

## SUMMARY AND RESPONSE TO PUBLIC COMMENTS

Permit No: Aquifer Protection Permit (APP) Application # 105588

Facility Name: Bella Terra Wastewater Reclamation Facility (WRF)

Applicant: BySynergy, L.L.C.

Permit Action: Final permit decision and response to comments received on the draft permit during the following public comment period:  
1) September 29, 2006 through November 1, 2006; and  
2) public hearing held on November 1, 2006, at the Sedona Red Rock High School Cafeteria, 995 Upper Red Rock Loop, Sedona, Arizona.

Prepared By: Maribeth Greenslade, APP Project Manager  
Jeanette Black, APP Hydrologist  
Arizona Department of Environmental Quality  
1110 W. Washington Street, 5415B-3  
Phoenix, Arizona 85007  
(602) 771-4578

Date: February 1, 2007

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### **Introduction**

There have been two formal public comment periods and two public hearings for the Bella Terra WRF aquifer protection permit (APP). The first formal public comment period began on May 5, 2006 with the publication, in accordance with Arizona Administrative Code (A.A.C.) R18-9-109 (A), of the preliminary decision to issue an aquifer protection permit (APP). This first formal public comment period ended June 5, 2006. The first public hearing was held on July 20, 2006 in accordance with A.A.C. R18-9-109(B). The public comments received during the first formal public comment period and first public hearing were considered by the Arizona Department of Environmental Quality (ADEQ) and a second preliminary decision to issue a revised draft APP was public noticed on September 29, 2006. The revised draft APP was issued to address the comments received during the first formal comment period and public hearing. The second preliminary decision to issue the revised draft APP and second formal public comment period supersedes the first preliminary decision and formal public comment period.

The second formal public comment period, for the revised draft APP, began on September 29, 2006 and ended November 1, 2006. The comments received during the second formal public comment period, and the second public hearing held on November 1, 2006, are the subject of this responsiveness summary. The revised draft APP public noticed on September 29, 2006, has been further revised based on the comments from the second public comment period and second public hearing.

In addition to the two formal public comment periods and two public hearings, a public meeting was held on August 30, 2006. The public meeting was not a regulatory requirement and was conducted in order to inform and address questions. Comments and questions from the public, including physicians, engineers, geologists and an attorney, were addressed at the meeting.

The comments received during the second formal public comment period and second public hearing, are summarized below. The comments are followed by ADEQ's responses in italics.

**Letter from Howard M. Shanker, The Shanker Law Firm, PLC, to Joan Card, Water Quality Division Director, Arizona Department of Environmental Quality, dated November 1, 2006.**

**COMMENT NO. 1 (Howard M. Shanker Letter I):**

**The proposed APP is not supported by a complete design drawings or design calculations package.** ADEQ should require submittal of a complete design drawing and calculation package and make it available for public inspection and comment prior to issuance of an APP for the Bella Terra facility.

**RESPONSE NO. 1:**

*The APP application for the facility is required to include a design report and engineering plans and specifications pursuant to A.A.C. R18-9-B202 and -B203. The application for the Bella Terra WRF meets these requirements through submittal of the following documents:*

*Wastewater Treatment Plant Design Report and Submittal for Bella Terra WWTP prepared by Santec Corporation and Curtis Engineering, sealed by Evan H. Curtis, P.E., January 26, 2005.*

*Design Reports for Bella Terra on Oak Creek prepared by Shepard-Wesnitzer, Inc., sealed by Arthur H. Beckwith, P.E., January 6, 2005.*

*Bella Terra on Oak Creek Construction Plans, Grading, Drainage, and Utilities, prepared by Shepard-Wesnitzer, Inc., sealed by Arthur Beckwith, P.E., January 7, 2005. Drawing set of 26 pages.*

*Response to Administrative Completeness Review for Bella Terra WWTP prepared by Santec Corporation and Curtis Engineering, sealed by Evan H. Curtis, P.E., April 12, 2005.*

*Wastewater Treatment Plant Revised Submittal for Bella Terra WWTP, prepared by Santec Corporation, sealed by Evan H. Curtis, P.E., September 12, 2006.*

*Letter dated September 26, 2006 from Evan H. Curtis, Curtis Engineering for Santec Corporation, to Maribeth Greenslade, ADEQ, with attachments, sealed by Evan H.*

*Curtis, P.E, September 26, 2006.*

*The file, including these documents, is available for review in the ADEQ Phoenix office. Prior to the second public hearing, a copy of the file was also provided in the ADEQ Flagstaff office for the convenience of the commenter, and a copy was provided to the Red Rock Rural Community Association.*

COMMENT NO. 2 (Howard M. Shanker Letter II):

**Percolations tests are not representative of site soil conditions.** The design of the disposal fields is based upon soil evaluations and percolation tests of soils that have since been disturbed or removed. The current plans for the disposal trenches and/or drip lines are based on data obtained in 2002 and conditions that no longer exist on the site. New percolation tests and soil evaluations are necessary prior to the issuance of any permit (See also "Question 9" from Paul Trotta, Bella Terra Hearing, November 1, 2006). ADEQ requires that percolation tests be conducted in undisturbed soils and that subsurface disposal fields based on the test be constructed in the same undisturbed native soil (See A.A.C. R18-9-A310(F)(3)(a)).

RESPONSE NO. 2:

*The rule cited by the commenter (A.A.C. R18-9-A310(F)(3)(a)), is not applicable to the Bella Terra permit application because the rule is a general permit requirement and Bella Terra is an individual APP facility. General Permit rules for on-site wastewater treatment (septic) systems rely on additional treatment within the site soils subsequent to discharge to the soils and that is why the general permit requires soil evaluations and percolation tests.*

*The individual APP for Bella Terra requires compliance with the BADCT requirements of A.A.C. R18-9-B201 through –B204. For Bella Terra, the application demonstrates that treatment is achieved prior to discharge to the disposal fields without the need for additional treatment in the site soils. Therefore, it is not necessary to conduct additional testing of the site soils prior to issuance of this individual APP.*

COMMENT NO. 3 (Howard M. Shanker Letter III):

**Groundwater monitoring.** A.A.C. R18-9-A206(A)(2)(b) requires that if groundwater monitoring is required by an APP, the frequency of monitoring be specified. There is no specified monitoring frequency in the draft APP.

RESPONSE NO. 3:

*This commenter is incorrect. Section 2.5 and Section 4.0, Table II, require groundwater monitoring at the Sentinel Well on a monthly basis. Section 3.0 of the permit requires collection of 12 months of ambient groundwater data. Monitoring frequency was specified in the draft APP public noticed on September 29, 2006.*

COMMENT NO. 4 (Howard M. Shanker Letter IV):

**Lack of surface water monitoring.** Surface water monitoring is necessary to ensure that if/when an effluent discharge to Oak Creek occurs, it is discovered and remedied.

RESPONSE NO. 4:

*Discharges are not permitted to either Carroll Canyon Wash or Oak Creek, therefore, monitoring of surface water is not required in the permit. Groundwater monitoring at the Sentinel Well is required as a permit condition and is designed to be an early warning system to protect Carroll Canyon Wash and Oak Creek. Additionally, Oak Creek water quality is regularly monitored by the ADEQ, Water Quality Division, Surface Water Section. See also response to Shanker letter comment VI.*

COMMENT NO. 5 (Howard M. Shanker Letter V):

**The APP permit should be based solely on required treatment components.** The APP should be based on definite required features. The discussions of reuse and plant uptake should not be included in the Fact Sheet. Only required components of effluent disposal should be included in the fact sheet. If reuse is part of the disposal design, it should be mandatory in the APP.

RESPONSE NO. 5:

*The Fact Sheet accurately reflects the requirements of the APP. With respect to effluent disposal and reuse, Permit Section 4.0 Table IA, Routine Discharge Monitoring, is amended to include a discharge limit for effluent application rate of 0.219 gallon per day per square foot (gpd/sf) to the subsurface drip irrigation system. This rate corresponds to the reuse of 10,000 gpd at full design capacity of the treatment plant. The permit requires the facility to monitor and maintain the subsurface irrigation system to meet this discharge limit for application rate by managing the flow from the facility and/or reusing the reclaimed water under a valid reclaimed water permit. By limiting the application rate to 0.219 gpd/sf, the percolation from the disposal fields will be minimized, and the concern for surface and groundwater impacts addressed. Although this discharge limit does not specifically require reuse, it requires the permittee to find ways to limit the discharge to meet specified APP requirements, including the option of reuse.*

COMMENT NO. 6 (Howard M. Shanker Letter V, continued):

The reuse analysis is based on faulty and inaccurate assessments and data. Seasonal variability in effluent production, plant uptake and precipitation was ignored. If uptake by turf is merely a "Reuse option" and not required as part of the design, it should not be considered by ADEQ in the APP process.

There are no plans and specifications for the effluent reuse distribution system or the plants to be irrigated.

The monthly water consumptive values used are for turf irrigated at the surface. The actual plans indicate that grasses and apple trees will be planted and the irrigation is subsurface. Therefore, the plants will not be able to uptake the water and the water will percolate resulting in contamination of the aquifers and/or Oak Creek.

The permit requires compliance with Aquifer Water Quality Standards (AWQS). The introduction of effluent into the aquifer could result in a violation of the permit and Arizona laws and regulations.

RESPONSE NO. 6:

*An application for a reclaimed water permit will be required to be submitted prior to reuse of reclaimed water pursuant to A.A.C. Title 18, Chapter 9, Article 7. When Bella Terra submits a reuse permit application, ADEQ will review the application to assure that all APP and reuse requirements will be met.*

*The treatment system is designed to produce effluent that meets the AWQS at the point of discharge to the subsurface irrigation system and the permit requires monitoring, reporting and contingency requirements to assure that AWQS are met at the point of discharge. Therefore, the APP requires that AWQS will not be exceeded in the aquifer as a result of discharge to and from the subsurface irrigation system.*

COMMENT NO. 7 (Howard M. Shanker Letter VI):

**Proposed Aquifer Protection Permit does not account for Oak Creek being a designated unique water.** In order to responsibly evaluate the proposed APP for the Bella Terra site, it is necessary for ADEQ to consider possible effluent discharges reaching the waters of Oak Creek. The evaluation appears to be limited to the statement that effluent discharging to Carroll Canyon Wash and then to Oak Creek is “deemed unlikely because Oak Creek is a losing stream at the confluence and downstream of the confluence with Carroll Canyon Wash”. ADEQ Memorandum from Jeanette Black to Vinita Bhatt, dated August 14, 2006. To comply with A.A.C. R18-11-112, it is necessary for ADEQ to obtain an analysis of the effect effluent from Bella Terra would have on the quality of Oak Creek.

Seasonal variability and the proximity of disposal fields are likely to cause seepage into Carroll Canyon Wash. Seepage into Carroll Canyon Wash already occurs from septic tanks in the area. The proximity of the proposed disposal fields to Carroll Canyon Wash and Oak Creek, and the topography of the Bella Terra site, would increase the amount of wastewater seepage.

The cross section and analysis of water levels provided by BySynergy’s engineer are incorrect when they show no seepage into Carroll Canyon Wash.

RESPONSE NO. 7:

*ADEQ has evaluated the potential for effluent discharges to reach surface waters and has determined that it is unlikely, in part, because Oak Creek is a losing stream at the confluence and downstream of the confluence with Carroll Canyon Wash.*

*The APP requires that effluent quality meet AWQS at the point of discharge to the subsurface irrigation system, the effluent application discharge rate is limited to 0.219 gpd/sf, and both the quality and quantity will be monitored as requirements of the permit. Further, Section 2.3 of the permit requires that surface water standards not be exceeded pursuant to A.A.C. R18-11-405(B). The Sentinel Well has been established to demonstrate that effluent disposal does not have adverse impacts on Carroll Canyon Wash and Oak Creek and to provide an early warning system in the unlikely event of a discharge of effluent to the aquifer.*

*The commenter's statement that discharge to the Bella Terra effluent disposal fields will add to seepage already occurring from on-site systems adjacent to Carroll Canyon Wash is an over-generalization. Discharge to the subsurface irrigation system at Bella Terra will be located on the opposite side of Carroll Canyon Wash from the existing on-site systems. ADEQ does not agree with the assertion that discharge to the Bella Terra disposal fields would add to seepage from existing septic tanks. Additionally, the discharge of effluent to Bella Terra disposal fields is of much higher quality than the discharge from on-site systems.*

COMMENT NO. 8 (Howard M. Shanker Letter VII):

**Inaccurate and/or unrepresentative hydro-geological studies.** Dr. Blakey and Dr. Trotta indicate that the underlying bedrock is highly fractured and that effluent will rapidly reach the aquifer.

If effluent from the Bella Terra facility reached an aquifer, it could take up to 30 years to restore that aquifer through natural attenuation. *See Decades Required for Natural Processes to Clean Wastewater-Contaminated Ground Water, U.S. Geological Survey, Toxic Substances Hydrology Program, [http://toxics.usgs.gov/highlights/gw\\_cessation.html](http://toxics.usgs.gov/highlights/gw_cessation.html).*

The 2002 hydrogeology report by Southwest Ground-water Consultants is a broad and general hydrogeologic study. Tito Comparan requested a detailed hydrogeologic study that identified flow paths for effluent to groundwater and/or surface water.

