | 109° 14' 30" West |
| Coal Storage Area Retention Pond | Active | 34° 19' 14" North | 109° 09' 13" West |
| Fire Training Facility/Catch Basin | Active | 34° 19' 15" North | 109° 10' 13" West |
| Unit 3 Evaporation Pond West (EPW) | Active | 34° 19' 11" North | 109° 10' 33" West |
| Unit 3 Evaporation Pond East (EPE) | Active | 34° 19' 11" North | 109° 10' 33" West |
| Unit 3 Evaporation Storage Pond 1E | Proposed | 34° 18' 57" North | 109° 11' 01" West |
| Unit 3 Evaporation Storage Pond 1F | Proposed | 34° 18' 57" North | 109° 10' 54" West |
| Unit 4 Evaporation Storage Pond 1A | Proposed | 34° 19' 03" North | 109° 11' 03" West |
| Unit 4 Evaporation Storage Pond 1B | Proposed | 34° 19' 09" North | 109° 10' 56" West |
| Unit 4 Evaporation Storage Pond 1C | Proposed | 34° 19' 05" North | 109° 11' 09" West |
| Unit 4 Evaporation Storage Pond 1D | Proposed | 34° 19' 15" North | 109° 11' 19" West |
| Unit 3 & 4 Lime Sludge Storage Pond North (LSSPN) | Active | 34° 19' 00" North | 109° 10' 17" West |
| Unit 3 & 4 Lime Sludge Storage Pond South (LSSPS) | Active | 34° 19' 00" North | 109° 10' 17" West |
| Unit 3 & 4 Combined Effluent Storage Pond (CESP) | Active | 34° 19' 00" North | 109° 10' 13" West |
| Unit 4 Combined Effluent Storage Pond | Proposed | 34° 19' 03" North | 109° 10' 13" West |
| Unit 3 & 4 Cooling Tower Blowdown Storage Pond (CTBDSP) | Active | 34° 18' 58" North | 109° 10' 12" West |

The site includes the following closed facilities:

| Facility | Latitude | Longitude |
|---|-------------------|-------------------|
| Sludge Settling Reservoir C | 34° 19' 08" North | 109° 09' 18" West |
| Construction Debris Landfill (Former) | 34° 18' 00" North | 109° 14' 30" West |
| Asbestos Landfill | 34° 17' 58" North | 109° 14' 30" West |
| Drywell Registration No. 01-25315-10 (DW-1) | 34° 19' 05" North | 109° 09' 55" West |
| Drywell Registration No. 01-25316-10 (DW-2) | 34° 18' 59" North | 109° 09' 29" West |
| Drywell Registration No. 01-25317-10 (DW-3) | 34° 18' 59" North | 109° 09' 29" West |

2.1.1 Closed Facilities

This section of the permit describes several discharging facilities at the site that no longer operational: Sludge Settling Reservoir C (Section 2.1.1.1), the Construction Debris and Asbestos Landfills (Section 2.1.1.2) and the three drywells (Section 2.1.1.3).

2.1.1.1 Sludge Settling Reservoir C

Sludge Settling Reservoir C was one of four reservoirs used for the storage of sludge generated from the pretreatment of raw water for use in plant processes. Reservoir C received calcium carbonate sludge from the lime/soda ash reactivator (water softener) from approximately 1985 to 2000. Reservoir C was approximately 500 feet in length by 230 feet wide and was lined with an 80-mil high density polyethylene (HDPE) liner with an estimated

permeability of 10^{-14} centimeters per second (cm/sec). The HDPE geomembrane liner was damaged with equipment during sludge removal and the reservoir was removed from service for sludge disposal in 2000 and is not currently in use. Use of this reservoir for wastewater storage/disposal or non-exempt discharges is not authorized by this permit.

A closure plan for Sludge Settling Reservoir C, dated February 13, 2001, was approved by ADEQ on April 16, 2001. The Sludge Settling Reservoir C Soil Characterization Report was submitted on April 21, 2004.

Soil samples were collected from five locations at a depth of approximately 12 inches below ground surface within Sludge Settling Reservoir C. The sampling locations are designated as SSRC-A, SSRC-B, SSRC-C, SSRC-D, SSRC-E. Refer to the table in the fact sheet for parameters and results. There were no exceedances of Residential Soil Remediation Levels (r-RSLs), or Ground Water Protection Levels (GPLs). The HDPE geomembrane liner was properly removed and disposed of in the ash landfill on-site.

2.1.1.2 Construction Debris and Asbestos Landfills

The Construction Debris Landfill was approximately 13.8 acres in size and was located within the boundaries of the ash disposal area. The debris landfill was closed in 1999 and integrated into the ash landfill boundary. The Construction Debris Landfill was covered with an average of 30 to 50 feet of ash material and capped with two feet of native soil at the time of closure. The final closure report, dated October 15, 2001, indicated that TEP has met the closure criteria for the Construction Debris Landfill as defined in A.R.S. § 49-201(5). No post-closure monitoring or maintenance is required.

The Asbestos Landfill was approximately 800 square feet in size and was located within the boundaries of the Construction Debris Landfill. The Asbestos Landfill was closed with the Construction Debris Landfill in 1999 and integrated into the boundary of the Ash Landfill. However, the ash landfill, including any closed areas, will be routinely monitored for the performance standards specified in Section 4.2, Table 2.

2.1.1.3 Drywells

Three drywells were formerly used to manage stormwater runoff at the facility. All three drywells were decommissioned in 2001.

Annual Registration Fee [A.R.S. § 49-242]

The annual registration fee for this permit is established by A.R.S. § 49-242 and is payable to ADEQ each year. The design flow is 879,440 gallons per day (gpd).

Financial Capability [A.R.S. § 49-243(N) and A.A.C. R18-9-A203]

The permittee has demonstrated financial capability under A.R.S. § 49-243(N) and A.A.C. R18-9-A203. The permittee shall maintain financial capability throughout the life of the facility. The estimated closure and post-closure cost is \$1,223,400. The financial assurance mechanism demonstration was met through A.A.C. R-18-9-A203(C)(3)

2.2 Best Available Demonstrated Control Technology

[A.R.S. § 49-243(B) and A.A.C. R18-9-A202(A)(5)]

The BADCT demonstrated for this facility shall consist of a combination of the design of the wastewater management systems, low-permeability (minimum 10^{-6} cm/sec) liner systems in all impoundments containing wastewater exceeding AWQS, processes and operational methods employed at the site for reducing discharges, water conservation, and site-specific characteristics. A freeboard of 2 feet shall be maintained for all impoundments. The depth to groundwater at the site is approximately 600 feet below ground surface (bgs). The vadose zone beneath the site includes a stratigraphy with low-permeability clay ranging in depth from 130 to 528 feet bgs, limiting the infiltration and migration of pollutants from the facility.

2.2.1 Engineering Design

On-site drainage systems shall be designed and maintained for the 100-year, 24-hour storm event. The subgrade for the entire SGS site was prepared using a minimum of 6 inches of native soils compacted to between 90 and 95 percent maximum dry density. All reservoirs containing wastewater exceeding AWQS shall be lined with either HDPE or a 4-inch layer of asphalt concrete. Actual seepage from the reservoirs and ash landfill shall be monitored using a series of downgradient seepage wells installed for detecting leakage from the facility. If water is detected (fluid present), contingency actions shall be required per Section 2.6.3.5.

2.2.1.1 Make-up Reservoirs (A and B)

Two make-up water reservoirs shall be used to store treated groundwater for distribution to plant processes and systems. The make-up reservoirs shall also receive decant water from the sludge settling reservoirs used to store water treatment sludge. Make-up Reservoir A shall be lined with an 80-mil HDPE geomembrane liner and Make-up Reservoir B shall be lined with a 4-inch asphalt liner. Make-up Reservoir A was designed with a storage capacity of 148 acre-feet and Reservoir B provides approximately 129 acre-feet storage capacity.

2.2.1.2 Sludge Settling Reservoirs (A, B, and D)

Three sludge settling reservoirs shall be used for storage and settling of reactivator sludge from the treatment of raw water for plant use. Sludge Settling Reservoirs A, B, and D shall be lined with a 4-inch-thick asphalt liner with an approximate permeability of 1.1×10^{-6} cm/sec. Each sludge settling reservoir shall have a storage capacity of 12.6 acre-feet.

2.2.1.3 Recoverable Water Reservoirs (A and B)

Two recoverable water reservoirs shall be used for storage of make-up water for use in the cooling towers. Both reservoirs shall be lined with a 4-inch-thick asphalt liner, with an approximate permeability of 1.1×10^{-6} cm/sec, and each reservoir shall have a storage capacity of approximately 2 acre-feet.

2.2.1.4 Cooling Tower Blowdown Reservoirs (A and B)

Two cooling tower blowdown reservoirs shall be used primarily for storage of spent cooling water. Both reservoirs shall be lined with a 4-inch-thick asphalt liner with an approximate permeability of 1.1×10^{-6} cm/sec, and each reservoir shall have a storage capacity of 3.74 acre-feet.

2.2.1.5 Process Water Collection Reservoir

The process water collection reservoir shall be used to store unrecoverable wastewater for transfer to the evaporation ponds. The process water collection reservoir shall be lined with a 4-inch-thick asphalt liner, with an approximate permeability of 1.1×10^{-6} cm/sec, and shall have a storage capacity of 3.74 acre-feet

2.2.1.6 Evaporation Ponds (1-6)

Six evaporation ponds shall be used for final storage and evaporation of wastewater from the process water collection reservoir. The evaporation basins shall be lined with an 80-mil HDPE geomembrane liner with an estimated permeability of 10^{-14} cm/sec. The total storage capacity of all 6 evaporation basins shall be approximately 275 acre-feet.

2.2.1.7 Wastewater Treatment Plant

The wastewater treatment plant is a package sewage treatment plant (Aer-O-Flo model CSR-EA-25) designed to handle an average daily flow of 25,000 gpd of domestic wastewater. The system shall be operated in the contact stabilization mode of treatment for normal flows and in the extended aeration mode for higher flows (secondary wastewater treatment).

2.2.1.8 Sewage Ponds (1 & 2)

Two sewage ponds shall be used for the storage and evaporation of effluent from the wastewater treatment plant. The sewage ponds shall be designed for peak discharge from the plant. Both sewage ponds shall be lined with a four-inch-thick asphalt liner with, an approximate permeability of 1.1×10^{-6} cm/sec, and each pond is approximately 2.5 acres in size.

2.2.1.9 Ash Landfill (Ash Disposal Area)

The Ash Landfill was designed for on-site disposal of the dry ash generated from the power plant operation. The Ash Landfill also receives water and wastewater treatment sludge removed from the wastewater storage reservoirs during maintenance. The ash disposal area is 400 acres in size, including the closed construction debris and asbestos landfills. The Ash Landfill shall be constructed using compacted layers of fly ash and bottom ash with an estimated permeability of 10^{-5} cm/sec. The landfill shall be constructed in a bench and crest design. The ash material shall be covered with approximately 24 inches of native soil following completion of each bench. All surface runoff from the ash disposal area shall be contained within the ash landfill area with a berm sized for a 100-year storm. The Ash Landfill shall be designed for containment of approximately 2,000,000 tons of ash per year with four generating units in operation.

2.2.1.10 Coal Storage Area Retention Pond

Three coal storage areas shall be located within the power plant area and contain approximately 800,000 tons of coal for use in the power plant operation. The Coal Area Retention Pond receives stormwater runoff from the coal storage areas and nearby plant areas. The retention pond shall be approximately 60 acre-feet in size and is unlined.

2.2.1.11 Fire Training Facility

The Fire Training Facility shall be used approximately 12 times per year for fire fighting exercises. The training facility consists of a fire training structure, a fire pan area, a concrete trough, a catch basin, a propane tank, and several training props. The fire training area is approximately 250 feet in length and 100 feet wide and drains to the catch basin for containment of the fire suppression water. The catch basin is approximately 100 feet in length and 25 feet wide. The fire training area shall be lined and maintained with a minimum of 14 inches of fly ash compacted to 95 percent maximum dry density, covered with approximately 4 inches of ABC fill and 3/8-inch gravel.

2.2.1.12 Unit 3 Evaporation Pond West and Unit 3 Evaporation Pond East

The two lined evaporation ponds shall be used for evaporation of plant process wastewater that includes cooling tower blowdown, air heater wash water, miscellaneous cleaning water, bottom ash and fly ash cleaning waste water, and regeneration waste water from the neutralization system. Both ponds shall be constructed with a 60-mil HDPE geomembrane liner, a leachate collection and recovery system (LCRS) consisting of a geonet layer sloped to a center sand-filled trough that has an embedded 60-mil HDPE pipe for collecting leachate and a lower composite liner consisting of 60-mil HDPE over a geosynthetic clay liner. Each pond shall have a total capacity of 12,500,000 gallons.

2.2.1.13 Unit 3 Evaporation Storage Ponds 1E and 1F

The two lined evaporation impoundments shall be used for evaporation of plant process wastewater that includes mixed regeneration waste from the neutralization system, air heater wastewater, cooling tower blowdown and bottom ash, fly ash, coal, lime sump water and start-up wastewater. The ponds shall be constructed with a 60-mil HDPE geomembrane upper liner, LCRS composed of geonet layer sloped to a center sand-filled trough embedded with a 6-inch perforated HDPE collection pipe, and a lower liner consisting of a 60-mil HDPE geomembrane liner over compacted subgrade. A freeboard of 2 feet shall be maintained for all the proposed ponds. The containment berms shall be constructed with a

slope no steeper than 3(H):1(V). Anchor trenches shall be constructed around the perimeter and on top of all in-place berms. The anchor trenches shall be constructed 2-feet in depth and maintain a 2-foot wide flat bottom. The drainage troughs shall be constructed in the subgrade in each pond floor. The troughs shall be well graded ditches with 3(H):1(V) side slopes and a minimum 2-foot wide flat bottom. Unit 3 Evaporation Pond 1E and 1F shall each have a storage capacity of 13,342,689 gallons.

2.2.1.14 Unit 4 Evaporation Storage Ponds 1A through 1D

The four lined evaporation impoundments shall be used for evaporation of plant process wastewater that includes mixed regeneration waste from the neutralization system, air heater wastewater, cooling tower blowdown and bottom ash, fly ash, coal, lime sump water and start-up wastewater. The ponds shall be constructed with a 60-mil HDPE geomembrane upper liner, LCRS composed of geonet layer sloped to a center sand filled trough embedded with a 6-inch perforated HDPE collection pipe, and a lower liner consisting of a 60-mil HDPE geomembrane over compacted subgrade. A freeboard of 2 feet will be maintained for all the proposed ponds. The containment berms will be constructed with a slope no steeper than 3(H):1(V). Anchor trenches will be constructed around the perimeter and on top of all in-place berms. The anchor trenches will be constructed 2-feet in depth and maintain a 2-foot wide flat bottom. The drainage troughs will be constructed in the subgrade in each pond floor. The troughs will be well graded ditches with 3(H):1(V) side slopes and a minimum 2-foot-wide flat bottom. Unit 4 Evaporation Pond 1A and 1B shall each have a storage capacity of 14,491,236 gallons. Unit 4 Evaporation Pond 1C and 1D shall each have a storage capacity of 15,566,471 gallons.

2.2.1.15 Unit 3 and 4 Lime Sludge Storage Pond North and South

The two lime sludge storage ponds shall be used for storage and settlement of reactivator sludge generated from the treatment of raw water for plant use. The Lime Sludge Storage Pond North (LSSPN) and Lime Sludge Storage Pond South (LSSPS) shall consist of a 60-mil HDPE geomembrane upper liner that has a 12-inch sand layer directly placed on the HDPE geomembrane liner and 6-inch aggregate layer on the sand layer. Under the upper liner is a LCRS consisting of geonet layer sloped to a center sand filled trough with an embedded perforated HDPE pipe for collection of leachate. Below the leachate collection system is a composite under liner consisting of a 60-mil HDPE geomembraneliner on top of a geosynthetic clay liner. Each pond shall have a total capacity of 2,000,000 gallons.

2.2.1.16 Unit 3 and 4 Combined Effluent Storage Pond

The Combined Effluent Storage Pond (CESP) shall receive miscellaneous wastewater including cooling tower blowdown, air heater wash water, miscellaneous cleaning water, bottom ash and fly ash cleaning waste water, and regeneration waste water from the neutralization system. Wastewater shall be temporarily stored in this pond until solids settle out and then the liquid is decanted and routed to the evaporation ponds. The CESP shall consist of 60-mil HDPE upper liner below a 6-inch layer of aggregate material on top of a 12-inch layer of sand. A LCRS consisting of a geonet layer sloped to a center sand-filled trough embedded with a perforated HDPE pipe is below the upper liner. The lower liner shall consist of a 60-mil HDPE geomembrane liner on top of a geosynthetic clay liner. The total capacity of the pond shall be approximately 375,000 gallons.

2.2.1.17 Unit 4 Combined Effluent Storage Pond

The Unit 4 CESP shall receive miscellaneous wastewater including cooling tower blowdown, air heater wash water, miscellaneous cleaning water, bottom ash and fly ash cleaning waste water, and regeneration waste water from the neutralization system. The pond shall be constructed with a 60-mil HDPE geomembrane upper liner, LCRS composed of geonet layer sloped to a center sand-filled trough embedded with a 6-inch perforated HDPE collection pipe, and a lower liner consisting of a 60-mil HDPE geomembrane over compacted subgrade. A 2-foot freeboard shall be maintained in the pond. The total capacity of the pond shall be

1,251,183 gallons.

2.2.1.18 Unit 3 and 4 Cooling Tower Blowdown Storage Pond

The Cooling Tower Blowdown Storage Pond (CTBDSP) associated with Unit 3 and 4 shall receive cooling tower blowdown from Units 3 and 4. The CTBDSP shall consist of a 60-mil HDPE upper geomembrane liner with a 12-inch layer of sand cover under a 6-inch aggregate layer over it. Under the HDPE upper geomembrane liner shall be a geonet layer sloped to a central sand filled trough embedded with a perforated HDPE collection pipe for LCRS. Under the geonet shall be a composite liner consisting of a 60-mil HDPE geomembraneliner over a geosynthetic clay liner. The total capacity of the pond shall be approximately 375,000 gallons.

2.2.2 Site-specific Characteristics

Site-specific characteristics shall be included as part of the BADCT for this facility. The depth to groundwater at the site ranges from approximately 539 to 740 feet bgs. The vadose zone beneath the power plant site consists of low-permeability soils (Chinle and Moenkopi Formations) with an approximate thickness of 400 feet, extending from 130 to 528 foot depths beneath the site. The hydraulic conductivity of this low-permeable zone is estimated at 10^{-9} cm/sec. The facility is not located in within the 100-year flood plain or in an area of geologic hazards.

2.2.3 Pre-operational Requirements

Within 60 days of completing construction of the proposed impoundments listed in the table in Section 2.1, or within 60 days of permit issuance, whichever is longer, and prior to initial discharge of wastewater to these lined impoundments, the permittee/operator shall inspect all wastewater management systems to verify that all components function as designed. The permittee/operator's inspections shall ensure that the installation of the liner and LCRS meet the manufacture's quality assurance and quality control requirements (QA/QC) and that the liner system has been installed in accordance with ADEQ-approved plans.

In accordance with the compliance schedule in Section 3.0, within 60 days of completing construction of the impoundments, or within 60 days of permit issuance, whichever is longer the permittee shall provide a final construction report to the ADEQ Groundwater Section and ADEQ Water Quality Compliance Section. The construction report shall include verification that the lined impoundments were constructed in accordance with ADEQ-approved plans, documentation of the QA/QC procedures completed for the installation of the liner and the LCRS, subgrade preparation testing results, weld seam testing results, and the final as-built plans and inspection results for all pollution control components relating to wastewater discharge and treatment processes. The final construction report shall be certified by the on-site construction manager and shall be sealed by a registered professional engineer.

2.2.4 Operational Requirements

The pollution control structures shall be inspected for the items listed in Section 4.2, Tables 2A through 2E and according to Section 2.5.2 (Facility/Operational Monitoring). If damage is identified during an inspection that could cause or contribute to an unauthorized discharge, proper repairs shall be promptly performed and documented according to Section 2.7.2 (Operation Inspection/Log Book Recordkeeping).

