

**AQUIFER PROTECTION PERMIT NO. P- 511628
PLACE ID 147575, LTF 61327**

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, the Arizona Department of Environmental Quality (ADEQ) hereby authorizes the City of Tucson is hereby authorized to operate the South Houghton Area Recharge Project (SHARP) located at 5700 South Houghton Road, Tucson, Pima County, Arizona, over groundwater of the Tucson Active Management Area in Township 15 S, Range 15 E, Section 11, NW¼, NE¼, NW & NE & SW & SE of the Gila and Salt River Baseline and Meridian.

This permit 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: City of Tucson - South Houghton Area Recharge Project (SHARP)
Facility Address: 5700 South Houghton Road
Tucson, Arizona 85747
County: Pima

Permittee: City of Tucson - Tucson Water Department (TWD)
Permittee Address: P.O. Box 2721
Tucson, Arizona 85726

Permitted Flow Rate: 7,141,460 gallons per day (gpd)

Facility Contact: Wally Wilson, Water Quality Manager
Emergency Phone No.: (520) 837-2239

Latitude/Longitude: 32°08' 49" N/ 110°46' 57" W
Legal Description: Township 15 S, Range 15 E, Section 11, NW¼, NE¼, NW & NE & SW & SE of the Gila and Salt River Baseline and Meridian.

1.2 Authorizing Signature

Trevor Baggione, Director, Water Quality Division
Arizona Department of Environmental Quality

Signed this ____ day of _____, 2016

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 City of Tucson – Tucson Water Department (TWD) is authorized to operate the South Houghton Area Recharge Project (SHARP) recharge/underground storage facility. The SHARP is designed to recharge up to 7,141,460 gallons per day (gpd) with a maximum total of 4,000 acre-feet per year (ac ft/yr) of Class A Reclaimed Water from the TWD - Houghton Reclaimed Reservoir (HRR) (APP #100147) and in addition to a minor amount of water will be pumped directly into the reclaimed distribution system from recovery well EW-007A. The SHARP Basins (recharged basins) are located within a 40-acre desert landscaped parcel (141-01-007G) owned by TWD adjacent to the HRR approximately 0.4 miles west of Houghton Road, south of Drexel Road.

The SHARP will consists of three (3) recharge basins that cover 6.8 acres total of wetted surface area. The individual basins are laid out in a triangular pattern to conform to local topography. Reclaimed water will be gravity fed through TWD’s distribution systems 30-inch transmission pipeline, which runs along the west and south boundaries of the SHARP site to the basins where the water will percolate through the vadose zone to the regional aquifer. The permittee has underground Storage Facility and Water Storage Permits issued by Arizona Department of Water Resources (ADWR) for this facility.

The recharge basins will be operated using alternating wetting (filling) and drying cycles. Based on the results of recharge parameters and maintenance operations from other facilities, the sustainable infiltration rates at SHARP are projected to average over 7 feet per day. With a projected 50-percent duty cycle, and six months of recharge per year, and an estimated average sustainable infiltration rate greater than 7 feet per day, the proposed permit volume of 4,000 AF/YR can be accommodated at the facility.

The depth to groundwater at the site is approximately 350 feet below land surface (bls). The overall direction of groundwater flow is to the west-northwest.

The site includes the following permitted discharging facilities:

Facility	Basin Size	Latitude	Longitude
Recharge Basin #1	2.21 acres	32° 08' 50" North	110° 46' 55" West
Recharge Basin #2	2.23 acres	32° 08' 46" North	110° 47' 05" West
Recharge Basin #3	2.34 acres	32° 08' 50" North	110° 46' 06" West

Annual Registration Fee [ARS § 49-242(D) and A.A.C. R18-14-104]

The annual registration fee for this permit is payable to ADEQ each year. The permitted flow for fee calculation is 7.14 mgd. If the facility is not yet constructed or is incapable of discharge at this time, the permittee may be eligible for reduced fees under the rule. Send all correspondence requesting reduced fees to the Water Quality Division of ADEQ. Please reference the permit number, LTF number and why reduced fees are requested under the rule.

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 dollar amount demonstrated for financial capability for closure and post-closure costs is \$713,188.56. The financial capability was demonstrated through R18-9-A203(B)(1)and(2).

2.2 Best Available Demonstrated Control Technology [A.R.S. § 49-243(B) and A.A.C. R18-9-A202(A)(5)]

Not applicable per A.A.C. R18-9A201(C) for a storage facility.

2.2.1 Engineering Design

The three (3) recharge basins were designed by CH2M, employing registered professionals in the State of Arizona. The design report was dated June 2015.

2.2.1.1 Recharge Basin # 1

The basin is irregular in shape with minimum 60-foot diameter radius and is approximately 2.21 acres in size. The basin is approximately 6.75 feet deep (average) with a bottom elevation of 2866.0 (low end). Basin side slopes will be 3H:1V (Horizontal:Vertical); one foot of aggregate base (3-inch minus) with compacted subgrade (95-percent); with a geotextile filter fabric (on-slope) in contact with the aggregate base. A 15-foot wide access ramp with 6H:1V slope will be provided into Recharge Basin 1.

2.2.1.2 Recharge Basin # 2

The basin is irregular in shape with minimum 60-foot diameter radius and is approximately 2.23 acres in size. The basin is approximately 9.50 feet deep (average) with a bottom elevation of 2861.0 (low end). Basin side slopes will be 3H:1V; one foot of aggregate base (3-inch minus) with compacted subgrade (95-percent); with a geotextile filter fabric (on-slope) in contact with the aggregate base. A 15-foot wide access ramp with 6H:1V slope will be provided into Recharge Basin 2.

2.2.1.3 Recharge Basin # 3

The basin is irregular in shape with minimum 60-foot diameter radius and is approximately 2.34 acres in size. The basin is approximately 9.00 feet deep (average) with a bottom elevation of 2857.5 (low end). Basin side slopes will be 3H:1V; one foot of aggregate base (3-inch minus) with compacted subgrade (95-percent); with a geotextile filter fabric (on-slope) in contact with the aggregate base. A 15-foot wide access ramp with 6H:1V slope will be provided into Recharge Basin 3.

2.2.2 Site-specific Characteristics

The projected maximum groundwater level rise in the regional aquifer during simulated recharge and recovery operations at 4,000 AF/YR is approximately 151 feet after 20 years, and projected minimum depth to groundwater level in the regional aquifer is approximately 200 feet bls. Based on the submitted report, these model projections indicate that the storage capacity of the aquifer is more than adequate to accommodate the proposed recharge volume.

