ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM (AZPDES)

FACT SHEET

This document gives pertinent information concerning the reissuance of the AZPDES permit listed below. This facility is a POTW with a design capacity of over 41 MGD, and is considered to be a major facility under the NPDES regulations. The effluent limitations contained in this permit will maintain the Water Quality Standards listed in Arizona Administrative Code (AAC.) R18-11-101 et. seq. This permit is proposed to be issued for a period of 5 years.

Permittee's Name:	Pima County Wastewater Management Department Roger Road Wastewater Treatment Plant
Mailing Address:	201 N. Stone Avenue Tucson, Arizona 85701
Plant Location:	2600 W. Sweetwater Drive Tucson, Arizona 85705
Contact Person(s):	Byron McMillan 520-744-4236
AZPDES Permit No.	AZ0020923
Inventory No.	100655

I. STATUS OF PERMIT(s)

Pima County Wastewater Management Department has applied for a renewal of the Arizona Pollutant Discharge Elimination System (AZPDES) permit to allow the discharge of secondary treated domestic wastewater from the Roger Road Wastewater Treatment Plant (WWTP) in Tucson, Arizona to the Santa Cruz River in Pima County, Arizona. This application was received by the Arizona Department of Environmental Quality (ADEQ) on April 30, 2004 and was determined to be administratively complete on June 21, 2004. Pima County Wastewater Management currently has an Aquifer Protection Permit (APP) No. P100655. The APP regulates discharges to the local aquifer.

II. GENERAL FACILITY INFORMATION

The Roger Road WWTP is located northwest of the City of Tucson, east of the Santa Cruz River in Pima County, Arizona. A map showing the location of the facility is included in Appendix A.

The applicant operates a Publicly Owned Treatment Works (POTW) that serves the City of Tucson, with a service population of approximately 419,000 people. The wastewater treatment plant is part of a sanitary sewer system that receives domestic wastewater from residential, commercial and industrial sources in Tucson. There are 36 significant industrial dischargers connected to the treatment works.

The Roger Road WWTP is an existing facility with a design capacity of 41 MGD. No expansion is planned during this permit term.

Treatment processes at the WWTP consist of influent screening, grit removal, primary sedimentation basins, biological treatment using synthetic media biofilter with return sludge recirculation, supplemental aeration, final clarification, disinfection and dechlorination. Solids are treated by gravity thickening, anaerobic digestion, and sent via pipeline for off-site dewatering at the Regional Biosolids Facility at Ina

Road Water Pollution Control Facility. Sludge is then sent for agricultural land disposal and mine reclamation.

Effluent from Roger Road WWTP is discharged through Outfall 001 to the Santa Cruz River. Effluent is also sent for reuse through Outfall 002. Some of the effluent sent to reuse is discharged to surface waters under AZ0025291. Outfall 003 is a stormwater outfall which does not discharge any process wastewater. Stormwater drained from the 95 acre site is collected in a large detention basin. Stormwater in the basin may evaporate or be pumped to the headworks for treatment. Only when stormwater flow exceeds the storage capacity of the basin or the pumping capacity is stormwater discharged to the River through Outfall 003.

III. RECEIVING WATER

The State of Arizona has adopted water quality standards to protect the designated uses of its surface waters. Streams have been divided into segments and designated uses assigned to these segments. The water quality standards vary by designated use depending on the level of protection required to maintain that use.

The receiving water for Roger Road WWTP Outfall 001 and 003 is the Santa Cruz River in the Santa Cruz River Basin.

Outfall 001 is located at: Township 7 S, Range 6 E, Section 20
Latitude 32° 17' 05" N, Longitude 111°01' 41" W

Outfall 003 is located at: Township 7 S, Range 6 E, Section 20
Latitude 32° 16' 57" N, Longitude 111°01' 45" W

This receiving water is not on the 303(d) list and there are no TMDL issues associated. The outfall discharges to, or the discharge may reach, a surface water listed in Appendix B of A.A.C. Title 18, Chapter 11, Article 1.