RESPONSE NO. 8:

*Bella Terra's APP application is required to include a hydrogeologic study pursuant to A.A.C. R18-9-A202(A)(8). Information from a previous study is allowable under the rule if the previous study accurately represents current hydrogeologic conditions. Bella Terra's application met the application requirements through submittal of the report titled Hydrogeology Investigation: Shuerman Ranch, Yavapai County, Arizona, by Southwest Ground-water Consultants, sealed by William G. Wellendorf April 2, 2002. This report was submitted in response to ADEQ's letter*

*dated October 31, 2005, which incorporated requests for hydrogeologic information from ADEQ hydrologist Tito Comparan.*

*Upon review of the report, Mr. Comparan wrote a memorandum dated January 18, 2006, which requested three additional items of information as follows:*

- 1) a site map which includes information on the pollutant management area, locations of wells, direction of groundwater flow, etc.;*
- 2) a narrative description of the proposed point of compliance for the effluent disposal site; and*
- 3) a contingency plan that addresses the actions to be taken if discharges from the facility are found to be seeping into Carroll Canyon or Oak Creek.*

*The review of the site hydrogeology was continued by Jeanette Black, R.G., and included a full file review, including Mr. Comparan's previous memorandums and the hydrogeologic information provided by the permittee. After review, it was determined that additional hydrogeologic data was not needed. The requirements of A.A.C. R18-9-A202(A)(8) had been fulfilled. Concerns regarding effluent flow paths have been addressed through the establishment of groundwater monitoring requirements at the Sentinel Well. This well provides a monitoring point in the alluvial aquifer between the disposal field and surface water. Groundwater monitoring in the first aquifer below the alluvial aquifer is not required in the permit because the treatment system is designed to produce effluent that meets AWQS at the point of discharge and because the effluent disposal rate required by the permit discharge limit is very low. Therefore, the APP provides that AWQS will not be exceeded in the aquifer.*

*ADEQ has review the report cited above, Decades Required for Natural Processes to Clean Wastewater-Contaminated Ground Water, U.S. Geological Survey, Toxic Substances Hydrology Program. The report refers to a study done in Cape Cod, Massachusetts, and does not substantiate that if effluent from the Bella Terra facility reached an aquifer, it could take up to 30 years to restore that aquifer through natural attenuation. The conditions described in the report do not reflect the conditions at Bella Terra and the conclusions made in the report would not have applicability to Bella Terra.*

COMMENT NO. 9 (Howard M. Shanker Letter VIII):

**Inability of the proposed system to effectively produce A+ effluent.** The proposed wastewater treatment system has not been demonstrated to be able to consistently produce A+ effluent. According to Mr. Paul Miller, package plants like the Santec unit generally cannot produce A+ quality effluent. Letter to ADEQ from Paul Miller dated October 17, 2006. Mr. Miller indicates that even if a package wastewater treatment system-such as the one proposed for Bella Terra- could produce A+ effluent at a certain time, it could not consistently produce that quality of effluent over a period of time at a flow rate below 25,000 gpd.

RESPONSE NO. 9:

*Mr. Miller provides no documentation to support his allegations. Design calculations, sealed by an Arizona registered Professional Engineer, are included in the design documents listed in Comment I above as required by A.A.C. R18-9-B202 and -B203. The calculations indicate that the treated effluent will meet the treatment standards required by A.A.C. R18-9-B204. Permit Section 2.2. requires that the treatment system be designed, constructed, operated and maintained to meet the treatment performance standards as specified in A.A.C. R18-9-B204. The treatment system is designed to produce effluent that meets the AWQS at the point of discharge and the permit requires monitoring to assure that the treatment requirements are met. At flows below the design capacity, the treatment process will be operated as a batch treatment process to meet the treatment standards.*

COMMENT NO. 10 (Howard M. Shanker Letter IX):

**Non-compliance with other permits is relevant in determining whether or not to issue an aquifer protection permit.** A.R.S. 49-243(N) states

[t]he director may require the applicant to furnish information, such as past performance, including compliance with or violations of similar laws or rules, and technical and financial competence, relevant to its capability to comply with the permit terms and conditions...

**The applicant has numerous on-going violations of the AZPDES (Storm water permit) at Bella Terra.** ADEQ's inspection on January 18, 2006, cited seven deficiencies of the best management practices according to the requirements of ADEQ rules (Exhibit 3).

In May 2006, Environmental & Business Conflict Resolution Consulting conducted a site visit and their report claims several permit violations (Exhibit 4).

Sediment from the Bella Terra project is being added to Carroll Canyon Wash and Oak Creek, both waters of the U.S., violating the applicant's AZPDES permit. The Environment and Business Conflict Resolution Consulting report highlights that work was being performed without the necessary sediment basins or other sediment control measures installed to protect against sediment migration. See also, e.g., photographs of Bella Terra Site (Exhibit 5).

RESPONSE NO. 10:

*The deficiencies cited in ADEQ's January 18, 2006 inspection, and a subsequent inspection on September 15, 2006, have been addressed. ADEQ's follow-up inspection on October 17, 2006 and letter dated November 1, 2006, document concurrence with the permittee's evaluation and responses to the deficiencies. The deficiencies noted in the inspection reports have been adequately addressed and are not an indication that the permittee is incapable of complying with permit terms and conditions. Therefore, the compliance issues with the storm water permit will not affect ADEQ's permit decision with regard to the APP.*

*The ADEQ inspections did not find that sediment from the Bella Terra project is being added to Carroll Canyon Wash or Oak Creek.*

*The photographs included in Exhibit 5 are not accompanied by documentation as to the date they were taken, the locations where they were taken, and the photographer. Without this documentation, it is not possible to determine whether the photographs indicate that sediment from the Bella Terra site entered Carroll Canyon Wash or Oak Creek.*

COMMENT NO. 11 (Howard M. Shanker Letter IX, continued)

**BySynergy appears to be unwilling or unable to comply.** The applicant has expressed an unwillingness or inability to comply with its permitting obligations (reference to letter from Micheal Zito to ADEQ dated August 16, 2006).

RESPONSE NO. 11:

*ADEQ disagrees that the letter referenced indicates an unwillingness or inability on the part of BySynergy to comply with permitting obligations.*

COMMENT NO. 12 (Howard M. Shanker Letter IX, continued)

**Violations of the Army Corp of Engineer's regulations.** The applicant may be affecting jurisdictional waters subject to 404 requirements of the Clean Water Act without the required permit. The Shanker Law Firm has requested the Army Corps of Engineers jurisdictional delineation with respect to the Bella Terra site and is currently awaiting the release of this information. If the project is subject to a 404 permit, it will likely trigger a requirement to comply with the National Environmental Policy Act (NEPA).

RESPONSE NO. 12:

*Exhibit 4, Environmental and Business Conflict Resolution Consulting (E&BCRC) Interim Report No. 2, dated May 30, 2006, includes reference to an e-mail from Daisy Eldridge, U.S. Army Corps of Engineers, to Dan Salzler, E&BCRC. The e-mail indicates that the construction activities are occurring outside of the Section 404 jurisdictional washes, and are therefore not regulated by the Corps of Engineers. As noted in the comment, the 404 program is administered by the Army Corps of Engineers.*

*ADEQ contacted Daisy Eldridge on August 16, 2006, regarding Bella Terra. Ms. Eldridge indicated that the developer completed a jurisdictional delineation of the waters on or near the site, then decided to move dirt and build without filling any waters of the U.S., thereby eliminating the need for a 401 certification for a 404 permit. As a result of complaints, comments and questions on the project, she inspected the site and indicated to ADEQ that she did not find any problems.*

*ADEQ contacted Daisy Eldridge on January 31, 2007, regarding Bella Terra. Ms. Eldridge indicated that on January 29, 2007, she requested that BySynergy submit updated project information including engineering design drawings for grading and drainage and any completed or planned construction in jurisdictional waters of the U.S. Upon receipt of the information from BySynergy, the Corps will evaluate the information and determine if there has been disturbance in jurisdictional areas.*

COMMENT NO. 13 (Howard M. Shanker Letter IX, continued):

Dr. Ron Blakey has observed mismanagement of the floodplain. Mr. Paul Lindberg's report indicates that there are problems with the fill along the southern boundary of the Bella Terra property (Report titled Flood Plain Measurements on South Margin Bella Terra Property, dated October 22, 2006, by Paul Lindberg, P.G.). Mr. Lindberg indicates that at the Bella Terra site "fill covered obvious flood plain material composed of abundant, cleanly washed boulders." Mr. Lindberg states that in his opinion, "the entire lower back-filled portion of the Bella Terra property is improperly engineered and is in danger of being overwhelmed by the next "100 year flood: due within the next decade".

RESPONSE NO. 13:

*The APP regulates the wastewater treatment facility and disposal fields and requires that the facility be protected from physical damage due to a 100-year flood (A.A.C. R18-9-B203(B)(4)). The wastewater treatment facility and disposal fields are located outside of the 100-year floodplain and also the area cited by the commenter. The facility meets the applicable APP requirements.*

*ADEQ does not have authority to make these land use and floodplain use determinations under the APP Program this permit. The Commenter may wish to forward the report by Mr. Lindberg to Yavapai County or other appropriate agency responsible for floodplain issues.*

COMMENT NO. 14 (Howard M. Shanker Letter X):

**Financial capability.** A letter from Michael Zito dated August 16, 2006 is quoted and interpreted by the Commenter to mean that BySynergy does not have the requisite financial capability to properly ensure the safe and continuous operation of the proposed facility.

RESPONSE NO. 14:

*The financial capability requirements of A.A.C. R18-9-A203(B)(3 and 4) require that BySynergy obtain a financial assurance mechanism that covers the cost of closure and operation and maintenance. The financial mechanism provided is the assignment to ADEQ of two Certificates of Deposit in the amounts of \$31,458.00 and \$35,000.00 to cover the estimated closure cost and operations and maintenance costs for one year in accordance with A.A.C. R18-9-A203(C). ADEQ has reviewed statements made in Mr. Zito's letter and they do not affect the financial capability demonstration for this permit.*

*The permit compliance schedule requires the permittee to submit additional financial assurance in the amount of \$600,000.*

*Further, ADEQ will use its compliance and enforcement authority to the fullest extent to address any permit violations.*

COMMENT NO. 15 (Howard M. Shanker Letter XI):

**Lack of listed species analysis.** Concern is raised over whether the Bella Terra development has or will impact habitat for endangered, threatened and/or sensitive species (e.g. Southwest Willow Flycatcher, Herons, Narrow Headed Garter Snake), which would necessitate investigation and/or opinions and consultation with the U.S. Fish and Wildlife Service and other relevant agencies.

RESPONSE NO. 15:

*As noted in the comment, the U.S. Fish and Wildlife Service has jurisdiction for administration and enforcement of the Endangered Species Act. This information is not applicable to the APP permit decision. The Commenter may wish to provide the information to the U.S. Fish and Wildlife Service.*

COMMENT NO. 16 (Howard M. Shanker Letter XII):

The history of the property likely makes the site eligible for inclusion on the National Register of Historic Places. The Arizona State Historic Preservation Office should be consulted so that an historical analysis of the site can be performed.

RESPONSE NO. 16:

*With regard to historic and archaeological sites, ADEQ has no regulatory authority under the aquifer protection permit program. ADEQ has notified the permittee that they are required to comply with all applicable state and federal historic preservation laws.*

COMMENT NO. 17 (Howard M. Shanker Letter XIII):

The APP does not address substances commonly contained in residential wastewater and expected to be in Bella Terra's effluent. The substances include birth control pills, estrogen replacement drugs, ibuprofen, insect spray, sunscreen, mouthwash, antibacterial soap chemicals, and hormones. Three studies are cited which indicate that these substances are not effectively treated by conventional treatment plants or land application and that the substances are commonly found in effluent.

The public record for the APP does not indicate whether the treatment plant will effectively treat these substances and only a few are proposed for monitoring. An analysis of the ability and effectiveness of the proposed plant to treat these substances needs to be performed and the results made available to the public.

ADEQ has the authority to regulate and require monitoring of compounds believed to be damaging to human health or the environment. ADEQ should develop a rule whereby these substances are to be monitored and maximum contaminant levels are established.

RESPONSE NO. 17:

*The permittee has fulfilled the requirements for BADCT in the design of the facility by meeting the treatment standards of A.A.C. R18-9-B204. The treatment system is designed to produce effluent that meets the AWQS at the point of discharge. These are among the criteria that are used to determine whether a facility will be issued an APP. Monitoring is required in the permit to assure that the treatment standards are met.*

*Available information indicates that the process of denitrification is effective in reducing the concentration of some pharmaceuticals listed above. Bella Terra meets the BADCT requirements for nitrogen reduction through denitrification and it is expected that there will be reduction of some pharmaceuticals during this process.*

*There may be pollutants in effluent for which AWQS have not been established. Arizona Revised Statutes (ARS) 49-223 states in part: "The director may adopt by rule a numeric drinking water aquifer water quality standards for pollutants for which the administrator (EPA) has not established primary drinking water maximum contaminant levels (MCLs).... "These standards shall be based on the protection of human health. In establishing numeric drinking water aquifer water quality standards, the director shall rely on technical protocols appropriate for the development of aquifer water quality standards and shall base the standards on credible medical and toxicological evidence that has been subjected to peer review."*

*ADEQ monitors and evaluates the medical and toxicological evidence available to determine if there is sufficient scientific basis to establish standards for pollutants under Arizona law. When the information is sufficient, ADEQ will propose rules establishing standards. When AWQS are established for additional pollutants, APPs will include monitoring, reporting and treatment standards for them. ADEQ has the authority to reopen permits to include new aquifer quality and discharge limits, and require monitoring for the limits.*

**Attachment to Shanker Letter: Questions from Paul D. Trotta, Ph.D., P.E., dated November 1, 2006. and oral comment from Dr. Trotta during the Public Hearing held November 1, 2006.**

COMMENT NO. 18 (Paul D. Trotta Questions 1 through 3) :

The Fact Sheet should stick to the relevant facts and not present distracting information about options or system components that the developer or some future owner can or may build at some point in the future. Describing a someday system which has no guarantees of ever being built is misleading and confusing for the very public that ADEQ has promised to inform with a "Fact Sheet".