2.2.3 Pre-operational Requirements

The permittee shall submit a signed, dated, and sealed Engineer's Certificate of Completion and well completion reports in a format approved by the Department per Compliance Schedule in Section 3.1, and 3.2. The Certificate shall be submitted to the Water Permits Section, and a copy shall be sent to the Water Quality Compliance Section.

If the AQL or AL is exceeded during pre-recharge groundwater sampling occurring prior to start-up, the permittee will be in violation of their permit. Since permittee has not commenced recharge activities, the permittee shall follow their recommended contingency plan action of conducting six additional monitoring rounds and submitting an Other Amendment to modify the AQL for the specified constituent(s) that exceeded the AL or violated the AQL.

2.2.4 Operational Requirements

1. The permittee shall maintain a copy of the up-to-date operations and maintenance manual at the SHARP site at all times; the manual shall be available upon request during inspections by ADEQ personnel.
2. The pollution control structures shall be inspected for the items listed in Section 4.2, Table III Facility Inspection (Operational Monitoring).
3. If any damage of the pollution control structures is identified during inspection, proper repair procedures shall be performed. All repair procedures and materials used shall be documented in the facility log book as per Section 2.7.2 and reported to ADEQ in the event of a violation or exceedance as per 2.7.3.

If damage is identified during an inspection that could cause or contribute to a discharge, proper repairs shall be promptly performed.

2.2.5 Reclaimed Water Classification

[A.A.C. R18-9-703(C)(2)(a), A.A.C. R18-11-303 through 307]

The SHARP is rated as producing reclaimed water meeting the Class A Reclaimed Water Quality Standards (A.A.C. R18-11, Article 3) which may be used for any allowable Class B, or C use under a valid reclaimed water permit (A.A.C. R18-9, Article 7).

2.2.6 Certified Area-wide Water Quality Management Plan Conformance

[A.A.C. R18-9-A201(B)(6)(a)]

Facility operations must conform to the approved Certified Area-wide Water Quality Management Plan according to the 208 consistency determination in place at the time of permit issuance

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

1. The permittee is authorized to operate the SHARP recharge basins with a maximum average monthly flow of 7.14mgd or 4,000 ac ft/yr.
2. Specific discharge limitations are listed in Section 4.2, Table IA.

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

The POCs are established at the following designated locations:

POC#	POC Locations	Latitude	Longitude	ADWR Registration #
1	POC Well WR-705A (MW-X) is located approximately 330 feet northwest (down-gradient) of Recharge Basin No. 3.	32°08'51.96" North	110°47'06.56" West	TBD
2	POC Well WR-706A (MW-Y) is located approximately 650 feet southeast (up-gradient) of Recharge Basin No. 2	32°08'45.27" North	110°46'48.14" West	TBD

Groundwater monitoring is required at the point of compliance wells.

The Director may amend this permit to designate additional points of compliance if information on groundwater gradients or groundwater usage indicates the need.

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

Unless otherwise specified in this permit, all monitoring required in this permit shall continue for the duration of the permit, regardless of the status of the facility. Monitoring shall commence the first full monitoring period following permit issuance. 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. 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

The permittee shall monitor the effluent according to Section 4.2, Tables IA. Flow shall be measured and representative samples of the effluent for compliance purposes shall be collected at the point of discharge.

2.5.2 Reclaimed Water Monitoring

Not required under the terms of this permit.

2.5.3 Facility / Operational Monitoring

Operational monitoring inspections shall be conducted according to Section 4.2, Table III.

If any damage of the pollution control structures is identified during inspection, proper repair procedures shall be performed. All repair procedures and materials used shall be documented in the facility log book as per Section 2.7.2 and reported to ADEQ in case of a violation or exceedance as per 2.7.3.

2.5.4 Groundwater Monitoring and Sampling Protocols

The permittee shall monitor the groundwater according to Section 4.2, Table IIA and IIB.

Static water levels shall be measured and recorded prior to sampling. Wells shall be purged of at least three borehole volumes (as calculated using the static water level) or until field parameters (pH, temperature, and conductivity) are stable, whichever represents the greater volume. If evacuation results in the well going dry, the well shall be allowed to recover to 80 percent (%) of the original borehole volume, or for 24 hours, whichever is shorter, prior to sampling. If after 24 hours there is not sufficient water for sampling, the well shall be recorded as “dry” for the monitoring event. An explanation for reduced pumping volumes, a record of the volume pumped, and modified sampling procedures shall be reported and submitted with the SMRF.

The permittee may conduct the sampling using the low-flow purging method as described in the Arizona Water Resources Research Center, March 1995 *Field Manual for Water Quality Sampling*. The well must be purged until indicator parameters stabilize. Indicator parameters shall include dissolved oxygen, turbidity, pH, temperature, and conductivity.

2.5.4.1 POC Well Replacement

In the event that one or more of the designated POC wells should become unusable or inaccessible due to damage, exceedance of an alert level (AL) for water level as required by Section 2.6.2.3.4(3), or any other event, a replacement POC well shall be constructed and installed upon approval by ADEQ. If the replacement well is fifty feet or less from the original well, the ALs and/or aquifer quality limits (AQLs) calculated for the designated POC well shall apply to the replacement well.

2.5.4.2 Ambient Groundwater Monitoring

Initial groundwater monitoring shall be conducted at the POC wells #1 (WR-705A (MW-X)) and #2 (WR-706A (MW-Y)) in accordance with this permit and shall consist of collecting 12 monthly samples for nitrogen and total coliform, 4 quarterly samples for metals, and 2 semi-annual samples for VOC's. All sampling shall be completed within 12 months from the installation of the monitoring wells. Each of the samples shall be analyzed for the parameters listed in Section 4.2, Table IIA. If an exceedance of Aquifer Water Quality Standard (AWQS) in POC #1 is analyzed during the ambient monitoring period, the Water Permits Section (WPS) must be notified in writing. In response to the exceedance, the WPS may require the submittal of a hydrological report to evaluate the cause of the exceedances. Alert levels and Aquifer Quality Levels shall be submitted to ADEQ in accordance with Sections 3.3 and 3.5 in the Compliance Schedule.

$$AL = M + KS$$

Where M = mean, S = standard deviation, and K = one-sided normal tolerance interval with a 95% confidence level (Lieberman, G.J. (1958) Tables for One-sided Statistical Tolerance Limits: Industrial Quality Control, Vol. XIV, No. 10). Obvious outliers should be excluded from the data used in the AL calculation.