The receiving water has the following designated uses:

Aquatic and Wildlife effluent dependent water (A&Wedw)
Partial Body Contact (PBC)

Given the uses stated above, the applicable narrative water quality standards are described in A.A.C. R18-11-108 and the applicable numeric water quality standards are listed in A.A.C. R18-11-109, and in Appendix A thereof. There are two standards for the Aquatic and Wildlife uses, acute and chronic. The standards for all applicable designated use are compared and the most stringent standard is applied, thus protecting for all applicable designated uses.

IV. DESCRIPTION OF DISCHARGE

The following is the effluent quality as outlined in the Roger Road WWTP application dated April 26, 2004. The existing permit required monitoring for biochemical oxygen demand (BOD), total suspended solids (TSS), total residual chlorine, fecal coliform, *E-Coli,* pH, copper and acute Whole Effluent Toxicity (WET) for *Daphnia Magna*. The permittee also submitted the results of monitoring for metals, cyanide, volatile organic compounds, base neutral compounds, and acid extractable compounds as part of the application process. This data was used to reassess reasonable potential for an exceedance of an

applicable standard. The results for the non organic parameters are described in the table in Part VII of this fact sheet. All monitoring for organic parameters was non-detect. For most parameters more than 10 samples were submitted.

The application indicates that the design removal rate for: BOD is >85%, and TSS is >85%.

V. STATUS OF COMPLIANCE WITH THE EXISTING NPDES PERMIT

The Roger Road WWTP is generally in compliance with its existing permit. There have been occasional exceedances of the daily maximum chlorine, *E. Coli*, and fecal coliform limits and exceedances of the monthly average for total suspended solids and biological oxygen demand (BOD).

VI. PROPOSED PERMIT CHANGES

The draft permit sets a chronic whole effluent toxicity (WET) limit for *Pimephales promelas*, and establishes action levels for chronic WET monitoring with *Ceriodaphnia dubia* and *Selenastrum capricornutum.*

Additional WET monitoring is required to assess the level of chronic toxicity in the effluent. Based on the receiving water, the large volume of discharge, and discharge frequency, chronic toxicity needs to be assessed rather that acute. The existing permit requires only acute monitoring.

A new limit was added for bis-2 (ethylhexyl) phthalate and additional assessment levels are included for parameters where reasonable potential analyses were indeterminate (chromium VI, cyanide, oil and grease, selenium and sulfide). Monitoring requirements for effluent characterization are also included. (See table in part VII of this fact sheet.)

The limit for copper is adjusted as a result of the new standards and the value of the translator used to adjust the dissolved standard to a total value has been changed. The previous permit used a translator value developed from samples taken from the Santa Cruz River at the Cortaro Bridge. This location is almost 7 miles downstream of the Roger Road discharge location. The draft permit uses a translator developed from Roger Road effluent at the Outfall. Both the translators used in the previous permit and in the draft permit are from the 1995 Translator Study. The permit also requires a new translator study be conducted if translators to be used in future permits.

The variance for chlorine that was included in the existing permit allowed the facility to conduct a study on automated chlorine sampling methodologies. The study is complete and the variance is not continued in the draft permit. The permittee needs to monitor total residual chlorine and demonstrate no detectable chlorine. Additional study is still required to determine the lowest level of detection on the effluent matrix and, as PCWWMD proposed, to evaluate the use of bisulfite monitoring as an indication of complete dechlorination.

Variances from the copper limit and the WET limit for ammonia toxicity are included. The variances are discussed in Section XI of this fact sheet.

Monitoring requirements for Outfall 003 are included in the draft permit. Data submitted on the 2F application indicates the need for better characterization of stormwater quality.

Also the existing permit was amended to include discharge to the Ed Pastor Kino Restoration Project and from the Randolph Park Water Reclamation Facility. These discharges have been removed from this permit and will be covered by AZPDES permits AZ0025291 and AZ0025283 respectively.

VII. DETERMINATION OF EFFLUENT LIMITATIONS

When determining what parameters need monitoring and or limits included in the draft Roger Road WWTF permit, both technology-based and water quality-based criteria were compared and the more stringent criteria applied.

Technology-based Limitations: As outlined in 40 CFR Part 133:
The regulations found at 40 CFR §133 require that publicly owned treatment works achieve specified treatment standards for BOD, TSS, and pH based on the type of treatment technology available.