The APP approval can not be based upon the inclusion of an "optional" system component unless it is analyzed, designed, reviewed and included in the APP's stipulations. Otherwise all we have are promises.

The "turf" is not sufficiently analyzed nor is it included in the submitted plans, or the APP and its stipulations. It should therefore not be considered in any way for the approval of the APP. It should be dropped from all discussions and considerations.

RESPONSE NO. 18:

*Please see responses to Comments 1 and 5.*

COMMENT NO. 19 (Paul D. Trotta Question 4) :

Why does ADEQ say the wastewater system is "non-discharging" in the Fact Sheet (page 8) but proposes to give permission to discharge in the APP document itself?

RESPONSE NO. 19:

*The Fact Sheet has been modified to clarify and indicate that the wastewater treatment plant components are designed not to leak and will be leak tested after installation.*

COMMENT NO. 20 (Paul D. Trotta Question 5) :

How did ADEQ come to decide that Tito Comparan's hydrogeologic analysis of the Bella Terra site was not correct and should be ignored? If ADEQ thinks that his issues were addressed where are the discussions saying so by other equally respected ADEQ hydrologists? The hydrogeology report is inadequate to answer the persistent questions about where the effluent is specifically going after it is discharged to the ground. The developer should commission a study to specifically answer the questions about the effluent's flow paths.

RESPONSE NO. 20:

*ADEQ did not determine that Mr. Comparan's analysis was incorrect and did not ignore it. Mr. Comparan voluntarily left ADEQ for another employment opportunity after he prepared a memorandum dated January 18, 2006 which was incorporated into a deficiency letter dated January 19, 2006. Ms. Jeanette Black, R.G., assumed his responsibilities.*

*Please also see responses to Comment 8.*

COMMENT NO. 21 (Paul D. Trotta Question 6):

Does ADEQ interpret its APP in a way which would entitle an application rate for A+ as high as 4.63 gpd/sq.ft. over a large area in proximity to streams or aquifers based only on the "perc" (and/or soil evaluation) and minimum vertical and horizontal separations? The high application levels which the developer's engineers use as comparison to their more conservative current plans begs the question of the fundamental hydrogeology under the disposal sites which has only been described in generic terms to date. It is quite possible that high application rates "allowed" by ADEQ into the surface soils can be sustained by the top soils but what happens below the surface soils? Tito's concerns are again paramount.

RESPONSE NO. 21:

*The General Permit rules apply to on-site wastewater treatment facilities and do not apply to the Bella Terra individual APP. Therefore, the General Permit rule is not used to determine permit requirements for Bella Terra's individual APP. The comparison between an application rate of 4.63 gpd/sq.ft., cited by the commentor as the General Permit application rate, to Bella Terra's permit limit of 0.219 gpd/sq.ft. is not used by ADEQ to determine that the application rate is allowable or to make a permit decision. Site specific conditions are evaluated by ADEQ hydrologists and a determination made that the disposal method is adequate to dispose of the treated effluent.*

COMMENT NO. 22 (Paul D. Trotta Question 7):

What experience, data or analysis can ADEQ reference to support their contention that putting A+ effluent into a shallow drinking water aquifer in close proximity to residential wells will have no adverse affect on the quality of water from those residential wells? ADEQ should not extrapolate from large scale recharge facilities to justify this discharge to a drinking water aquifer. Aquifer recharge is not listed as a beneficial use for A+ water in ADEQ's reuse regulations.

RESPONSE NO. 22:

*ADEQ does not consider this project a recharge facility and Table I of the permit requires that the discharge limit to the disposal fields remain below 0.219 gpd/sf. The application rate is low enough so that there will not be impacts to the aquifer or nearby residential wells.*

*The hydrogeologic report by Southwest Groundwater Consultants, Inc. identified two regional aquifers in the area within the Supai and Redwall Formations. Groundwater in both aquifers appears to be confined based on the well logs which indicate the presence of groundwater first encountered approximately 50 to 100 feet below the static water levels. Groundwater in the Supai Formation is reported to be first encountered at depths between 100 and 250 feet below the ground surface (bgs) with the static water level found at depths of about 70 to 84 feet bgs in the on-site wells. Groundwater in the Redwall Formation is reported to be between 300 and 400 feet bgs with the potentiometric surface found at depths of about 165 feet bgs. Groundwater also may be present in a shallow alluvial deposits adjacent to Carroll Canyon Wash and Oak Creek.*

*Currently five wells are located on-site. Two wells (55-533861 and 55-544520) extend into the Redwall Formation (well depths approximately 450 feet deep) with the others extending to depths between 100 and 250 feet deep within the Supai Formation. The two deep wells tapping the aquifer in the Redwall Formation are located upgradient of effluent disposal fields. The three shallower wells are located between the effluent disposal fields but are not located within the minimum separation distance of 100 feet between a septic tank or sewage disposal as identified in A.A.C. R12-15-818. Offsite wells also are more that 100 feet from the disposal fields.*

*APP rule A.A.C. R18-9-B201(E) states that a person shall not create or maintain a connection between any part of the sewage treatment facility and a potable water supply so that the sewage or wastewater contaminates a potable or public water supply. The Bella Terra facility meets this requirement.*

*The treatment system is designed and the permit conditions require the plant to produce effluent that meets the AWQS at the point of discharge. Design calculations provided by the manufacturer indicate that the effluent will meet the treatment standards required. Therefore, AWQS will be met if effluent reaches groundwater.*

*The reclaimed water classification of A+ is applicable to the effluent in a situation where it is reused for specified purposes. The disposal of treated effluent from Bella Terra via a subsurface disposal system is not considered reuse. This is the reason the disposal of effluent through the irrigation system is included in the individual APP and not in a reuse permit.*

*In conclusion, an analysis of the hydrogeology, setback for the potable wells, effluent quality and disposal methods proposed indicates that effluent discharged is not expected to cause contamination of drinking water wells.*

COMMENT NO. 23 (Paul D. Trotta Question 8) :

Where can I find in the APP rules and guidance documents a justification for approving a system because it is better than what was or better than what might be under other development scenarios? ADEQ should evaluate whatever system Bella Terra proposes using the concept of

Best Management Practice (BMP) rather than comparing the proposed system to other systems which have been removed or could be proposed in other development scenarios.

RESPONSE NO. 23:

*Applications, including Bella Terra's, are not approved because a system is better than what might be proposed under other development scenarios. Individual APP applications are reviewed to determine if they meet the requirements of A.A.C. R18-9-101 et. seq, including Best Available Demonstrated Control Technology (BADCT) and a demonstration of compliance with Aquifer Water Quality Standards. Best Management Practice (BMP) is not relevant to the APP for this facility. Bella Terra's application has met the APP regulatory requirements.*

COMMENT NO. 24 (Paul D. Trotta Question 9) :

Is ADEQ sure that the soil evaluations and percolation tests used to design the disposal field are still valid? It is imperative that ADEQ inspect the specific sites being considered and require confirming percolation tests and soil evaluations if any of the surface soils have been graded away, compacted or otherwise disturbed. This must be done before ADEQ issues any APP. If similar but not original soils are no longer there how can the percolation test data be used as the basis of design and how can plans be submitted which describe disposal trenches or drip lines in soils which weren't tested? The material submitted to ADEQ for their evaluation should, of course, reflect true current conditions at the site. I believe that ADEQ should take a second careful look at the site and site data.

How does ADEQ assure the public that its decisions are based on the most correct and up to date information? ADEQ should insist that all submittals from the developer reflect the best available current information and not just the information that may have been relevant a couple of years ago.

RESPONSE NO. 24:

*Please see responses to Comment 2.*

*In general, if conditions change during construction of the facility, the permit requires documentation of the changes in the construction certification report sealed by a registered Arizona Professional Engineer as required by permit Section 3.0. Also, the permit requires compliance with the permit discharge conditions. If changes to site conditions occur which make the design of the facility ineffective, the permit requires contingency actions to assure compliance with permit conditions.*

*Modifications to permits can be accomplished by submitting amendment applications. Changes to the Bella Terra design have been made in response to public comment at the July 20, 2006 public hearing. These design changes have been incorporated in the permit.*

**Attachment to Shanker Letter: Environmental & Business Conflict Resolution Consulting (E&BCRC), Daniel Salzler, Interim Report No. 1, May 15, 2006 and Interim Report No. 2, May 30, 2006.**

COMMENT NO. 25

Interim Report No. 1 cites contacts between Daniel Salzler, E&BCRC, and the following people:

Sara Konrad, ADEQ Stormwater Project Manager.  
Vinita Bhatt, ADEQ, APP Wastewater Unit  
Daisy Eldridge, U.S. Army Corps of Engineers  
John Fortune, ADWR

The report summarizes the contact with Sara Konrad as follows:  
E&BCRC presented digital photo images of the Bella Terra development site, taken on May 13, 2006. The images demonstrated the conditions observed during the site visit. Ms. Konrad provided a copy of the the AZPDES General Permit. Based on Ms. Konrad's cursory observations of the digital images, violations of the permit were as follows:

- The Notice of Intent (NOI) filed by Tiffany Construction and BySynergy were for 15 acres. Due to the significant increase in the number of acres disturbed, both parties have to submit new NOIs that accurately represent the number of acres disturbed.
- The NOI is required to be posted on site for easy access and viewing at all times.
- The Storm Water Pollution Prevention Plans (SWPPPs) must be on site at all times and accessible for viewing.
- Photos indicated that the sediment controls had no effect on the migration of sediment to Oak Creek.
- The lack of activity on site should be documented in some way.
- The control features noted in the SWPPP, including rock entrances and numerous rock check dams, are not in place.
- The sediment basins were not in place.
- A local representative needs to visit the site and document the fact that the SWPPP is not on site or accessible during normal business hours.

The report summarizes the contact with Vinita Bhatt as follows:  
E&BCRC met with Vinita Bhatt to discuss the wastewater treatment plant plans and the permit. The property was designed for 53.5 acres. There is no issue to pursue with ADEQ wastewater.

The report summarizes the contact with Daisy Eldridge as follows:  
E&BCRC discussed its site visit of May 14, 2006. Ms. Eldridge explained that the correct procedure is to fill out a four page "Unauthorized Activity Report Form" and send it to her with the photographs taken on May 14, 2006. E&BCRC inquired as to the CoE's invitation of AZ Game and Fish to look into bird habitat destruction. Ms. Eldridge state that AZ Game and Fish have their own people to investigate potential wildlife issues.

The report summarizes the contact with John Fortune as follows:  
E&BCRC inquired as to the "Application for a Water Adequacy Report". Mr. Fortune indicated that Yavapai County Planning and Zoning do the oversight.

RESPONSE NO. 25:

*Please see responses to Comments 10-13 and 15.*

COMMENT NO. 26

Interim Report No. 2 includes summaries of contacts between Daniel Salzler, E&BCRC, and the following people:

Rick Obenshain, ADWR, Assured/Adequate Water Supply Unit  
Lori Casan, ADWR, Manager, Well Drilling Permit Unit  
Robert Scalamera, ADEQ, 401 Certification Program  
Daisy Eldridge, U.S. Army Corps of Engineers  
Kelly Wolf, Arizona Game and Fish  
Shaula Hedwall, U.S. Fish and Wildlife Service

The report summarizes the contact with Rick Obenshain and Lori Casan as follows:  
Mr. Obenshain had significant questions about the information I presented on the size of the development and suggested that we get a copy of the file. Ms. Casan indicated that an adequate water supply had been issued by ADWR and there was no record of a permit for drilling the well at Bella Terra, as of 3:00 p.m. on May 19, 2006.

The report summarizes the contact with Robert Scalamera as follows:  
E&BCRC inquired as to whether a 401 Certification had been issued to Bella Terra. According to ADEQ's 401 Certification officer, no 401 Certification was applied for or issued to Bella Terra.

The report summarizes the contact with Daisy Eldridge as follows:  
E&BCRC received an e-mail on May 18, 2006. The e-mail states that Ms. Eldridge has been in contact with the developer and has been apprised of the activities occurring onsite. The construction activities are taking place outside of the 404 jurisdictional washes, and are therefore, not regulated by the Corps of Engineers. Therefore, there is no potential Section 404 violation and/or unauthorized activity. Submittal of the Unauthorized Activity Report Form is not necessary. Despite receipt of this e-mail, E&BCRC completed the form and mailed it to the Corps of Engineers on May 30, 2006.

The report summarizes the contact with Kelly Wolf as follows:  
Ms. Wolf indicated that a preliminary screen of computer records for the site shows no study of the site for habitat impairment. Kelly wants to talk further about the destruction of the heron and Southwest Willow Flycatcher habitat.