The following criteria shall be met in establishing ALs in the permit:

1. The AL shall be calculated for a parameter using the analyses from the last 12 consecutive monthly sample rounds. The permittee shall not use less than twelve (12) sample rounds in the calculation.
2. Any data where the practical quantification limit (PQL) exceeds 80% of the AWQS shall not be included in the AL calculation.
3. If a parameter is below the detection limit, the permittee must report the value as “less than” the numeric value for the PQL or detection limit for the parameter, not just as “non-detect”. For those parameters, the permittee shall use a value of one-half the reported detection limit for the AL calculation.
4. If the analytical results from more than 50% of the samples for a specific parameter are non-

detect, then the AL shall be set at 80% of the AWQS.

5. If the calculated AL for a specific constituent and well is less than 80% of the AWQS, the AL shall be set at 80% of the AWQS for that constituent in that well.

The following criteria shall be met in establishing ALs in the permit for constituents without an AWQS:

1. The AL shall be calculated for a parameter using the analyses from a minimum of eight (8) consecutive sample rounds. The permittee shall not use more than twelve (12) sample rounds in the calculation.
2. If a parameter is below the detection limit, the permittee must report the value as “less than” the numeric value for the PQL or detection limit for the parameter, not just as “non-detect”. For those parameters, the permittee shall use a value of one-half the reported detection limit for the AL calculation.

For each of the monitored analytes for which a numeric AWQS has been adopted, the AQL shall be established as follows:

1. If the calculated AL is less than the AWQS, then the AQL shall be set equal to the AWQS.
2. If the calculated AL is greater than the AWQS, then the AQL shall be set equal to the calculated AL value, and no AL shall be set for that constituent at that monitoring point.

2.5.5 Surface Water Monitoring and Sampling Protocols

Surface water monitoring is not required under the terms of this permit.

2.5.6 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. If all methods have detection limits higher than the applicable limit, the permittee shall follow the contingency requirements of Section 2.6 and may propose “other actions” including amending the permit to set higher limits. Analyses shall be performed by a laboratory licensed by the Arizona Department of Health Services, Office of Laboratory Licensure and Certification unless exempted under A.R.S. § 36-495.02. 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

2.5.7 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 Water Permits 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 this permit and the approved contingency and emergency response plan submitted shall be maintained at the location where day-to-day decisions regarding the operation of the facilities are made. The permittee shall be aware of and follow the contingency and emergency plan.

Any AL that is exceeded or any violation of an 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 and Performance Levels

1. If the operational performance level set in Section 4.2, Table III has been exceeded the permittee shall:
 - a. Notify the ADEQ Water Quality Compliance Section within five days of becoming aware of the exceedance.
 - b. Submit a written report within 30 days after becoming aware of the exceedance. The report shall document all of the following:
 - (1) A description of the exceedance and its cause;
 - (2) the period of the exceedance, including exact date(s) and time(s), if known, and the anticipated time period during which the exceedance is expected to continue;
 - (3) any action taken or planned to mitigate the effects of the exceedance or spill, or to eliminate or prevent recurrence of the exceedance or spill;
 - (4) any monitoring activity or other information which indicates that any pollutants would be reasonably expected to cause a violation of an AWQS; and
 - (5) any malfunction or failure of pollution control devices or other equipment or process.
2. The facility is no longer on alert status once the operational indicator no longer indicates a performance level exceedance. The permittee shall, however, complete all tasks necessary to return the facility to its pre-alert operating condition.

2.6.2.2 Exceeding of Alert Levels Set for Discharge Monitoring

1. If an AL set in Section 4.2, Table IA has been exceeded; the permittee shall immediately investigate to determine the cause of the AL exceedance. 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 exceedance;
 - b. Review of recent process logs, reports, and other operational control information to identify any unusual occurrences;
 - c. If the investigation procedures indicated in (a) and (b) above fail to reveal the cause of the exceedance, the permittee shall sample individual waste streams composing the wastewater for the parameters in question, if necessary to identify the cause of the exceedance.
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 the AL exceedance. 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 exceedance, 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 exceedance, 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.

2.6.2.2.1 Exceeding Permit Flow Limit

1. If the Alert Level (AL) for average monthly flow in Section 4.2, Table IA, has been exceeded, the permittee shall submit an application for an APP amendment to expand the WRF or submit a report detailing the reasons that expansion is not necessary.
2. Acceptance of the report instead of an application for expansion requires ADEQ approval.

2.6.2.3 Exceeding of Alert Levels in Groundwater Monitoring

2.6.2.3.1 Alert Levels for Indicator Parameters

Not required

2.6.2.3.2 Alert Levels for Pollutants with Numeric Aquifer Water Quality Standards

1. If an AL for a pollutant set in Section 4.2, Table IIB, has been exceeded, the permittee may conduct verification sampling within five days of becoming aware of the exceedance. The permittee may use results of another sample taken between the date of the last sampling event and the date of receiving the result as verification.
2. If verification sampling confirms the AL exceedance or if the permittee opts not to perform verification sampling, then the permittee shall increase the frequency of monitoring as follows:

Specified Monitoring Frequency (Section 4.2, Table IIA and IIB)	Monitoring Frequency for AL Exceedance
Daily	Daily
Monthly	Weekly
Quarterly	Monthly
Semi-annually	Quarterly
Annually	Quarterly

In addition, the permittee shall immediately initiate an investigation of the cause of the AL exceedance, including inspection of all discharging units and all related pollution control devices, review of any operational and maintenance practices that might have resulted in an unexpected discharge, and hydrologic review of groundwater conditions including upgradient water quality.

3. The permittee shall initiate actions identified in the approved contingency plan referenced in in Section 8.5 of the APP application dated June 26, 2015 and specific contingency measures identified in Part 2.6 to resolve any problems identified by the investigation which may have led to an AL exceedance. To implement any other corrective action the permittee shall obtain prior approval from ADEQ according to Section 2.6.6. Alternatively, the permittee may submit a technical demonstration, subject to written approval by the Water Permits Section, that although an AL is exceeded, pollutants are not reasonably expected to cause a violation of an AQL. The demonstration may propose a revised AL or monitoring frequency for approval in writing by the Water Permits Section.
4. Within 30 days after confirmation of an AL exceedance, the permittee shall submit the laboratory results to the Water Quality Compliance Section along with a summary of

the findings of the investigation, the cause of the exceedance, and actions taken to resolve the problem.