2.2.4.1 Water and Industrial Wastewater Reservoirs

The industrial wastewater management system shall consist of collection, segregation, and recycling of wastewater. The waste streams shall be segregated as follows: (a) recoverable wastes that are recycled to the circulating water system; (b) process wastewater that contains high total dissolved solids (TDS) or chemical content; (c) cooling tower blowdown that is reused in the flue gas cleaning and ash handling system; and (d) non-process waste streams collected from floor drains and equipment washes that are also reused in the flue gas cleaning

and the ash handling system. These waste streams shall be collected in a network of sumps and storage reservoirs throughout the facility.

The water needed to operate the power plant is supplied by groundwater pumped from on-site production wells. Groundwater shall be directed to the two lined raw water reservoirs to equalize water quality and flow to the reactivators. Raw water from these reservoirs shall be sent for treatment by the lime/soda ash reactivators to remove hardness. SGS operates two lime/soda ash reactivators (water softening treatment) to maintain a high cycle of concentration in the cooling tower and prevent mineral deposits in the distribution lines. The reactivators have a combined design capacity of 171 acre-feet.

Treated water from the reactivators shall be conveyed to the make-up water reservoirs for storage. The make-up water reservoirs shall be used to contain the treated groundwater for distribution to plant processes and systems. The water in the make-up water reservoirs shall be distributed for use as cooling tower make-up water, boiler water (mixed bed demineralizers), potable water (water treatment filtration system), plant maintenance/service water, and fire and coal dust suppression.

The sludge from the reactivators, consisting primarily of calcium and magnesium, shall be discharged to one of the five sludge settling reservoirs. As the sludge settles in the reservoirs, the decant water shall be directed to one of the make-up water reservoirs for use in the plant systems. Once a settling reservoir is filled, the discharge shall be diverted to the next settling reservoir to allow drying time. The sludge shall be partially dried and removed from the settling reservoirs using loaders. The reactivator sludge shall be transported to the ash landfill for final disposal.

The recoverable water reservoirs shall be used to store wastewater for reuse in the cooling towers. Discharges to the recoverable water reservoirs consist of demineralizer effluent, polisher rinses and boiler blowdown. The cooling tower blowdown reservoir shall be used to store wastewater discharged from the cooling towers, flue gas cleaning building, and lime unloading building sumps.

The process water collection reservoir shall be used to store unrecoverable wastewater for transfer to the evaporation ponds. The reservoir collects discharges from various floor drains and industrial building sumps, including the water treatment plant filtration system, the reactivators, and the air pre-heater. Spillage and regenerate waste shall be directed to the neutralization tank for treatment prior to discharge to the process water collection reservoir. The process water collection reservoir shall also receive overflow from the cooling tower blowdown reservoir and the recoverable water reservoirs.

Any wastewater containing oil and/or grease shall be directed to the oil/water separator(s) for treatment. The oil sludge is disposed of off-site at facilities licensed to accept the wastes. The effluent from the oil/water separator(s) is sent to the ash handling facility for reuse, to the process water collection reservoir or the wastewater treatment plant. Wastewater from the process water collection reservoir is conveyed to the evaporation ponds for final disposal.

The evaporation ponds are used for final storage and evaporation of unrecoverable industrial wastewater from the process water collection reservoir.

The wastewater reservoirs shall be routinely inspected to ensure proper functioning and to prevent discharges to the underlying soils. Leakage from the reservoirs shall be monitored using on-site seepage monitoring wells. The seepage wells were installed downgradient from the reservoirs for detecting leakage from the plant site. The seepage monitoring wells consist of 3-inch-diameter PVC pipe with depths ranging from 45 feet to 210 feet. Each seepage well shall be constructed with a 15-foot (approximately) perforated interval (slotted screen)

length above the well bottom. The slotted screen area shall be surrounded by 3/8-inch gravel. From the perforated interval to the ground surface, the PVC piping shall be surrounded by clay and grout to ensure that only water flowing through the entire column of undisturbed native soil enters the perforated interval. The seepage wells shall be designed to prevent surface water from entering the borehole. Monitoring of the seepage wells shall be in accordance with the monitoring requirements in Section 2.5.1.6. If water is detected (fluid present), contingency actions shall be required per 2.6.3.5. Monitoring of the wastewater reservoirs shall be performed in accordance with the monitoring requirements described in Section 2.5 of this permit.

2.2.4.2 Domestic Wastewater Treatment Plant/Sewage Ponds

TEP operates an on-site wastewater treatment plant and two sewage ponds for disposal of domestic wastewater from the SGS. Flow to the treatment plant shall be approximately 8,600 gpd of domestic wastewater when Units 3 and 4 go on line. The treatment plant also receives a small amount of effluent from an oil/water separator receiving wash water from the plant maintenance shop. The effluent from the wastewater treatment plant shall be discharged to one of two sewage ponds for evaporation. One sewage pond shall be operated at a time, while the other pond shall be used for evaporation. The dried sludge from the sewage ponds shall be removed approximately once every 10 years and transported to the ash landfill for final disposal.

2.2.4.3 Material and Waste Storage Areas (Coal Storage and Ash Disposal)

TEP acquires coal from New Mexico and other suppliers, for use in the coal-fired units operated at the power plant. The coal shall be stored on site in one contiguous area with three separate coal laydown areas. Two coal storage areas are currently in use and the other storage area was constructed for coal reserves and is not used frequently. Approximately 800,000 tons of coal shall be stored on site at the SGS. The coal storage area retention pond shall be constructed adjacent to the coal storage area to contain stormwater runoff from these storage areas. The retention pond shall also receive stormwater runoff from adjacent power plant areas.

The Ash Landfill shall be designed for the disposal of dry fly ash and bottom ash generated from the operation of the coal-fired units at the power plant. The dry fly ash shall be mixed with water for dust control and shall be transported by truck to the Ash Landfill for disposal.

The bottom ash shall be drained of free water prior to disposal in the Ash Landfill. The ash shall be transported to the landfill daily and terraced at the time of disposal. The Ash Landfill shall receive approximately 2,000,000 tons of fly ash and bottom ash generated at the SGS annually. The Ash Landfill may receive up to an additional 35,000 tons of fly ash generated by TEP's Irvington Generating Station (IGS) annually if the ash is not used for cement production.

In addition to dry ash, the Ash Landfill shall receive water and wastewater treatment wastes, (reactivator sludge, demineralizer resins, sewage pond sludge, evaporation pond solids), construction debris (insulation, metal, wood, pipe, wire, rubber, plastic, treated lumber), petroleum impacted soils not exceeding residential soil remediation levels (SRLs) for polynuclear hydrocarbons (PAHs) and benzene, toluene, ethylbenzene, and xylene (BTEX) per A.R.S. § 49-851(A)(3), rubbish from the plant, and other non-hazardous materials. No municipal, household, or hazardous wastes shall be disposed of in the Ash Landfill. TEP began disposing ash in the landfill in 1987. Prior to 1987, fly ash was used as construction and fill material (1985 and 1986) in the coal storage area, coal train rail loop, and for road construction.

Following completion of each bench, the ash and other solid wastes shall be covered with 2feet of native soil graded to a minimum 3 percent slope for drainage. Surface runoff that

has been in contact with ash shall be contained within the ash disposal area with one non-jurisdictional dam sized for a 100-year storm event. Stormwater runoff from within the plant area shall be diverted away from the Ash Landfill. TEP shall perform routine inspections of the Ash Landfill to ensure integrity of the disposal facility. The landfill is estimated to operate for a period of 40 years and shall comprise approximately 400 acres at the time of completion. Monitoring of the Ash Landfill shall be performed in accordance with the monitoring requirements described in Section 2.5 of this permit.

2.2.4.4 Fire Training Facility

TEP shall operate a Fire Training Facility at the SGS to perform fire training exercises. The training facility shall be used occasionally by neighboring fire departments and the Northland Pioneer College's Fire Science Program for fire training. The Fire Training Facility shall be used approximately 12 times per year. Authorized fuels used at the facility shall include wood, gasoline, diesel fuel, propane, and waste oils. Stormwater and fire suppression water from the training exercises shall be collected and evaporated in a catch basin located adjacent to the training area.

2.3 Discharge Limitations [A.R.S. §§ 49-201(14), 49-243 and A.A.C. R18-9-A205(B)]

2.3.1 Wastewater Reservoirs

The permittee shall operate and maintain the wastewater reservoirs to the maximum extent practicable to prevent liner failure, uncontrollable leakage, overtopping, berm breaches, accidental spills, or other unauthorized discharges. The permittee shall not exceed the maximum storage capacity of any reservoir and shall maintain a minimum of 2 feet of freeboard in each reservoir at all times during operation. The permittee shall maintain the seepage monitoring systems and LCRS required by this permit and shall comply with the monitoring requirements specified in Section 2.5 (Monitoring Requirements) and Section 4.0 (Monitoring Tables) of this permit.

The materials authorized for discharge to the wastewater reservoirs shall be restricted to industrial wastewater (pretreatment sludge, demineralizer effluent, polisher rinses, boiler blowdown, spent cooling water, oil/water separator effluent) generated from the SGS plant and shall not contain any organic solvents or other hazardous substances that are not associated with the aforementioned operations. The materials authorized for discharge to the sewage Ponds shall be restricted to domestic wastewater and oil/water separator effluent generated from the SGS plant and shall not contain any organic solvents or other hazardous substances that are not associated with the aforementioned operations. In the event of an unauthorized discharge, the permittee shall initiate the contingency requirements described in Section 2.6 of this permit.

2.3.2 Oil/water Separator

The permittee shall operate and maintain the oil/water separator(s) according to the recommended performance standards. The influent to the separator shall meet the requirements of the manufacturer specifications with respect to pH, flow, and influent concentrations. Exceedance of the pretreatment capacity of the oil/water separator shall be a permit violation. Sludge collected from the oil/water separator shall be adequately characterized and properly disposed of off-site in accordance with Federal, State, and local waste disposal rules and regulations. Waste manifests and disposal certificates shall be maintained in the facility records according to Sections 2.7.2 of this permit.

2.3.3 Ash Landfill

The disposal of ash material shall be limited to the fly ash and bottom ash generated at the SGS or TEP's Irvington Generating Station. The amount of ash and solid materials authorized for disposal in the Ash Landfill shall be restricted to the amount that can be contained within the physical boundaries of Ash Landfill as designed. The boundary and height requirements shall comply with Drawings No. 6 and No. 36 in the APP Application, dated April 13, 1998. No other wastes generated from off-site sources shall be permitted for disposal at the SGS site. Waste characterization records shall be

maintained in accordance with Sections 2.7.2 and 2.7.4 of this permit.

Other solid wastes authorized for disposal at the Ash Landfill shall include wastewater treatment wastes (reactivator sludge, demineralizer resins, cooling tower sludge, sewage pond sludge, evaporation pond solids, and miscellaneous sump and pond clean-outs), construction debris (concrete, insulation, metal, wood, pipe, wire, rubber, plastic, treated lumber), petroleum impacted soils not exceeding residential SRLs for PAHs and BTEX per A.R.S. § 49-851(A)(3), and refuse/rubbish from the SGS plant. Any soils exceeding residential SRLs shall be disposed of off site in accordance with Federal, State, and local waste disposal rules and regulations.

The Ash Landfill is not permitted to receive the following wastes:

1. any petroleum contaminated soils (PCS), which exceed r-SRLs for polycyclic aromatic hydrocarbons (PAHs) and benzene, toluene, ethylbenzene, and xylene (BTEX);
2. municipal solid waste, as defined in 40 CFR 258.2;
3. household waste, as defined in A.R.S. § 49-701(14);
4. special waste, as defined in A.R.S. § 49-851(A)(5);
5. bulk liquids and liquid waste, as defined in 40 CFR 258.28;
6. hazardous wastes, as defined in 40 CFR Part 261 and A.R.S. § 49-921(5);
7. radioactive materials, as defined in A.R.S. § 30-651.12;
8. regulated friable asbestos material, as defined in 40 CFR 61.141;
9. polychlorinated biphenyl (PCB), as defined in 40 CFR 761; and
10. other wastes which are prohibited by Federal, State, or local regulation from disposal at non-municipal solid waste landfills.

2.3.4 Fire Training Facility

The permittee shall be authorized to perform 12 fire training exercises per year at the Fire Training Facility. The use of liquid petroleum products for fire training exercises shall be limited to the minimum amount of fuel required to perform the exercise such that no excess fuel ponds or drains off the training area. No PCS exceeding r-SRLs for PAHs and BTEX per A.R.S. § 49-851(A)(3) shall be disposed of at the facility. Any PCS exceeding residential SRLs for PAHs and BTEX per A.R.S. § 49-851(A)(3) shall be disposed of at the facility. Any PCS exceeding r-SRLs for PAHs and BTEX shall be disposed off-site in accordance with Federal, State, and local waste disposal rules and regulations.

2.3.5 Surface Water Diversions

Surface water diversions shall be maintained to direct stormwater flows from a 100-year, 24-hour storm event away from the power plant site, wastewater reservoirs, and the Ash Landfill.

2.4 Point(s) of Compliance [A.R.S. § 49-244]

The POCs are established by the following monitoring locations:

| POC Locations | Latitude | Longitude |
|---|------------------|------------------|
| Seepage Monitoring Well A10W (Main Plant and Main Plant Impoundments PMA) | 34°19'21" North | 109°10'14" West |
| Seepage Monitoring Well A3W | 34°19' 09" North | 109°10'38" West |
| Seepage Monitoring Well B7W (Ash Landfill PMA) | 34°18'02" North | 109°14'37" West |
| MW-1 (Alternative location for this POC to be proposed as part of the Compliance Schedule in Section 3.0) | To be determined | To be determined |

Monitoring requirements for each POC are listed in Section 4.2, Table3. The Director may amend this permit to designate additional POCs if information on groundwater gradients or groundwater usage indicates the need.

2.5 Monitoring Requirements [A.R.S. § 49-243(K)(1), A.A.C. R18-9-A206(A)]

All monitoring required in this permit shall continue for the duration of the permit, regardless of the status of the facility. All sampling, preservation and holding times shall be in accordance with currently accepted standards of professional practice. Trip blanks, equipment blanks and duplicate samples shall also be obtained, and chain of custody procedures shall be followed, in accordance with currently accepted standards of professional practice. The permittee shall consult the most recent version of the ADEQ Quality Assurance Project Plan (QAPP) and EPA 40 CFR PART 136 for guidance in this regard. Copies of laboratory analyses and chain of custody forms shall be maintained at the permitted facility. Upon request these documents shall be made immediately available for review by ADEQ personnel.

2.5.1 Discharge Monitoring**2.5.1.1 Initial Discharge Monitoring****2.5.1.1.1 Unit 3 Evaporation Storage Ponds 1E and 1F, Unit 4 Evaporation Storage Ponds 1A, 1B, 1C, and 1D, and Unit 4 Combined Effluent Storage Pond**

Within 60 days of initiation of operations the permittee shall perform a characterization of the wastewaters discharging into the lined impoundments according to Section 4.1, Table 1 and Section 3.0. The results shall be used as the basis for contingency discharge monitoring. The characterization shall be based on a composite of four, discrete samples collected from each lined impoundment with the exception of samples collected for organic parameters. A single discrete sample shall be collected from each impoundment and analyzed for organic parameters.

2.5.1.2 Routine Discharge Monitoring**2.5.1.2.1 Industrial Wastewater Reservoirs**

The permittee shall characterize the wastewater discharging to the make-up reservoirs, sludge settling reservoirs, recoverable water reservoirs, cooling tower blowdown reservoirs, process water collection reservoir, combined effluent storage ponds, and the evaporation ponds every 5 years after permit issuance. Four consecutive quarterly samples representative of each waste stream shall be collected from the discharge outfall pipe to the make-up reservoirs (decant water), sludge settling basin(s), the recoverable water reservoir(s), the cooling tower blowdown reservoir(s), and the process water collection reservoir. One representative, composite sample of the pond contents shall be collected from each wastewater reservoir and evaporation pond, based on a grid sampling approach. The samples shall be analyzed for all parameters specified in Section 4.2, Tables 1A through 1G.

2.5.1.2.2 Sewage Ponds/Wastewater Treatment Plant (WWTP)

The permittee shall characterize the effluent discharging to the sewage ponds every 5 years. A representative sample of the wastewater shall be collected from the discharge outfall pipe from the WWTP to the active sewage pond. The sample shall be analyzed for all parameters specified in Section 4.2, Table 1F.

2.5.1.2.3 Coal Storage Area Retention Pond

The permittee shall characterize the stormwater/surface runoff discharging to the retention pond every 5 years according to Section 4.2, Table 1E. A representative sample of the water contained in the retention pond shall be collected from the pond following precipitation sufficient for sample collection. The sample shall be analyzed for all parameters specified in Section 4.2, Table 1E. Four rounds of samples have been collected. The results were submitted March 9, 2009. Four additional rounds of samples shall be collected, and ALs shall be proposed for Sulfate, Chloride and TDS as required in Section 3.0, Compliance Schedule.

If no precipitation sufficient for sample collection occurs during the period within 1 year of permit issuance, the sample shall be collected following the next rainfall sufficient for sample collection. If no precipitation sufficient for sample collection occurs during the 5-year monitoring period after the initial characterization, a sample shall be collected during the next rainfall sufficient for sample collection. If no storm event sufficient for sampling occurs within the required monitoring period, the permittee shall report “none” for the monitoring period, and shall submit sampling results within 30 days of receipt of the laboratory report upon sample collection.

2.5.1.2.4 Ash Characterization

Ash generated at the SGS may be disposed at the SGS. The permittee may also dispose of up to 35,000 tons of fly ash generated at TEP’s IGS. The permittee shall perform waste characterization of the ash generated at both SGS and TEP’s IGS every 5 years. A representative sample of the ash shall be collected and analyzed for all parameters specified in Section 4.2, Table 1H.

2.5.1.2.5 Oil/Water Separator(s)

The permittee shall characterize the effluent from the oil/water separator(s) annually for all the parameters specified in Section 4.2, Table 1I.

2.5.1.2.6 Seepage Monitoring

The permittee shall maintain seepage monitoring quarterly in accordance with Section 4.2, Table 3, at the following locations:

| Identification | Well Depth (feet) | Latitude | Longitude |
|----------------------|----------------------|---------------|----------------|
| Seepage Well A3W | 117 | 34° 19’ 09” N | 109° 10’ 38” W |
| Seepage Well A10W | 211 | 34° 19’ 21” N | 109° 10’ 14” W |
| Seepage Well A14W | 150 | 34° 19’ 44” N | 109° 09’ 14” W |
| Seepage Well B2W | 73 | 34° 18’ 42” N | 109° 14’ 54” W |
| Seepage Well B7W | 89 | 34° 18’ 02” N | 109° 14’ 37” W |

If fluids (including stormwater) are detected in a seepage well, the permittee shall initiate contingency actions specified in Section 2.6.3.5 of this permit.

2.5.2 Facility / Operational Monitoring

2.5.2.1 Wastewater Reservoirs

The permittee shall inspect all wastewater reservoirs (make-up reservoirs, sludge settling reservoirs, recoverable water reservoirs, cooling tower blowdown reservoirs, process water collection reservoirs, evaporation ponds, sewage ponds, and coal area retention pond) to verify that all systems are functioning properly. At minimum, the reservoirs shall be inspected for the performance standards listed in Section 4.2, Tables 2A through 2C, at least once monthly. The permittee shall also inspect the wastewater reservoirs following any significant rainfall or storm event and after sludge removal.

If any damage to a wastewater reservoir is identified during an inspection or if a pollution control system is rendered inoperable, the permittee shall perform the necessary repairs or maintenance to return the reservoir or system to operating condition, or remove the reservoir from service. The permittee shall document facility monitoring activities, inspection results, and all repair procedures, methods, and materials used to return the system to operating condition in the Annual Report described in Section 2.7 (Reporting and Recordkeeping Requirements) of this permit. A log of the wastewater reservoir monitoring activities and related information shall be kept at the facility for 10 years from the date of inspection and available for review by ADEQ.

2.5.2.2 Ash Landfill

The permittee shall inspect the ash landfill areas to verify that landfill is operated properly and as permitted. At minimum, the landfill shall be inspected for the performance standards listed in Section 4.2, Table 2D. Inspections shall be performed for the landfill areas at least once monthly and after any significant rainfall or storm event.

If any damage to an area of the landfill (active or closed benches or crests) is identified during an inspection, the permittee shall perform the necessary repairs or maintenance to return the area to the proper operational or closed condition. The permittee shall document the landfill monitoring activities, inspection results, and all repair procedures, methods, and materials used to return the facility to operational status in the Annual Report described in Section 2.7 (Reporting and Recordkeeping Requirements) of this permit. A log of the ash landfill monitoring activities and related information shall be kept at the facility for 10 years from the date of inspection and available for review by ADEQ.