Numeric Water Quality Standards: As outlined in A.A.C. R18-11-109 and Appendix A:
Per 40 CFR 122.44(d)(1)(ii), (iii) and (iv), limits have been included in the permit for parameters with 'reasonable potential', that is, those known to be or expected to be present in the effluent at a level that could potentially cause any applicable numeric water quality standard to be exceeded. The procedures used to determine reasonable potential are outlined in the *Technical Support Document for Water Quality-based Toxics Control (TSD)* (EPA/505/2-90-001).

It is assumed that RP exists for exceedance of water quality criteria for the pollutants: *E. coli*, and total residual chlorine. These parameters have been shown through extensive monitoring of POTWs to fluctuate greatly and thus are not conducive to exclusion from limitation due to a lack of RP.

The proposed permit limits and/or assessment levels were established using a methodology developed by EPA. Long Term Averages (LTA) were calculated for each designated use and the lowest LTA was used to calculate the average monthly limit (AML) and maximum daily limit (MDL) necessary to protect all uses. This methodology takes into account criteria, effluent variability, and the number of observations taken to determine compliance with the limit and is described in Chapter 5 of the TSD. Limits based on A&W criteria were developed using the "two-value steady state wasteload allocation" described on page 99 of the TSD. When the limit was based on human health criteria the monthly average was set at the level of the applicable standard and a daily maximum limit was determined as specified in Section 5.4.4 of the TSD.

Arizona water quality rules require that water quality standards be achieved without mixing zones unless the permittee applies and is approved for a mixing zone. Since the receiving stream for this discharge is an effluent dependent water, no water is available for a mixing zone and all water quality criteria are applied at end-of pipe. This means that the effluent concentration must meet stream standards.

Permit Limitations:
The tables that follow summarize parameters limited in the permit, the regulatory justification for their inclusion, and the associated monitoring. Also included are some parameters that require monitoring without any limitations or that have not been included in the permit at all and the basis for that decision.

Parameter	Lowest Standard/ Designated Use	Maximum Reported Daily Value	Maximum reported Monthly Average Value	No. of Samples/ RP Mult	Estimated Maximum Value	RP determination	Proposed Monitoring Requirement/ Rationale
Discharge Flow	- - -	- - -	- - -	- - -	- - -	- - -	Discharge flow is to be monitored on a continual basis using a flow meter.
BOD & Suspended Solids	30mg/L 3o day average 45 mg/L 7 day average/ Technology based limits 40 CFR 133.102	56 mg/L BOD/ 67 mg/L TSS	18.9 mg/L BOD/ 20.6 g/L TSS	50/NA	NA	Limit is technology based.	Monitoring for influent and effluent BOD and TSS is to be conducted daily using composite samples of the influent and the effluent. The sample type required was chosen to be representative of the discharge. The requirement to monitor influent BOD and suspended solids is included to assess compliance with the 85% removal requirement in this permit. At least one sample must coincide with WET testing to aid in the determination of the cause of toxicity if toxicity is detected.
pH	Minimum: 6.5 Maximum: 9.0 Maximum change due to discharge: 0.5/ A&Wedw, and PBC A.A.C.R 18-11-109(B)	7.2 to 8.0	NA			Limit is always included. Technology based limit exists in addition to the limit in A.A.C.R 18-11-109(B)	pH is to be monitored once daily using a discrete sample of the effluent. 40 CFR Part 136 specifies that grab samples must be collected for pH. At least one sample must coincide with WET testing to aid in the determination of the cause of toxicity if toxicity is detected. pH sampling must also coincide with ammonia sampling when required.
Temperature	No applicable standard	26°C to 31°C	23°C to 28°C	Sampled daily	NA	NA	Effluent temperature is to be monitored monthly with ammonia for effluent characterization by discrete sample. 40 CFR Part 136 specifies that discrete samples must be collected for temperature. Additionally, one sample must coincide with WET sampling to aid in the determination of the cause of toxicity, if toxicity is detected.
Ammonia	No applicable standard	32.3 mg/L	19.8 mg/L	1333	NA	NA	Ammonia is to be monitored monthly for effluent characterization by discrete sample. One sample must coincide with WET sampling to aid in the determination of the cause of toxicity, if toxicity is detected.
Antimony	Applicable standard of 560 ug/l/ PBC	1.3 ug/L	0.6 ug/L ***	16/ 2.5	3.25 ug/L	No RP	Monitoring required 2 times per year for effluent characterization.
Arsenic	190 ug/L/ A&Wedw	7 ug/L	4.75 ug/L	16/ 2.5	17.5 ug/L	No RP	Monitoring required 2 times per year for effluent characterization.
Beryllium	5.3 ug/L/ A&Wedw chronic	<1.3	0.19***	16/ 2.5	1.6 ug/L	No RP	Monitoring required 2 times per year for effluent characterization.
Bis-2 (ethylhexyl) phthalate	360 ug/L A&Wedw chronic	1270 ug/L	636 ug/L	16/2.5	3175 ug/L	RP exists	High value is from analyses done for TIE sample from 10/2000. Other values are below the standard. Monitoring is requird and a limit is set.
Cadmium	3.02 ug/L/ A&Wedw chronic	<1.2 ug/L	0.188 ug/L*	16/ 2.5	1.5 ug/L	No RP	Monitoring required 2 times per year for effluent characterization.
Chromium (total)	100 ug/L/ PBC	18.8 ug/L	1.92 ug/L	16/ 2.5	47 ug/L	No RP	Monitoring required 2 times per year for effluent characterization.