5. 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.
6. The increased monitoring required as a result of an AL exceedance may be reduced to the monitoring frequency in Section 4.2, Table IIB if the results of four sequential sampling events demonstrate that no parameters exceed the AL.
7. If the increased monitoring required as a result of an AL exceedance continues for more than six sequential sampling events, the permittee shall submit a second report documenting an investigation of the continued AL exceedance within 30 days of the receipt of laboratory results of the sixth sampling event.

2.6.2.3.3 Alert Levels to Protect Downgradient Users from Pollutants Without Numeric Aquifer Water Quality Standards

Not required at time of issuance.

2.6.2.3.4 Alert Level for Groundwater Level

1. If an alert level for groundwater level when established in Section 4.2, Table IIB is not within the allowable range, the permittee shall submit a written report within thirty (30) days after becoming aware of the exceedance. The report shall document the following:
 - a. the as-built configuration of the well including the screened interval;
 - b. all groundwater level measurements available for the well;
 - c. a discussion and analysis of any trends or seasonal variations in the groundwater level measurements;
 - d. information on groundwater recharge, withdrawal or other hydrologic conditions in the vicinity of the well; and
 - e. and any other pertinent information obtained by the permittee.
2. If an alert level for groundwater level when established in Section 4.2, Table IIB is not within the allowable range for more than four sequential sampling events, the permittee shall submit a second report that evaluates the cause(s) of the exceedance and recommends whether the well should be replaced pursuant to Section 2.5.4.1. The report shall discuss and demonstrate whether samples representative of the water quality of the relevant aquifer can be practicably obtained from the well.
3. Upon review of the submitted report, the Department may amend the permit to require replacement of the well, require additional permit conditions or other actions.

2.6.3 Discharge Limitations Violations

1. If a DL set in Section 4.2, Table IA has been violated, the permittee shall immediately investigate to determine the cause. 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 violation;
 - b. Review of recent process logs, reports, and other operational control information to identify any unusual occurrences;
 - c. If the investigation procedures indicated in (a) and (b) above fail to reveal the cause of the violation, the permittee shall sample individual waste streams composing the wastewater for the parameters in violation, as necessary to identify the cause of the violation.

The permittee shall submit a report according to Section 2.7.3, which includes a summary of the findings of the investigation, the cause of the violation, and actions taken to resolve the problem. The permittee shall consider and ADEQ may require corrective action that may include control of the source of discharge, cleanup of affected soil, surface water or groundwater, notification of downstream or downgradient users who may be directly affected by the discharge, and mitigation of the impact of pollutants on existing uses of the aquifer. Corrective actions shall either be specifically identified in this permit, included in an ADEQ-approved contingency plan, or separately approved according to Section 2.6.6.

2. 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.

2.6.4 Aquifer Quality Limit Violation

1. If an AQL set in Section 4.2 Table IIB has been exceeded, the permittee may conduct verification sampling within five days of becoming aware of an AQL exceedance. The permittee may use the results of another sample taken between the date of the last sampling event and the date of receiving the result as verification.
2. If the verification sample does not confirm an AQL violation, no further action is needed under this Section.
3. If verification sampling confirms that the AQL is violated for any parameter or if the permittee opts not to perform verification sampling, then the permittee shall increase the frequency of monitoring as follows:

Specified Monitoring Frequency (Section 4.2, Tables IIB)	Monitoring Frequency for AQL Exceedance
Daily	Daily
Weekly	Daily
Monthly	Weekly
Quarterly	Monthly
Semi-annually	Quarterly
Annually	Quarterly

In addition, the permittee shall immediately initiate an evaluation for the cause of the violation, including inspection of all discharging units and all related pollution control devices, and review of any operational and maintenance practices that might have resulted in unexpected discharge.

The permittee also shall submit a report according to Section 2.7.3, which includes a summary of the findings of the investigation, the cause of the violation, and actions taken to resolve the problem. A verified exceedance of an AQL will be considered a violation unless the permittee demonstrates within 90 days or a longer time period if agreed to by ADEQ that the exceedance was not caused or contributed to by pollutants discharged from the facility. Unless the permittee has demonstrated that the exceedance was not caused or contributed to by pollutants discharged from the facility, the permittee shall consider and ADEQ may require corrective action that may include control of the source of discharge, cleanup of affected soil, surface water or groundwater, and mitigation of the impact of pollutants on existing uses of the aquifer. Corrective actions shall either be specifically identified in this permit, included in an ADEQ approved contingency plan, or separately approved according to Section 2.6.6.

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.

2.6.5 Emergency Response and Contingency Requirements for Unauthorized Discharges pursuant to A.R.S. §49-201(12) and pursuant to A.R.S. § 49-241 That Are Not Addressed Elsewhere in Section 2.6

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 Water Quality Compliance Section and the Southern Regional Office 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 Water Quality Compliance Section and the Southern Regional Office 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 ADEQ Water Quality Compliance Section and the Southern Regional Office 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 and actions identified in the approved contingency plan referenced in Section 5.0 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 Water Permits 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 SMRFs provided by ADEQ including contact information for the person completing the Form. Submit the completed Form to the Water Quality Compliance Data and Enforcement 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 reporting period, the permittee shall enter “not required” on the Form and include an explanation, and submit the Form to the Water Quality Compliance Data and Enforcement Unit.
3. The following tables contained in Section 4.2 list the parameters to be monitored and the frequency for reporting results on the SMRFs.
 - Table IA, Routine Discharge Monitoring
 - Table IIB, Groundwater Monitoring
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.
 - Table IIA - Ambient Groundwater Monitoring
 - Table III - Facility Inspection (Operational Monitoring)- Logbook

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 ten 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 (by mail or by fax - see Section 2.7.5) within five days (except as provided in Section 2.6.5) of becoming aware of a violation of any permit condition, AQL, or DL, or of an AL exceedance.
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; and
 - f. Description of any malfunction or failure of pollution control devices or other equipment or processes.

2.7.4 Operational, Other or Miscellaneous Reporting

The permittee shall record the information as required in Table III in the facility log book as per Section 2.7.2, and report to ADEQ any violations or exceedances as per Section 2.7.3.