2.5.2.3 Fire Training Facility

The permittee shall inspect the fire training facility to verify that the grading and drainage are maintained properly at all times. At minimum, the fire training facility shall be inspected for the performance standards listed in Section 4.2, Table 2E, at least once monthly. The permittee shall also inspect the fire training facility prior to the training exercises and following any significant rainfall or storm event.

If any damage to the fire training area or drainage catch basin is identified during an inspection, the permittee shall perform the necessary repairs or maintenance to return the facility or system to operating condition. The permittee shall document facility monitoring activities, inspection results, and all repair procedures, methods, and materials used to return the systems to operational status in the Annual Report described in Section 2.7 (Reporting and Recordkeeping Requirements). A log of the fire training facility monitoring activities and related information shall be kept at the facility for 10 years from the date of inspection and available for review by ADEQ upon request.

2.5.2.4 Leachate Collection and Removal System Monitoring

The permittee shall perform monitoring of the LCRS for Unit 3 Evaporation Ponds East and West, Unit 3 Evaporation Storage Pond 1E and 1F, Unit 4 Evaporation Storage Pond 1A, 1B, 1C, and 1D, Unit 3 and 4 Lime Sludge Storage Ponds North and South, the Unit 3 and 4 Combined Effluent Storage Pond, Unit 4 Effluent Storage Pond, and the Unit 3 & 4 Cooling Tower Blowdown Storage Pond according to Section 4.2, Table 3A, of this permit. If ALs are exceeded the permittee shall place into action the necessary contingency actions according to Section 2.6.2.4.

2.5.3 Seepage Well Monitoring

The permittee shall monitor the seepage wells (A10 W, A3W, A14W, B2W, and B7W) to verify that the seepage wells are functioning in operating condition and to identify possible leakage from the site. At minimum, the seepage wells shall be inspected for operating condition and for the presence of

fluids on a quarterly basis following any significant rainfall or storm event. If fluids (including stormwater) are detected in a seepage well, the permittee shall initiate contingency actions specified in Section 2.6.3.5 of this permit.

If any damage to a seepage well is identified during an inspection, the permittee shall perform the necessary repairs or maintenance to return the seepage well to operating condition. The permittee shall document seepage well monitoring activities, inspection results, and all repair procedures, methods, and materials used to return the seepage well to operating condition in the Annual Report described in Section 2.7.4 (Other Reporting) of this permit. A log of the seepage well monitoring activities and related information shall be kept at the facility for 10 years from the date of inspection and available for review by ADEQ upon request.

2.5.3.1 Seepage Monitoring Sampling Protocols

The permittee shall conduct sampling according to Section 2.5.3 of this permit and shall use a standard method that allows for a representative sample. If volume is not sufficient to meet purge requirements, the permittee shall obtain a grab sample and state as such on the corresponding chain of custody. Sampling shall be documented in the facility logbook in accordance with Section 2.7.2.

2.5.4 Groundwater Monitoring and Sampling Protocols

Routine groundwater monitoring is not required under the terms of this permit. If groundwater monitoring is required in the future, groundwater flow conditions shall be reassessed to determine if the designated point(s) of compliance are still appropriate locations for groundwater monitoring. If necessary, the permittee shall install a groundwater monitoring well(s) at the designated point(s) of compliance at the direction of ADEQ.

2.5.5 Analytical Methodology

All samples collected for compliance monitoring shall be analyzed using Arizona state-approved methods. If no state approved method exists, then any appropriate EPA-approved method shall be used. Regardless of the method used, the detection limits must be sufficient to determine compliance with the regulatory limits of the parameters specified in this permit. Analyses shall be performed by a laboratory licensed by the Arizona Department of Health Services, Office of Laboratory Licensure and Certification. For results to be considered valid, all analytical work shall meet quality control standards specified in the approved methods. A list of Arizona state-certified laboratories can be obtained at the address below:

Arizona Department of Health Services
Office of Laboratory Licensure and Certification
250 North 17th Avenue
Phoenix, AZ 85007
Phone: (602) 364-0720

2.5.6 Installation and Maintenance of Monitoring Equipment

Monitoring equipment required by this permit shall be installed and maintained so that representative samples required by the permit can be collected. If new groundwater wells are determined to be necessary, the construction details shall be submitted to the ADEQ Groundwater Section for approval prior to installation and the permit shall be amended to include any new points.

2.6 Contingency Plan Requirements

[A.R.S. § 49-243(K)(3), (K)(7) and A.A.C. R18-9-A204 and R18-9-A205]

2.6.1 General Contingency Plan Requirements

At least one copy of the approved contingency and emergency response plan(s) submitted in the application or referenced in Section 5 of this permit shall be maintained at the location where day-to-day decisions regarding the operation of the facility are made. The permittee shall be knowledgeable

of and follow the contingency and emergency plans.

Any AL that is exceeded or any violation of an aquifer quality limit (AQL), discharge limit (DL), or other permit condition shall be reported to ADEQ following the reporting requirements in Section 2.7.3.

Some contingency actions involve verification sampling. Verification sampling shall consist of the first follow-up sample collected from a location that previously indicated a violation or the exceedance of an AL. Collection and analysis of the verification sample shall use the same protocols and test methods to analyze for the pollutant or pollutants that exceeded an AL or violated an AQL. The permittee is subject to enforcement action for the failure to comply with any contingency actions in this permit. Where verification sampling is specified in this permit, it is the option of the permittee to perform such sampling. If verification sampling is not conducted within the timeframe allotted, ADEQ and the permittee shall presume the initial sampling result to be confirmed as if verification sampling has been conducted. The permittee is responsible for compliance with contingency plans relating to the exceedance of an AL or violation of a DL, AQL or any other permit condition.

2.6.2 Exceeding of Alert Levels

2.6.2.1 Exceeding of Alert Levels Set for Operational Conditions

1. If the operational AL set in Section 4.2, Table 2A through 2E, has been exceeded the permittee shall immediately cease discharging if necessary to prevent releases to the subsurface. In the event of uncontrollable leakage or structural failure of a wastewater reservoir such that fluids are released to the vadose zone, the permittee shall initiate contingency actions specified in Section 2.6.3.1 of this permit.
2. Within 5 days of discovery, notify ADEQ as specified in Section 2.7.3 (Permit Violation and AL Status Reporting) of this permit.
3. Within 5 days of discovery, initiate an evaluation to determine the cause of the problem and assess the condition of the impaired system(s) or structure(s). Immediately adjust operational conditions if needed to avoid future occurrences.
4. Within 30 days of discovery, initiate repairs to the affected system, structure, or other component as necessary to return the system to compliance with this permit, or remove the affected system(s) from service as specified in Section 2.8 (Temporary Cessation) and Section 2.9 (Closure) of this permit. The permittee shall not operate the system(s) or structure (resume discharging) until the repairs have been performed to restore proper functioning of the system and/or the problems identified in the evaluation are resolved. Record any repair procedures, methods, and materials used to restore the facility to operating condition in the facility log/recordkeeping file. The facility log/recordkeeping file shall be maintained according to Section 2.7.2 of this permit. If the facility is removed from service, the permittee shall amend this permit to reflect the change in operating status.
5. Submit records documenting each incident and actions taken to correct the problem in the Annual Report as required in Section 2.7.4 (Other Reporting) of this permit. Upon review of the report, ADEQ may request additional monitoring or remedial actions.
6. The facility is no longer on alert status once the operational indicator no longer indicates that an AL is being exceeded. The permittee shall, however, complete all tasks necessary to return the facility to its pre-alert operating condition.

2.6.2.1.1 Exceeding Alert Levels Set for Freeboard

In the event that freeboard in a reservoir becomes less than a minimum of 2 feet, the permittee shall:

1. Immediately cease discharging to the reservoir to prevent overtopping. Remove and properly dispose of the excess wastewater in the reservoir until the water level is restored at or below the 2-foot freeboard. If the freeboard

becomes less than a minimum of 2 feet as a result of significant rainfall or storm event, the excess water may be allowed to evaporate until the water level is restored at or below the 2-foot freeboard unless there is any potential for overtopping. Record in the facility log/recordkeeping file, the amount of wastewater removed, a description of the removal method, and the disposal arrangements. The facility log/recordkeeping file shall be maintained according to Section 2.7.2 of this permit.

2. Within 5 days of discovery of freeboard becoming less than 2 feet, notify ADEQ of the AL exceedance as specified in Section 2.7.3 (Permit Violation and AL Status Reporting) of this permit.
3. Within 5 days of discovery, initiate an evaluation to determine the cause of the problem and assess the condition of the impaired system(s) or structure(s). Immediately adjust operational conditions if needed to avoid future occurrences.
4. Within 30 days of discovery, initiate repairs to the affected system, structure, or other component as necessary to return the system to compliance with this permit, or remove the affected system(s) from service as specified in Section 2.8 (Temporary Cessation) and Section 2.9 (Closure) of this permit. The permittee shall not operate the system(s) or structure (resume discharging) until the repairs have been performed to restore proper functioning of the system and/or the problems identified in the evaluation are resolved. Record any repair procedures, methods, and materials used to restore the facility to operating condition in the facility log/recordkeeping file. The facility log/recordkeeping file shall be maintained according to Section 2.7.2 of this permit. If the facility is removed from service, the permittee shall amend this permit to reflect the change in operating status.
5. Submit records documenting each incident and actions taken to correct the problem in the Annual Report as required in Section 2.7.4 (Other Reporting) of this permit. Upon review of the report, ADEQ may request additional monitoring or remedial actions.

2.6.2.2 Exceeding Alert Levels Set for Seepage Monitoring Wells

If fluid (including stormwater) is detected in a seepage monitoring well, the permittee shall initiate the following actions:

1. Within 5 days of discovery of fluid in a seepage monitoring well, collect a representative sample of the fluid from the well to identify the water quality by analyzing for the parameters listed in Section 4.2, Table 3A.
 - a. If a DL is exceeded in a seepage well as specified in Section 4.0, Table 3A, then the permittee shall initiate contingency actions specified in Section 2.6.3.5 of this permit.
 - b. If the fluid detected in the seepage well is determined not be leachate from the facility and resulted from another source based on the initial sampling data, then the permittee shall:
 - i. Perform an evaluation to identify possible sources of the fluid collected in the seepage well.
 - ii. Eliminate the source, if possible, and/or perform any necessary repairs or maintenance to return the seepage well to proper operating condition and prevent accumulation of water in the well from other sources.
 - iii. Summarize the findings of the evaluation and actions taken to correct the problem in the Annual Report required in Section 2.7.4 (Other Reporting) of this permit.
 - iv. Resume quarterly seepage well monitoring.
2. Within 5 days of discovery of seepage, notify ADEQ of the condition as specified in

Section 2.7.3 (Permit Violation and AL Status Reporting) of this permit.

2.6.2.3 Exceeding Alert Levels Set for Leachate Collection and Removal System Monitoring

2.6.2.3.1 Exceeding of Alert Level #1 for Normal Liner Leakage

If an Alert Level #1 (AL #1) as specified in Section 4.2, Table 4A, has been exceeded, the permittee shall take the following actions:

1. Within 5 days of discovery, determine if the fluid in the collection sump is industrial wastewater from the evaporation impoundment by measuring the pH and conductivity of fluids in the impoundment and in the sump to allow direct comparison in wastewater quality.
2. Within 10 days, notify ADEQ Water Quality Compliance Section, Enforcement Unit, in accordance with Section 2.7.3 (Permit Violation and AL Status Reporting), and include in the notification an assessment of the type of water in the sump based on the measurements taken according to (1) listed above.
3. Within 15 days, assess the condition of the liner system using visual methods, electrical leak detection, or other methods as applicable.
4. Monitor fluid removal from the LCRS on a daily basis until the daily volume of fluid quantified either remains below AL#1 for 30 days, or ADEQ completes a review of a Liner Leakage Assessment Report [2.6.2.3.1(5)] and determines that the permittee must perform repairs.
5. Within 30 days of discovery of exceeding AL#1, the permittee shall submit an initial report to ADEQ Water Quality Compliance Section to address problems identified from the initial assessment of the liner system, the source of the fluid, and any remedial actions taken to minimize the future occurrences. The report shall include the results of the initial liner evaluation, methods used to locate the leak(s) if applicable, any repair procedures implemented to restore the liner to optimal operational status if required, and other information necessary to ensure the future occurrence of the incidence will be minimized.
6. For leakage rates that continue to exceed AL#1 and are below AL#2, a Liner Leakage Assessment Report shall be included in the next annual report described in Section 2.7.4 (Other Reporting) of this permit. The permittee may also submit the Liner Leakage Assessment Report to ADEQ prior to the annual report due date. This Liner Leakage Assessment Report shall be submitted to ADEQ Water Quality Compliance Section and ADEQ Groundwater Section.

ADEQ will review the Liner Leakage Assessment Report and may require that the permittee take additional action to address the problems identified from the assessment of the liner and perform other applicable repair procedures as directed by ADEQ, including repair of the liner or addressing and controlling infiltration of non-operational water detected in the LCRS. Once ADEQ determines that the detected leakage rate is normal and a permit amendment is required to revise AL#1, then 2.6.2.2(A)(4) shall no longer be required.

2.6.2.3.2 Exceeding the Liner Leakage Discharge Limit

If the Liner Leakage Discharge Limit (AL #2) specified in Part 4.2, Table 4A, has been exceeded, the permittee shall:

1. Immediately cease all discharge to the impoundment. Within 24 hours, determine if water in the collection sump is operational/process water from the impoundment by measuring the pH and conductivity of fluids contained in the impoundment and in the sump to allow direct comparison in water quality.
2. Within 5 days of discovery, notify ADEQ Water Quality Compliance Section, in accordance with Section 2.7.3 (Permit violation and AL Status Reporting)

and include an assessment regarding the type of water in the sump based upon the measurements taken according to (1) listed above.

3. Within 5 days of discovery, collect samples from the liquid contained in the collection sump and analyze the samples in accordance with Section 4.2, Table 4.
4. Within 30 days of exceeding an AL #2, submit the analytical data to ADEQ Water Quality Compliance Section,
4. Within 5 days of discovery, remove and properly dispose, or return to the process for reuse, any wastewater in the impoundment as necessary and within 15 days identify the location of the leak(s) using visual methods, electrical leak detection, or other methods as applicable. Discharge to the impoundment shall not be re-initiated until the leaks have been repaired.
5. Within 30 days of exceeding a Liner Leakage Discharge Limit, submit a report to ADEQ as specified in section 2.7.3 (Permit Violation and AL Status Reporting). Upon review of the report, ADEQ may request additional monitoring or remedial actions.
6. Within 60 days of exceeding a Liner Leakage Discharge Limit, submit for approval to ADEQ, a corrective action plan to address all problems identified from the assessment of the liner system and surface releases, if any. At the direction of ADEQ, the permittee shall implement the approved plan.
7. Within 30 days of completion of being directed to implement the plan by ADEQ, repair any leaks identified in (4) above and perform all approved corrective actions.
8. Within 30 days of completion of corrective actions, submit to ADEQ, a written report as specified in Section 2.6.6 (Corrective Actions).

2.6.2.4 Exceeding of Alert Levels Set for Discharge Monitoring

This permit shall be amended to establish alert levels upon submission of four rounds of quarterly discharge monitoring results.

1. If an AL set in Section 4.2, Tables 1A through 1I, has been exceeded, the permittee shall immediately investigate to determine the cause of the AL being exceeded. The investigation shall include the following:
 - a. Inspection, testing, and assessment of the current condition of all treatment or pollutant discharge control systems that may have contributed to the AL being exceeded.
 - b. Review of recent process logs, reports, and other operational control information to identify any unusual occurrences;
2. The permittee shall initiate actions identified in the approved contingency plan referenced in Section 5.0 and specific contingency measures identified in Section 2.6 to resolve any problems identified by the investigation which may have led to an AL being exceeded. To implement any other corrective action the permittee shall obtain prior approval from ADEQ according to Section 2.6.6.
3. Within 30 days of an AL being exceeded, the permittee shall submit the laboratory results to the ADEQ Water Quality Compliance Section, along with a summary of the findings of the investigation, the cause of the AL being exceeded, and actions taken to resolve the problem.
4. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions or other actions.

2.6.2.5 Exceeding of Alert Levels in Groundwater Monitoring

Groundwater monitoring is not a condition of this permit at this time.

2.6.3 Discharge Limitations Violations

2.6.3.1 Unexpected Loss of Wastewater, Leakage, or Structural Failure

If there is unexpected loss of wastewater in a reservoir, structural failure, or any other indication of leakage or failure of a wastewater storage reservoir, such that fluids are released to the vadose zone, then the permittee shall take the following actions:

1. Immediately cease discharging to the affected reservoir as necessary to prevent releases to the environment.
2. Within 5 days of discovery of the condition, notify ADEQ as specified in Section 2.7.3 (Permit Violation and AL Status Reporting) of this permit.
3. Within 5 days of discovery, collect a representative sample of the wastewater remaining in the reservoir. At minimum, samples shall be analyzed for the parameters specified in Section 4.2, Tables 1A, 1B, 1C, 1D, 1E, 1F, or 1G.
4. Within 5 days of discovery, initiate an evaluation to determine the cause of the incident. Identify the circumstances that resulted in the failure and assess the condition of the reservoir, liner, and associated systems.
5. Within 5 days of discovery, initiate removal and disposal of any wastewater remaining in the reservoir as necessary to prevent releases to the subsurface and/or as necessary to perform repairs. Record the amount of wastewater removed, a description of the removal method, and other disposal arrangements in the facility log/recordkeeping file. The facility log/recordkeeping file shall be maintained according to Section 2.7.2 of this permit.
6. If the permittee finds that leakage from the affected reservoir can be stopped by water elevation control, the permittee shall establish and maintain an elevation and freeboard below the identified leak area within 30 days of identifying the leak. The permittee shall not operate the affected reservoir above newly established elevation and freeboard until repairs of any failed liner or structure are performed. Within 60 days of identifying the leak, the permittee shall initiate repairs to any failed reservoir or liner as necessary to restore proper functioning of the reservoir and return the facility to compliance with this permit, or remove the reservoir from service as specified in Section 2.8 (Temporary Cessation) and Section 2.9 (Closure) of this permit. Record the repair procedures, methods, and materials used to restore the reservoir to the proper operating condition in the facility log/recordkeeping file according to Section 2.7.2 of this permit. If a reservoir is removed from service, the permittee shall amend this permit to reflect the change in operating status.
7. If the permittee finds that the affected reservoir must be emptied completely to perform repairs after the cessation of discharge (in [1] above), initial required evaluation (in [4] above) and liquid depth reduction (in [5] and [6] above), the permittee shall remove all excess wastewater within 30 days of identifying the leak. The permittee shall not resume discharging to the affected reservoir until repairs of any failed liner or structure are performed. Within 60 days of removing excess wastewater, the permittee shall initiate repairs or remove the reservoir from service as specified in Section 2.8 (Temporary Cessation) and Section 2.9 (Closure) of this permit. Record the repair procedures, methods, and materials used to restore the reservoir to the proper operating condition in the facility log/recordkeeping file according to Section 2.7.2 of this permit. If a reservoir is removed from service, the permittee shall amend this permit to reflect the change in operating status.
8. Within 30 days of discovery of the incident, submit a report to ADEQ as specified in Section 2.7.3 (Permit Violation and AL Status Reporting) of this permit. Include a description of the actions performed in (1) through (7) listed above and a copy of the analytical results, or if the investigation is incomplete, a plan of action to return the facility to compliance. Upon review of the report, ADEQ may request additional monitoring or remedial actions.
9. Within 60 days of discovery, conduct an assessment of the impacts to the subsoil and/or groundwater resulting from the incident. If soil or groundwater is impacted, submit a

corrective action plan to ADEQ within 90 days of discovery, to address problems identified in the assessment, including identification of releases to the environment, remedial actions and/or monitoring, and a schedule for completion of activities. At direction of ADEQ, the permittee shall implement the approved plan.

10. Within 30 days of completion of corrective actions, submit to ADEQ, a written report as specified in Section 2.6.6 (Corrective Actions) of this permit.