The report summarizes the contact with Shaula Headwall as follows:  
E&BCRC wrote an e-mail indicating that a relatively large area that runs along Oak Creek has been cleared and that a local resident indicated a blue heron had nested in the trees that used to grow in this area. E&BCRC wanted to investigate the possibility with an issue of Southwest Willow Flycatcher habitat. If there is an issue with either species habitat destruction, E&BCRC would like to know what action the Fish and Wildlife Service is planning to initiate. Ms. Headwall responded that she had not yet been able to determine whether a 404 permit was issued. We are concerned about any actions that impact either species listed under the Endangered Species Act or Migratory Birds Treaty Act. As to actions we would take in regards to impacts to any species protected under these laws, that is dependent upon the details of the situation.

RESPONSE NO. 26:

*Please see responses to the Comments 10-13 and 15.*

**Attachment to Shanker Letter: Report titled Flood Plain Measurements on South Margin Bella Terra Property, BySynergy LLC, developer; Located off Lower Loop Road, Sedona, Arizona, by Paul A. Lindberg, Geological Engineer, Arizona Professional Geologist #22226, dated October 22, 2006.**

COMMENT NO. 27

The report indicates measurements of the elevation of fill materials along Oak Creek were obtained by a hand held level. Estimates of the rise in water level due to flooding in 2004 were made based on debris clinging in trees. The following conclusions are listed:

1. The newly place unconsolidated fill along the creek-side southern boundary of the Bella Terra property has been filled over an obvious floodplain. The flood in late 2004 came close to over-topping that bench with a rise above the level of Oak Creek as of October 22, 2006 to an estimated 7.0 feet. Similar floods in December 1971 and 1993 were of about the same magnitude as the 2004 flood, indicating that flooding of this magnitude every decade cannot be the hypothetical "100 year flood" event.
2. The culvert that is supposed to drain the western portion of the Bella Terra property is a 3 foot diameter zinc-coated spiral steel pipe whose top lies about 4.6 feet above the current low water level of Oak Creek, and its base is a mere 1.6 feet above the current level of Oak Creek. Even if this pipe were to be connected to drain into Oak Creek the next expected flood would quickly backfill and plug the pipe, preventing drainage of the property.
3. Downstream from the Bella Terra property is Red Rock State Park. On the same day as the above measurements were taken I measured the high water debris marks left by the 2004 flood. It showed that the water rose at least 11 feet at the Sentinel Crossing in the park. This is compatible with the findings upstream where a steeper creek gradient is present. Park officials thought the high water was even higher, up to an estimated 17 feet.

4. It is the opinion of this writer that the entire lower back-filled portion of the Bella Terra property is improperly engineered and is in danger of being overwhelmed by the next "100 year flood" due within the next decade.

RESPONSE NO. 27:

*Please see responses to Comments 10 through 13.*

**Attachment to Shanker Letter: Letter from Kevin Hansen, P.G. (Pennsylvania and Delaware), to Howard Shanker, Esq., dated October 26, 2006. and oral comment from Kevin Hansen during the Public Hearing held November 1, 2006.**

COMMENT NO. 28 (Kevin Hansen Comment 1 through 3) :

The draft APP contains no regulation, listing, or sampling of the numerous harmful substances expected to be released in the post-treatment wastewater. The Commenter cites a study which indicates that pharmaceuticals, insect spray, sunscreen, mouthwash and antibacterial soap chemicals and hormones are common in wastewater and that conventional treatment methods do not remove all of the contaminants. The Commenter indicates these substances can be regulated already under Arizona Regulations, but ADEQ has chosen not to include them in the APP. Further, Arizona regulations allow the Director to add the regulation and monitoring of additional substances s/he believes to be damaging to human health or the environment and a large body of scientific literature strongly suggests health and environmental effects from these substances. No information is provided on the effectiveness of the proposed treatment system for treating these substances, except for a selected few substances listed on the equipment manufacturer's literature/website.

RESPONSE NO. 28:

*Please see responses Comment 17.*

COMMENT NO. 29 (Kevin Hansen Comment 4 through 6) :

Winter seepage of wastewater is likely to occur into Carroll Canyon Wash. Seasonally, seepage already occurs, and current septic systems already leak into Carroll Canyon Wash; added wastewater will increase this flow. This assessment is based on my review of the proposed disposal fields' locations, and on field inspection of the site's topography.

The design of the wastewater treatment system assumes that growing plants will uptake wastewater and thus prevent seepages in the Wash; however, the design itself does not provide a seasonal analysis. In the winter, lower water uptake by plants means that additional flow into surface water and recharge of the aquifer must occur. Both of these wastewater receivers are problematic, the aquifers are likely to be so-called "Sole Source" aquifers with specific Federal legal protection, while Carroll Canyon Wash discharges immediately to Oak Creek, a Scenic and Unique waterway – with special protections in Arizona.

According to a USGS study, 30 years were required to return an aquifer to normal after wastewater injection.

RESPONSE NO. 29:

*Please see responses to Comments 6 through 8.*

*This area has not been designated as having a sole source aquifer.*

COMMENT NO. 30 (Kevin Hansen Comment 7) :

Based on my site visits, the applicant for this APP has already violated Army Corps of Engineers regulations for floodplain filling. This apparent violation has direct bearing on the applicant's ability to successfully implement, build and operate this complex wastewater treatment system.

RESPONSE NO. 30:

*Please see responses to Comments 10 through 14.*

COMMENT NO. 31 (Kevin Hansen Comment 8) :

The APP as drafted is not supported by a complete design drawings/calculations package. Major design changes since July 2006 appear to be based only on verbal or e-mail commitments to ADEQ, not on actual design criteria (not provided in the public record in complete form). It appears inappropriate for the ADEQ and a disservice to the public to (potentially) issue an APP without a complete package for inspection/comment.

RESPONSE NO. 31:

*Please see responses to Comment 1.*

COMMENT NO. 32 (Kevin Hansen Comment 9) :

Voluminous oral objections to the draft APP by the public at the two hearings were not addressed in writing, and ADEQ responses cannot be reviewed. Relevant comments and objections from several physicians, two engineers, two geologists, at least one attorney were not addressed in written form, and many of their comments do not appear to have been addressed.

RESPONSE NO. 32:

*There have been two formal public comment periods and two public hearings for the Bella Terra WRF aquifer protection permit (APP). The first formal public comment period began on May 5, 2006 with the publication, in accordance with Arizona Administrative Code (A.A.C.) R18-9-109 (A), of the preliminary decision to issue an aquifer protection permit (APP). This first formal*

*public comment period ended June 5, 2006. The first public hearing was held on July 20, 2006 in accordance with A.A.C. R18-9-109(B). The public comments received during the first formal public comment period and first public hearing were considered by the Arizona Department of Environmental Quality (ADEQ) and a second preliminary decision to issue a revised APP was public noticed on September 29, 2006. The revised APP was issued to address the comments received during the first formal comment period and public hearing. The second preliminary decision to issue the revised APP and second formal public comment period supersedes the first preliminary decision and formal public comment period.*

*The second formal public comment period, for the revised APP, began on September 29, 2006 and ended November 1, 2006. The comments received during the second formal public comment period, and the second public hearing held on November 1, 2006, are the subject of this responsiveness summary. The revised APP public noticed on September 29, 2006, has been further revised based on the comments from the second public comment period and second public hearing.*

*In addition to the two formal public comment periods and two public hearings, a public meeting was held on August 30, 2006. The public meeting was not a regulatory requirement and was conducted in order to inform and address questions. Comments and questions from the public, including physicians, engineers, geologists and an attorney, were addressed at the meeting.*

*The comments received during the second formal public comment period and second public hearing, are addressed in this responsiveness summary in compliance with A.A.C. R18-9-109(C).*

COMMENT NO. 33 (Kevin Hansen Comments 10 and 11) :

The permit should be denied because the applicant has failed to show the technical capability because of repeated failures to provide an acceptable proposal for wastewater treatment. The number of failed draft permits is also a reason for denial. There appears to be no mechanism for permit denial.

RESPONSE NO. 33:

*The applicant made design changes in order to address public comments made during the July 20, 2006 public hearing. ADEQ allowed the design changes and incorporated the changes into the revised draft permit because they were viewed as improvements to the original design and were responsive to public comment. Revisions to the design of a facility and revisions to the draft permit are not viewed by ADEQ as a failure on the part of the applicant to show technical capability. A decision to issue or deny an individual APP is made by the Department pursuant to A.A.C. R18-9-A201(G).*

COMMENT NO. 34 (Kevin Hansen Comment 12) :

In personal communications with Mr. Paul Lindberg, P.G., the southern portion of the Bella Terra development is proposed to be built below the elevation of the 100-year floodplain, that

was apparently mislocated on the Flood Insurance Rate Maps of the site. Floodplain encroachment by these wastewater treatment/conveyance facilities (e.g. piping and pump stations), in addition to damaging sensitive riparian areas, risks their integrity and may allow for untreated wastewater releases to Oak Creek waters.

RESPONSE NO. 34:

*Please see responses to Comment 13, regarding floodplain issues.*

*The Bella Terra individual APP does not cover the sewage collection system. A separate General Permit is required for sewage collection systems (A.A.C. R18-9-E301). To date, ADEQ has not received a General Permit application from the permittee for the Bella Terra sewage collection system.*

**Letter from Annan Wonson, Ascendia Helminiak, and Ellanora DellErba to ADEQ, received November 1, 2006.**

COMMENT NO. 35:

We live next door to Bella Terra and we are concerned that effluent will seep into Carroll Canyon Wash and then to Oak Creek and then the Verde River. It is very important that the effluent be pure enough to drink and swim in. We are concerned that people and animals will become sick because of the effluent. Pay careful attention to the questions the experts have asked. It is important to protect the children and the environment.

RESPONSE NO. 35:

*Please see responses to Comments 7 and 17 regarding Oak Creek and emerging contaminants, and to Comment 22 regarding wells.*

**Letter from Kelly French to Maribeth Greenslade, ADEQ, received November 1, 2006.**

COMMENT NO. 36:

As a resident of Sedona, I am strongly opposed to A+ effluent being discharged onto areas that could run into the aquifer water supply, because it contains endocrine disruptors or other toxic compounds and poses a major threat to humans and animals. I feel that ADEQ needs to have much stronger standards for its wastewater than A+ effluent to protect the citizens of Arizona and future generations.

RESPONSE NO. 36:

*The permit does not allow toxic constituents to be discharged and requires monitoring to demonstrate compliance with the requirements of A.A.C. R18-9-B204(B)(6). The APP requirements specify that toxic constituents must be removed to the greatest extent possible*

*regardless of cost.*

*Please see responses Comment 17 regarding endocrine disruptors, and Comment 22 regarding wells.*

**Letter from Thomas Slaback to ADEQ, received November 1, 2006.**

**COMMENT NO. 37:**

Prior to the treatment plant going online, baseline data should be collected at the Sentinel Well and at additional monitoring sites at the Carroll Canyon/Oak Creek confluence and the downstream end of the property.

Minute amounts of chemicals found in human urine are not removed by this method of sewage treatment (note the recent news of massive numbers of fish in the Potomac River that have changed sex). Only now are mass screening testing becoming available to detect these chemicals.

In response to Mr. Zito's assertion that his development grading is "a natural and organic" area, runoff has been flowing off this area and into Oak Creek. The same should not be allowed to happen with his treated effluent wastewater.

**RESPONSE NO. 37:**

*Please see responses to Comment 3 regarding the Sentinel Well. Permit Section 2.6.2.3.2 requires actions to be taken if the alert levels for the Sentinel Well are exceeded. These actions include review of groundwater conditions and upgradient water quality, and possible additional monitoring.*

*Please see responses to Comment 17 regarding emerging contaminants.*

*Please see responses to Comment 10 regarding storm water and Comment 7 regarding Oak Creek.*

**E-mail from Sam Braun, President, Red Rock Rural Community Association, to Steve Owens, ADEQ, dated October 30, 2006.**

**COMMENT NO. 38:**

The Bella Terra development borders or is on a flood plain depending on who determines the extent of the flood plain. Two years ago some of the property was under water. The puddles and runoff after a rain are substantial. What assurance is there that this system can function when the floods come?

The prospect of A+ effluent being discharged at the predicted rate of 24,000 gpd into discharge

fields causes us great concern. A+ effluent contains harmful, toxic compounds. What assurance is there that this effluent, still containing harmful compounds, won't run into the wash, the creek and the neighbor's properties let alone the aquifer? The aquifer into which some of the effluent will filter is said by the geologists to be honeycombed with cracks and fissures in its rock formation. It is the same aquifer that we all must drink from.

What assurance that the treatment plant can be maintained after the developer leaves?