Parameter	Lowest Standard/ Designated Use	Maximum Reported Daily Value	Maximum reported Monthly Average Value	No. of Samples/ RP Mult	Estimated Maximum Value	RP determination	Proposed Monitoring Requirement/ Rationale
Chromium VI	11 ug/L/ A&Wedw chronic	No Data	No Data	NA	NA	indeterminate	Since total chromium values have exceeded the standard for chromium VI, Monitoring for chromium VI is required once every 2 weeks and an assessment level is set.
Copper	12.7 ug/L/ A&Wedw chronic Applying the copper metal translator of 0.7 the lowest standard becomes 18.1	24.8 ug/L	18.8 ug/L	16/ 1.4	34.7 ug/L	RP exists	Monthly monitoring is required and a limit is set. Data from the previous permit term indicates copper levels in the effluent are relatively uniform (CV of 0.18). The permit limits include the use of a translator to adjust the dissolved copper standard to a total copper limit. This translator is a site specific translator developed in 1995 for the Roger Road effluent. The translator is 0.7 calculated as the geometric mean of the dissolved to total copper ratios measured in Roger Road effluent as given in Appendix F and Table II.4 of the translator study.
Cyanide	9.7 ug/L/ A&Wedw	5 ug/L	2.33 ug/L*	16/ 2.5	12.5 ug/L	indeterminate	All values are non-detect or trace. Also all samples are composites when cyanide is required as a discrete sample. Monitoring is required once every 2 weeks and an assessment level is set.
E. Coli	30-day geometric mean: 126 cfu /100 mL (4 sample minimum) Single sample maximum: 576 cfu /100 mL/ PBC	No Data	No Data			RP always expected for WWTPs. See explanation above.	*E. coli* is to be monitored daily using a grab sample of the effluent. The specified monitoring frequency is the minimum required to ensure compliance with the 30-day geometric mean water quality standards. 40 CFR Part 136 specifies that grab samples must be collected for coliform bacteria. At least one sample per month must coincide with WET testing to aid in the determination of cause of toxicity if toxicity is detected.
Fecal Coliform	No Applicable Standard	>1600 cfu	51.8 cfu	50	NA	NA	No monitoring required.
Hardness	No Applicable Standard. Hardness is used to determine standards for specific metal parameters.	214 mg/L	150 mg/L (average of all values)	47	NA	NA	A&W standards for cadmium, chromium III, copper, lead, nickel, silver and zinc used for RP determinations were based on the average hardness value of 150 mg/L. Monitoring for hardness is required whenever monitoring for hardness dependent metals is required.
Lead	3.9 ug/L / A&Wedw chronic	1.01 ug/L	<0.326	16/ 2.5	2.53	No RP	Monitoring required 2 times per year for effluent characterization.
Mercury	0.2 ug/L/ A&W edw chronic	0.059 ug/L	<0.018 ug/L	16/ 2.5	0.15 ug/L	No RP	15 out of 16 samples are non-detect with detection levels below standard. Monitoring required 2 times per year for effluent characterization.
Nickel	73.3 ug/L/ A&Wedw chronic	15.6 ug/L	5.18 ug/L	16/ 2.9	45.2 ug/L	No RP	Monitoring required 2 times per year for effluent characterization.
Nutrients (Total N or NO3 and Total P or PO4)	No Applicable Standards	NA	NA	NA	NA	NA	Monitoring required 2 times per year for effluent characterization.
Oil and grease	Technology based BPJ (1)	No data	NA	NA	NA	indeterminate	No data. Monitoring is required once every 2 weeks and an assessment level is set.