2.6.3.2 Overtopping of a Reservoir

If overtopping of wastewater occurs from a reservoir, the permittee shall:

1. Immediately cease all discharges to the reservoir to prevent any further releases to the environment.
2. Within 5 days of discovery, notify ADEQ as specified in Section 2.7.3 (Permit Violation and AL Status Reporting) of this permit.
3. Within 5 days, collect representative samples of the wastewater contained in the reservoir. Samples shall be analyzed for the parameters specified in Section 4.2, Tables 1A, 1B, 1C, 1D, 1E, 1F, or 1G.
4. Within 5 days of discovery, initiate removal and disposal of the excess water in the reservoir until the water level is restored at or below the 2-foot freeboard level. Record the amount of wastewater removed, a description of the removal method, and the disposal arrangements in the facility log/recordkeeping file. The facility log/recordkeeping file shall be maintained according to Section 2.7.2 of this permit.
5. Within 5 days of discovery, initiate an evaluation to determine the cause of the overtopping and identify the circumstances that resulted in the incident. Based on the evaluation of the incident, adjust operational practices and/or repair any systems or equipment as necessary to prevent future occurrences of overtopping. Within 30 days of discovery, implement these corrective actions as necessary to resolve the problems identified in the evaluation. Record the incident and any repairs to the facility in the facility log/recordkeeping file according to Section 2.7.2 of this permit.
6. Within 30 days of discovery of overtopping, submit a report to ADEQ as specified in Section 2.7.3 (Permit Violation and AL Status Reporting) of this permit. Include a description of the actions performed in (1) through (5) listed above and a copy of the analytical results, or if the investigation is incomplete, a plan of action to return the facility to compliance. Upon review of the report, ADEQ may request additional monitoring or remedial actions.
7. Within 60 days of discovery, conduct an assessment of the impacts to the subsoil and/or groundwater resulting from the incident. If soil or groundwater is impacted, submit to ADEQ, for approval, a corrective action plan to address problems identified in the assessment, including identification of releases to the environment, remedial actions and/or monitoring, and a schedule for completion of activities. At direction of ADEQ, the permittee shall implement the approved plan.
8. Within 30 days of completion of corrective actions, submit to ADEQ, a written report as specified in Section 2.6.6 (Corrective Actions) of this permit.

2.6.3.3 Discharge of Unauthorized Materials to a Wastewater Reservoir

Authorized discharges are specified in Section 2.3 (Discharge Limitations) of this permit.

If any unauthorized materials are discharged to a wastewater reservoir, the permittee shall:

1. Immediately cease all unauthorized discharges to the reservoir(s).
2. Within 5 days of discovery of the incident, notify ADEQ as specified in Section 2.7.3 (Permit Violation and AL Status Reporting) of this permit.
3. Within 5 days of discovery, initiate an evaluation to identify the source of the material and cause for the unauthorized discharge. Based on the evaluation of the incident, adjust operational practices and/or repair any systems or equipment as necessary to prevent future unauthorized discharges. Within 30 days of discovery, implement these

corrective actions as necessary to resolve the problems identified in the evaluation. Record the incident and any repairs to the facility in the facility log/recordkeeping file according to Section 2.7.2 of this permit.

4. Within 5 days of discovery, characterize the unauthorized discharge, if possible, and evaluate the compatibility of the discharged material and the liner system. If the liner is damaged or degraded by the unauthorized discharge, initiate an assessment of the impacts to the subsoil and/or groundwater resulting from the incident.
5. Within 30 days of discovery of a discharge of an unauthorized material, submit a report to ADEQ as specified in Section 2.7.3 (Permit Violation and AL Status Reporting) of this permit. Include a description of the actions performed in (1) through (4) listed above and a copy of the analytical results, or if the investigation is incomplete, a plan of action to return the facility to compliance. Upon review of the report, ADEQ may request additional monitoring or remedial action.
6. Within 60 days of discovery of the incident, submit a corrective action plan to ADEQ to address any impacts to soil or groundwater if identified in the assessment. The corrective action plan shall include identification of releases to the environment, remedial actions and/or monitoring, and a schedule for completion of activities. At direction of ADEQ, the permittee shall implement the approved plan.
7. Within 30 days of completion of corrective actions, submit to ADEQ, a written report as specified in Section 2.6.6 (Corrective Actions) of this permit.

2.6.3.4 Discharge of Unauthorized Materials to the Ash Disposal Landfill

Authorized discharges are specified in Section 2.3 (Discharge Limitations) of this permit. If any unauthorized materials are discharged to the ash landfill, the permittee shall:

1. Immediately cease the disposal of the unauthorized materials to the landfill.
2. Within 5 days of discovery of the incident, notify ADEQ as specified in Section 2.7.3 (Permit Violation and AL Status Reporting) of this permit.
3. Within 5 days of discovery, initiate an evaluation to identify the source of the material and cause for the unauthorized discharge. Based on the evaluation of the incident, adjust operational practices and/or repair any systems or equipment as necessary to prevent future unauthorized discharges. Within 30 days of discovery, implement these corrective actions as necessary to resolve the problems identified in the evaluation. Record the incident and any repairs to the facility in the facility log/recordkeeping file according to Section 2.7.2 of this permit.
4. Within 5 days of discovery, characterize the unauthorized material, if possible, and initiate an assessment of the impacts to the subsoil and/or groundwater resulting from the unauthorized discharge.
5. Within 30 days of discovery of a discharge of an unauthorized material, submit a report to ADEQ as specified in Section 2.7.3.2 (Permit Violation and AL Status Reporting) of this permit. Include a description of the actions performed in (1) through (4) listed above, or if the investigation is incomplete, a plan of action to return the facility to compliance. Upon review of the report, ADEQ may request additional monitoring or remedial action.
6. Within 60 days of discovery of the incident, submit a corrective action plan to ADEQ to address any impacts to soil or groundwater if identified in the assessment. The corrective action plan shall include identification of releases to the environment, remedial actions and/or monitoring, and a schedule for completion of activities. At direction of ADEQ, the permittee shall implement the approved plan.
7. Within 30 days of completion of corrective actions, submit to ADEQ, a written report as specified in Section 2.6.6 (Corrective Actions) of this permit.

2.6.3.5 Leachate in Seepage Monitoring Wells

If the initial sampling data collected in accordance with Section 2.6.2.2 of this permit indicates that fluid detected in the seepage well is leachate migrating from the site

(wastewater reservoirs or ash landfill), the permittee shall initiate the following contingency actions:

1. Within 5 days of discovery of seepage, collect a representative sample of the fluids in the seepage well. Samples shall be analyzed for the parameters specified in Section 4.3, Table 1, for comparison with sampling data collected from discharge monitoring (wastewater quality of the discharges from the facility) to evaluate the possible sources of seepage from the facility.
2. Within 5 days of discovery of seepage, notify ADEQ of the incidence as specified in Section 2.7.3 (Permit Violation and AL Status Reporting) of this permit.
3. Within 5 days of discovery, initiate an evaluation to determine the location of the leakage and condition of the reservoir(s) and liner(s). The evaluation shall consist of an assessment of the seepage water quality in comparison with known reservoir discharge quality, as well as observation of water levels, flow measurement, and water balance, including ceasing flow between reservoirs as necessary to isolate and test reservoirs in proximity to the seepage well. A report of the findings of the evaluation shall be submitted to ADEQ within 90 days of initiating the evaluation.
4. Within 15 days of identifying the affected reservoir, cease discharging to the reservoir and initiate removal and disposal of any wastewater remaining in the reservoir as necessary to prevent further releases to the subsurface and/or as necessary to perform repairs. Record the amount of wastewater removed, a description of the removal method, and other disposal arrangements in the facility log/recordkeeping file. The facility log/recordkeeping file shall be maintained according to Section 2.7.2 of this permit.
5. If the permittee finds that leakage from the reservoir can be stopped by water elevation control, the permittee shall establish and maintain the elevation and freeboard below the identified leak area within 30 days of identifying the leak. The permittee shall not operate the affected reservoir above the newly established elevation and freeboard until repairs of any failed liner or structure are performed. Within 60 days of identifying the leak, the permittee shall initiate repairs to any failed reservoir or liner as necessary to restore proper functioning of the reservoir and return the facility to compliance with this permit, or remove the reservoir from service as specified in Section 2.8 (Temporary Cessation) and Section 2.9 (Closure) of this permit. Record any repair procedures, methods, and materials used to restore the facility to the proper operating condition in the facility log/recordkeeping file according to Section 2.7.2 of this permit. If a facility is removed from service, the permittee shall amend this permit to reflect the change in operating status.
6. If the permittee finds that the reservoir must be emptied completely to perform repairs after the cessation of discharge, initial required evaluation and liquid depth reduction, the permittee shall remove all excess wastewater within 30 days of identifying the leak. The permittee shall not resume discharging to the affected reservoir until repairs of any failed liner or structure are performed. Within 60 days of identifying the leak, the permittee shall initiate repairs within 60 days or remove the reservoir from service as specified in Section 2.8 (Temporary Cessation) and Section 2.9 (Closure) of this permit. Record any repair procedures, methods, and materials used to restore the facility to the proper operating condition in the facility log/recordkeeping file according to Section 2.7.2 of this permit. If the facility is removed from service, the permittee shall amend this permit to reflect the change in operating status.
7. Increase monitoring of the seepage well(s) to monthly until fluid is no longer detected in the seepage well(s) for at least four consecutive quarters. If fluid is not detected for four consecutive quarters, monthly seepage well monitoring may cease and routine quarterly monitoring shall be resumed.
8. Within 30 days of confirmation of seepage, submit a report to ADEQ as specified in Section 2.7.3 (Permit Violation and AL Status Reporting) of this permit. Include a description of the actions performed in (1) through (7) listed above and a copy of the

analytical results, or if the investigation is incomplete, a plan of action to return the facility to compliance. Upon review of the report, ADEQ may request additional monitoring, additional investigations, or remedial actions.

9. Within 90 days of confirmation of seepage, conduct an assessment of the impacts to the subsoil and groundwater, including an evaluation of the need for additional seepage monitoring wells or the installation of groundwater monitoring wells. If soil or groundwater is impacted, submit to ADEQ, for approval, a corrective action plan to prevent or mitigate impacts to the regional aquifer and address problems identified in the assessment, including identification of releases to the environment, remedial actions and monitoring, and a schedule for completion of activities. At the direction of ADEQ, the permittee shall implement the approved plan.
10. Within 30 days of completion of corrective actions, submit to ADEQ, a written report as specified in Section 2.6.6 (Corrective Actions) of this permit.

2.6.4 Aquifer Quality Limit Violation

Reserved

2.6.5 Emergency Response and Contingency Requirements for Unauthorized Discharges pursuant to A.R.S. §49-201(12) and pursuant to A.R.S. § 49-241

2.6.5.1 Duty to Respond

The permittee shall act immediately to correct any condition resulting from a discharge pursuant to A.R.S. § 49-201(12) if that condition could pose an imminent and substantial endangerment to public health or the environment.

2.6.5.2 Discharge of Hazardous Substances or Toxic Pollutants

In the event of any unauthorized discharge pursuant to A.R.S. § 49-201(12) of suspected hazardous substances (A.R.S. § 49-201(19)) or toxic pollutants (A.R.S. § 49-243(I)) on the facility site, the permittee shall promptly isolate the area and attempt to identify the discharged material. The permittee shall record information, including name, nature of exposure and follow-up medical treatment, if necessary, on persons who may have been exposed during the incident. The permittee shall notify the ADEQ Northern Regional Office at (928) 779-0313 and the ADEQ Water Quality Compliance Section at (602) 771-4614 within 24 hours upon discovering the discharge of hazardous material which: (a) has the potential to cause an AWQS or AQL to be exceeded; or (b) could pose an endangerment to public health or the environment.

2.6.5.3 Discharge of Non-hazardous Materials

In the event of any unauthorized discharge pursuant to A.R.S. § 49-201(12) of non-hazardous materials from the facility, the permittee shall promptly attempt to cease the discharge and isolate the discharged material. Discharged material shall be removed and the site cleaned up as soon as possible. The permittee shall notify the ADEQ Northern Regional Office at (928) 779-0313 and the ADEQ Water Quality Compliance Section at (602) 771-4614 within 24 hours upon discovering the discharge of non-hazardous material which: (a) has the potential to cause an AQL to be exceeded; or (b) could pose an endangerment to public health or the environment.

2.6.5.4 Reporting Requirements

The permittee shall submit a written report for any unauthorized discharges reported under Sections 2.6.5.2 and 2.6.5.3 to the ADEQ Northern Regional Office and the ADEQ Water Quality Compliance Section within 30 days of the discharge or as required by subsequent ADEQ action. The report shall summarize the event, including any human exposure, and facility response activities and include all information specified in Section 2.7.3. If a notice is issued by ADEQ subsequent to the discharge notification, any additional information requested in the notice shall also be submitted within the time frame specified in that notice.

Upon review of the submitted report, ADEQ may require additional monitoring or corrective actions.

2.6.6 Corrective Actions

Specific contingency measures identified in Section 2.6 have already been approved by ADEQ and do not require written approval to implement.

With the exception of emergency response actions taken under Section 2.6.5, the permittee shall obtain written approval from the Groundwater Section prior to implementing a corrective action to accomplish any of the following goals in response to exceeding an AL or violation of an AQL, DL, or other permit condition:

1. Control of the source of an unauthorized discharge;
2. Soil cleanup;
3. Cleanup of affected surface waters;
4. Cleanup of affected parts of the aquifer, and/or
5. Mitigation to limit the impact of pollutants on existing uses of the aquifer.

Within 30 days of completion of any corrective action, the operator shall submit to the ADEQ Water Quality Compliance Section, a written report describing the causes, impacts, and actions taken to resolve the problem.

2.7 Reporting and Recordkeeping Requirements

[A.R.S. § 49-243(K)(2) and A.A.C. R18-9-A206(B) and R18-9-A207]

2.7.1 Self-monitoring Report Form

1. The permittee shall complete the Self-monitoring Report Form (SMRF) provided by ADEQ, and submit them to the Water Quality Compliance Section, Data Unit.
2. The permittee shall complete the SMRF to the extent that the information reported may be entered on the form. If no information is required during a quarter, the permittee shall enter "not required" on the SMRF and submit the report to ADEQ. The permittee shall use the format devised by ADEQ.
3. The tables contained in Sections 4.0 list the parameters to be monitored and the frequency for reporting results for groundwater compliance monitoring. Analytical methods shall be recorded on the SMRF.
4. In addition to the SMRF, the information contained in A.A.C. R18-9-A206(B)(1) shall be included for exceeding an AL or violation of an AQL, DL, or any other permit condition being reported in the current reporting period.

2.7.2 Operation Inspection / Log Book Recordkeeping

A signed copy of this permit shall be maintained at all times at the location where day-to-day decisions regarding the operation of the facility are made. A log book (paper copies, forms or electronic data) of the inspections and measurements required by this permit shall be maintained at the location where day-to-day decisions are made regarding the operation of the facility. The log book shall be retained for 10 years from the date of each inspection, and upon request, the permit and the log book shall be made immediately available for review by ADEQ personnel. The information in the log book shall include, but not be limited to, the following information as applicable:

1. Name of inspector;
2. Date and shift inspection was conducted;
3. Condition of applicable facility components;
4. Any damage or malfunction, and the date and time any repairs were performed;
5. Documentation of sampling date and time;
6. Any other information required by this permit to be entered in the log book, and
7. Monitoring records for each measurement shall comply with R18-9-A206(B)(2).

2.7.3 Permit Violation and Alert Level Status Reporting

1. The permittee shall notify the Water Quality Compliance Section in writing within 5 days (except as provided in Section 2.6.5) of becoming aware of a violation of any permit condition, discharge limitation or of an Alert Level being exceeded.
2. The permittee shall submit a written report to the Water Quality Compliance Section within 30 days of becoming aware of the violation of any permit condition or discharge limitation. The report shall document all of the following:
 - a. Identification and description of the permit condition for which there has been a violation and a description of its cause.
 - b. The period of violation including exact date(s) and time(s), if known, and the anticipated time period during which the violation is expected to continue.
 - c. Any corrective action taken or planned to mitigate the effects of the violation, or to eliminate or prevent a recurrence of the violation.
 - d. Any monitoring activity or other information which indicates that any pollutants would be reasonably expected to cause a violation of an AWQS.
 - e. Proposed changes to the monitoring which include changes in constituents or increased frequency of monitoring.
 - f. Description of any malfunction or failure of pollution control devices or other equipment or processes.

2.7.4 Operational, Other or Miscellaneous Reporting

2.7.4.1 Final Closure Report

Following completion of closure of the diesel release area, the permittee shall submit documentation to ADEQ Groundwater Section indicating that closure has been approved by ADEQ Waste Division (Solid Waste Section), or if applicable, ADEQ Voluntary Remediation Program (VRP), and that no further action is required by TEP for compliance with applicable state statutes and rules.

In June 1997, ADEQ (Solid Waste Section) approved TEP's Remedial Design and Risk Assessment Plan, dated February 27, 1997.

2.7.4.2 Wastewater (Discharge) Characterization Report

Within 150 days of permit issuance, as specified in Section 3.0 (Compliance Schedule) of this permit, the permittee shall submit a report to ADEQ Groundwater Section that summarizes the analytical results from the initial wastewater characterization and propose numeric ALs for the Unit 3 and 4 East and West Evaporation Ponds, the Unit 3 and 4 North and South Lime Sludge Ponds, the Unit 3 and 4 Combined Effluent Storage Pond, Unit 4 combined Effluent Storage Pond, and the Unit 3 and 4 Cooling Tower Blowdown Storage Pond.

2.7.4.3 Annual Report

The permittee shall submit an annual report in narrative and/or tabular form to ADEQ Water Quality Compliance Section that briefly summarizes the status of compliance under this permit. The report shall summarize the results of the discharge (wastewater characterizations) specified in Section 2.5.1; summarize the findings of the operational monitoring specified in Section 2.5.2; summarize the results of the seepage monitoring specified in Section 2.5.3; identify any contingency actions performed, including any violations of this permit, or any ALs or DLs that have been exceeded; and shall include any other information specifically requested by this permit to be submitted in the annual report. The annual report shall be submitted by April 30th of each year to cover monitoring activities performed from January 1 through December 31st of the previous year.

2.7.4.4 Waste Disposal Records (Ash Landfill)

The permittee shall maintain records of the wastes disposed in the ash landfill, including the type and source (origination) of the waste. Waste disposal records shall be retained for the duration of the permit, through closure of the facility, and shall be retained on site and available for review by ADEQ upon request.

2.7.4.5 Fire Training Exercise Records

The permittee shall maintain records of fire training exercises conducted at the site, including the frequency of fire training exercises, the types and quantities of fuels used in each exercise, the types and volumes of materials burned in each exercise, and the estimated volume of fire suppression water discharged during the exercise. Records of fire training exercises shall be retained for the duration of the permit, through closure of the facility, and shall be retained on site and available upon request for review by ADEQ personnel.

2.7.5 Reporting Location

All SMRFs shall be submitted to:

Arizona Department of Environmental Quality
 Water Quality Compliance Section, Data Unit
 Mail Code: 5415B-1
 1110 W. Washington Street
 Phoenix, AZ 85007
 Phone (602) 771-4513

All documents required by this permit to be submitted to the Water Quality Compliance Section shall be directed to:

Arizona Department of Environmental Quality
 Water Quality Compliance Section
 Mail Code: 5415B-1
 1110 W. Washington Street
 Phoenix, AZ 85007
 Phone (602) 771-4614

All documents required by this permit to be submitted to the Groundwater Section shall be directed to:

Arizona Department of Environmental Quality
 Groundwater Section
 Mail Code: 5415B-3
 1110 W. Washington Street
 Phoenix, AZ 85007
 Phone (602) 771-4428

2.7.6 Reporting Deadline

The following table lists the quarterly report due dates:

| Monitoring conducted during quarter: | Quarterly Report due by: |
|---|---------------------------------|
| January-March | April 30 |
| April-June | July 30 |
| July-September | October 30 |
| October-December | January 30 |

The following table lists the annual report due date:

| Monitoring conducted during | |
|------------------------------------|--|
| | |

| the year: | Annual Report due by: |
|------------------|-----------------------|
| January-December | April 30 |

2.7.7 Changes to Facility Information in Section 1.0

The Groundwater Section and Water Quality Compliance Section shall be notified within 10 days of any change of facility information including Facility Name, Permittee Name, Mailing or Street Address, Facility Contact Person or Emergency Telephone Number.