RESPONSE NO. 38:

*Please see responses to Comment 7 regarding the disposal fields and Comments 12 and 13 regarding the floodplain and stormwater.*

*Please see responses to Comment 17 emerging contaminants and Comment 22 regarding wells.*

*The permit does not allow toxic constituents to be discharged and requires monitoring to demonstrate compliance with the requirements of A.A.C. R18-9-B204(B)(6). The APP requirements specify that toxic constituents must be removed to the greatest extent possible regardless of cost.*

*The permit is being issued to BySynergy as the owner of the facility and as a utility. The permit may only be transferred to a municipality or to another utility registered with the Arizona Corporation Commission. A permit transfer is subject to review by ADEQ to assure that the new permittee has the financial and technical capability to meet the permit conditions.*

**Letter from Paul Trotta, P.E., Ph.D., to Joan Card, ADEQ, dated October 30, 2006.**

COMMENT NO. 39:

Enclosed find 10 questions which relate to the Bella Terra APP application. The questions fall into 4 groups. Questions 1, 2, and 3 question the touting of the optional features of the proposed system which are not included formally and completely included as part of the actual plans specifications, or the APP and its compliance schedule. Question 5, 6, 7 and 8 question the nature of the issues considered and issues not considered by ADEQ in their deliberation of this APP. Questions 9 and 10 question the use of obsolete site data as the basis of design of the actual system components actually included in this proposed APP. Several of the questions fall more on ADEQ review policy side while several relate more to the specific design and its environmental setting. It is my professional opinion that each of these issues should be seriously considered as grounds for denying or at least stopping the APP application.

In my opinion these issues suggest serious defects in both the regulatory review process and wastewater system design which must be addressed before you continue.

RESPONSE NO. 39:

*Please see responses to these questions, which were submitted as attachments to the Howard Shanker letter, within the responses to the Howard Shanker letter.*

*The regulatory review process is conducted within the framework of the applicable sections of the Arizona Revised Statutes and Arizona Administrative Code. ADEQ staff are required to, and do, determine if applications for APPs meet the requirements.*

**E-mail from Celinas Ruth to Stephen Owens, ADEQ, dated November 1, 2006 and oral comments during the Public Hearing on November 1, 2006.**

COMMENT NO. 40:

I am concerned about the emitters from the subsurface irrigation and the potential of them clogging up. I have read about this particular type of wastewater treatment facility and that this is a potential problem. Our water is quite high in calcium and if the emitters clog we will have quite a problem.

I am concerned that the effluent will reach Oak Creek. What can be done about the pollution of the shallow water wells from the A+ water – water not legal to drink?

Please clarify the differences between the ADEQ Fact Sheet and APP.

I believe ADEQ must upgrade our standards to monitor and remove the deadly chemicals, isotopes, radiation, and endocrine disruptors from our water.

What is the coagulating agent to be used?

Disposal Field 4 is very close to the wash and every time it rains the wash fills with mud and pulls a lot of that silt down out of that area and has in the past traveled at least 300 feet.

RESPONSE NO. 40:

*The subsurface disposal system is designed to allow periodic maintenance to address potential maintenance requirements such as removing obstructions from the emitters. Permit Section 4.0, Table III has been modified to clarify that it requires monitoring of the effluent disposal field components to assure that the disposal system is operating as designed.*

*Please see responses to Comment 7 regarding Oak Creek and Comment 22 regarding wells.*

*Please see responses to Comment 5 regarding the permit and fact sheet.*

*Please see responses to Comment 17 regarding endocrine disruptors.*

*The coagulating agent has not been determined. A coagulating agent would be used, if needed, to reduce turbidity prior to reuse of the effluent in order to meet permit conditions. The coagulating agent is removed in the filtration process prior to effluent discharge.*

*Disposal Field 4 is located in the northwest portion of the property, north of lots 48, 49, 50 and 57 (see Fact Sheet Exhibit 1) and south of the Red Rock Loop Road. West of lots 47 and 48, there is a natural slope on the western corner of the Bella Terra property. Disposal Field 4 is at a higher elevation than the slope and separated from the slope by Lots 47 and 48. The subsurface disposal system is designed to discharge to the subsurface and is limited by permit Section 4.0, Table 1, to emit effluent at a maximum discharge rate of 0.219 gpd/sf. These attributes are adequate to ensure that effluent will not be discharged to the slope. Permit Section 4.0, Table III, requires monitoring of the effluent disposal fields to assure that the fields are operating as designed and that there is no seepage from the fields.*

**E-mail from A.R. Frazier to Joan Card, ADEQ, dated November 1, 2006.**

**COMMENT NO. 41:**

Don't taint the aquifer!

**RESPONSE NO. 41:**

*Please see response to Comment 22.*

**Over 200 copies of a letter, signed by individuals, were received during the comment period:**

**COMMENT NO. 42:**

The letter supports the issuance of the APP for the Bella Terra WRF.

**RESPONSE NO. 42:**

*Thank you for your comment.*

**E-mails from the following commenters (comments have been combined because they are substantially similar):**

**Patricia Rettinger Fledzinskas, to Steve Owens, ADEQ, dated October 31, 2006.**

**NiCieen Nelson to Joan Card, ADEQ, dated October 31, 2006.**

**Beyana Grace, R.N. to Maribeth Greenslade, dated October 31, 2006**

**Asai to Stephan Owens, dated October 30, 2006**

**Bernd Uhl to Stephen Owens, dated October 30, 2006**

**J. D. Howe to Stephen Owens, dated October 29, 2006**

**Bill Eich to Stephen Owens, dated October 30, 2006**

**Kimberly S. Calviero, to Stephen Owens, dated October 30, 2006**

**Marcia Fry to Stephen Owens, ADEQ, dated October 27, 2006.**

**George Fledge to Stephen Owens, ADEQ dated October 27, 2006**

**Shannon Plyler to Stephen Owens, ADEQ dated October 27, 2006**

**CipPriAnkhA to Stephen Owens, ADEQ dated October 27, 2006**

**COMMENT NO. 43:**

Hydrology and hydrogeology studies need to be conducted in order to analyze how the surface and groundwater will be affected over a specified time period. Many neighboring wells are drawn from the shallow groundwater in this area and could be polluted by the effluent from the project.

Oak Creek is a precious waterway and must be fully protected from any degradation. Oak Creek stands to be polluted tremendously by this type of filtering. Every time it floods the Creek will receive all this runoff because there is no possible system this close to it that will be sufficient.

If the original APP had been approved, it would have allowed a chlorine treatment plant with disposal fields adjacent to Carroll Canyon Wash. At the hearing in July, the ADEQ said that it was the best possible proposal and this has been proven inaccurate.

The revised APP and Fact Sheet contain discrepancies that must be addressed.

Apparently, all indications show that the current system is set up for ADEQ to assist the developer rather than to protect the environment and this is of grave concern. Please deny the permit.

The Director must uphold the Clean Water Act and require alternate wastewater treatment plants that will not pollute groundwater, surface water, soil, air, or people who reside in areas in and around such facilities. ADEQ should require additional testing and evaluation of at least six months, preferably twelve months, to be done by an impartial, unbiased, independent third party team to complete an Environmental Impact Statement before the APP is issued.

RESPONSE NO. 43:

*Please see responses to Comment 8 regarding the hydrogeology and Comment 22 regarding the neighboring wells.*

*Please see response to Comment 7 regarding Oak Creek.*

*Please see response to Comment 32 regarding changes to the design.*

*Please see response Comment 5 regarding changes to permit and fact sheet.*

*ADEQ requires wastewater treatment plants to meet treatment performance standards listed in A.A.C. R18-9-204 and to meet Aquifer Water Quality Standards at the Point of Compliance. The proposed Bella Terra WRF meets these criteria and therefore, additional treatment and/or alternate treatment methods are not required. The application for the APP meets the information requirements under the regulations and additional information is not needed to make a determination to issue a permit. The Bella Terra APP has the most stringent permit conditions of any permit issued by ADEQ for a wastewater treatment plant of this size and ADEQ is confident that it is protective of human health and the environment.*

*An Environmental Impact Statement and the Clean Water Act are not applicable to this project because this permit is issued under the APP program which is not a federal program.*

**Letter from Paul F. Miller, to Joan Card, ADEQ, dated October 17, 2006.**

COMMENT NO. 44:

The project has added a sand filter to the treatment train. Are we to understand ADEQ considers the addition of a sand filter sufficient to render the effluent "potable"?

Successful treatment by package treatment plants only occurs under specific controlled conditions. The plant will be highly vulnerable to fluctuations in flow and BOD loading rates and will not be able to produce the specified effluent quality noted in the draft permit. Adding one process on top of another is not always viable because the processes are often not compatible rendering a less than satisfactory effluent quality.

The commenter requests a formal design layout of all the devices and their placement in the Santec treatment train for presentation at the next public hearing.

The commenter requests documentation on the chemistry and biology of the treatment process.

The commenter asks for a breakdown on how ADEQ arrived at the determination that \$31,458.0 for closure cost and \$35,000.00 for plant O&M were sufficient amounts to protect the citizens of Arizona.

RESPONSE NO. 44:

*Addition of the sand filter does not render the effluent "potable". The filter was added to treat the effluent sufficiently to meet reclaimed water standards for Class A+.*

*The wastewater treatment plant design has been demonstrated to meet the treatment performance standards of A.A.C. R18-9-B204. Operation under fluctuating conditions will be controlled by a Certified Operator to assure that treatment standards are attained. The permit includes contingency actions to be implemented in the event that the system does not meet discharge requirements. These include emergency response actions, corrective actions, and notification.*

*The design of the treatment plant and the design calculations document the treatment process and are included in the permit application. This information is available for public review at the ADEQ Phoenix office.*

*The closure costs estimates are included in the permit application and the estimates were prepared and are sealed by an Arizona registered professional engineer.*

*Please see also the response to Comment 14.*

**E-mail from Paul F. Miller, to Maribeth Greenslade, ADEQ, and others, dated October 24, 2006.**

COMMENT NO. 45:

The commenter indicates that after he circulated his October 17, 2006 letter to Joan Card, ADEQ (see Comment 44 above), he received a phone call from "an individual who identified himself as the principal engineer for the developers". ADEQ believes that the commenter had a conversation with Evan H. "Ted" Curtis, P.E., engineer of record for the Bella Terra WRF (See comment from Ted Curtis dated October 23, 2006). The commenter summarizes the phone conversation. The commenter indicates that Mr. Curtis said there are two other Santec systems operating near Bella Terra. When the commenter asked if the other systems were required to produce Class A+ effluent quality, Mr. Curtis deftly changed the conversation. The commenter is aware that the other two wastewater treatment plants produce class two (11) effluent quality. The commenter asked about the biology and chemistry of the system and its ability to consistently produce class A+ effluent at influent levels less than 25,000 gpd. Mr. Curtis said that the system included an equalization tank preceding treatment. The commenter indicates that this is not evidence that the system can produce class A+ effluent at low influent volumes and low influent BOD levels. When the commenter asked about closure costs and operating costs including more detail from Santec, he was informed that the information was proprietary. What then did ADEQ use and reply upon to form the requisite conclusion the figure provided by the developers is adequate and justified?

RESPONSE:

*Please see responses to Comment 44.*

**E-mail from Paul F. Miller, to Maribeth Greenslade, ADEQ, dated October 31, 2006.**

**COMMENT NO. 46:**

The designation of Oak Creek as a unique water essentially stipulates that no water shall enter this water body which will degrade the quality of its water. While A+ sewage effluent is of high standard, it is not deemed by current ADEQ rule, standard, regulation or law as “potable” (drinking) water quality.

ADEQ has refused to address the issue of the unique water designation of Oak Creek and the effect the designation has on not permitting the introduction of A+ effluent into this water body. ADEQ has approved other projects in the general vicinity of Bella Terra whose effluent discharge is of lesser quality and which can also reach Oak Creek.

**RESPONSE:**

*Please see response to the Comment 7 regarding Oak Creek.*

**E-mail from Evan H. “Ted” Curtis, P.E., Engineer of Record for Bella Terra WWTP, Curtis Engineering, to Asif Majeed, ADEQ, dated October 23, 2006.**

**COMMENT NO. 47:**

The commenter indicates that a copy of the Mr. Paul F. Miller letter of October 17, 2006 to Ms. Joan Card, ADEQ, was forwarded to him. The commenter indicates that he made a phone call on October 19, 2006 to Mr. Paul Miller in an attempt to answer any outstanding questions on the Santec design for the Bella Terra WWTP. The commenter summarizes the phone conversation as follows. The commenter indicates that the Santec wastewater treatment plant is specifically designed for the full Bella Terra flow at build-out and is not a “package plant”. Full documentation for the plant, including drawings and design calculations, were submitted to ADEQ. The Santec design has been used over 250 times in various sizes and any design problems or issues have been worked out long ago. The Bella Terra WWTP design allows for full operation with the production of Class A+ effluent at flows ranging from 25% to 125% of rated flow, and including start-up when flows are low. Start-up low levels of flow are handled in the aerated Flow Equalization (FEQ) Tank that is operated in extended aeration mode until 25% of rated flow has been achieved. During start-up when the FEQ tank becomes full, the aeration is turned off, the solids settle and the clear water is decanted and pumped to the aeration tank for further treatment. Then extended aeration treatment continues in the FEQ Tank for incoming sewage. The remainder of the Bella Terra WWTP will be used to produce the quality of effluent as required in the permit. No coagulation is used in the WWTP process as is known in water treatment. The sand filter design provides to the operator an option to use polymer feed to improve sand filter efficiency for best effluent quality. Use of polymer feed in filtration can be

described as coagulation. Bella Terra funds have been deposited into a financial institution for one year of operation and maintenance and the cost of decommissioning the Bella Terra WWTP. The cost of decommissioning includes removal and disposal of the fiberglass tanks and all liquids in the tanks.