2.7.4.1 Well Installation Reports

A well installation report shall be submitted to ADEQ within ninety (90) days after the completion of new well installations in accordance with Section 2.5.4.1 and the Compliance Schedule in Section 3.2. Each well installation report shall be completed in accordance with A.A.C. R12-15-801 et seq. and consist of the following:

- Copies of Arizona Dept. of Water Resources (ADWR) Notice of Intent and all related submittals to ADWR;
- Boring log and well as-built diagram; Total depth of well measured after installation; Top of well casing or sounding tube (whichever is used as the fixed reference measuring point) and ground surface elevation;
- Depth to groundwater;
- Geophysical logging reports and subsurface sampling results, if any;
- Description of well drilling method;
- Description of well development method;
- If dedicated sampling equipment installed, details on the equipment and at what depth the equipment was installed;
- Summary of analytical results for initial groundwater sample collected after installation;
- Corresponding analytical data sheets; and
- GPS coordinates for each new well

2.7.4.2 Annual Monitoring and Compliance Report (Annual Report)

Each year the permittee shall submit an Annual Report to ADEQ summarizing the results of the Facility's performance monitoring for the calendar year. The Annual Reports shall be submitted to ADEQ in accordance with the Compliance Schedule in Section 3.7.

2.7.5 Reporting Location

All SMRFs shall be submitted to:

Arizona Department of Environmental Quality
 Water Quality Compliance Data and Enforcement Unit
 Mail Code: 5415B-1
 1110 W. Washington Street
 Phoenix, AZ 85007
 Phone (602) 771-4497
 Fax (602) 771-4505

All documents, excluding SMRFs, required by this permit to be submitted to the Water Quality Compliance Section shall be directed to both of the following addresses:

Arizona Department of Environmental Quality
 Water Quality Compliance Section
 Mail Code: 5415B-1
 1110 W. Washington Street
 Phoenix, AZ 85007
 Phone (602) 771-4497

-AND-

Arizona Department of Environmental Quality
 Southern Regional Office
 400 West Congress Street, Suite 433
 Tucson, Arizona 85701
 Phone (520) 628-6733
 Fax (520) 628-6745

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

Arizona Department of Environmental Quality
 Water Permits Section
 Mail Code: 5415B-3
 1110 West Washington Street
 Phoenix, Arizona 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 semi-annual and annual report due dates:

Monitoring conducted:	Report due by:
Semi-annual: January-June	July 30
Semi-annual: July-December	January 30
Annual: January-December	January 30

2.7.7 Changes to Facility Information in Section 1.0

The Water Permits Section, and the Water Quality Compliance Section, and the Southern Regional Office shall be notified within ten 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 and the Southern Regional Office before ceasing operation of the facility for a period of 60 days or greater. The permittee shall take the following measures upon temporary cessation:

1. If applicable, direct the wastewater flows from the facility to another state-approved wastewater treatment facility;
2. Correct the problem that caused the temporary cessation of the facility; and
3. Notify ADEQ Water Quality Compliance Section and the Southern Regional Office with a monthly facility status report describing the activities conducted on the treatment facility to correct the problem. 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

and the Southern Regional Office of the operational status of the facility every three 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 and the Southern Regional Office 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 Water Permits Section and the Southern Regional Office, a Closure Plan which 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.

2.9.2 Closure Completion

Upon completion of closure activities, the permittee shall give written notice to the Water Permits 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 AWQS at the applicable POC;
3. Continued action is required to verify that the closure design has eliminated discharge to the extent intended;
4. Remediation or mitigation measures are necessary to achieve compliance with Title 49, Ch. 2; and/or
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 Water Permits Section.

In the event clean closure cannot be achieved pursuant to A.R.S. § 49-252, the permittee shall submit for approval to the Water Permits 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.

2.10.1 Post-closure Plan

A specific post-closure plan may be required upon the review of the closure plan.

2.10.2 Post-closure Completion

Not required at the time of permit issuance.

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 Water Permits Section. A copy of the cover letter must also be submitted to the Water Quality Compliance Section.

CSI	Description	Due by:	Permit Amendment Required?
3.1	The permittee shall submit a signed, dated, and sealed Engineer's Certificate of Completion in a format approved by the Department that confirms that the recharge basins were constructed according to the Department-approved design report or plans and specifications, as applicable.	Prior to discharging under this permit and within 90 days of completion of construction.	No
3.2	Permittee shall notify ADEQ, of the installation of the two POC wells per Section 2.7.4.2 Well Installation Reports. The wells shall be appropriately screened, with 10 feet above the water table and 30 feet below the water table in the uppermost aquifer, unless an alternative screen length is pre-approved by the Water Permits Section.	Within 90 days of completion of installation.	No
3.3	The permittee shall begin conducting 12 monthly rounds of ambient groundwater monitoring at the two POC wells for the parameters listed in Section 4.2, Table IIA.	Within 30 days after receiving approval of the POC Wells Installation Report from ADEQ.	No
3.4	Monitoring under Table IIA may be discontinued upon completion of 12 rounds of monthly sampling. Notify the Compliance Data Unit to receive SMRFs and begin monitoring per Section 4.2, Table IIB.	Within 30 days of completion of ambient groundwater	No
3.5	If an exceedance of Aquifer Water Quality Standard (AWQS) in POC #1 is analyzed during the ambient monitoring period, the WPS must be notified in writing. In response to the exceedance, the WPS may require the submittal of a hydrological report to evaluate the cause of the exceedances. Alert levels and Aquifer Quality Levels shall be submitted to ADEQ.	In accordance with Section 2.5.4.2 and 2.7.3	No
3.6	The permittee shall submit an APP Amendment Application to set Alert Levels (ALs) and Aquifer Quality Limits (AQLs) at POC wells, along with copies of all laboratory analytical reports, including chain of custody and QA/QC. Submit with the lab reports a field sampling report describing the sampling procedures and sample collection QA/QC. The permittee may calculate the alert levels and aquifer quality limits for those constituents in section 4.2, Table IIA, or may request GWS to perform the calculations. The alert level for the groundwater level measurement in Table IIB shall be based on the screened interval of the POC well.	Within 30 days of receipt of laboratory report for final ambient sample.	Yes
3.7	Submit Annual Report in accordance with Sections 2.7.4.2. and 2.7.3	January 30 and yearly thereafter	No

4.0 TABLES OF MONITORING REQUIREMENTS

4.1 PRE-OPERATIONAL MONITORING (or CONSTRUCTION REQUIREMENTS)

Table I - Startup - Not applicable

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

Table IA - Routine Discharge Monitoring

Table IIA - Ambient Groundwater Monitoring

Table IIB - Groundwater Monitoring

Table III - Facility Inspection (Operational Monitoring) - Logbook

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

**TABLE IA
ROUTINE DISCHARGE MONITORING**

Sampling Point Number	Sampling Point Identification			Latitude	Longitude
1	Flow meter station			32° 08' 46.35" N	110° 46' 51.95" W
Parameter	AL ¹	DL ²	Units	Sampling Frequency	Reporting Frequency
Total Flow ³ : Daily ⁴	Not Established ⁵	Not Established	AC/FT ⁶	Daily	Quarterly
Total Flow: Average Annually ⁷	Not Established	4,000	AC/FT	Annually	Annually

¹AL = Alert Level

²DL = Discharge Limit

³Total flow is the total of flows to the Recharge Basins

⁴Flow shall be measured using a continuous recording flow meter which totals the flow daily.