2.8 Temporary Cessation [A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A209(A)]

The permittee shall give written notice to the Water Quality Compliance Section before ceasing operation of the facility for a period of 60 days or greater. At the time of notification the permittee shall submit for ADEQ approval a plan for maintenance of discharge control systems and for monitoring during the period of temporary cessation. Immediately following ADEQ’s approval, the permittee shall implement the approved plan. If necessary, ADEQ shall amend permit conditions to incorporate conditions to address temporary cessation. During the period of temporary cessation, the permittee shall provide written notice to the Water Quality Compliance Section of the operational status of the facility every 3 years. If the permittee intends to permanently cease operation of any facility, the permittee shall submit closure notification, as set forth in Section 2.9 below.

2.9 Closure [A.R.S. §§ 49-243(K)(6), 49-252 and A.A.C. R18-9-A209(B)]

For a facility addressed under this permit, the permittee shall give written notice of closure to the Water Quality Compliance Section of the permittee’s intent to cease operation without resuming activity for which the facility was designed or operated.

2.9.1 Closure Plan

Within 90 days following notification of closure, the permittee shall submit for approval to the Groundwater Section, a closure plan that meets the requirements of A.R.S. § 49-252 and A.A.C. R18-9-A209(B)(3). If the closure plan achieves clean closure immediately, ADEQ shall issue a letter of approval to the permittee. If the closure plan contains a schedule for bringing the facility to a clean closure configuration at a future date, ADEQ may incorporate any part of the schedule as an amendment to this permit.

2.9.1.1 Fire Training Closure Activities

The closure requirements for the fire training facility shall include subsurface soil sampling and investigation. The parameters for soil sampling shall be representative of the chemicals used, and the materials and wastes burned, in the fire training exercises. At minimum, soil sampling for the fire training areas shall include (TPH), total metals, BTEX, and PAHs.

2.9.1.2 Impoundments

The closure requirements for the impoundments shall include:

1. For impoundments using HDPE geomembrane liners, soil samples shall be collected only if there is a tear in the liner or if a visual inspection indicates that discharge to the soil beneath the liner has occurred.
2. For impoundments that have asphalt liners or amended soil liners, a soil sample shall be collected from beneath the liner.
3. For unlined impoundments, a soil sample shall be collected from 1-5 feet below the lowest point of the impoundment.
4. Soil samples shall be analyzed for all the parameters listed in the discharge monitoring table associated with the impoundment.

2.9.2 Closure Completion

Upon completion of closure activities, the permittee shall give written notice to the Groundwater Section indicating that the approved closure plan has been implemented fully and providing supporting documentation to demonstrate that clean closure has been achieved (soil sample results, verification

sampling results, groundwater data, as applicable). If clean closure has been achieved, ADEQ shall issue a letter of approval to the permittee at that time. If any of the following conditions apply, the permittee shall follow the terms of post-closure stated in this permit:

1. Clean closure cannot be achieved at the time of closure notification or within one year thereafter under a diligent schedule of closure actions;
2. Further action is necessary to keep the facility in compliance with aquifer water quality standards at the applicable point of compliance;
3. Continued action is required to verify that the closure design has eliminated discharge to the extent intended;
4. Remedial or mitigative measures are necessary to achieve compliance with Title 49, Ch. 2; and
5. Further action is necessary to meet property use restrictions.

2.10 Post-closure [A.R.S. §§ 49-243(K)(6), 49-252 and A.A.C. R18-9-A209(C)]

Post-closure requirements shall be established based on a review of facility closure actions and will be subject to review and approval by the Groundwater Section.

In the event clean closure cannot be achieved pursuant to A.R.S. § 49-252, the permittee shall submit for approval to the Groundwater Section a post-closure plan that addresses post-closure maintenance and monitoring actions at the facility. The post-closure plan shall meet all requirements of A.R.S. §§ 49-201(30) and 49-252 and A.A.C. R18-9-A209(C). Upon approval of the post-closure plan, this permit shall be amended or a new permit shall be issued to incorporate all post-closure controls and monitoring activities of the post-closure plan.

3.0 COMPLIANCE SCHEDULE [A.R.S. § 49-243(K)(5) and A.A.C. R18-9-A208]

For each compliance schedule item listed below, the permittee shall submit the required information, including a cover letter that lists the compliance schedule items, to the Groundwater Section. A copy of the cover letter must also be submitted to the Water Quality Compliance Section.

| Description | Completion/Submittal Date | Comments |
|--|---|--|
| Final report documenting the investigation and operating status of sludge settling reservoir C | Submitted April 21, 2004 | Submit a final report summarizing the findings of the soil investigation, including laboratory reports, and specifying the final operating status of the reservoir, in accordance with Section 2.1.1.1 and Section 2.7.4.1 of this permit. The final report shall be accompanied by an APP amendment form and initial fee for permit amendment. |
| Initial Discharge Characterization | Submitted April 21, 2004 | Characterize the waste streams and submit a report proposing alert levels (ALs) and discharge limits (DLs) for each type of discharge, in accordance with Section 2.5.1 and Section 2.7.4.2 of this permit. The wastewater characterization report (with AL and DL proposal) shall be accompanied by an APP amendment form and initial fee for permit amendment. |
| Routine Discharge Characterization | Every 5 years as follows: April 30, 2009 April 30, 2014 April 30, 2019 April 30, 2024 April 30, 2029 April 30, 2034 April 30, 2039 April 30, 2044 | Characterize the wastes streams every 5 years according to Section 2.5.1 of this permit. Submit a report summarizing the results of the wastewater characterization, including a comparison with previous discharge monitoring results and an evaluation of the ALs and DLs specified in this permit. |
| Final Construction Reports and QA/QC documentation, including final design or as built plans | Submit within 60 days of completion of construction of the lined impoundments and LCRS for the Unit 3 & 4 Evaporation Pond East, Evaporation Pond West, Lime Sludge Storage Pond North, Lime Sludge Storage Pond South, Combined Effluent Storage Pond and Cooling Tower Blowdown Storage Pond. Submitted a report dated April 13, 2006 | Refer to Section 2.2.4 (Pre-operational Requirements) Include certification that the facility was constructed in accordance with plans approved by ADEQ and QA/QC documentation completed for liner and LCRS installation, and subgrade preparation. The final construction report shall be certified by the on-site construction manager and shall be sealed by a registered professional engineer. It shall include piping layout and connections from various wastewater source areas to the impoundment |
| Discharge Characterization four consecutive quarterly samples. | Submit characterization report with 90 days of completion of the fourth consecutive quarterly | Characterize the waste streams and submit a report proposing ALs and DLs for each type of discharge, in accordance with |

| Description | Completion/Submittal Date | Comments |
|--|--|--|
| | sample. Submitted March 9, 2009 | Section 2.5.1 and Section 2.7.4.2 of this permit. The wastewater characterization report (with AL and DL proposal) shall be accompanied by an APP amendment form and initial fee for permit amendment. |
| Discharge Characterization | Collect a representative sample within 60 days of the start of operation from the Evaporation Pond East, Evaporation Pond West, Lime Sludge Storage Pond North, Lime Sludge Storage Pond South, Combined Effluent Storage Pond, and Cooling Tower Blowdown Storage Pond. Submit report of analytical results to ADEQ within 90 days of the date of sample collection. Report Submitted January 31, 2007 | Refer to Section 2.5.2 (Discharge Monitoring) Collect a representative sample of wastewater discharged to the Evaporation Pond East, Evaporation Pond West, Lime Sludge Storage Pond North, Lime Sludge Storage Pond South, Combined Effluent Storage Pond, and Cooling Tower Blowdown Storage Pond. Refer to Section 4.1, Tables 1 and 2. |
| Discharge Characterization | Collect a representative sample within 60 days of the start of operation from the Unit 3 Evaporation Storage Ponds 1E and 1F, Unit 4 Evaporation Storage Ponds 1A, 1B, 1C, and 1D, and Unit 4 Combined Effluent Storage Pond Submit report of analytical results to ADEQ within 90 days of the date of sample collection. | Refer to Section 2.5.2 (Discharge Monitoring) Collect a representative sample of wastewater discharged to the Unit 3 Evaporation Storage Ponds 1E and 1F, Unit 4 Evaporation Storage Ponds 1A, 1B, 1C, and 1D, and Unit 4 Combined Effluent Storage Pond. Refer to Section 4.1, Tables 1 and 2. Submit a report proposing ALs for each type of discharge. |
| Final Construction Reports and QA/QC documentation, including final design or as built plans | Submit within 60 days of completion of construction of the lined impoundments and LCRS for the Unit 3 & 4 Evaporation Storage Ponds and Unit 4 Combined Effluent Storage Pond or within 60 days of permit issuance whichever is longer | Refer to Section 2.2.4 (Pre-Operational Requirements) Include certification that the facility was constructed in accordance with plans approved by ADEQ and QA/QC documentation completed for liner and LCRS installation, and subgrade preparation. The final construction report shall be certified by the on-site construction manager and shall be sealed by a registered professional engineer. It shall include piping layout and connections from various wastewater source areas to the impoundment |
| Provide Information | Within 60 days of the date of | Provide information regarding known past |

| Description | Completion/Submittal Date | Comments |
|--|---|--|
| regarding past discharges | permit issuance as part of an amendment application to the APP | discharges in the area of all recently constructed and proposed ponds. The information should include the exact location and quantity of the discharge and chemical characteristics of the discharge. Please include a site map with any past discharge identified including the known diesel release area. |
| Design details for the Fire Training Facility catch basin | Within 60 days of the date of issuance of this permit as part of an amendment application | Provide an enlarged map outlining the exact location of the Fire Training Facility catch basin. Include a plan and cross-section views of the catch basin with dimensions. Provide all relevant design details relating to the construction of the catch basin, including the year of construction. Please provide operational details on how soils impacted by hydrocarbons are removed, and if soil removal could damage the liner. |
| Provide maps of the PMA(s) | Within 60 days of permit issuance as part of an amendment application to the APP | Maps for two PMAs: The Main Plant and Main Plant Impoundments PMA and the Ash Landfill PMA. |
| Submit maps of groundwater flow direction | Within 60 days of permit issuance as part of an amendment application to the APP | TEP shall provide two maps of groundwater flow direction and magnitude based on measurements and/or published reports less than five years old. TEP shall provide an explanation as to why the map should be considered reasonably accurate. One map for the Main Plant and Main Plant Impoundments PMA and, a map for the Ash Landfill PMA. The groundwater map of the Main Plant and Main Plant Impoundments PMA shall be submitted prior to installing the three seepage monitoring wells required by this compliance schedule. |
| Submit groundwater data from M-1 and any other upgradient groundwater well | Within 60 days of permit issuance as part of an amendment application to the APP | Submit data collected within the last 5 years or if not available older data is acceptable. |
| Submit information and data for groundwater wells that are upgradient of the Main Plant and Main Plant | Within 90 days of permit issuance | For each upgradient groundwater well provide: the location, well construction details, ADWR registry IDs (55#), a description of the water quality and |

| Description | Completion/Submittal Date | Comments |
|--|---|---|
| Impoundments PMA and the Ash Landfill PMA | | quantity withdrawn, and state what aquifer the water is withdrawn from. |
| Provide an inspection report for all existing seepage monitoring wells | Within 60 days of permit issuance as part of an amendment application to the APP | The report shall document that the existing seepage wells are still open to total depth and able to function as they were designed, to intercept water or seepage. |
| Propose numeric ALs for the 6 proposed groups of impoundments based on similar wastewater characteristics and impoundment design | Within 60 days of permit issuance as part of an amendment application to the APP | TEP shall calculate and propose the ALs for the following groups of impoundments: 1) Make-up Water Reservoirs and Recoverable Water Reservoirs, 2) Sludge Settling Reservoirs, 3) Cooling Tower Blowdown Reservoirs, 4) Process Water Collection Reservoir, 5) Evaporation Pond Reservoirs, 6) Sewage Ponds. |
| Propose numeric ALs for the Group 7 impoundments | TEP shall initiate collection of 4 additional quarterly samples within 30 days of permit issuance. Submit the test results and propose ALs 30 days after receiving results from the last quarterly sample. | TEP shall calculate and propose the ALs for impoundment Group 7, Coal Storage Area Retention Pond using the eight samples that have been collected and analyzed |
| Install three new seepage monitoring wells | Installation of the new seepage monitoring wells shall commence within 90 days of permit issuance | Location 1 is less than 750 feet north of proposed Unit 4 Evaporation Pond 1A and shall also be a POC location. Location 2 is in the northeast portion of section 27 and the main plant area, less than 750 feet northwest of Units 1 & 2 Evaporation Pond 1. Location 3 is less than 750 feet northwest of the Coal Storage Area Retention Pond. |
| Commence monitoring of new seepage wells | Within 30 days of installation | Begin quarterly seepage monitoring for the seepage monitoring wells in accordance with Section 4.2, Table 3A |
| Provide a map of the locations of the Oil/Water Separators and a brief description of the design and operation | Within 60 days of permit issuance as part of an amendment application to the APP | |
| Initial wastewater characterization of Oil/Water Separators effluent | Within 60 days of permit issuance | The permittee shall collect 8 quarterly Oil/water separator effluent samples and analyze for the list of pollutants in Section 4.2, Table 1H Discharge Monitoring for Oil/water Separators. |
| Propose ALs & DLs for Oil/Water separators | Submit the test results and propose ALs 30 days after | For the list of pollutants in Section 4.2, Table 1H Discharge Monitoring for |

| Description | Completion/Submittal Date | Comments |
|---|--|---|
| effluent | receiving results from the last quarterly sample | Oil/water Separators. |
| Provide an updated process flow diagram | Within 60 days of permit issuance as part of an amendment application to the APP | The process flow diagram submitted April 16, 2008 lists dust suppression water at 5gpm and Rain Bird usage at 18gpm. Include details on these two flow rates along with the process flow diagram. |
| Provide details on the surface water flow diversion strategies for the site | Within 60 days of permit issuance as part of an amendment application to the APP | |

4.0 TABLES OF MONITORING REQUIREMENTS

4.1 PRE-OPERATIONAL MONITORING (or CONSTRUCTION REQUIREMENTS)

TABLE 1: Initial Wastewater Discharge Characterization Sampling Points for Section 4.1

TABLE 2: Initial Wastewater Discharge Characterization for the Impoundments listed in Table 1

**TABLE 1
Initial Wastewater Discharge Characterization Sampling Points for Section 4.1**

| Facility Identification | Sampling Location/Type² | Latitude | Longitude |
|---|---|-------------------|-------------------|
| Unit 3 Evaporation Storage Pond 1E | Four grab samples taken from different quarters of the pond and composited. | 34° 18' 57" North | 109° 11' 01" West |
| Unit 3 Evaporation Storage Pond 1F | Four grab samples taken from different quarters of the pond and composited. | 34° 18' 57" North | 109° 10' 54" West |
| Unit 4 Evaporation Storage Pond 1A | Four grab samples taken from different quarters of the pond and composited. | 34° 19' 03" North | 109° 11' 03" West |
| Unit 4 Evaporation Storage Pond 1B | Four grab samples taken from different quarters of the pond and composited. | 34° 19' 09" North | 109° 10' 56" West |
| Unit 4 Evaporation Storage Pond 1C | Four grab samples taken from different quarters of the pond and composited. | 34° 19' 05" North | 109° 11' 09" West |
| Unit 4 Evaporation Storage Pond 1D | Four grab samples taken from different quarters of the pond and composited. | 34° 19' 05" North | 109° 11' 19" West |
| Unit 3 & 4 Combined Effluent Storage Pond | Four grab samples taken from different quarters of the pond and composited. | 34° 19' 03" North | 109° 10' 13" West |

² A single discrete sample will be collected from each pond and analyzed for organic parameters.

TABLE 2
Initial Wastewater Discharge Characterization for the Impoundments Listed in Table 1

| Parameter ³ | Monitoring Frequency | Reporting Frequency |
|--------------------------------------|--|--|
| pH | Sample shall be collected within 60 days of initial discharge to the ponds according to Section 4.1, Table 1 | Submit laboratory report within 90 days of the date of sample collection |
| Alkalinity | “ | “ |
| Total Dissolved Solids (TDS) | “ | “ |
| Total Nitrogen ⁴ | “ | “ |
| Calcium | “ | “ |
| Chloride | “ | “ |
| Fluoride | “ | “ |
| Magnesium | “ | “ |
| Potassium | “ | “ |
| Sodium | “ | “ |
| Sulfate | “ | “ |
| Antimony | “ | “ |
| Arsenic | “ | “ |
| Barium | “ | “ |
| Beryllium | “ | “ |
| Boron | “ | “ |
| Cadmium | “ | “ |
| Chromium | “ | “ |
| Lead | “ | “ |
| Mercury | “ | “ |
| Nickel | “ | “ |
| Selenium | “ | “ |
| Thallium | “ | “ |
| Zinc | “ | “ |
| Total Petroleum Hydrocarbons (TPH) | “ | “ |
| Organic Compounds⁵ | | |
| Acetone | Sample shall be collected within 60 days of initial discharge to the ponds according to Section 4.1, Table 1 | Submit laboratory report within 90 days of the date of sample collection |
| Benzene | “ | “ |
| Chlorobenzene | “ | “ |
| Chloroform | “ | “ |
| 1,2-Dichlorobenzene | “ | “ |
| 1,3-Dichlorobenzene | “ | “ |
| 1,4-Dichlorobenzene | “ | “ |
| 2-Butanone (MEK) | “ | “ |
| Ethylbenzene | “ | “ |
| Tetrachloroethylene | “ | “ |
| Toluene | “ | “ |
| 1,1,1-Trichlorethane | Sample shall be collected within 60 | Submit laboratory report within 90 |

³ Refer to Section 2.5.5. for analytical methodology requirements. Metals shall be analyzed for total metals concentration.

⁴ Total Nitrogen is the sum of TKN + Nitrate (as N) + Nitrite (as N).

⁵ If any constituent in a group of these compounds (Organics and Radionuclides) is detected in the initial characterization sampling, analysis of these groups of compounds is required during contingency monitoring.

| Parameter ³ | Monitoring Frequency | Reporting Frequency |
|---|--|--|
| | days of initial discharge to the ponds according to Section 4.1, Table 1 | days of the date of sample collection |
| 1,1,2-Trichloroethane | “ | “ |
| Trichloroethylene | “ | “ |
| Vinyl Chloride | “ | “ |
| Total Xylene | “ | “ |
| Di-(2-ethylhexyl) phthalate | “ | “ |
| Di-n-octyl phthalate | “ | “ |
| 1,2,4-Trichlorobenzene | “ | “ |
| Hexachlorobenzene | “ | “ |
| Pentachlorobenzene | “ | “ |
| 2-Methylnaphthalene | “ | “ |
| Naphthalene | “ | “ |
| Phenanthrene | “ | “ |
| Fluoranthene | “ | “ |
| Chrysene | “ | “ |
| Benzo(b)Fluoranthene | “ | “ |
| Benzo(a)Pyrene | “ | “ |
| Indeno(1,2,3-cd)Pyrene | “ | “ |
| Radionuclides⁶ | | |
| Gross Alpha If Gross Alpha is >5pCi/L measure Radium 226, Radium 228, Radon, Uranium | Sample shall be collected within 60 days of initial discharge to the ponds according to Section 4.1, Table 1 | Submit laboratory report within 90 days of the date of sample collection |
| Gross Beta | “ | “ |

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

TABLE 1: Discharge Monitoring Sampling Points

⁶ If any constituent in a group of these compounds (Organics and Radionuclides) is detected in the initial characterization sampling, analysis of these groups of compounds is required during contingency monitoring.