Parameter	Lowest Standard/ Designated Use	Maximum Reported Daily Value	Maximum reported Monthly Average Value	No. of Samples/ RP Mult	Estimated Maximum Value	RP determination	Proposed Monitoring Requirement/ Rationale
Selenium	2 ug/L/ A&Wedw chronic	<4.3 ug/L	<1.34 ug/L	16/ 2.5	5.3 ug/L	indeterminate	All samples less than detection. However some detection levels are above the standard. Monitoring is required once every 2 weeks and an assessment level is set.
Silver	6.9 ug/L/ A&Wedw chronic	2.6 ug/L	<1.66 ug/L	16/ 2.5	4.9	No RP	Monitoring required 2 times per year for effluent characterization.
Sulfides	100 ug/L/ A&Wedw acute	No data	No data	NA	NA	indeterminate	Monitoring is required once every 2 weeks and an assessment level is set.
Thallium	112 ug/L/ PBC	<1.0 ug/L	<0.31 ug/L*	15/ 2.6	1.3	No RP	Monitoring required 2 times per year for effluent characterization.
Total Residual Chlorine	5 ug/L/ A&Wedw chronic	3100 ug/L	289 ug/L	NA	NA	RP exists	TRC is to be monitored daily as a discrete sample. 40 CFR Part 136 specifies that discrete samples must be collected for chlorine. At least one sample per month must coincide with WET testing to aid in the determination of the cause of toxicity if toxicity is detected
Whole Effluent Toxicity (WET)	No toxicity (A.A.C. R18-11-108.A.6)	*Raphidocelis subcapitata*	no data	N/A	N/A	indeterminate	RP is not determined since no data was available for this species. Monitoring is required and an action level is set in the permit.
		Pimephales promelas	1.9 TUc**	24	Not calculated	RP exists based on 20 of 24 samples showing toxicity	Monitoring is required (with ammonia removal) and a limit is set in the permit. The source of toxicity has been determined to be ammonia (See maximum and average ammonia level above). The permit also includes a variance for this parameter and schedule for removing ammonia from the effluent.
		Ceriodaphnia dubia	2.6 TUc**	24	Not calculated	Changes in the effluent to remove residual chlorine have occurred since the listed toxicity tests. RP is indeterminate based on BPJ.	Monitoring is required and an action level is set in the permit. This toxicity has been attributed to high chlorine levels in the effluent which have been corrected. If toxicity occurs when the effluent is meeting the permit limits for chlorine, a TIE would be required.
Zinc	165 ug/L/ A&W edw acute	39.4 ug/L	31.5 ug/L	16/ 1.4	55.16	No RP	Monitoring required 2 times per year for effluent characterization.

NA =non-applicable

(1) The 10 mg/L monthly average and 15 mg/L daily maximum technology-based effluent limitations in the draft permit are derived using best professional judgment. Under Section 402(a)(2) of the Clean Water Act, permit writers are required to use their best professional judgment to determine effluent limitations in the absence of promulgated effluent limitations. Oil and grease is one of the five conventional pollutants regulated in many of the early NPDES permits issued to municipal WWTPs. It has been generally shown and accepted that properly designed and operated municipal WWTP effluent contains less than 10 mg/L oil and grease most of the time. In 1975, EPA concluded that animal and vegetable fats oil and grease (FOG) can be metabolized by microorganisms during municipal wastewater treatment and may be removed by up to 80-90%. EPA suggests that influent to biological treatment plants should ideally contain less than 50 mg/L of FOG and there are numerous reasons to try to keep FOG out of municipal sewer systems. A cursory review of information on other States' permitting practices showed oil and grease limits on municipal POTWs between 5 and 15 mg/L. These limitations should also help ensure protection of the narrative standard at A.A.C. R18-11-108B, 'A surface water shall be free from oil, grease and other pollutants that float as debris, foam, or scum; or that cause a film or iridescent appearance on the surface of the water; or that cause a deposit on a shoreline, bank or aquatic vegetation.