⁵Not Established = Monitoring is required but no limits are specified.

⁶AC/FT = Acres-Feet

⁷Monthly average of daily flow values.

4.0 TABLES OF MONITORING REQUIREMENTS

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

**TABLE IA
ROUTINE DISCHARGE MONITORING (Continued)**

Sampling Point Number	Sampling Point Identification			Latitude	Longitude
2	Sampling Point 522 The entry point of reclaimed water into the distribution system			Please Provide	Please Provide
Parameter	AL ⁸	DL ⁹	Units	Sampling Frequency	Reporting Frequency
<i>E. coli</i> : Single sample maximum	Not Established	15.0	MPN ¹⁰	Daily ¹¹	Quarterly
<i>E. coli</i> : four (4) of seven (7) samples in a week ¹²	Not Established	Absence ¹³	MPN	Weekly Calculation	Quarterly
Total Nitrogen ¹⁴ : Five-sample rolling geometric mean ¹⁵	8.0	10.0	mg/l	Monthly Calculation	Quarterly
Nitrate-Nitrite as N	8.0	10.0	mg/l	Monthly	Quarterly
Nitrate as N	8.0	10.0	mg/l	Monthly	Quarterly
Nitrite as N	0.8	1.0	mg/l	Monthly	Quarterly
Total Kjeldahl Nitrogen (TKN)	Not Established ¹⁶	Not Established	mg/l	Monthly	Quarterly

⁸AL = Alert Level

⁹DL = Discharge Limit

¹⁰MPN = Most Probable Number/100 ml sample. For MPN, a value of <2.2 shall be considered to be absence.

¹¹For *E.coli*, "daily" sampling means every day in which a sample can practicably be obtained and delivered in sufficient time for proper analysis, provided that no less than four (4) samples in each seven-day period are obtained and analyzed.

¹²**Week** means the seven-day period starting on Sunday and ending the following Saturday. The reporting form for this parameter consists of 13 weeks per quarter.

¹³"*E.coli* four (4) of the last seven (7) samples" requires entering a "Compliance" or "Not in Compliance" on the SMRF for each day of the reporting period; use the following procedure to determine whether to enter a "Compliance" or "Not in Compliance" for each daily entry: For each date of the reporting period, evaluate the daily *E.coli* result for that date along with the daily *E.coli* results for the six previous days. If, of these seven days of data, four (4) or more of the daily *E.coli* results are absence (a daily value of <2.2 MPN is considered absence for that day), report "yes" for that date's entry on the SMRF. If three (3) or fewer of the daily *E.coli* results are absence, report "Not in compliance" for that date's entry on the SMRF. For days when there is no flow, the daily *E.coli* result is considered "Absence" for the purpose of evaluating the seven days of daily data for the SMRF entry.

¹⁴Total Nitrogen = Nitrate N, plus Nitrite N, plus Total Kjeldahl Nitrogen (TKN)

¹⁵The five-sample rolling geometric mean is determined by multiplying the five (5) most recent monthly sample values together then taking the fifth root of the product. *Example: GM₅ = $\sqrt[5]{(m_1)(m_2)(m_3)(m_4)(m_5)}$*

¹⁶ Not Established means monitoring is required, but no limits are specified.

4.0 TABLES OF MONITORING REQUIREMENTS

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

TABLE IA
ROUTINE DISCHARGE MONITORING (Continued)

Parameter	AL	DL	Units	Sampling Frequency	Reporting Frequency
Metals (total):					
Antimony	0.0048	0.006	mg/l ¹⁷	Quarterly	Quarterly
Arsenic	0.04	0.05	mg/l	Quarterly	Quarterly
Barium	1.60	2.00	mg/l	Quarterly	Quarterly
Beryllium	0.0032	0.004	mg/l	Quarterly	Quarterly
Cadmium	0.004	0.005	mg/l	Quarterly	Quarterly
Chromium	0.08	0.1	mg/l	Quarterly	Quarterly
Cyanide (as free cyanide)	0.16	0.2	mg/l	Quarterly	Quarterly
Fluoride	3.2	4.0	mg/l	Quarterly	Quarterly
Lead	0.04	0.05	mg/l	Quarterly	Quarterly
Mercury	0.0016	0.002	mg/l	Quarterly	Quarterly
Nickel	0.08	0.1	mg/l	Quarterly	Quarterly
Selenium	0.04	0.05	mg/l	Quarterly	Quarterly
Thallium	0.0016	0.002	mg/l	Quarterly	Quarterly

¹⁷mg/l = milligrams per liter

4.0 TABLES OF MONITORING REQUIREMENTS

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

TABLE IA
ROUTINE DISCHARGE MONITORING (Continued)

Parameter	AL	DL	Units	Sampling Frequency	Reporting Frequency
Volatile and Semi-Volatile Organic Compounds (VOCs and SVOCs):					
Benzene	0.004	0.005	mg/l ¹⁸	Semi-Annually	Semi-Annually
Carbon tetrachloride	0.004	0.005	mg/l	Semi-Annually	Semi-Annually
o-Dichlorobenzene	0.48	0.6	mg/l	Semi-Annually	Semi-Annually
para-Dichlorobenzene	0.06	0.075	mg/l	Semi-Annually	Semi-Annually
1,2-Dichloroethane	0.004	0.005	mg/l	Semi-Annually	Semi-Annually
1,1-Dichloroethylene	0.0056	0.007	mg/l	Semi-Annually	Semi-Annually
cis-1,2-Dichloroethylene	0.056	0.07	mg/l	Semi-Annually	Semi-Annually
trans-1,2-Dichloroethylene	0.08	0.1	mg/l	Semi-Annually	Semi-Annually
Dichloromethane	0.004	0.005	mg/l	Semi-Annually	Semi-Annually
1,2-Dichloropropane	0.004	0.005	mg/l	Semi-Annually	Semi-Annually
Ethylbenzene	0.56	0.7	mg/l	Semi-Annually	Semi-Annually
Hexachlorobenzene	0.0008	0.001	mg/l	Semi-Annually	Semi-Annually
Hexachlorocyclopentadiene	0.04	0.05	mg/l	Semi-Annually	Semi-Annually
Monochlorobenzene	0.08	0.1	mg/l	Semi-Annually	Semi-Annually
Styrene	0.08	0.1	mg/l	Semi-Annually	Semi-Annually
Tetrachloroethylene	0.004	0.005	mg/l	Semi-Annually	Semi-Annually
Toluene	0.8	1.0	mg/l	Semi-Annually	Semi-Annually
1,1,1-Trichloroethane	0.16	0.2	mg/l	Semi-Annually	Semi-Annually
1,2,4 - Trichlorobenzene	0.056	0.07	mg/l	Semi-Annually	Semi-Annually
1,1,2 - Trichloroethane	0.004	0.005	mg/l	Semi-Annually	Semi-Annually
Trichloroethylene	0.004	0.005	mg/l	Semi-Annually	Semi-Annually
Vinyl Chloride	0.0016	0.002	mg/l	Semi-Annually	Semi-Annually
Xylenes (Total)	8.0	10.0	mg/l	Semi-Annually	Semi-Annually