RESPONSE 47:

*Thank you for your comments.*

**E-mail from Susan M. Ritter, to Stephen Owens, ADEQ, dated October 29, 2006.**

COMMENT NO. 48:

As former President of Foothills South Owners Association, I am aware that our treatment leachfield went to overflow in the 1993 flood and despite the best of designs, plans and maintenance, headed for Carroll Canyon. Because of this overflow, I was told our subdivision was moved into Phase I of the Sedona Sewer implementation after ADEQ looked into it.

If treated effluent was considered a health hazard for overflow of chemicals in 1993, would it not be considered a health hazard in 2006? Adding extra treatment fields does not answer the question of what happens if there are terrific rains and overflow flooding.

Where is the high water mark from the last major flooding and do these fields fall into that area?

RESPONSE NO. 48:

*A leach field for a septic tank discharges septage that is treated to a much lower standard than the effluent to be produced by the Bella Terra WRF. The effluent required to be produced by the Bella Terra WRF will not create a health hazard because of its quality and the disposal method.*

*The WRF and disposal fields are not located within the 100-year floodplain. Please see the response to Comment 13 regarding the floodplain.*

**E-mail from Rev. Sophia Banks-Daniells, to Stephen Owens, ADEQ, dated October 26, 2006.**

COMMENT NO. 49:

We are voicing our concern about water. Please make sure that we can have healthy water.

RESPONSE NO. 49:

*Please see response to Comment 22 (and others).*

**E-mail from Barb Copenhaver, to Stephen Owens, ADEQ, dated October 26, 2006.**

COMMENT NO. 50:

No ones knows the effect of A+ effluent getting into drinking water aquifers and Oak Creek on humans. No research has been completed which proves at what levels the toxic compounds in A+ effluent are or are not dangerous for us to ingest. I petition ADEQ to investigate and regulate the toxic compounds to prevent them from contaminating our drinking water aquifers and Oak Creek before issuing the APP to Bella Terra.

RESPONSE NO. 50:

*Please see response to Comment 17 regarding emerging contaminants.*

*The permit does not allow toxic constituents to be discharged and requires monitoring to demonstrate compliance with the requirements of A.A.C. R18-9-B204(B)(6). The APP requirements specify that toxic constituents must be removed to the greatest extent possible regardless of cost.*

**E-mail from Jean Jenks, to Stephen Owens, ADEQ, dated October 29, 2006 and oral comments during the Public Hearing held November 1, 2006 .**

COMMENT NO. 51:

Treated wastewater is an unpredictable mixture containing a vast number of harmful variables that pass unchanged into reclaimed water no matter the disinfectant(s) and treatment modalities utilized. These include emerging contaminants such as discarded and excreted pharmaceuticals and personal care products, antibiotics, hormones, carcinogens, radionuclides, endocrine disruptors, and numerous organic industrial, commercial, hospital and laboratory chemicals (including illegal chemicals from "meth" labs, etc.)

Aquifer recharge with treated effluent is in the experimental stages and not enough is known about it to be able to honestly claim, as ADEQ has done, that so-called A+ effluent is "Drinking Water Quality".

Why doesn't ADEQ admit that approval of an APP for Bella Terra will likely result in public health problems locally in the long run, especially for fetuses, children, the elderly and infirm? I urge ADEQ to disallow the APP for the project.

RESPONSE NO. 51:

*Please see response to Comment 17 regarding emerging contaminants and Comment 7 regarding the quality of the effluent.*

*ADEQ does not consider this project a recharge facility and Table I of the permit requires that the discharge limit to the disposal fields remain below 0.219 gpd/sf. ADEQ has not indicated that A+ reclaimed water is "drinking water quality". Please see response to Comment 22 regarding wells.*

*The Bella Terra APP has the most stringent permit conditions of any permit issued by ADEQ for a wastewater treatment plant of this size and ADEQ is confident that it is protective of human health and the environment.*

**E-mail from Marsha Red Adams, to Stephen Owens, ADEQ, dated October 29, 2006 and oral comments during the Public Hearing held November 1, 2006.**

COMMENT NO. 52:

Consider the contaminants in A+ effluent including endocrine disruptors confirmed to cause mutations in fish and frogs. How ethical is it to open ourselves to poisoning and potential disaster, which could destroy this area should the Bella Terra plan be allowed to go forward?

I'm told moving earth over a declared flood zone is a Federal Crime.

The proposed plant is at the bottom of a natural bowl. This fragile environment is all interconnected. Many wells have run dry recently in this area, including the community well in the Cathedral Vista Water Company. Experts say it is not a question of "if" but "when" irreparable problems and damage will arise with the Bella Terra project and sewage treatment plant.

Sedona is at a crucial breaking point of over-saturation. The Bella Terra Plan has come at a critical time of breaking point, which needs to be recognized and acknowledged now. Please consider not only the potential and real dangers of this, but also the larger context of the entire Bella Terra project and the imbalance that could be forced upon this delicate and fragile area.

RESPONSE 52:

*Please see response to Comment 17 regarding emerging contaminants and Comment 12 regarding the floodplain. The WRF and disposal fields are not located within the designated 100-year floodplain, thereby meeting APP requirements.*

*Please see response to Comment 22 regarding wells.*

*ADEQ does not decide land use issues. The local zoning authority determines land use.*

**Letter from David M. Monihan, Jr., P.E., R.L.S., Shepard Wesnitzer, to Maribeth Greenslade, ADEQ, dated October 25, 2006.**

**COMMENT NO. 53:**

The wastewater system has been designed by Santec to provide Class A+ effluent. It is acceptable for all uses allowed by ADEQ as it is the highest level of treatment defined in rule (R18-11-303). The commenter includes a comparison of effluent quality and application rate from pre-development (septic tanks) to post-development (A+ effluent from treatment plant). The commenter states that there is no direct discharge to the alluvial aquifer associated with Oak Creek and there is no direct discharge to Oak Creek and therefore, there will be no pollution of the aquifer or Oak Creek.

The commenter notes that there are a number of public health and environmental issues that are currently under study and that after reasonable study, the findings should be applied to rule or legislation. These new requirements will then apply equitably to everyone and not inequitably to just one developer.

The commenter notes that Yavapai County has approved the development.

The commenter requests that ADEQ disregard the inaccurate, erroneous and misleading information provided by the opposition and approve the APP.

**RESPONSE NO. 53:**

*Thank you for your comments.*

**Letter from Matt Shobert, Sedona Fire District, to Maribeth Greenslade, ADEQ, dated October 24, 2006.**

**COMMENT NO. 54:**

Sedona Fire District favors any plan that supports our ability to deliver essential fire suppression services.

**RESPONSE NO. 54:**

*Thank you for your comment.*

**Letter from Jerry Crawford to Maribeth Greenslade, ADEQ, dated October 24, 2006.**

**COMMENT NO. 55:**

The commenter states that he walked the property in 2002 and saw a junk yard, dilapidated

trailers, agricultural land in need of stewardship, and feces floating in Carroll Canyon Wash. With approval of the APP, wastewater treated to unprecedented environmental standards will have replaced the toxic waste that once covered much of the property.

RESPONSE NO. 55:

*Thank you for your comment.*

**Letter from Steve Spyker to Joan Card, ADEQ, received September 29, 2006.**

COMMENT NO. 56:

I have many unanswered questions and concerns regarding the ultimate protection of Oak Creek and the drinking water quality of the aquifer. I feel that ADEQ has not been respectful of the public by setting these meetings at inconvenient times with only a five day public notice. I was not pleased with the unexpected changes in the technical details of the APP (at both meetings), and the unexpected change in the meeting format (in the second meeting) where no citizen was allowed to verbally ask their questions, but instead had to write them on paper. I request that ADEQ give me correct and honest information regarding the format of all future public hearings or meetings and the date when the new Draft APP will be available for public comment.

RESPONSE NO. 56:

*Both public hearings were noticed in the Red Rock News at least 30 days prior to the hearing date as required by A.A.C. R18-1-401. The public hearings were conducted in accordance with the requirements of A.A.C. R18-1-402.*

*Public concerns expressed at the first public hearing on July 20, 2006, prompted ADEQ to schedule a public meeting as quickly as possible to address the concerns with the permit and permitting process. The public meeting held on August 30, 2006, was not a public hearing and was not required to be noticed 30 days in advance. The fact that approximately 300 people attended the meeting indicates that notice of the meeting reached significant numbers of concerned citizens. The format of the public meeting was designed to answer as many questions as possible.*

*The design of the wastewater treatment plant and the draft APP were revised based on comments received during the first formal public comment period and first public hearing. ADEQ issued a second public notice for the revised draft APP which addressed concerns expressed during the first formal public comment period and at the first hearing.*

*A letter dated October 5, 2006, transmitted a copy of the September 29, 2006, public notice for the revised draft permit and public comment period to Mr. Spyker.*

**Oral comment from Rudy Hilt during the Public Hearing held November 1, 2006.**

**COMMENT NO. 57:**

The commenter identified himself as the senior vice president of creative development for BySynergy, the developer of Bella Terra on Oak Creek.

We feel we have developed a system that meets state requirements and we plan to make the best possible use of our treatment.

We intended to upgrade to A+ water long before these community meetings started several months ago. Our in-house biotechnologist, Dr. Martin Yassi, has been engaged in this process for over a year. He has plans to irrigate our vineyards with this water, utilizing the latest state of the art irrigation system.

**RESPONSE NO. 57:**

*Thank you for your comments.*

**Oral comment from James Gundelach during the Public Hearing held November 1, 2006.**

**COMMENT NO. 58:**

Mr. Gundelach identified himself as a “managing employee of BySynergy for the construction development of the Bella Terra project on Oak Creek”.

The proposed Bella Terra Wastewater Treatment Plant will produce A+ effluent by using the industry’s state of the art wastewater treatment plant design.

Mr. Gundelach commented that the City of Sedona wastewater treatment plant produces Class B+ reclaimed water that is used to irrigate National Forrest Land. He discussed the drainage area of Carroll Canyon wash, information provided in the Red Rock News, and an organization called Ecowatch.

BySynergy will provide homeowners with information on the wastewater system and what not to put in their drains.

The professional engineers retained by BySynergy have provided the key data in submittals to ADEQ showing that the A+ effluent produced by Bella Terra will not add to the pollution of the aquifer, Carroll Canyon Wash, or Oak Creek. No professional engineer has submitted any technical data to ADEQ indicating that Bella Terra will contribute to the pollution of the aquifer, Carroll Canyon Wash or Oak Creek, or that would justify denying the Bella Terra permit.

RESPONSE NO. 58:

*Thank you for your comments.*

**Oral comment from Dr. Martin Yassi during the Public Hearing held November 1, 2006.**

COMMENT NO. 59:

Dr. Yassi indicated that he works for BySynergy in charge of Agricultural Operations, which includes irrigation water and water reuses.

Dr. Yassi comments on what Yavapai County intended by approving Bella Terra.

Bella Terra has 342 acre-feet of water irrigation rights per year from the ditch that runs through the site, but we chose to purify our water to A+ quality to be used for irrigation.

Dr. Yassi comments that the suggestions made by Dr. Trotta should be studied in one of Dr. Trotta's committees and rules and regulations should be made by ADEQ prior to every developer coming through and living by them.

Inaccurate, erroneous and misleading facts have been made regarding the wastewater facility that BySynergy proposed to do at Oak Creek. The professionals and the opposition experts should know better and they do know better.

Every one of the professionals know that water goes into the ground and is met by millions of microorganisms or by organic compounds before reaching an aquifer. One cup of undisturbed natural soil contains more than 200 billion bacteria and more. Their job, as nature intended, is to degrade organic and inorganic chemicals and recharge to the aquifer for us to have good drinking water and to contend that A+ effluent from Bella Terra site would pollute the groundwater is unthinkable.

RESPONSE NO. 59:

*Thank you for your comments.*

**Oral comment from Michael Zito during the Public Hearing held November 1, 2006.**

COMMENT NO. 60:

Mr. Zito identifies himself as co-owner with his wife of BySynergy, one of the developers of Bella Terra on Oak Creek.

Mr. Zito indicates that when he purchased the 59-acre property now known as Bella Terra on Oak Creek, back in 2002, it was basically a 15-acre junk yard and 24 unit trailer park. It was surrounded on 3 sides by residential development. Wastewater from the trailer park at that time

was serviced by a septic system.

Mr. Zito summarizes the zoning changes that occurred.

Mr. Zito indicates that after the July 20, 2006 hearing, BySynergy addressed the concern expressed in the hearing and made changes to the facility that are included in the revised draft permit. The changes are more costly and time consuming but BySynergy agreed to them. Mr. Zito requests that ADEQ issue the APP for Bella Terra on Oak Creek.

RESPONSE NO. 60:

*Thank you for your comments.*

**Oral comment from Frank Scarpelli during the Public Hearing held November 1, 2006.**

COMMENT NO. 61:

The commenter expresses support for the Bella Terra Development and requests that ADEQ issue the APP.

RESPONSE NO. 61:

*Thank you for your comments.*

**Oral comment from Ron Blakey during the Public Hearing held November 1, 2006.**

COMMENT NO. 62:

Dr. Blakey identified himself as a professor of geology at Northern Arizona University.

There is a lack of data concerning the permitting process. The existing geologic report is generalized and does not have the data to address my concerns.

There needs to be a mass balance equation that shows what will happen to the proposed wastewater that is spread onto the leach field. We need to know what's going in, what's coming out, where it's coming out, what is happening to it. This equation needs to address specifically what would happen to the soil and wastewater. For example, during a heavy rain, three to five inches in several hours is not unusual in this part of the country. What would happen if we got three to five inches of heavy rain in several hours or what if we had a heavy snowfall that rapidly melted?