** TUc was determined based on 25% inhibition concentrations (IC25), since "No Observed Effect Concentrations" were not reported.

Trace Substances:

The following table shows the trace substances included in the draft permit and their 30-day average and maximum assessment levels in both mass and concentration. An *Assessment Level* differs from other limits in that an exceedance of an assessment level is not a permit violation. Instead, Assessment Levels serve as triggers, alerting the permitting authority when there is cause for re-evaluation of RP for exceeding a water quality standard, which may result in new permit limitations. A reopener clause is included in the draft permit should future monitoring data indicate water quality standards are being exceeded. Also shown on the table are the action levels WET testing for *Raphidocelis subcapitata* and *Ceriodaphnia dubia* and the interim action level for *Pimephales promelas* .

TRACE SUBSTANCES

Parameter	ASSESSMENT LEVELS (1) (2)		Basis	Proposed Monitoring Requirement
	Monthly Avg	Daily Max		
Oil and grease	10 ug/L	15 ug/L	A.A.C. R18-9-108.B.	Monitoring for trace substances is to be conducted once every two weeks for parameters other than WET, monthly for Ceriodaphnia *dubia* and *Raphidocelis subcapitata*, and semi-annually for *Pimephales promelas*. Samples shall be either composite samples or grab samples as indicated in Table 4 of the draft permit. The sample types required were chosen to be representative of the discharge while taking into consideration the nature of the samples. 40 CFR Part 136 specifies that grab samples must be collected for cyanide, sulfides, and chromium VI. Also, at least one sample must coincide with required WET testing to aid in the determination of the cause of toxicity if toxicity is detected.
Chromium VI	8 ug/L	16 ug/L	A&Wedw acute	
Cyanide	7.9 ug/L	16 ug/L	A&Wedw chronic	
Selenium	2 ug/L	3 ug/L	A&Wedw chronic	
Sulfides	49.8 ug/L	100 ug/L	A&Wedw acute	
WET *Ceriodaphnia dubia*	1 TUc (monthly median)	1.6 TUc	A.A.C. R18-9-108.A.6	
WET *Raphidocelis subcapitata*	1 TUc (monthly median)	1.6 TUc	A.A.C. R18-9-108.A.6	
WET *Pimephales promels*	1 TUc (monthly median)	1.6 TUc	A.A.C. R18-9-108.A.6	

Footnotes:
1. Exceedances of these values will trigger an evaluation of reasonable potential and the permit may be reopened and modified to include limitations if necessary. Monitoring and reporting required.
2. µg/L = Micrograms per liter = parts per billion; Kgms = Kilograms

The requirement to monitor for these trace substances is included in the draft permit according to A.A.C. R18-11-109 (A) and Appendix A. Assessment Levels (ALs) listed for each parameter were calculated in the same manner that a limit would have been calculated if RP was determined.

The permittee is required to sample hardness as $CaCO_3$ at the same time the trace metals are sampled because the water quality standards for some metals are calculated using the water hardness values. The hardness value of 150 mg/L (the average value of samples submitted with the application) was used to calculate the assessment levels for cadmium, copper, lead, and silver.

The following trace substances were not included in the draft permit due to a lack of RP based on best professional judgement (BPJ): barium, nitrates and manganese. The numeric standards for these two pollutants are well above what would be expected from a POTW discharge.

Whole Effluent Toxicity:

A limits of 1.6 chronic toxic units for the species, *Pimephales promelas* is included in the draft permit according to ADEQ's *Interim Whole Effluent Toxicity Implementation Guidelines for Arizona.* Limits are included for this species since previous testing shows that effluent has shown toxicity to this species and the source of toxicity has not been corrected. Therefore, reasonable potential exists for a violation of the narrative toxic standard, A.A.C. R18-11-108(A)(5) and a limit is required. (See variance provisions in Part XI.)