¹⁸mg/l = milligrams per liter

4.0 TABLES OF MONITORING REQUIREMENTS

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

**TABLE IIA
AMBIENT GROUNDWATER MONITORING¹⁹**

Sampling Point Number	Sampling Point Identification	Latitude	Longitude
1 ²⁰	POC Well WR-705A (MW-X) is located approximately 330 feet northwest (down-gradient) of Recharge Basin No. 3.	32°08'51.96" North	110°47'06.56"West
2 ²¹	POC Well WR-706A (MW-Y) is located approximately 650 feet southeast (up- gradient) of Recharge Basin No. 2	32°08'45.27" North	110°46'48.14"West
Parameter	Units	Sampling Frequency	Reporting Frequency
Depth to Groundwater	Feet	Monthly	IGMR ²²
Total Nitrogen ²³ :	mg/l	Monthly	IGMR
Nitrate-Nitrite as N	mg/l	Monthly	IGMR
Nitrate as N	mg/l	Monthly	IGMR
Nitrite as N	mg/l	Monthly	IGMR
Total Kjeldahl Nitrogen (TKN)	mg/l	Monthly	IGMR
Total Coliform	P/A ²⁴	Monthly	IGMR

¹⁹ Monitoring may be discontinued after initial groundwater monitoring has been completed as per Section 3.0, item 3.4 and begin monitoring under Table IIB.

²⁰ Sample only for metals at POC Well #1 (WR-705A (MW-X)).

²¹ Sample for all parameters at POC Well #2 (WR-706A (MW-Y)).

²²IGMR= Initial Groundwater Monitoring Report

²³Total Nitrogen is equal to nitrate as N plus nitrite as N plus TKN.

²⁴ P/A = Presence or absence of total coliforms in a 100-milliliter sample.

4.0 TABLES OF MONITORING REQUIREMENTS

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

TABLE IIA
AMBIENT GROUNDWATER MONITORING (Continued)

Parameter	Unit	Sampling Frequency	Reporting Frequency
Metals (Total):			
Antimony	mg/l	Monthly	IGMR ²⁵
Arsenic	mg/l	Monthly	IGMR
Barium	mg/l	Monthly	IGMR
Beryllium	mg/l	Monthly	IGMR
Cadmium	mg/l	Monthly	IGMR
Chromium	mg/l	Monthly	IGMR
Cyanide (as free cyanide)	mg/l	Monthly	IGMR
Fluoride	mg/l	Monthly	IGMR
Lead	mg/l	Monthly	IGMR
Mercury	mg/l	Monthly	IGMR
Nickel	mg/l	Monthly	IGMR
Selenium	mg/l	Monthly	IGMR
Thallium	mg/l	Monthly	IGMR

²⁵IGMR= Initial Groundwater Monitoring Report

4.0 TABLES OF MONITORING REQUIREMENTS

4.2 TABLES OF COMPLIANCE MONITORING

TABLE IIA
AMBIENT GROUNDWATER MONITORING (Continued)

Parameter	Units	Sampling Frequency	Reporting Frequency
Benzene	mg/l	Monthly	IGMR ²⁶
Carbon tetrachloride	mg/l	Monthly	IGMR
o-Dichlorobenzene	mg/l	Monthly	IGMR
para-Dichlorobenzene	mg/l	Monthly	IGMR
1,2-Dichloroethane	mg/l	Monthly	IGMR
1,1-Dichloroethylene	mg/l	Monthly	IGMR
cis-1,2-Dichloroethylene	mg/l	Monthly	IGMR
trans-1,2-Dichloroethylene	mg/l	Monthly	IGMR
Dichloromethane	mg/l	Monthly	IGMR
1,2-Dichloropropane	mg/l	Monthly	IGMR
Ethylbenzene	mg/l	Monthly	IGMR
Hexachlorobenzene	mg/l	Monthly	IGMR
Hexachlorocyclopentadiene	mg/l	Monthly	IGMR
Monochlorobenzene	mg/l	Monthly	IGMR
Styrene	mg/l	Monthly	IGMR
Tetrachloroethylene	mg/l	Monthly	IGMR
Toluene	mg/l	Monthly	IGMR
Trihalomethanes (total) ²⁷	mg/l	Monthly	IGMR
1,1,1-Trichloroethane	mg/l	Monthly	IGMR
1,2,4 - Trichlorobenzene	mg/l	Monthly	IGMR
1,1,2 - Trichloroethane	mg/l	Monthly	IGMR
Trichloroethylene	mg/l	Monthly	IGMR
Vinyl Chloride	mg/l	Monthly	IGMR
Xylenes (Total)	mg/l	Monthly	IGMR

²⁶IGMR= Initial Groundwater Monitoring Report

²⁷Total Trihalomethanes are comprised of Bromoform, Bromodichloromethane, Chloroform, and Dibromochloromethane.

4.0 TABLES OF MONITORING REQUIREMENTS

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

**TABLE IIB²⁸
GROUNDWATER MONITORING**

Sampling Point Number	Sampling Point Identification			Latitude	Longitude
1 ²⁹	POC Well WR-705A (MW-X) is located approximately 330 feet northwest (down-gradient) of Recharge Basin No. 3.			32°08'51.96" North	110°47'06.56" West
2 ³⁰	POC Well WR-706A (MW-Y) is located approximately 650 feet southeast (up-gradient) of Recharge Basin No. 2			32°08'45.27" North	110°46'48.14" West
Parameter	AL³¹	AQL³²	Units	Sampling Frequency	Reporting Frequency
Groundwater Level ³³	Reserved	Reserved	Feet above mean sea level (amsl)	Monthly	Quarterly
Total Nitrogen ³⁴	Reserved	Reserved	mg/l ³⁵	Monthly Calculation	Quarterly
Nitrate-Nitrite as N	Reserved	Reserved	mg/l	Monthly	Quarterly
Nitrate as N	Reserved	Reserved	mg/l	Monthly Calculation	Quarterly
Nitrite as N	Reserved	Reserved	mg/l	Monthly	Quarterly
Total Kjeldahl Nitrogen (TKN)	Monitor ³⁶	Reserved	mg/l	Monthly	Quarterly
Total Coliform	Absence	Absence ³⁷	P/A ³⁸	Monthly	Quarterly

²⁸ Begin monitoring under this Table upon completion and submittal of the ambient groundwater monitoring (Table IIA) results per Section 3.0, item 3.4.