There is inadequate data to calculate the total amount of soil and surficial material that would underlie the proposed leach fields. Do the percolation tests already performed pertain to the entire area of the leach fields? From the aerial photos it looks like the site has been altered. So how can we use old percolation tests with the new existing conditions.

Until this type of study is conducted, there is no way of knowing what the potential for failure of the planned wastewater disposal site might be.

Some potential for failure are listed as: direct runoff from the primary leach field down the steep slope, which is in some areas 6% to 10% in the Carroll Canyon; a dissection and erosion of surficial material and wastewater into Carroll Canyon and Oak Creek; a mass wasting, this includes things like slumps, soil creep and mudflow, of surficial material and wastewater directly into Carroll Canyon; the flowage of wastewater into numerous faults in the area and eventually into the deep regional aquifer; and the seepage of wastewater through surficial material in the bedrock contact to the down gradient towards Oak Creek and Carroll Canyon.

RESPONSE NO. 62:

*Please see response to Comment 8 regarding the hydrogeologic report.*

*The mass balance issue is addressed by the water balance analysis as described in the application and summarized in the Fact Sheet as follows:*

“The consumptive use for the Bella Terra site, assuming turf irrigation, is estimated at 53 inches per year or 0.09 gallons per day per square foot (gpd/sf). The average effluent application rate at full flow, and reuse utilizing 10,000 gpd, is given as 0.219 gpd/sf. To determine the amount of effluent available for percolation, the consumptive use (0.09 gpd/sf) can be subtracted from the application rate (0.219 gpd/sf), providing an estimate of 0.129 gpd/sf percolation.”

*The disposal fields are not leach fields. Leach fields are regulated under the APP General Permit rules for on-site (septic) systems. In this permit, the application rate to the disposal fields is limited by permit Section 4.0, Table 1, and rotational use of the fields must be managed to meet the 0.219 gpd/sf limit. Permit Section 4.0, Table III requires there be no seepage from the disposal fields and that the disposal field components operate as designed. The water balance and permit conditions are sufficient to address the concerns regarding the performance of the disposal system under various rainfall conditions.*

*The question of slope stability was addressed in the application and described in the Fact Sheet as follows:*

“The average ground slope across Disposal Field 1 toward Carroll Canyon Wash is calculated as 4.55% (vertical:horizontal ratio is 1:22). The soils are described as fine loamy sand, with angular sand particles and low clay content. The angle of internal friction, or resistance to shearing, for this type of soil is great enough to hold a stable slope at the low slope angle of the disposal area.

The interface between the sandy soil and the fractured underlying bedrock is not likely to create a soil-rock slip plane. The low clay content soil will not accumulate and hold sufficient moisture to provide the lubrication for slippage along the interface.

The potential for mud flow phenomenon is very low because the sandy soil does not have the clay content to create the conditions typically associated with mud flows. The sandy soil is well drained and holds only a modest amount of capillary water. These properties make it very unlikely that mud flows would occur.”

*Please see responses to Comment 2 regarding the percolation tests.*

**Oral comment from O’Breean Lawrence during the Public Hearing held November 1, 2006.**

**COMMENT NO. 63:**

I’m requesting that all of the technical questions raised in the past two public meetings and here today, be answered clearly and concisely before this permit is approved.

I am concerned about protecting the aquifer and that Oak Creek not be degraded.

Does ADEQ have any provision in place for the flash floods and the forces of nature that have been proven to be destructive of the specific area over the years?

**RESPONSE NO. 63:**

*Please see the introduction to this Responsiveness Summary for a response to the comment regarding how public comments are addressed. This responsiveness summary and the revised permit address the public comments and technical questions.*

*The APP includes requirements designed to protect the aquifer and Oak Creek.*

*This permit applies to the wastewater treatment plant and disposal fields which are outside of the designated 100-year floodplain.*

**Oral comment from Charles Nelson during the Public Hearing held November 1, 2006.**

**COMMENT NO. 64:**

A+ effluent, is there really such a thing? This is raw sewage that is now to become drinking water. What do you think is in that raw sewage? There is medicine, antibiotics, antidepressants, Drano and plumber materials and pesticides.

What will this do to our children born and not yet born? Oak Creek will be flooded with this stuff every time it floods, it cannot be stopped, the floods take everything downstream. The only

way it wouldn't is if you pipelined it away from the creek, the way Sedona had to do it ten years ago.

RESPONSE NO. 64:

*The Bella Terra reclaimed water is not drinking water but it meets the standards of A.A.C. R18-11-303 for Class A+ reclaimed water and meets all current numeric drinking water standards, as well as BADCT requirements. The wastewater treatment plant will produce effluent which meets the APP treatment performance standards in A.A.C. R18-9-B204. Effluent discharged to the disposal fields will not be used for drinking water. The APP does not permit raw sewage to be discharged to the disposal fields. Reclaimed water will meet Class A+ standards prior to reuse.*

*Please see responses to Comment 17 regarding emerging contaminants.*

*The disposal fields are located outside of the designated 100-year floodplain, the permit requires that there is no direct discharge of effluent to Oak Creek, and the sentinel well will provide an early warning of any potential for an indirect discharge to Carroll Canyon Wash and Oak Creek.*

**Oral comment from Blue Evening Star during the Public Hearing held November 1, 2006.**

COMMENT NO. 65:

Blue Evening Star identified herself as a staff writer for the Alternative Voice Quarterly Publications.

The commenter summarizes a 2002 U.S. Geological Survey study (no citation given) that found organic contaminants, fertilizers, flame retardants, pharmaceuticals, hormones, antibiotics, antihypertensives, painkillers, and antidepressants in surface water across the nation. Because there is evidence that these contaminants harm aquatic organisms and very possibly human beings, we should be very concerned and proactive in protecting fragile riparian zones and aquifers from infiltration and degradation. We know these volatile organic compounds can and often do exist in A+ effluent. We have yet to test how the compounds interact with one another in the ecosphere.

The commenter urges ADEQ to examine the concerns raised by Professor Trotta, Kevin Hansen, and Ron Blakey at the hearings and meeting, and to address the questions raised by ADEQ hydrologist Tito Comparan.

RESPONSE NO. 65:

*Please see responses to Comment 17 regarding the emerging contaminants.*

*Please see responses to Howard Shanker letter (Comments 1 through 17), Dr. Trotta's questions*

*(Comments 18 through 24), Kevin Hansen's comments (28 through 34), and Dr. Blakey's comments (Comment 62), above.*

*Please see response to Comment 8 regarding Tito Comparan's hydrology review.*

**Oral comment from Michael White during the Public Hearing held November 1, 2006.**

**COMMENT NO. 66:**

Can ADEQ require the permittee to pay for an independent monitor or an employee of ADEQ, rather than ADEQ relying strictly on the permittee's employees to monitor the Sentinel Well?

Will the treated effluent permitted in this APP adversely affect the health of residents?

Given all the various organic compounds that are allowed in this particular permit, I think it's pretty clear that it is going to have an adverse affect or certainly could have an adverse affect.

**RESPONSE NO. 66:**

*As established by the Arizona Legislature, the APP program requires self-monitoring and reporting to demonstrate compliance with permit conditions. The monitoring reports are evaluated quarterly and inspections are conducted by ADEQ inspectors regularly. This oversight ensures that permit conditions are followed by the permittee. If inconsistencies are found, ADEQ may conduct sampling and analysis to verify that permit conditions are being met.*

*The wastewater treatment plant is designed to meet the treatment performance standards (BADCT) and to comply with Aquifer Water Quality Standards at the point of compliance. These requirements of A.A.C. R18-9-101 et. seq. are designed to protect human health and the environment. ADEQ employees review the information and issue aquifer protection permits based upon the regulatory requirements.*

**Oral comment from Lah-May Bremmer during the Public Hearing held November 1, 2006.**

**COMMENT NO. 67:**

The commenter is concerned about the entire process. I hope we are not just going through the checklist, when all the boxes have been checked, the permit is issued and our comments aren't considered.

Concerns that don't fit into the rules or standards shouldn't be dismissed or passed on, waiting for future studies. They should be reason for pause. There have been many studies on the effects of pharmaceuticals, pesticides and herbicides, and I believe it is time that we speak our concerns on where we as a society are heading with our pharmaceutical chemicals and how they are ending up in our waterways. The commenter cites an article titled How Prescription Drugs are Poisoning Our Waters (website given: AlterNet).

My main concern is the concentration of large numbers of families and aquifers next to Oak Creek. We are going to be in trouble if our water isn't pure to drink. Are we moving in a direction to keep our water pure or are we taking chances? I think the BySynergy project is taking a big chance.

RESPONSE NO. 67:

*Please see the introduction to this Responsiveness Summary for a response to the comment regarding how public comments are addressed. This responsiveness summary and the revised permit address the public comments and technical questions.*

*Please see responses to Comment 17 for a response to the comment regarding regulating pharmaceuticals and other contaminants. The referenced article was reviewed by ADEQ.*

*The zoning authority, Yavapai County, determines the number and density of residences allowable on the property. The wastewater treatment plant is designed to meet the treatment performance standards and to comply with Aquifer Water Quality Standards at the point of compliance. These requirements of A.A.C. R18-9-101 et. seq. are designed to protect human health and the environment.*

*Please see response to Comment 22 regarding wells.*

**Oral comment from Greg Kay during the Public Hearing held November 1, 2006.**

COMMENT NO. 68:

Mr. Kay expresses his opposition to the application because it is a threat to the current quality of drinking water.

While ADEQ maintains and implements its water protection standards, do they meet highest global standards in technology today?

Because of the height of the obvious sensitive and vulnerable lay of the land next to Carroll Canyon Wash and Oak Creek, with all drainage going downhill, including the Bella Terra site, is it not obvious this is a high risk proposal?

Has ADEQ researched the most current global wastewater treatment technology available today that deals with the dangers of pharmaceutical enhancing risks and other contaminants? And if you haven't, why? Is there no active research being done to keep up with the global times of protecting one of our most precious resources, water?

The commenter asks that all parties involved in this decision realize that precedence needs to be set in this case and that no compromise be made to the health and well being of all residents now and in the future.

RESPONSE NO. 68:

*The APP requires that the Bella Terra treatment facility meet the Arizona requirements for regulated contaminants. The Bella Terra APP has the most stringent permit conditions of any permit issued by ADEQ for a wastewater treatment plant of this size and ADEQ is confident that it is protective of human health and the environment.*

*Please see responses to Comment 17 regarding the emerging contaminants and Comment 22 regarding wells.*

**Oral comment from Carolyn Bickart during the Public Hearing held November 1, 2006.**

COMMENT NO. 69:

We hope that you are doing everything under the law, as mandated by the legislature, in order to assure that we have safe drinking water.

Under the mandates of the legislature, and your so-called science coming in, we would like to know if it could be mandated that these wastewater treatment plants upgrade as the sums become available. Why keep running something that is dangerous to the public health?

Please have a neutral third party do all the testing.

Please investigate Disposal Field 4. I live close to that and I know it is a huge slope down into the wash and we do get leaching from that.

RESPONSE NO. 69:

*Please see responses to Comment 17 regarding the emerging contaminants.*

*As new aquifer water quality standards (AWQSs) are adopted for constituents, APPs can be reopened to establish additional aquifer limits and discharge limits and to require additional discharge and groundwater monitoring and reporting.*

*As established by the Arizona Legislature, the APP program requires self-monitoring and reporting to demonstrate compliance with permit conditions. The monitoring reports are evaluated quarterly and inspections are conducted by ADEQ inspectors regularly. This oversight ensures that permit conditions are followed by the permittee. If inconsistencies are found, ADEQ may conduct sampling and analysis to verify that permit conditions are being met.*

*Disposal Field 4 is located in the northwest portion of the property, north of lots 48, 49, 50 and 57 (see Fact Sheet Exhibit 1) and south of the Red Rock Loop Road. West of lots 47 and 48, there is a natural slope on the western corner of the Bella Terra property. Disposal Field 4 is at a higher elevation than the slope and separated from the slope by Lots 47 and 48. The*

*subsurface disposal system is designed to discharge to the subsurface and is limited by permit Section 4.0, Table 1, to emit effluent at a maximum discharge rate of 0.219 gpd/sf. These attributes are adequate to ensure that effluent will not be discharged to the slope. Permit Section 4.0, Table III, requires monitoring of the effluent disposal fields to assure that the fields are operating as designed and that there is no seepage from the fields.*

**Oral comment from Daniel Steinhardt during the Public Hearing held November 1, 2006.**

**COMMENT NO. 70:**

The commenter expresses his opposition to the project. There will be impacts from the project on Oak Creek and beyond to the whole world. Many scientists and doctors are saying the reason there is so much disease on this planet is that the water and drinking water is polluted and that make people susceptible to disease.

**RESPONSE NO. 70:**

*The Bella Terra APP has the most stringent permit conditions of any permit issued by ADEQ for a wastewater treatment plant of this size and ADEQ is confident that it is protective of human health and the environment.*

**Oral comment from Mari Pattison during the Public Hearing held November 1, 2006.**

**COMMENT NO. 71:**

A year ago, approximately 20 wells (120-150 deep) close to Bella Terra, went dry due to the drastic growth. Several people were not allowed to drill new wells because they could not meet the setback requirements from their own septic tanks.