Action levels or "triggers" are included for *Ceriodaphnia dubia* and *Raphidocelis subcapitata.* WET testing is required in the draft permit to evaluate the narrative toxic standard in A.A.C. R18-11-108(A)(5). The draft permit requires all WET test results to be submitted with the discharge monitoring reports that are due following receipt of each WET test result.

Parameter	Proposed Monitoring Requirement
Whole Effluent Toxicity (WET)	WET testing for chronic toxicity shall be conducted monthly for *Ceriodaphnia dubia* (with ammonia removal) and *Raphidocelis subcapitata.* Testing for *Pimephales promelas* is required semi-annually (with ammonia removal), since the effluent is known to be toxic and a variance and schedule for addressing the toxicity are included in the draft permit. A more frequent sampling requirement is triggered if any of the WET limits for *Ceriodaphnia dubia* or action level for *Raphidocelis subcapitata* listed in the permit are exceeded. Three composite samples are required to complete one chronic WET test. A 24-hour composite for WET testing is required in order to have consistency with the type of sample required for other parameters requiring monitoring in this permit. WET sampling must coincide with testing for all the parameters in Tables 1 and 2 of the draft permit to aid in the determination of the cause of toxicity if toxicity is detected. Additional procedural requirements for the WET test are included in the proposed permit.

Requirements for follow-up testing if any of the WET limits or trigger of 1.6 chronic toxic units is exceeded for any of the three test species and the development of a TRE and/or TIE to identify, control or eliminate the cause of toxicity within an approved time-frame are included in the draft permit (for *Ceriodaphnia dubia* the TRE study is included in the draft permit). These special conditions are required to ensure that toxicants are not discharged in amounts that are toxic to organisms [A.A.C. R18-11-108(A)(5)]. A reopener clause is included in accordance with 40 CFR Parts 122 and 124.

VIII. NARRATIVE WATER QUALITY STANDARDS

All applicable narrative limitations in A.A.C. R-11-108 are included in Part I, Sections F, G, I, J, K and L of the draft permit.

IX. MONITORING REQUIREMENTS

Section 308 of the Clean Water Act and 40 CFR Part 122.44(i) require that monitoring be included in permits to determine compliance with effluent limitations. Additionally, monitoring may be required to gather data for future effluent limitations or to monitor effluent impacts on receiving water quality.

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. The permittee is responsible for conducting and reporting results to ADEQ and on DMRs or otherwise specified in the permit.

For this permit, "24-hour composite" means (except for volatile organics) a mixture of discrete samples (aliquots). An aliquot shall be collected after each 2 millions gallons of flow over a twenty-four hour period. Volatile organic composite samples shall be composited as given in Table 3.c, footnote 1 of this permit.

These criteria for composite sampling are included in order to obtain samples that are representative of the discharge given the potential variability in the duration, frequency and magnitude of discharges from this facility. Information in the application indicates that the discharge is continuous. The applicant indicates that the average flow per discharge is 28 MGD per day.

Grab samples are specified in the permit for parameters that for varying reasons are not amenable to compositing.

X. BIOSOLIDS REQUIREMENTS

Standard requirements for the monitoring, reporting, record keeping, and handling of biosolids, as well as minimum treatment requirements for biosolids according to 40 CFR Part 503 are incorporated in the draft permit.

XI. SPECIAL CONDITIONS

Antidegradation:

The discharge from Outfall 001 is to the Santa Cruz River which is designated as an effluent dependent water. The only water in the wash at most times of the year is effluent. Effluent quality limitations and monitoring requirements under this permit have been established to ensure that the discharge will meet the applicable water quality standards, except for toxicity to *Pimephales promelas* and for copper, which have variances for this permit term. Since the effluent does not consistently meet the toxicity and copper standards it does not meet the applicable antidegradation requirements under A.A.C. R18-11-107(C). However, the permit requires actions by the permit to bring the facility (or its replacement) into compliance with all standards by January 30, 2015.

Variances and Required Action Schedule

The permit contains a variance for ammonia toxicity for *Pimephales promelas* and for compliance with the copper limit. The variance for *Pimephales promelas* is granted to allow time for PCWWM to make necessary changes to the plant (or replace the plant) to remove ammonia to below toxic levels. The permit also specifies specific actions leading to the needed plant improvements to remove ammonia toxicity by January 30, 2015. The schedule requires that contracts for the construction of plant improvements or a new plant be issued by PCWWM by January 30, 2011. The ammonia toxicity variance is anticipated to be requested for the next permit term in the reapplication and to be granted until January 30, 2015. Granting of a variance for a second term is dependent on compliance with the provisions of Part VI. B of the permit.