TABLE 1A: Discharge Monitoring (Group 1 Impoundments)
TABLE 1B: Discharge Monitoring (Group 2 Impoundments)
TABLE 1C: Discharge Monitoring (Group 3 Impoundments)
TABLE 1D: Discharge Monitoring (Group 4 Impoundments)
TABLE 1E: Discharge Monitoring (Group 5 Impoundments)
TABLE 1F: Discharge Monitoring (Group 6 Impoundments)
TABLE 1G: Discharge Monitoring (Group 7 Impoundments)
TABLE 1H: Discharge Monitoring (Ash Characterization)
TABLE 1I: Discharge Monitoring (Oil/water Separator)
TABLE 2A: Facility Inspections Wastewater Reservoir
TABLE 2B: Facility Inspections Evaporation Ponds
TABLE 2C: Facility Inspections Stormwater Diversion Structure
TABLE 2D: Facility Inspections Ash Disposal Landfill
TABLE 2E: Facility Inspections Fire Training Facility
TABLE 3: Seepage Monitoring Sampling Points
TABLE 3A: Seepage Well Monitoring
TABLE 4: Leakage Collection System Monitoring Locations
TABLE 4A: Leakage Collection and Removal System Monitoring

TABLE 1
Discharge Monitoring Sampling Groups

| Sampling Group | Facility Identification | Sampling Location | Latitude | Longitude |
|----------------|--|---|--|--|
| 1 | Make-up Reservoir A Make-up Reservoir B Recoverable Water Reservoir A Recoverable Water Reservoir B | Discharge outfall to the active reservoir ⁷ | 34° 19' 06" N 34° 19' 08" N 34° 19' 06" N 34° 19' 08" N | 109° 09' 33" W 109° 09' 33" W 109° 09' 31" W 109° 09' 31" W |
| 2 | Sludge Settling Reservoir A Sludge Settling Reservoir B Sludge Settling Reservoir D Unit 3 & 4 Lime Sludge Storage Pond North Unit 3 & 4 Lime Sludge Storage Pond South | Discharge outfall to the active reservoir | 34° 19' 08" N 34° 19' 08" N 34° 19' 08" N 34° 19' 00" N 34° 19' 00" N | 109° 09' 15" W 109° 09' 17" W 109° 09' 19" W 109° 10' 17" W 109° 10' 17" W |
| 3 | CT Blowdown Reservoir A CT Blowdown Reservoir B Unit 3 & 4 CT Blowdown Storage Pond | Discharge outfall to the active reservoir ⁸ | 34° 19' 06" N 34° 19' 08" N 34° 18' 58" N | 109° 09' 25" W 109° 09' 25" W 109° 10' 12" W |
| 4 | Process Water Collection Reservoir Unit 3 & 4 Combined Effluent Storage Pond Unit 4 Combined Effluent Storage Pond | Discharge outfall to the reservoir ⁹ | 34° 19' 07" N 34° 19' 00" N 34° 19' 03" N | 109° 09' 15" W 109° 10' 13" W 109° 10' 13" W |
| 5 | Evaporation Pond 1 Evaporation Pond 2 Evaporation Pond 3 Evaporation Pond 4 Evaporation Pond 5 Evaporation Pond 6 Unit 3 Evaporation Pond East Unit 3 Evaporation Pond West Unit 3 Evaporation Storage Pond 1E Unit 3 Evaporation Storage Pond 1F Unit 4 Evaporation Storage Pond 1A Unit 4 Evaporation Storage Pond 1B Unit 4 Evaporation Storage Pond 1C Unit 4 Evaporation Storage Pond 1D | Within each evaporation pond ¹⁰ | 34° 19' 22" N 34° 19' 20" N 34° 19' 23" N 34° 19' 25" N 34° 19' 28" N 34° 19' 32" N 34° 19' 11" N 34° 19' 11" N 34° 18' 57" N 34° 18' 57" N 34° 19' 03" N 34° 19' 09" N 34° 19' 05" N 34° 19' 05" N | 109° 09' 15" W 109° 09' 22" W 109° 09' 08" W 109° 09' 13" W 109° 09' 07" W 109° 09' 10" W 109° 10' 33" W 109° 10' 33" W 109° 11' 01" W 109° 10' 54" W 109° 11' 03" W 109° 10' 56" W 109° 11' 09" W 109° 11' 19" W |
| 6 | Sewage Pond 1 Sewage Pond 2 | Discharge outfall to the active reservoir ¹¹ | 34° 19' 17" N 34° 19' 16" N | 109° 09' 23" W 109° 09' 24" W |

⁷ Time-weighted sampling at outfall and discrete samples for volatile organic compounds (VOCs) as applicable.

⁸ Time-weighted sampling at outfall and discrete samples for VOCs as applicable.

⁹ Time-weighted sampling at outfall and discrete samples for VOCs as applicable.

¹⁰ One composite sample representative of the contents of each evaporation pond based on grid sampling approach.

¹¹ Time-weighted sampling at outfall and discrete samples for volatile organic compounds VOCs as applicable.

| Sampling Group | Facility Identification | Sampling Location | Latitude | Longitude |
|-----------------------|----------------------------------|---------------------------|-----------------|------------------|
| 7 | Coal Storage Area Retention Pond | Within the retention pond | 34° 19' 14" N | 109° 09' 13" W |

TABLE 1A
Discharge Monitoring (Group 1 Impoundments)

| Parameter ¹² | Alert Level | Discharge Limit | Monitoring Frequency | Reporting Frequency |
|---------------------------------------|------------------------|-----------------|--|---|
| pH | Reserved ¹³ | Reserved | 4 consecutive quarterly discharge samples and every 5 years thereafter as required by Section 2.5. | Annually beginning April 2004 and as otherwise required by Section 2.6 and Section 2.7. |
| Alkalinity | Reserved | Reserved | “ | “ |
| Total Dissolved Solids (TDS) | Reserved | Reserved | “ | “ |
| Total Nitrogen ¹⁴ | Reserved | Reserved | “ | “ |
| Calcium | Reserved | Reserved | “ | “ |
| Chloride | Reserved | Reserved | “ | “ |
| Fluoride | Reserved | Reserved | “ | “ |
| Magnesium | Reserved | Reserved | “ | “ |
| Potassium | Reserved | Reserved | “ | “ |
| Sodium | Reserved | Reserved | “ | “ |
| Sulfate | Reserved | Reserved | “ | “ |
| Antimony | Reserved | Reserved | “ | “ |
| Arsenic | Reserved | Reserved | “ | “ |
| Barium | Reserved | Reserved | “ | “ |
| Beryllium | Reserved | Reserved | “ | “ |
| Boron | Reserved | Reserved | “ | “ |
| Cadmium | Reserved | Reserved | “ | “ |
| Chromium | Reserved | Reserved | “ | “ |
| Lead | Reserved | Reserved | “ | “ |
| Mercury | Reserved | Reserved | “ | “ |
| Nickel | Reserved | Reserved | “ | “ |
| Selenium | Reserved | Reserved | “ | “ |
| Thallium | Reserved | Reserved | “ | “ |
| Zinc | Reserved | Reserved | “ | “ |
| Total Petroleum Hydrocarbons (TPH) | Reserved | Reserved | “ | “ |
| Organic Compounds¹⁵ | | | | |
| Acetone | Reserved | Reserved | 4 consecutive quarterly discharge samples and every 5 years thereafter as required by Section 2.5. | Annually beginning April 2004 and as otherwise required by Section 2.6 and Section 2.7. |
| Benzene | Reserved | Reserved | “ | “ |
| Chlorobenzene | Reserved | Reserved | “ | “ |
| Chloroform | Reserved ¹⁶ | Reserved | 4 consecutive quarterly | Annually beginning |

¹² Refer to Section 2.5 for Analytical Methodology requirements. Metals shall be analyzed for total metal concentration.

¹³ Reserved=Alert levels shall be established for all constituents specified in the above table based on the results of 4 consecutive quarterly discharge samples and concentrations proposed by the permittee. Discharge limits shall be established for all parameters with established numeric aquifer water quality standards.

¹⁴ Total Nitrogen is the sum of total Kjeldahl nitrogen (TKN) + nitrate (as N) + nitrite (as N).

¹⁵ Monitoring for volatile organic compounds (VOCs) and Semi-VOCs may be ceased following the initial wastewater characterization if no constituent in a group of these compounds is detected in the representative sample of discharge.

¹⁶ Reserved=Alert levels shall be established for all constituents specified in the above table based on the results of 4 consecutive quarterly discharge samples and concentrations proposed by the permittee. Discharge limits shall be established for all parameters with established numeric aquifer water quality standards.

| Parameter ¹² | Alert Level | Discharge Limit | Monitoring Frequency | Reporting Frequency |
|--|-------------|-----------------|--|--|
| | | | discharge samples and every 5 years thereafter as required by Section 2.5. | April 2004 and as otherwise required by Section 2.6 and Section 2.7. |
| 1,2-Dichlorobenzene | Reserved | Reserved | “ | “ |
| 1,3-Dichlorobenzene | Reserved | Reserved | “ | “ |
| 1,4-Dichlorobenzene | Reserved | Reserved | “ | “ |
| 2-Butanone (MEK) | Reserved | Reserved | “ | “ |
| Ethylbenzene | Reserved | Reserved | “ | “ |
| Tetrachloroethylene | Reserved | Reserved | “ | “ |
| Toluene | Reserved | Reserved | “ | “ |
| 1,1,1-Trichloroethane | Reserved | Reserved | “ | “ |
| 1,1,2-Trichloroethane | Reserved | Reserved | “ | “ |
| Trichloroethylene | Reserved | Reserved | “ | “ |
| Vinyl Chloride | Reserved | Reserved | “ | “ |
| Total Xylene | Reserved | Reserved | “ | “ |
| Di-(2-ethylhexyl) phthalate | Reserved | Reserved | “ | “ |
| Di-(2-ethylhexyl) adipate | Reserved | Reserved | “ | “ |
| 1,2,4-Trichlorobenzene | Reserved | Reserved | “ | “ |
| Hexachlorobenzene | Reserved | Reserved | “ | “ |
| Pentachlorobenzene | Reserved | Reserved | “ | “ |
| 2-Methylnaphthalene | Reserved | Reserved | “ | “ |
| Naphthalene | Reserved | Reserved | “ | “ |
| Phenanthrene | Reserved | Reserved | “ | “ |
| Fluoranthene | Reserved | Reserved | “ | “ |
| Chrysene | Reserved | Reserved | “ | “ |
| Benzo(b)Fluoranthene | Reserved | Reserved | “ | “ |
| Benzo(a)Pyrene | Reserved | Reserved | “ | “ |
| Indeno(1,2,3-cd)Pyrene | Reserved | Reserved | “ | “ |
| Radionuclides | | | | |
| Gross Alpha If Gross Alpha is >5pCi/L measure Radium 226, Radium 228, Radon, Uranium | Reserved | Reserved | Sample shall be collected within 60 days of initial discharge to the ponds according to Section 4.1, Table 1 | Submit laboratory report within 90 days of the date of sample collection |

TABLE 1B
Discharge Monitoring (Group 2 Impoundments)

| Parameter ¹⁷ | Alert Level | Discharge Limit | Monitoring Frequency | Reporting Frequency |
|---------------------------------------|------------------------|-----------------|--|---|
| pH | Reserved ¹⁸ | Reserved | 4 consecutive quarterly discharge samples and every 5 years thereafter as required by Section 2.5. | Annually beginning April 2004 and as otherwise required by Section 2.6 and Section 2.7. |
| Alkalinity | Reserved | Reserved | “ | “ |
| Total Dissolved Solids (TDS) | Reserved | Reserved | “ | “ |
| Total Nitrogen ¹⁹ | Reserved | Reserved | “ | “ |
| Calcium | Reserved | Reserved | “ | “ |
| Chloride | Reserved | Reserved | “ | “ |
| Fluoride | Reserved | Reserved | “ | “ |
| Magnesium | Reserved | Reserved | “ | “ |
| Potassium | Reserved | Reserved | “ | “ |
| Sodium | Reserved | Reserved | “ | “ |
| Sulfate | Reserved | Reserved | “ | “ |
| Antimony | Reserved | Reserved | “ | “ |
| Arsenic | Reserved | Reserved | “ | “ |
| Barium | Reserved | Reserved | “ | “ |
| Beryllium | Reserved | Reserved | “ | “ |
| Boron | Reserved | Reserved | “ | “ |
| Cadmium | Reserved | Reserved | “ | “ |
| Chromium | Reserved | Reserved | “ | “ |
| Lead | Reserved | Reserved | “ | “ |
| Mercury | Reserved | Reserved | “ | “ |
| Nickel | Reserved | Reserved | “ | “ |
| Selenium | Reserved | Reserved | “ | “ |
| Thallium | Reserved | Reserved | “ | “ |
| Zinc | Reserved | Reserved | “ | “ |
| Total Petroleum Hydrocarbons (TPH) | Reserved | Reserved | “ | “ |
| Organic Compounds²⁰ | | | | |
| Acetone | Reserved | Reserved | 4 consecutive quarterly discharge samples and every 5 years thereafter as required by Section 2.5. | Annually beginning April 2004 and as otherwise required by Section 2.6 and Section 2.7. |
| Benzene | Reserved | Reserved | “ | “ |
| Chlorobenzene | Reserved | Reserved | “ | “ |
| Chloroform | Reserved ²¹ | Reserved | 4 consecutive quarterly | Annually beginning |

¹⁷ Refer to Section 2.5 for Analytical Methodology requirements. Metals shall be analyzed for total metal concentration.

¹⁸ Reserved=Alert levels shall be established for all constituents specified in the above table based on the results of 4 consecutive quarterly discharge samples and concentrations proposed by the permittee. Discharge limits shall be established for all parameters with established numeric aquifer water quality standards

¹⁹ Total Nitrogen is the sum of total kjeldahl nitrogen (TKN) + Nitrate (as N) + Nitrite (as N).

²⁰ Monitoring for volatile organic compounds (VOCs) and Semi-VOCs may be ceased following the initial wastewater characterization if no constituent in a group of these compounds is detected in the representative sample of discharge.

²¹ Reserved=Alert levels shall be established for all constituents specified in the above table based on the results of 4 consecutive quarterly discharge samples and concentrations proposed by the permittee. Discharge limits shall be established for all parameters with established numeric AWQS.

| Parameter ¹⁷ | Alert Level | Discharge Limit | Monitoring Frequency | Reporting Frequency |
|--|-------------|-----------------|--|--|
| | | | discharge samples and every 5 years thereafter as required by Section 2.5. | April 2004 and as otherwise required by Section 2.6 and Section 2.7. |
| 1,2-Dichlorobenzene | Reserved | Reserved | “ | “ |
| 1,3-Dichlorobenzene | Reserved | Reserved | “ | “ |
| 1,4-Dichlorobenzene | Reserved | Reserved | “ | “ |
| 2-Butanone (MEK) | Reserved | Reserved | “ | “ |
| Ethylbenzene | Reserved | Reserved | “ | “ |
| Tetrachloroethylene | Reserved | Reserved | “ | “ |
| Toluene | Reserved | Reserved | “ | “ |
| 1,1,1-Trichloroethane | Reserved | Reserved | “ | “ |
| 1,1,2-Trichloroethane | Reserved | Reserved | “ | “ |
| Trichloroethylene | Reserved | Reserved | “ | “ |
| Vinyl Chloride | Reserved | Reserved | “ | “ |
| Total Xylene | Reserved | Reserved | “ | “ |
| Di-(2-ethylhexyl) phthalate | Reserved | Reserved | “ | “ |
| Di-(2-ethylhexyl) adipate | Reserved | Reserved | “ | “ |
| 1,2,4-Trichlorobenzene | Reserved | Reserved | “ | “ |
| Hexachlorobenzene | Reserved | Reserved | “ | “ |
| Pentachlorobenzene | Reserved | Reserved | “ | “ |
| 2-Methylnaphthalene | Reserved | Reserved | “ | “ |
| Naphthalene | Reserved | Reserved | “ | “ |
| Phenanthrene | Reserved | Reserved | “ | “ |
| Fluoranthene | Reserved | Reserved | “ | “ |
| Chrysene | Reserved | Reserved | “ | “ |
| Benzo(b)Fluoranthene | Reserved | Reserved | “ | “ |
| Benzo(a)Pyrene | Reserved | Reserved | “ | “ |
| Indeno(1,2,3-cd)Pyrene | Reserved | Reserved | “ | “ |
| Radionuclides | | | | |
| Gross Alpha If Gross Alpha is >5pCi/L measure Radium 226, Radium 228, Radon, Uranium | Reserved | Reserved | Sample shall be collected within 60 days of initial discharge to the ponds according to Section 4.1, Table 1 | Submit laboratory report within 90 days of the date of sample collection |

TABLE 1C
Discharge Monitoring (Group 3 Impoundments)

| Parameter ²² | Alert Level | Discharge Limit | Monitoring Frequency | Reporting Frequency |
|---------------------------------------|------------------------|-----------------|--|---|
| pH | Reserved ²³ | Reserved | 4 consecutive quarterly discharge samples and every 5 years thereafter as required by Section 2.5. | Annually beginning April 2004 and as otherwise required by Section 2.6 and Section 2.7. |
| Alkalinity | Reserved | Reserved | “ | “ |
| Total Dissolved Solids (TDS) | Reserved | Reserved | “ | “ |
| Total Nitrogen ²⁴ | Reserved | Reserved | “ | “ |
| Calcium | Reserved | Reserved | “ | “ |
| Chloride | Reserved | Reserved | “ | “ |
| Fluoride | Reserved | Reserved | “ | “ |
| Magnesium | Reserved | Reserved | “ | “ |
| Potassium | Reserved | Reserved | “ | “ |
| Sodium | Reserved | Reserved | “ | “ |
| Sulfate | Reserved | Reserved | “ | “ |
| Antimony | Reserved | Reserved | “ | “ |
| Arsenic | Reserved | Reserved | “ | “ |
| Barium | Reserved | Reserved | “ | “ |
| Beryllium | Reserved | Reserved | “ | “ |
| Boron | Reserved | Reserved | “ | “ |
| Cadmium | Reserved | Reserved | “ | “ |
| Chromium | Reserved | Reserved | “ | “ |
| Lead | Reserved | Reserved | “ | “ |
| Mercury | Reserved | Reserved | “ | “ |
| Nickel | Reserved | Reserved | “ | “ |
| Selenium | Reserved | Reserved | “ | “ |
| Thallium | Reserved | Reserved | “ | “ |
| Zinc | Reserved | Reserved | “ | “ |
| Total Petroleum Hydrocarbons (TPH) | Reserved | Reserved | “ | “ |
| Organic Compounds²⁵ | | | | |
| Acetone | Reserved | Reserved | 4 consecutive quarterly discharge samples and every 5 years thereafter as required by Section 2.5. | Annually beginning April 2004 and as otherwise required by Section 2.6 and Section 2.7. |
| Benzene | Reserved | Reserved | “ | “ |
| Chlorobenzene | Reserved | Reserved | “ | “ |
| Chloroform | Reserved ²⁶ | Reserved | 4 consecutive quarterly | Annually beginning |

²² Refer to Section 2.5 for Analytical Methodology requirements. Metals shall be analyzed for total metal concentration.

²³ Reserved=Alert levels shall be established for all constituents specified in the above table based on the results of 4 consecutive quarterly discharge samples and concentrations proposed by the permittee. Discharge limits shall be established for all parameters with established numeric aquifer water quality standards.

²⁴ Total Nitrogen is the sum of total kjeldahl nitrogen (TKN) + nitrate (as N) + nitrite (as N).

²⁵ Monitoring for volatile organic compounds (VOCs) and Semi-VOCs may be ceased following the initial wastewater characterization if no constituent in a group of these compounds is detected in the representative sample of discharge.