Who at ADEQ has the authority to change the laws?

It is my understanding that it is against the law to drink treated effluent. Who at ADEQ can change the law to allow these people to put this treated effluent into our drinking water?

**RESPONSE NO. 71:**

*The setback requirement for drinking water wells (100 feet from the nearest septic tank) is established in Arizona Department of Water Resources rule A.A.C. R12-15-818, and is established to protect the quality of the water in the well.*

*The APP does not allow effluent to be used as drinking water. The APP requires that the treated effluent be discharged to the subsurface irrigation system for disposal at a very low rate. There is no direct discharge from the wastewater treatment plant to the aquifer.*

**Oral comment from Nellie Edwards during the Public Hearing held November 1, 2006.**

**COMMENT NO. 72:**

There hasn't been an environmental study done to determine whether there are endangered species.

There hasn't been an archaeological study done to determine if there are artifacts in the area.

Can ADEQ use its ability to make recommendations to those people who can honor a moratorium on construction in the valley until such a time that these studies are done?

It is quite evident that there was considerable occupation and I do believe that this is the very serious question that needs to be approached. What if we are out there digging and putting in some foundation and all the sudden we turn up a burial ground? I believe that these studies should have been done prior to any disturbing of the area.

**RESPONSE NO. 72:**

*Please see responses to Comment 15 regarding endangered species and Comment 16 regarding historic sites.*

*The Bella Terra APP regulates the wastewater treatment facility and disposal fields. ADEQ does not decide land use issues. The local zoning authority determines land use.*

**Oral comment from Jay Philips during the Public Hearing held November 1, 2006.**

**COMMENT NO. 73:**

The commenter references a book titled Living Downstream about a woman with cancer. It can be caused by pesticides or other toxic chemicals. Our concerns are protecting our health. There is lymphoma in the commenter's family. He's not sure what caused it. It is important to know what causes cancer so that we can look toward the future and prevent it.

The commenter opposes issuance of a permit.

**RESPONSE NO. 73:**

*Please see responses to Comment 17 regarding the emerging contaminants.*

**Oral comment from Albert Bowes during the Public Hearing held November 1, 2006.**

**COMMENT NO. 74:**

Mr. Bowes comments on his experience in Florida.

The system should have backups in case it breaks down. Put in safeguards.

**RESPONSE NO. 74:**

*APP Section 2.6.5 includes contingency requirements in case of equipment breakdown or other conditions that could impact the discharge from the facility. The application requirements include a contingency plan (A.A.C. R18-9-A204) and specifications for a standby back-up power source (A.A.C. R18-9-B202(A)(10)).*

**Oral comment from Stephen Alish-Tasen during the Public Hearing held November 1, 2006.**

**COMMENT NO. 75:**

It is my understanding that Bella Terra is actually marketing those projects down there and they haven't even gotten approval for the project, yet they are selling lots. How can they do that when the process is still underway and all the concerns of the community have not been addressed yet satisfactorily?

**RESPONSE NO. 75:**

*The marketing or sale of properties at the Bella Terra development is under the authority of the Arizona Department of Real Estate. The wastewater treatment plant cannot operate prior to issuance of an APP.*

**Oral comment from Patrick Hickey during the Public Hearing held November 1, 2006.**

**COMMENT NO. 76:**

Endocrine disruptors should be included in the monitoring requirements of the permit and should be prohibited from being discharged.

I would like to have copies of the speeches made by the first speakers, the employees.

**RESPONSE NO. 76:**

*Please see responses to Comment 17 regarding the emerging contaminants.*

*The public hearing transcript is available for public review at the ADEQ Phoenix office.*

**Oral comment from Ed Stillman during the Public Hearing held November 1, 2006.**

COMMENT NO. 77:

The domestic well for Bella Terra should be tested for the same constituents as the Sentinel Well.

RESPONSE NO. 77:

*The permit does not include requirements to test the domestic well. The Sentinel Well will be monitored for nitrogen species on a monthly basis.*

*ADEQ understands that Bella Terra will have a public water system to serve the development and, as such, will be required to monitor water quality pursuant to A.A.C. R18, Chapter 4. As a community water system, the monitoring requirements will be more extensive than those required for the Sentinel Well.*

**Oral comment from Robert Henry during the Public Hearing held November 1, 2006.**

COMMENT NO. 78:

Mr. Henry identified himself as the president of the Red Rock Ditch Association. He operates a ditch that has been in existence for irrigation water from Oak Creek since 1889. This particular ditch comes out of Oak Creek at the Red Rock State Park and then proceeds through Bella Terra properties and to approximately 45 customers. It flows at eight cubic feet per second, through most of the Bella Terra development, through 2.1 miles of ditch and then it re-enters Oak Creek. Most of the ditch through Bella Terra is unlined.

How is the ditch going to be protected from spills or contamination of the underground that could reach the ditch and then be spread over the 45 adjacent properties downstream. The fields operate food supplies, cattle, and private gardens.

What is the separation between the Bella Terra project and our water supplies?

I'm concerned about disposal field 4. The ditch overflows. We have the ability to do about 200 to 300 cubic feet per second over our ditch. But if the flows exceed that, which I've seen two times over the last four years, approximately three to five times that, and seeing over a hundred cubic feet per second pouring into that ditch, which travels downstream, and when it is traveling at that speed it damages and overflows property.

I would like to work with the people to assure that we are all safe in the areas down below.

RESPONSE NO. 78:

*The ditch enters the Bella Terra development on the east side where Via Bella Terra most closely approaches Carroll Canyon Wash. The ditch runs approximately southwest, paralleling Via Bella Terra and the back of lots 14 through 24 (See Fact Sheet Exhibit 1), where it exits the Bella Terra property on the west side.*

*The effluent disposal fields are located several hundred feet from the ditch. Disposal Field 1 is approximately 300 feet from the ditch and is separated by a bedrock outcrop. Disposal Fields 3 and 4 are approximately 800 feet from the ditch. The subsurface irrigation system is designed to discharge to the subsurface and to emit effluent under unsaturated flow conditions. These attributes are adequate to ensure that effluent will not be discharged to the ditch.*

*Disposal Field 4 is located in the northwest portion of the property, north of lots 48, 49, 50 and 57, approximately 800 hundred feet from the ditch, and at an elevation approximately 50 feet higher than the ditch. Overflow from the ditch will not impact Disposal Field 4.*

**Oral comment from Mr. Joe Galli during the Public Hearing held November 1, 2006.**

COMMENT NO. 79:

Mr. Galli indicated he was speaking on behalf of BySynergy.

There have been two environmental studies done on the property. Monitoring of the Sentinel Well will be done by the Operator, Santec. None of the homes will be built in the floodplain. I believe the state requires that any new development have a minimum of 25 percent open space on the project. Mr. Zito stated that this project could have been 225 units. It is proposed for a maximum of 106 and will likely, with double lot sales, be roughly 85 units, which leaves it at 40+ percent open space.

Mr. Galli thanks the management and staff at ADEQ who have worked on the permit.

BySynergy has exceeded state requirements in many areas and has developed the best product possible. Mr. Galli reads from the Fact Sheet, page 5, paragraph 3, and from page 11 regarding the changes to the permit. He notes that the six changes to the permit were not required but were put forward in a good faith effort to make this facility the best it can be. Mr. Zito has gone above and beyond and has successfully met the APP requirements as needed to construct, operate and close this facility. Mr. Galli requests that ADEQ expeditiously approve the permit.

RESPONSE NO. 79:

*Thank you for your comments.*

**Oral comment from Shannon Plyler during the Public Hearing held November 1, 2006.**

**COMMENT NO. 80:**

I find it unfortunate that there is such a fabrication within the government systems and the lack of checks and balances. It seems to me that ADEQ, and the various land use organizations who decide on land use should be working together before these decisions are made and we get to this point.

My concern is ADEQ's responsibilities within all this and that ADEQ feels empowered in their responsibility within all this. I keep hearing that our hands are tied kind of attitude, and that these are the laws. This is the limit of our power.

I think that ADEQ should take these concerns up to the EPA and organizations in a higher level to do what we are doing, banding together. Band together with other organizations that have similar concerns about the lack of testing done on pharmaceuticals and improper drugs. I don't think that we should wait for health problems.

**RESPONSE:**

*ADEQ coordinates with other agencies to the extent authorized by law. The APP program is a regulatory program established for the state of Arizona and follows state requirements. The Bella Terra APP has the most stringent permit conditions of any permit issued by ADEQ for a wastewater treatment plant of this size and ADEQ is confident that it is protective of human health and the environment.*

*Please see responses to Comment 17 regarding emerging contaminants.*

**Oral comment from Jana Shiloh during the Public Hearing held November 1, 2006.**

**COMMENT NO. 81:**

Ms. Shiloh identified herself as a homeopathic educator and indicated she taught at the University of Arizona Medical School.

Very small quantities of substances can cause very severe reactions and three out of four people in this room will get cancer. So we are looking at toxins. We are looking at things that affect us. The UV sounds really good, but all this effluent turns into dioxins and then goes into our drinking water and our creek.

I wonder if ADEQ can really guarantee us that we will not have pollution into our aquifer and our creek. How long is it going to take you to discover if there is runoff and how will you stop it and then what will you do from there?

I have submitted my e-mail address in the last two meetings and I've never gotten any answers

back to any questions, so I would really ask if there's some way we can see the answers to our questions.

I reiterate what Dr. Trotta said. If all these wonderful things are being stated by Zito's project, then why aren't they in the APP?

RESPONSE NO. 81:

*Please see responses to Comment 17 regarding the emerging contaminants, Comment 7 regarding Oak Creek, and Comment 22 regarding wells.*

*The permit does not allow toxic constituents to be discharged and requires monitoring to demonstrate compliance with the requirements of A.A.C. R18-9-B204(B)(6). The APP requirements specify that toxic constituents must be removed to the greatest extent possible regardless of cost.*

*The APP includes monitoring requirements and contingency requirements. Permit Section 4.0, Table III requires weekly monitoring of the effluent disposal fields to make sure there is no seepage from the fields and that the components are operating as designed.*

*Your e-mail address is in the interested parties e-mail list and you will be provided with a copy of this Responsiveness Summary.*

*Please see responses to Comment 5 regarding changes to the permit.*

**Oral comment from Maura Morning Star during the Public Hearing held November 1, 2006.**

COMMENT NO. 82:

Maura Morning Star identified herself as a teacher and the nursery supervisor at the private school that is close to the treatment area.

The children could potentially be affected by the detrimental effects of the treatment plant. I urge ADEQ to consider all the points that have been brought forward by the experts about the A+, about the runoff, about area four, and the other questions that have been asked.

RESPONSE NO. 82:

*This responsiveness summary and the revised permit address the public comments and technical questions.*

*With respect to children and learning sites, the fact sheet provides the following information:*

*"The WRF meets the required setback of 50 feet, for the full build-out WRF design*

*capacity of 24,910 gpd.*

*No schools or daycare centers are located within the 50 foot setback for the WRF. The nearest public school is Sedona Red Rock High School which is located about 2 miles north at Highway US 89A. The Starseed and Urantian Schools of Melchizedek for Children and Teens has notified ADEQ that their daycare program, home school cooperative and classes are located at homes in the Red Rock Loop Road area, some within ½ mile of the facility.*

*ADEQ's Learning Sites Policy indicates that permit applications will be evaluated to ensure that children at learning sites are protected. In response to public concerns regarding the storage of chlorine at the facility and the protection of children in the area, the Applicant has changed the disinfection method from chlorination to ultraviolet disinfection. The application meets the Aquifer Protection Permit requirements for protection of groundwater, BADCT, zoning, and technical and financial capability requirements. The application has met the criteria of the policy that children at learning sites will be protected."*

**Oral comment from Evan Fitzpatrick during the Public Hearing held November 1, 2006.**

**COMMENT NO. 83:**

Mr. Fitzpatrick indicated he is 16 years old and a student at the private school near the development.

Shouldn't there have been approval of this permit before they started clearing off all these trees in this area because right now it is a really big area of flat dirt and it is looking really dusty? If they don't get approval, it's going to take a while for all those trees and plants to grow back.

If we are putting the effluent back to the earth, which we eventually are going to drink from the aquifer, is it possible to push that farther to be pretty drinkable, if it is to be dumped into the earth at all?

The effluent could endanger children and pregnant women.

**RESPONSE NO. 83:**

*The applicant cannot discharge from the wastewater treatment plant until the APP is issued. The ADEQ APP program does not have approval authority over the grading and drainage issues raised by the commenter. This authority lies with Yavapai County.*

*Please see responses to Comment 17 regarding emerging contaminants.*

*Please see responses to Comment 22 regarding wells.*

**Oral comment from Birgit Loewenstein during the Public Hearing held November 1, 2006.**

**COMMENT NO. 84:**

The purity of groundwater that is drinking water depends on many factors, one of them being the time that the water is allowed to filter into the aquifer and be purified. Were there any studies that looked at the effect of rate of water removal from an aquifer on the water quality in the aquifer? Is this being considered in general and in particular for the Bella Terra Permit?

**RESPONSE NO. 84:**

*The effluent quality meets aquifer water quality standards (AWQS) at the point of discharge. Further treatment in the soil is not required to comply with AWQS. The APP program does not regulate water withdrawal from the aquifer.*

END COMMENTS