The copper variance is granted for the permit term. During the permit term Pima County may choose to conduct an investigation in attempt to establish a site specific copper standard (via the State Water Quality Standards rulemaking process), but in any event, or shall meet the applicable water quality standard by January 30, 20011.

Translator Study

The limit for copper in the draft permit was determined using a metal site specific translator developed in 1995. The applicable copper dissolved standard was divided by the translator to determine a standard for total recoverable metals. The translator used (0.7) is the translator developed from samples of effluent at Outfall 001. This is a different translator than used in the previous permit (see Part VI above). Once the total recoverable copper standard was calculated, that value was used to create a daily maximum and monthly average limit using the TSD method.

The permit requires the translator study be updated if PCWWMD anticipates requesting the use of translators in future permits. Updated translators are needed to account for any changes in treatment at the plant and/or source water since the original study was done in 1995.

Chlorine MDL determination Study

The permit requires PCWWMD to conduct continued studies to determine the lowest matrix specific MDL for chlorine for the Roger Road effluent.

Pretreatment

Standard requirements for implementing and enforcing an approved pretreatment plan are included in the draft permit.

XII. PERMIT REOPENERS

The permit may be reopened based on newly available information to add conditions or limits required due to monitoring data or revised standards.

XIII. STANDARD CONDITIONS

Conditions applicable to all NPDES permits are included in accordance with 40 CFR, Part 122.

XIV. ADMINISTRATIVE INFORMATION

Public Notice (A.A.C. R18-9-A907)
The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft AZPDES permit or other significant action with respect to an AZPDES permit or application. The basic intent of this requirement is to ensure that all interested parties have an opportunity to comment on significant actions of the permitting agency with respect to a permit application or permit. This permit will be public noticed in a local newspaper after a pre-notice review by the applicant and other affected agencies.

Public Comment Period (A.A.C. R18-9-A908)
Rules require that permits be public noticed in a newspaper of general circulation within the area affected by the facility or activity and provide a minimum of 30 calendar days for interested parties to respond in writing to ADEQ. After the closing of the public comment period, ADEQ is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

Public Hearing (A.A.C R18-9-A908(B))
A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if the Director determines there is a significant amount of interest expressed during the 30-day public comment period, or if significant new issues arise that were not considered during the permitting process.

EPA Review (A.A.C. R18-9-A908(C))
A copy of this draft permit and any revisions made to this draft as a result of public comments received, will be sent to EPA Region 9 for review. If EPA objects to a provision of the draft, ADEQ will not issue the permit until the objection is resolved.

XV. ADDITIONAL INFORMATION

Additional information relating to this proposed permit may be obtained from:

ADEQ
Water Quality Division- Surface Water Permits Unit
Attn: Debra Daniel
1110 W. Washington St.
Phoenix, Arizona 85007

or, by contacting Debra Daniel at (602) 771-4689

XVI. INFORMATION SOURCES

While developing effluent limitations, monitoring requirements and special conditions for the draft permit, the following information sources were used:

1. AZPDES Permit Application Form 2A, received April 30. 2004 and supporting data, facility diagram and maps submitted by the applicant with the application forms.
2. Supplemental information to the application received by ADEQ on June 21, 2004.
3. ADEQ files on Roger Road WWTP.
4. Arizona Water Quality Standards for Surface Waters, Title 18, Chapter 11, Article 1. Adopted March, 2003
5. Title 18, Chapter 9, Article 9. Arizona Pollutant Discharge Elimination System rules.
6. 40 CFR Parts 122, 124 and 133.
7. 40 CFR, Part 503, Sludge Regulations.
8. EPA Technical Support Document for Water Quality-based Toxics Control dated March, 1991
9. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA/821-R-02-013, 2002).
10. U.S. EPA NPDES Permit Writers' Manual, December 1996.
11. PCWWMD Site-Specific Metals Partitioning Study, Phase II Final Report, August 1995.