²⁶ Reserved=Alert levels shall be established for all constituents specified in the above table based on the results of 4 consecutive quarterly discharge samples and concentrations proposed by the permittee. Discharge limits shall be established for all parameters with established numeric aquifer water quality standards.

| Parameter ²² | Alert Level | Discharge Limit | Monitoring Frequency | Reporting Frequency |
|--|-------------|-----------------|--|--|
| | | | discharge samples and every 5 years thereafter as required by Section 2.5. | April 2004 and as otherwise required by Section 2.6 and Section 2.7. |
| 1,2-Dichlorobenzene | Reserved | Reserved | “ | “ |
| 1,3-Dichlorobenzene | Reserved | Reserved | “ | “ |
| 1,4-Dichlorobenzene | Reserved | Reserved | “ | “ |
| 2-Butanone (MEK) | Reserved | Reserved | “ | “ |
| Ethylbenzene | Reserved | Reserved | “ | “ |
| Tetrachloroethylene | Reserved | Reserved | “ | “ |
| Toluene | Reserved | Reserved | “ | “ |
| 1,1,1-Trichloroethane | Reserved | Reserved | “ | “ |
| 1,1,2-Trichloroethane | Reserved | Reserved | “ | “ |
| Trichloroethylene | Reserved | Reserved | “ | “ |
| Vinyl Chloride | Reserved | Reserved | “ | “ |
| Total Xylene | Reserved | Reserved | “ | “ |
| Di-(2-ethylhexyl) phthalate | Reserved | Reserved | “ | “ |
| Di-(2-ethylhexyl) adipate | Reserved | Reserved | “ | “ |
| 1,2,4-Trichlorobenzene | Reserved | Reserved | “ | “ |
| Hexachlorobenzene | Reserved | Reserved | “ | “ |
| Pentachlorobenzene | Reserved | Reserved | “ | “ |
| 2-Methylnaphthalene | Reserved | Reserved | “ | “ |
| Naphthalene | Reserved | Reserved | “ | “ |
| Phenanthrene | Reserved | Reserved | “ | “ |
| Fluoranthene | Reserved | Reserved | “ | “ |
| Chrysene | Reserved | Reserved | “ | “ |
| Benzo(b)Fluoranthene | Reserved | Reserved | “ | “ |
| Benzo(a)Pyrene | Reserved | Reserved | “ | “ |
| Indeno(1,2,3-cd)Pyrene | Reserved | Reserved | “ | “ |
| Radionuclides | | | | |
| Gross Alpha If Gross Alpha is >5pCi/L measure Radium 226, Radium 228, Radon, Uranium | Reserved | Reserved | Sample shall be collected within 60 days of initial discharge to the ponds according to Section 4.1, Table 1 | Submit laboratory report within 90 days of the date of sample collection |

TABLE 1D
Discharge Monitoring (Group 4 Impoundments)

| Parameter ²⁷ | Alert Level | Discharge Limit | Monitoring Frequency | Reporting Frequency |
|---------------------------------------|------------------------|-----------------|--|---|
| pH | Reserved ²⁸ | Reserved | 4 consecutive quarterly discharge samples and every 5 years thereafter as required by Section 2.5. | Annually beginning April 2004 and as otherwise required by Section 2.6 and Section 2.7. |
| Alkalinity | Reserved | Reserved | “ | “ |
| Total Dissolved Solids (TDS) | Reserved | Reserved | “ | “ |
| Total Nitrogen ²⁹ | Reserved | Reserved | “ | “ |
| Calcium | Reserved | Reserved | “ | “ |
| Chloride | Reserved | Reserved | “ | “ |
| Fluoride | Reserved | Reserved | “ | “ |
| Magnesium | Reserved | Reserved | “ | “ |
| Potassium | Reserved | Reserved | “ | “ |
| Sodium | Reserved | Reserved | “ | “ |
| Sulfate | Reserved | Reserved | “ | “ |
| Antimony | Reserved | Reserved | “ | “ |
| Arsenic | Reserved | Reserved | “ | “ |
| Barium | Reserved | Reserved | “ | “ |
| Beryllium | Reserved | Reserved | “ | “ |
| Boron | Reserved | Reserved | “ | “ |
| Cadmium | Reserved | Reserved | “ | “ |
| Chromium | Reserved | Reserved | “ | “ |
| Lead | Reserved | Reserved | “ | “ |
| Mercury | Reserved | Reserved | “ | “ |
| Nickel | Reserved | Reserved | “ | “ |
| Selenium | Reserved | Reserved | “ | “ |
| Thallium | Reserved | Reserved | “ | “ |
| Zinc | Reserved | Reserved | “ | “ |
| Total Petroleum Hydrocarbons (TPH) | Reserved | Reserved | “ | “ |
| Organic Compounds³⁰ | | | | |
| Acetone | Reserved | Reserved | 4 consecutive quarterly discharge samples and every 5 years thereafter as required by Section 2.5. | Annually beginning April 2004 and as otherwise required by Section 2.6 and Section 2.7. |
| Benzene | Reserved | Reserved | “ | “ |
| Chlorobenzene | Reserved | Reserved | “ | “ |
| Chloroform | Reserved ³¹ | Reserved | 4 consecutive quarterly | Annually beginning |

²⁷ Refer to Section 2.5 for Analytical Methodology requirements. Metals shall be analyzed for total metal concentration.

²⁸ Reserved=Alert levels shall be established for all constituents specified in the above table based on the results of 4 consecutive quarterly discharge samples and concentrations proposed by the permittee. Discharge limits shall be established for all parameters with established numeric Aquifer water quality standards.

²⁹ Total Nitrogen is the sum of total kjeldahl nitrogen (TKN) + nitrate (as N) + nitrite (as N).

³⁰ Monitoring for volatile organic compounds (VOCs) and Semi-VOCs may be ceased following the initial wastewater characterization if no constituent in a group of these compounds is detected in the representative sample of discharge.

³¹ Reserved=Alert levels shall be established for all constituents specified in the above table based on the results of 4 consecutive quarterly discharge samples and concentrations proposed by the permittee. Discharge limits shall be established for all parameters with established numeric aquifer water quality standards.

| Parameter ²⁷ | Alert Level | Discharge Limit | Monitoring Frequency | Reporting Frequency |
|--|-------------|-----------------|--|--|
| | | | discharge samples and every 5 years thereafter as required by Section 2.5. | April 2004 and as otherwise required by Section 2.6 and Section 2.7. |
| 1,2-Dichlorobenzene | Reserved | Reserved | “ | “ |
| 1,3-Dichlorobenzene | Reserved | Reserved | “ | “ |
| 1,4-Dichlorobenzene | Reserved | Reserved | “ | “ |
| 2-Butanone (MEK) | Reserved | Reserved | “ | “ |
| Ethylbenzene | Reserved | Reserved | “ | “ |
| Tetrachloroethylene | Reserved | Reserved | “ | “ |
| Toluene | Reserved | Reserved | “ | “ |
| 1,1,1-Trichloroethane | Reserved | Reserved | “ | “ |
| 1,1,2-Trichloroethane | Reserved | Reserved | “ | “ |
| Trichloroethylene | Reserved | Reserved | “ | “ |
| Vinyl Chloride | Reserved | Reserved | “ | “ |
| Total Xylene | Reserved | Reserved | “ | “ |
| Di-(2-ethylhexyl) phthalate | Reserved | Reserved | “ | “ |
| Di-(2-ethylhexyl) adipate | Reserved | Reserved | “ | “ |
| 1,2,4-Trichlorobenzene | Reserved | Reserved | “ | “ |
| Hexachlorobenzene | Reserved | Reserved | “ | “ |
| Pentachlorobenzene | Reserved | Reserved | “ | “ |
| 2-Methylnaphthalene | Reserved | Reserved | “ | “ |
| Naphthalene | Reserved | Reserved | “ | “ |
| Phenanthrene | Reserved | Reserved | “ | “ |
| Fluoranthene | Reserved | Reserved | “ | “ |
| Chrysene | Reserved | Reserved | “ | “ |
| Benzo(b)Fluoranthene | Reserved | Reserved | “ | “ |
| Benzo(a)Pyrene | Reserved | Reserved | “ | “ |
| Indeno(1,2,3-cd)Pyrene | Reserved | Reserved | “ | “ |
| Radionuclides | | | | |
| Gross Alpha If Gross Alpha is >5pCi/L measure Radium 226, Radium 228, Radon, Uranium | Reserved | Reserved | Sample shall be collected within 60 days of initial discharge to the ponds according to Section 4.1, Table 1 | Submit laboratory report within 90 days of the date of sample collection |

TABLE 1E
Discharge Monitoring (Group 5 Impoundments)

| Parameter ³² | Alert Level | Discharge Limit | Monitoring Frequency | Reporting Frequency |
|---------------------------------------|------------------------|-----------------|--|---|
| pH | Reserved ³³ | Reserved | 4 consecutive quarterly discharge samples and every 5 years thereafter as required by Section 2.5. | Annually beginning April 2004 and as otherwise required by Section 2.6 and Section 2.7. |
| Alkalinity | Reserved | Reserved | “ | “ |
| Total Dissolved Solids (TDS) | Reserved | Reserved | “ | “ |
| Total Nitrogen ³⁴ | Reserved | Reserved | “ | “ |
| Calcium | Reserved | Reserved | “ | “ |
| Chloride | Reserved | Reserved | “ | “ |
| Fluoride | Reserved | Reserved | “ | “ |
| Magnesium | Reserved | Reserved | “ | “ |
| Potassium | Reserved | Reserved | “ | “ |
| Sodium | Reserved | Reserved | “ | “ |
| Sulfate | Reserved | Reserved | “ | “ |
| Antimony | Reserved | Reserved | “ | “ |
| Arsenic | Reserved | Reserved | “ | “ |
| Barium | Reserved | Reserved | “ | “ |
| Beryllium | Reserved | Reserved | “ | “ |
| Boron | Reserved | Reserved | “ | “ |
| Cadmium | Reserved | Reserved | “ | “ |
| Chromium | Reserved | Reserved | “ | “ |
| Lead | Reserved | Reserved | “ | “ |
| Mercury | Reserved | Reserved | “ | “ |
| Nickel | Reserved | Reserved | “ | “ |
| Selenium | Reserved | Reserved | “ | “ |
| Thallium | Reserved | Reserved | “ | “ |
| Zinc | Reserved | Reserved | “ | “ |
| Total Petroleum Hydrocarbons (TPH) | Reserved | Reserved | “ | “ |
| Organic Compounds³⁵ | | | | |
| Acetone | Reserved | Reserved | 4 consecutive quarterly discharge samples and every 5 years thereafter as required by Section 2.5. | Annually beginning April 2004 and as otherwise required by Section 2.6 and Section 2.7. |
| Benzene | Reserved | Reserved | “ | “ |
| Chlorobenzene | Reserved | Reserved | “ | “ |
| Chloroform | Reserved ³⁶ | Reserved | 4 consecutive quarterly | Annually beginning |

³² Refer to Section 2.5 for Analytical Methodology requirements. Metals shall be analyzed for total metal concentration.

³³ Reserved=Alert levels shall be established for all constituents specified in the above table based on the results of 4 consecutive quarterly discharge samples and concentrations proposed by the permittee. Discharge limits shall be established for all parameters with established numeric aquifer water quality standards.

³⁴ Total Nitrogen is the sum of total kjeldahl nitrogen (TKN) + nitrate (as N) + nitrite (as N).

³⁵ Monitoring for volatile organic compounds (VOCs) and Semi-VOCs may be ceased following the initial wastewater characterization if no constituent in a group of these compounds is detected in the representative sample of discharge.

³⁶ Reserved=Alert levels shall be established for all constituents specified in the above table based on the results of 4 consecutive quarterly discharge samples and concentrations proposed by the permittee. Discharge limits shall be established for all parameters with established numeric aquifer water quality standards.

| Parameter ³² | Alert Level | Discharge Limit | Monitoring Frequency | Reporting Frequency |
|--|-------------|-----------------|--|--|
| | | | discharge samples and every 5 years thereafter as required by Section 2.5. | April 2004 and as otherwise required by Section 2.6 and Section 2.7. |
| 1,2-Dichlorobenzene | Reserved | Reserved | “ | “ |
| 1,3-Dichlorobenzene | Reserved | Reserved | “ | “ |
| 1,4-Dichlorobenzene | Reserved | Reserved | “ | “ |
| 2-Butanone (MEK) | Reserved | Reserved | “ | “ |
| Ethylbenzene | Reserved | Reserved | “ | “ |
| Tetrachloroethylene | Reserved | Reserved | “ | “ |
| Toluene | Reserved | Reserved | “ | “ |
| 1,1,1-Trichloroethane | Reserved | Reserved | “ | “ |
| 1,1,2-Trichloroethane | Reserved | Reserved | “ | “ |
| Trichloroethylene | Reserved | Reserved | “ | “ |
| Vinyl Chloride | Reserved | Reserved | “ | “ |
| Total Xylene | Reserved | Reserved | “ | “ |
| Di-(2-ethylhexyl) phthalate | Reserved | Reserved | “ | “ |
| Di-(2-ethylhexyl) adipate | Reserved | Reserved | “ | “ |
| 1,2,4-Trichlorobenzene | Reserved | Reserved | “ | “ |
| Hexachlorobenzene | Reserved | Reserved | “ | “ |
| Pentachlorobenzene | Reserved | Reserved | “ | “ |
| 2-Methylnaphthalene | Reserved | Reserved | “ | “ |
| Naphthalene | Reserved | Reserved | “ | “ |
| Phenanthrene | Reserved | Reserved | “ | “ |
| Fluoranthene | Reserved | Reserved | “ | “ |
| Chrysene | Reserved | Reserved | “ | “ |
| Benzo(b)Fluoranthene | Reserved | Reserved | “ | “ |
| Benzo(a)Pyrene | Reserved | Reserved | “ | “ |
| Indeno(1,2,3-cd)Pyrene | Reserved | Reserved | “ | “ |
| Radionuclides | | | | |
| Gross Alpha If Gross Alpha is >5pCi/L measure Radium 226, Radium 228, Radon, Uranium | Reserved | Reserved | Sample shall be collected within 60 days of initial discharge to the ponds according to Section 4.1, Table 1 | Submit laboratory report within 90 days of the date of sample collection |

TABLE 1F
Discharge Monitoring (Group 6 Impoundments)

| Parameter ³⁷ | Alert Level | Discharge Limit | Monitoring Frequency | Reporting Frequency |
|------------------------------------|--|----------------------------------|--|---|
| Discharge Rate | Average daily flow of 24,000 gallons per day (gpd) | Average daily flow of 25,000 gpd | Monthly | Annually beginning April 2004 and as otherwise required by Section 2.6 and 2.7. |
| Biochemical Oxygen Demand (BOD) | Reserved ³⁸ | Reserved | 4 consecutive quarterly discharge samples and every 5 years thereafter as required by Section 2.5. | “ |
| Total Suspended Solids (TSS) | Reserved | Reserved | “ | “ |
| Total Nitrogen ³⁹ | Reserved | Reserved | “ | “ |
| Nitrate | Reserved | Reserved | “ | “ |
| Total Petroleum Hydrocarbons (TPH) | Reserved | Reserved | “ | “ |
| Antimony | Reserved | Reserved | “ | “ |
| Arsenic | Reserved | Reserved | “ | “ |
| Barium | Reserved | Reserved | “ | “ |
| Beryllium | Reserved | Reserved | “ | “ |
| Boron | Reserved | Reserved | “ | “ |
| Cadmium | Reserved | Reserved | “ | “ |
| Chromium | Reserved | Reserved | “ | “ |
| Lead | Reserved | Reserved | “ | “ |
| Mercury | Reserved | Reserved | “ | “ |
| Nickel | Reserved | Reserved | “ | “ |
| Selenium | Reserved | Reserved | “ | “ |
| Silver | Reserved | Reserved | “ | “ |
| Zinc | Reserved | Reserved | “ | “ |

TABLE 1G
Discharge Monitoring (Group 7 Impoundments)

³⁷ Refer to Section 2.5 for Analytical Methodology requirements. Metals shall be analyzed for total metal concentration.

³⁸ Reserved = Alert levels shall be established for all constituents specified in the above table based upon the results of 4 consecutive quarterly discharge samples and proposal from the permittee. Discharge limits shall be established for all parameters with established numeric aquifer water quality standards.

³⁹ Total Nitrogen is the sum of total kjedahl nitrogen (TKN) + nitrate (as N) + nitrite (as N) .

| Parameter ⁴⁰ | Alert Level | Discharge Limit | Monitoring ⁴¹ Frequency | Reporting Frequency |
|---|------------------------|-----------------|---|---|
| pH | Reserved ⁴² | Reserved | 4 consecutive quarterly discharge samples and every 5 years thereafter as required by Section 2.5. | As required by Section 2.6 and 2.7. |
| Total Dissolved Solids (TDS) | “ | “ | “ | “ |
| Sulfate | “ | “ | “ | “ |
| Fluoride | “ | “ | “ | “ |
| Chloride | “ | “ | “ | “ |
| Antimony | “ | “ | “ | “ |
| Arsenic | “ | “ | “ | “ |
| Barium | “ | “ | “ | “ |
| Beryllium | “ | “ | “ | “ |
| Boron | “ | “ | “ | “ |
| Cadmium | “ | “ | “ | “ |
| Chromium | “ | “ | “ | “ |
| Lead | “ | “ | “ | “ |
| Mercury | “ | “ | “ | “ |
| Nickel | “ | “ | “ | “ |
| Selenium | “ | “ | “ | “ |
| Silver | “ | “ | “ | “ |
| Zinc | “ | “ | “ | “ |
| Gross Alpha: If Gross Alpha is >5 pCi/L, measure Radium 226, Radium 228, Radon and Uranium | “ | “ | “ | “ |

TABLE 1H
Discharge Monitoring (Ash Characterization)⁴³

⁴⁰ Refer to Section 2.5 for Analytical Methodology requirements. Metals shall be analyzed for total metal concentration.

⁴¹ As specified in Section 2.5.1.3, if no storm event sufficient for sampling occurs within the required monitoring period, the permittee shall report “none” for the monitoring period, and shall submit sampling results within 30 days of receipt of the laboratory report upon sample collection.

⁴² Reserved=Alert levels shall be established for all constituents specified in the above table based upon the results of 4 consecutive quarterly discharge samples and concentrations proposed by the permittee. Discharge Limits shall be established for all parameters with established numeric aquifer water quality standards.

⁴³ Initial ash discharge characterization results were submitted in 2004.

| Sampling Point | Description |
|----------------|--|
| A | TEP Springerville Generating Station Fly Ash |
| B | TEP Irvington Generating Station Fly Ash |

| Parameter ⁴⁴ | Alert Level | Discharge Limit | Monitoring Frequency | Reporting ⁴⁵ Frequency |
|---|--------------|-----------------|---|-----------------------------------|
| pH | Monitor Only | Monitor Only | Within 1 year of permit issuance and every 5 years thereafter as required by Section 2.5. | Every 5 Years |
| Total Dissolved Solids (TDS) | Monitor Only | Monitor Only | “ | Every 5 Years |
| Sulfate | Monitor Only | Monitor Only | “ | Every 5 Years |
| Fluoride | Monitor Only | Monitor Only | “ | Every 5 Years |
| Chloride | Monitor Only | Monitor Only | “ | Every 5 Years |
| Antimony | Monitor Only | Monitor Only | “ | Every 5 Years |
| Arsenic | Monitor Only | Monitor Only | “ | Every 5 Years |
| Barium | Monitor Only | Monitor Only | “ | Every 5 Years |
| Beryllium | Monitor Only | Monitor Only | “ | Every 5 Years |
| Boron | Monitor Only | Monitor Only | “ | Every 5 Years |
| Cadmium | Monitor Only | Monitor Only | “ | Every 5 Years |
| Chromium | Monitor Only | Monitor Only | “ | Every 5 Years |
| Lead | Monitor Only | Monitor Only | “ | Every 5 Years |
| Mercury | Monitor Only | Monitor Only | “ | Every 5 Years |
| Nickel | Monitor Only | Monitor Only | “ | Every 5 Years |
| Selenium | Monitor Only | Monitor Only | “ | Every 5 Years |
| Silver | Monitor Only | Monitor Only | “ | Every 5 Years |
| Zinc | Monitor Only | Monitor Only | “ | Every 5 Years |
| Gross Alpha: If Gross Alpha is >5 pCi/L, measure Radium 226, Radium 228, Radon and Uranium | Monitor Only | Monitor Only | “ | Every 5 Years |

TABLE 11
Discharge Monitoring (Oil/water Separator)

⁴⁴ Refer to Section 2.5 for Analytical Methodology requirements. Metals shall be analyzed for total metal concentration.

⁴⁵ Every 5 years beginning April 2004 and as otherwise required by Section 2.6 and 2.7.

| Parameter ⁴⁶ | Alert Level | Discharge Limit | Monitoring Frequency | Reporting ⁴⁷ Frequency |
|------------------------------------|------------------------|-----------------|----------------------|-----------------------------------|
| Oil & Grease | Reserved ⁴⁸ | Reserved | Annually | Annually |
| Total Petroleum Hydrocarbons (TPH) | Reserved | Reserved | Annually | Annually |
| Organic Compounds | | | | |
| Acetone | Reserved | Reserved | Annually | Annually |
| Benzene | Reserved | Reserved | Annually | Annually |
| Chlorobenzene | Reserved | Reserved | Annually | Annually |
| Chloroform | Reserved | Reserved | Annually | Annually |
| 1,2-Dichlorobenzene | Reserved | Reserved | Annually | Annually |
| 1,3-Dichlorobenzene | Reserved | Reserved | Annually | Annually |
| 1,4-Dichlorobenzene | Reserved | Reserved | Annually | Annually |
| 2-Butanone (MEK) | Reserved | Reserved | Annually | Annually |
| Ethylbenzene | Reserved | Reserved | Annually | Annually |
| Tetrachloroethylene | Reserved | Reserved | Annually | Annually |
| Toluene | Reserved | Reserved | Annually | Annually |
| 1,1,1-Trichloroethane | Reserved | Reserved | Annually | Annually |
| 1,1,2-Trichloroethane | Reserved | Reserved | Annually | Annually |
| Trichloroethylene | Reserved | Reserved | Annually | Annually |
| Vinyl Chloride | Reserved | Reserved | Annually | Annually |
| Total Xylene | Reserved | Reserved | Annually | Annually |
| Di-(2-ethylhexyl) phthalate | Reserved | Reserved | Annually | Annually |
| Di-(2-ethylhexyl) adipate | Reserved | Reserved | Annually | Annually |
| 1,2,4-Trichlorobenzene | Reserved | Reserved | Annually | Annually |
| Hexachlorobenzene | Reserved | Reserved | Annually | Annually |
| Pentachlorobenzene | Reserved | Reserved | Annually | Annually |
| 2-Methylnaphthalene | Reserved | Reserved | Annually | Annually |
| Naphthalene | Reserved | Reserved | Annually | Annually |
| Phenanthrene | Reserved | Reserved | Annually | Annually |
| Fluoranthene | Reserved | Reserved | Annually | Annually |
| Chrysene | Reserved | Reserved | Annually | Annually |
| Benzo(b)Fluoranthene | Reserved | Reserved | Annually | Annually |
| Benzo(a)Pyrene | Reserved | Reserved | Annually | Annually |
| Indeno(1,2,3-cd)Pyrene | Reserved | Reserved | Annually | Annually |

**TABLE 2A
FACILITY INSPECTIONS
WASTEWATER RESERVOIRS**

⁴⁶ Refer to Section 2.5 for Analytical Methodology requirements.