²⁹ Sample only for metals at POC Well #1 (WR-705A (MW-X)).

³⁰ Sample for all parameters at POC Well #2 (WR-706A (MW-Y)).

³¹ AL = Alert Level

³² AQL = Aquifer Quality Limit

³³ Groundwater Level elevation to be determined once the POC wells have been installed as Section 3.0 items 3.2 and 3.3 and per Section 2.6.2.3.4 .

³⁴ Total Nitrogen is equal to Nitrate-Nitrite as N plus TKN.

³⁵ mg/l = milligrams per liter

³⁶ Monitor = Monitoring is required, but no limits have been set at the time of permit issuance.

³⁷ Absence means < 2.2 MPN per 100 ml.

³⁸ P/A = Presence (Not in compliance) or absence (Compliance) of total coliforms in a 100-milliliter sample.

4.0 TABLES OF MONITORING REQUIREMENTS

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

TABLE IIB
GROUNDWATER MONITORING (continued)

Parameter	AL	AQL	Units	Sampling Frequency	Reporting Frequency
Metals (Total):					
Antimony	0.0048	0.006	mg/l ³⁹	Quarterly	Quarterly
Arsenic	0.04	0.05	mg/l	Quarterly	Quarterly
Barium	1.60	2.00	mg/l	Quarterly	Quarterly
Beryllium	0.0032	0.004	mg/l	Quarterly	Quarterly
Cadmium	0.004	0.005	mg/l	Quarterly	Quarterly
Chromium	0.08	0.1	mg/l	Quarterly	Quarterly
Cyanide (as free cyanide)	0.16	0.2	mg/l	Quarterly	Quarterly
Fluoride	3.2	4.0	mg/l	Quarterly	Quarterly
Lead	0.04	0.05	mg/l	Quarterly	Quarterly
Mercury	0.0016	0.002	mg/l	Quarterly	Quarterly
Nickel	0.08	0.1	mg/l	Quarterly	Quarterly
Selenium	0.04	0.05	mg/l	Quarterly	Quarterly
Thallium	0.0016	0.002	mg/l	Quarterly	Quarterly

³⁹mg/l = milligrams per liter

4.0 TABLES OF MONITORING REQUIREMENTS

4.2 TABLES OF COMPLIANCE MONITORING

TABLE IIB
GROUNDWATER MONITORING (continued)

Parameter	AL	AQL	Units	Sampling Frequency	Reporting Frequency
Volatile Organic Compounds (VOCs):					
Benzene	0.004	0.005	mg/l ⁴⁰	Annually	Annually
Carbon tetrachloride	0.004	0.005	mg/l	Annually	Annually
o-Dichlorobenzene	0.48	0.6	mg/l	Annually	Annually
para-Dichlorobenzene	0.06	0.075	mg/l	Annually	Annually
1,2-Dichloroethane	0.004	0.005	mg/l	Annually	Annually
1,1-Dichloroethylene	0.0056	0.007	mg/l	Annually	Annually
cis-1,2-Dichloroethylene	0.056	0.07	mg/l	Annually	Annually
trans-1,2-Dichloroethylene	0.08	0.1	mg/l	Annually	Annually
Dichloromethane	0.004	0.005	mg/l	Annually	Annually
1,2-Dichloropropane	0.004	0.005	mg/l	Annually	Annually
Ethylbenzene	0.56	0.7	mg/l	Annually	Annually
Hexachlorobenzene	0.0008	0.001	mg/l	Annually	Annually
Hexachlorocyclopentadiene	0.04	0.05	mg/l	Annually	Annually
Monochlorobenzene	0.08	0.1	mg/l	Annually	Annually
Styrene	0.08	0.1	mg/l	Annually	Annually
Tetrachloroethylene	0.004	0.005	mg/l	Annually	Annually
Toluene	0.8	1.0	mg/l	Annually	Annually
Trihalomethanes (total) ⁴¹	0.08	0.1	mg/l	Annually	Annually
1,1,1-Trichloroethane	0.16	0.2	mg/l	Annually	Annually
1,2,4 - Trichlorobenzene	0.056	0.07	mg/l	Annually	Annually
1,1,2 - Trichloroethane	0.004	0.005	mg/l	Annually	Annually
Trichloroethylene	0.004	0.005	mg/l	Annually	Annually
Vinyl Chloride	0.0016	0.002	mg/l	Annually	Annually
Xylenes (Total)	8.0	10.0	mg/l	Annually	Annually

⁴⁰mg/l = milligrams per liter

⁴¹Total Trihalomethanes are comprised of Bromoform, Bromodichloromethane, Chloroform, and Dibromochloromethane.

4.0 TABLES OF MONITORING REQUIREMENTS

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

**TABLE III
FACILITY INSPECTION (Operational Monitoring) - Log Book⁴²**

Pollution Control Structures/Parameter	Performance Levels	Inspection Frequency	Reporting Frequency
Basin No. 1 Freeboard	3.6 feet	Weekly	Quarterly
Basin No. 2 Freeboard	4.5 feet	Weekly	Quarterly
Basin No. 1 Freeboard	4.5 feet	Weekly	Quarterly
Basins	No visible structural damage, breach, or erosion	Weekly	Quarterly
Flowmeter	Good working condition	Weekly	Quarterly

⁴² The permittee shall record the inspection performance levels in a log book as per Section 2.7.2, and report any violations or exceedances as per Section 2.7.3. In the case of an exceedance, identify which structure exceeds the performance level in the log book.

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. APP Amendment Application, dated: July 6, 2015
2. Final Engineering Report, dated: January 22, 2016
3. Final Hydrogeology Report, dated: January 27, 2016
3. Public Notice, dated:
4. Public Hearing, dated: Not applicable.
5. Responsiveness Summary, dated: Not applicable.

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 Water Permits 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).