⁴⁷ Quarterly for the first two years and annually thereafter.

⁴⁸ Reserved=Alert levels shall be established for all constituents specified in the above table based on the results of 4 consecutive quarterly discharge samples and concentrations proposed by the permittee. Discharge limits shall be established for all parameters with established numeric aquifer water quality standards.

| Parameter | Performance Standard | Monitoring Frequency | Reporting Frequency ⁴⁹ |
|------------------------------------|---|--|-----------------------------------|
| Freeboard | Minimum of 2 feet | Monthly and after significant rainfall | Annually |
| Water Level | No unexpected or sudden loss of fluid. | Monthly | Annually |
| Liner Integrity (HDPE and Asphalt) | No visible tears, punctures, cracks, deformities, or other damage due to sunlight, wind, weather, debris, vegetation, animals, or other adverse conditions. | Monthly and after significant rainfall | Annually |
| Berm Integrity | No visible structural damage, breach, erosion of embankments or seepage | Monthly and after significant rainfall | Annually |
| Oil/Water Separator | Operated within separator design capacity, no exceeding maximum design flow, no oil and grease concentration in the effluent greater than 15 mg/L, routine maintenance and sludge removal is performed so that sludge does not accumulate beyond 25 percent of capacity | Monthly | Annually |
| Seepage Wells ⁵⁰ | No presence (measurable accumulation) of fluids | Quarterly | Annually |

**TABLE 2B
FACILITY INSPECTIONS
EVAPORATION PONDS**

| Parameter | Performance Standard | Monitoring Frequency | Reporting Frequency ⁵¹ |
|------------------------|---|--|-----------------------------------|
| Freeboard | Minimum of 2 feet | Monthly and after significant rainfall | Annually |
| Water Level | No unexpected or sudden loss of fluid. | Monthly | Annually |
| Liner Integrity (HDPE) | No visible tears, punctures, cracks, deformities, or other damage due to sunlight, wind, weather, debris, vegetation, animals, or other adverse conditions. | Monthly and after significant rainfall | Annually |
| Berm Integrity | No visible structural damage, breach, erosion of embankments or seepage | Monthly and after significant rainfall | Annually |

**TABLE 2C
FACILITY INSPECTIONS**

⁴⁹ Annually or in accordance with Section 2.7.

⁵⁰ Seepage wells to be monitored include A10 W, A3W, A14W, B2W, and B7W.

⁵¹ Annually or in accordance with Section 2.7.

STORMWATER DIVERSION STRUCTURE

| Parameter | Performance Standard | Monitoring Frequency | Reporting Frequency ⁵² |
|--------------------------------|--|--|-----------------------------------|
| Stormwater Diversion Structure | No structural damage or obstructions that impair the function of the diversion structure | Monthly and after significant rainfall | Annually |

**TABLE 2D
FACILITY INSPECTIONS
ASH DISPOSAL LANDFILL**

| Parameter | Performance Standard | Monitoring Frequency | Reporting Frequency ⁵³ |
|------------------|---|--|-----------------------------------|
| Benches/soil cap | No surface subsidence or settlement, no ponding water, no visible erosion | Monthly and after significant rainfall | Annually |

**TABLE 2E
FACILITY INSPECTIONS
FIRE TRAINING FACILITY**

| Parameter | Performance Standard | Monitoring Frequency | Reporting Frequency ⁵⁴ |
|--|-----------------------------------|---|-----------------------------------|
| Integrity of concrete trough and catch basin | No damage to grading and drainage | Monthly and prior to each training exercise | Annually |

**TABLE 3
Seepage Monitoring Sampling Points**

⁵² Annually or in accordance with Section 2.7.

⁵³ Annually or in accordance with Section 2.7.

⁵⁴ Annually or in accordance with Section 2.7.

| Sampling Point^{55, 56} | Identification | Well Depth (ft) | Latitude | Longitude |
|--|-----------------------|------------------------|-----------------|------------------|
| A3W | Seepage Well A3W | 117 | 34° 19' 09" N | 109° 10' 38" W |
| A10W | Seepage Well A10W | 211 | 34° 19' 21" N | 109° 10' 14" W |
| A14W | Seepage Well A14W | 150 | 34° 19' 44" N | 109° 09' 14" W |
| B2W | Seepage Well B2W | 73 | 34° 18' 42" N | 109° 14' 54" W |
| B7W | Seepage Well B7W | 89 | 34° 18' 02" N | 109° 14' 37" W |

TABLE 3A
Seepage Well Monitoring (Inspection for Fluid)

| Screening Parameter⁵⁷ | Alert Level | Discharge Limit | Monitoring Frequency | Reporting Frequency |
|---|--------------------|--|--|---|
| pH | Presence of fluid | None | Quarterly as required by Section 2.5 and 2.6 | Annually and as otherwise required by Section 2.6 and Section 2.7 |
| Specific Conductance | Presence of fluid | 6,000 umhos/cm | Quarterly as required by Section 2.5 and 2.6 | Annually and as otherwise required by Section 2.6 and Section 2.7 |
| Fluoride | Presence of fluid | 3.2 mg/l | Quarterly as required by Section 2.5 and 2.6 | Annually and as otherwise required by Section 2.6 and Section 2.7 |
| Sulfate | Presence of fluid | 600 mg/l | Quarterly as required by Section 2.5 and 2.6 | Annually and as otherwise required by Section 2.6 and Section 2.7 |
| Chloride | Presence of fluid | 350 mg/l | Quarterly as required by Section 2.5 and 2.6 | Annually and as otherwise required by Section 2.6 and Section 2.7 |
| Magnesium | Presence of fluid | 50 mg/l | Quarterly as required by Section 2.5 and 2.6 | Annually and as otherwise required by Section 2.6 and Section 2.7 |
| Boron | Presence of fluid | Reserved shall compare to raw water from well fields | Quarterly as required by Section 2.5 and 2.6 | Annually and as otherwise required by Section 2.6 and Section 2.7 |

TABLE 4
Leachate Collection and Removal System Monitoring Locations

⁵⁵ A Wells: Downgradient of wastewater reservoirs, sewage ponds, coal retention pond, fire training facility.

⁵⁶ B Wells: Downgradient of ash landfill areas.

⁵⁷ Refer to Section 2.5 for seepage well sampling requirements.

| Facility Identification | Latitude | Longitude |
|---|-------------------|-------------------|
| Unit 3 Evaporation Pond East | 34° 19' 11" North | 109° 09' 29" West |
| Unit 3 Evaporation Pond West | 34° 19' 11" North | 109° 10' 33" West |
| Unit 3 & 4 Lime Sludge Storage Pond North | 34° 19' 00" North | 109° 10' 17" West |
| Unit 3 & 4 Lime Sludge Storage Pond South | 34° 19' 00" North | 109° 10' 17" West |
| Unit 3 & 4 Combined Effluent Storage Pond | 34° 19' 00" North | 109° 10' 13" West |
| Unit 3 & 4 Cooling Tower Blowdown Pond | 34° 18' 58" North | 109° 10' 12" West |
| Unit 3 Evaporation Storage Pond 1E | 34° 18' 57" North | 109° 11' 01" West |
| Unit 3 Evaporation Storage Pond 1F | 34° 18' 57" North | 109° 10' 54" West |
| Unit 4 Evaporation Storage Pond 1A | 34° 19' 03" North | 109° 11' 03" West |
| Unit 4 Evaporation Storage Pond 1B | 34° 19' 09" North | 109° 10' 56" West |
| Unit 4 Evaporation Storage Pond 1C | 34° 19' 05" North | 109° 11' 09" West |
| Unit 4 Evaporation Storage Pond 1C | 34° 19' 05" North | 109° 11' 09" West |
| Unit 4 Combined Effluent Storage Pond | 34° 19' 03" North | 109° 10' 13" West |

TABLE 4A
Leachate Collection and Removal System Monitoring

Note: The alert level #1 (AL #1) or alert level# 2 (AL #2) shall be exceeded when the amount of leakage pumped from the sump for the evaporation pond is greater than the applicable quantity below. For reporting purposes on the SMRF, the AL #1 is equivalent to the AL and AL #2 is equivalent to the DL. An exceedance of the AL is not a violation of the permit unless the permittee fails to perform as required under Section 2.6.2.3.

| Pond | Parameter⁵⁸ | AL # 1 gpd⁵⁹ | AL #2 gpd⁶⁰ | Monitoring Method | Monitoring Frequency⁶¹ | Reporting Frequency⁶² |
|---|-------------------------------|------------------------------------|-----------------------------------|------------------------------|--|---|
| Unit 3 Evaporation Pond East | Liquid Pumped | 1,640 | 52,377 | Manual Observation | Monthly | Quarterly |
| Unit 3 Evaporation Pond West | Liquid Pumped | 1,640 | 52,377 | Manual Observation | Monthly | Quarterly |
| Unit 3 Evaporation Storage Pond 1E | Liquid Pumped | 1,540 | 52,200 | Manual Observation | Monthly | Quarterly |
| Unit 3 Evaporation Storage Pond 1F | Liquid Pumped | 1,540 | 52,200 | Manual Observation | Monthly | Quarterly |
| Unit 4 Evaporation Storage Pond 1A | Liquid Pumped | 1,760 | 56,200 | Manual Observation | Monthly | Quarterly |
| Unit 4 Evaporation Storage Pond 1B | Liquid Pumped | 1,760 | 56,200 | Manual Observation | Monthly | Quarterly |
| Unit 4 Evaporation Storage Pond 1C | Liquid Pumped | 1,890 | 60,300 | Manual Observation | Monthly | Quarterly |
| Unit 4 Evaporation Storage Pond 1D | Liquid Pumped | 1,890 | 60,300 | Manual Observation | Monthly | Quarterly |
| Lime Sludge Storage Pond North | Liquid Pumped | 302 | 9,616 | Manual Observation | Monthly | Quarterly |
| Lime Sludge Storage Pond South | Liquid Pumped | 302 | 9,616 | Manual Observation | Monthly | Quarterly |
| Unit 3 & 4 Combined Effluent Storage Pond | Liquid Pumped | 86 | 2,740 | Manual Observation | Monthly | Quarterly |
| Unit 4 Combined Effluent Storage Pond | Liquid Pumped | 160 | 5,200 | Manual Observation | Monthly | Quarterly |
| Cooling Tower Blowdown Storage Pond | Liquid Pumped | 86 | 2,740 | Manual Observation | Monthly | Quarterly |

4.3 CONTINGENCY MONITORING

⁵⁸ The “Liquid Pumped” value to be reported is the amount of liquid pumped from the leachate collection and removal system (LCRS) sump in gallons per day (gpd).

⁵⁹ Alert Level #1 is the daily threshold value at which the permittee shall place into action the appropriate requirements specified in Section 2.6.2.

⁶⁰ Discharge Limit is the daily threshold at which the permittee shall place into action the appropriate requirements specified in Section 2.6.2.

⁶¹ LCRS monitoring quantification shall be performed daily while the pond is “in use” (when industrial wastewater is present in the impoundment and/or LCRS). Evacuation of fluids in the LCRS sump shall be performed as necessary for accurate monitoring and effective operation of the LCRS.

⁶² All reporting requirements are specified in Section 2.7.

TABLE 1: Contingency Seepage Well Monitoring (Seepage Characterization)

TABLE 1
Contingency Seepage Well Monitoring (Seepage Characterization)

| Indicator Parameter ⁶³ | Monitoring Frequency ⁶⁴ | Reporting Frequency |
|-----------------------------------|---|------------------------------------|
| Total Dissolved Solids (TDS) | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Total Nitrogen ⁶⁵ | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Chloride | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Fluoride | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Sulfate | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Antimony | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Boron | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Cadmium | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Chromium | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Lead | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Calcium | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Magnesium | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Potassium | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Sodium | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Barium | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Beryllium | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Mercury | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Nickel | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Selenium | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Thallium | Upon verification of seepage as | As required in Section 2.6 and 2.7 |

⁶³ Refer to Section 2.5 for seepage well sampling requirements. Metals shall be analyzed for total metal concentration. The permittee shall characterize detected seepage for additional constituents as indicated by the initial wastewater characterizations.

⁶⁴ Fluids shall be characterized if detected in the seepage well based on screening parameters (pH and conductance) as required by Section 2.6.

⁶⁵ Total nitrogen is the sum of total kjeldahl nitrogen (TKN) + nitrate (as N) + nitrite (as N).

| Indicator Parameter⁶³ | Monitoring Frequency⁶⁴ | Reporting Frequency |
|---|---|------------------------------------|
| | required by Section 2.6 | |
| Zinc | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Total Petroleum Hydrocarbons | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Benzene, ethylbenzene, toluene, xylenes (BTEX) | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Polycyclic Aromatic Hydrocarbons (PAHs) | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |
| Radionuclides: Gross Alpha Radium 226, Radium 228, Radon, Uranium | Upon verification of seepage as required by Section 2.6 | As required in Section 2.6 and 2.7 |

5.0 REFERENCES AND PERTINENT INFORMATION

The terms and conditions set forth in this permit have been developed based upon the information contained in the following, which are on file with the Department:

1. *Aquifer Protection Permit Application*, dated April 13, 1998
2. Supplemental Information
 - Closure and Post-Closure Plan, Construction Debris Landfill*, dated May 1, 1998
 - Response to Comments and Addendum to the APP Application*, dated August 19, 1999 & August 26, 1999
 - Closure and Post-Closure Plan, Sludge Settling Basin C*, dated February 13, 2001
 - Construction Completion Report, Final Cover, Construction Debris Landfill*, dated October 15, 2001
 - Response to Comments and Addendum to the APP Application*, dated April 30, 2002
 - Drywell Registration Form*, and supplemental information, dated January 14, 2003
3. Permit issued April 1, 2003
4. *Application for a Significant Aquifer Protection Permit Amendment*, dated November 7, 2003
5. Supplemental Information
 - Response to Comments, Significant Amendment to Springerville Generating Station APP*, Submitted March 17, 2004
 - Sludge Settling Reservoir C Soil Characterization Report*, submitted April 21, 2004
 - Initial Ash Characterization Report*, submitted April 21, 2004
 - Initial Wastewater Characterization Report*, submitted April 21, 2004
 - Response to Comments, Significant Amendment to Springerville Generating Station APP*, submitted March May 4, 2004
6. Amendment to the permit issued December 12, 2004
7. *Request for a Significant Amendment to the Aquifer Protection Permit*, dated April 9, 2008
8. Supplemental Information
 - Revised application for a Significant Amendment to the Aquifer Protection Permit*, dated November 14, 2008
 - Response to comments, Significant Amendment to Springerville Generating Station APP*, dated March 6, 2009
 - Response to comments, Significant Amendment to Springerville Generating Station APP*, dated April 1, 2009
9. Contingency Plan for the use of Forced Evaporation Spray System in Unit 3 Evaporation Pond (East and West) dated October 8, 2008.

6.0 NOTIFICATION PROVISIONS

6.1 Annual Registration Fees

The permittee is notified of the obligation to pay an Annual Registration Fee to ADEQ. The Annual Registration Fee is based upon the amount of daily influent or discharge of pollutants in gallons per day as established by A.R.S. § 49-242.

6.2 Duty to Comply [A.R.S. §§ 49-221 through 49-263]

The permittee is notified of the obligation to comply with all conditions of this permit and all applicable provisions of Title 49, Chapter 2, Articles 1, 2 and 3 of the Arizona Revised Statutes, Title 18, Chapter 9, Articles 1 through 4, and Title 18, Chapter 11, Article 4 of the Arizona Administrative Code. Any permit non-compliance constitutes a violation and is grounds for an enforcement action pursuant to Title 49, Chapter 2, Article 4 or permit amendment, suspension, or revocation.

6.3 Duty to Provide Information [A.R.S. §§ 49-243(K)(2) and 49-243(K)(8)]

The permittee shall furnish to the Director, or an authorized representative, within a time specified, any information which the Director may request to determine whether cause exists for amending 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.

6.4 Compliance with Aquifer Water Quality Standards [A.R.S. §§ 49-243(B)(2) and 49-243(B)(3)]

The permittee shall not cause or contribute to a violation of an aquifer water quality standard at the applicable point of compliance for the facility. Where, at the time of issuance of the permit, an aquifer already exceeds an aquifer water quality standard for a pollutant, the permittee shall not discharge that pollutant so as to further degrade, at the applicable point of compliance for the facility, the water quality of any aquifer for that pollutant.

6.5 Technical and Financial Capability

[A.R.S. §§ 49-243(K)(8) and 49-243(N) and A.A.C. R18-9-A202(B) and R18-9-A203(E) and (F)]

The permittee shall have and maintain the technical and financial capability necessary to fully carry out the terms and conditions of this permit. Any bond, insurance policy, trust fund, or other financial assurance mechanism provided as a demonstration of financial capability in the permit application, pursuant to A.A.C. R18-9-A203(D), shall be in effect prior to any discharge authorized by this permit and shall remain in effect for the duration of the permit.

6.6 Reporting of Bankruptcy or Environmental Enforcement [A.A.C. R18-9-A207(C)]

The permittee shall notify the Director within five days after the occurrence of any one of the following:

1. The filing of bankruptcy by the permittee.
2. The entry of any order or judgment not issued by the Director against the permittee for the enforcement of any environmental protection statute or rule.

6.7 Monitoring and Records [A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A206]

The permittee shall conduct any monitoring activity necessary to assure compliance with this permit, with the applicable water quality standards established pursuant to A.R.S. §§ 49-221 and 49-223 and §§ 49-241 through 49-252.

6.8 Inspection and Entry [A.R.S. §§ 41-1009, 49-203(B) and 49-243(K)(8)]

In accordance with A.R.S. §§ 41-1009 and 49-203(B), the permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to enter and inspect the facility as reasonably necessary to ensure compliance with Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes, and Title 18, Chapter 9, Articles 1 through 4 of the Arizona Administrative Code and the terms and conditions of this permit.

6.9 Duty to Modify [A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A211]

The permittee shall apply for and receive a written amendment before deviating from any of the designs or operational practices specified by this permit.

6.10 Permit Action: Amendment, Transfer, Suspension & Revocation

[A.R.S. §§ 49-201, 49-241 through 251, A.A.C. R18-9-A211, R18-9-A212 and R18-9-A213]

This permit may be amended, transferred, renewed, or revoked for cause, under the rules of the Department.

The permittee shall notify the Groundwater Section in writing within 15 days after any change in the owner or operator of the facility. The notification shall state the permit number, the name of the facility, the date of property transfer, and the name, address, and phone number where the new owner or operator can be reached. The operator shall advise the new owner or operators of the terms of this permit and the need for permit transfer in accordance with the rules.

7.0 ADDITIONAL PERMIT CONDITIONS

7.1 Other Information [A.R.S. § 49-243(K)(8)]

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, the permittee shall promptly submit the correct facts or information.

7.2 Severability

[A.R.S. §§ 49-201, 49-241 through 251, A.A.C. R18-9-A211, R18-9-A212 and R18-9-A213]

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby. The filing of a request by the permittee for a permit action does not stay or suspend the effectiveness of any existing permit condition.

7.3 Permit Transfer

This permit may not be transferred to any other person except after notice to and approval of the transfer by the Department. No transfer shall be approved until the applicant complies with all transfer requirements as specified in A.A.C. R18-9-A212(B) and (C).