

**APPENDIX E**

**COMMENTS RECEIVED ON THE DRAFT EIS  
AND RESPONSES**



**List of Comments to the DEIS**

<b>Comment Number</b>	<b>Comment</b>	<b>Response</b>
<b>U.S. Environmental Protection Agency</b>		
EPA-1	Based on the known effects of pumping on surface aquifers to demonstrate dissolution of matrix and potential of reduction in load bearing strength, EPA recommends a 12th objective of ASR pilots: Evaluate the effects of ASR on the possible magnitude and rate of land deformation (subsidence) in the areas around the pilot tests. Long term effects of pumping on deeper aquifers are unknown.	We recognize the concern regarding the potential for land subsidence as a result of ASR operations. Based on evidence from the operations of other well systems into deep aquifers, we are unaware of any deleterious land subsidence effects at any of the many deep injection well systems that operate in Florida. The concrete pads that surround these DIW systems would have experienced significant cracking and slumping over time if land subsidence at these facilities was a major concern. Therefore, we don't believe this rises to the level of identifying it as a new objective for the pilot projects. This evaluation, however, is being conducted as part of the ASR Regional Study. A detailed survey of the elevation of the pilot project sites is planned upon conclusion of construction and prior to the initiation of cycle testing. We will commit to conduct an additional elevation survey at the sites at the conclusion of cycle testing to see if there is any appreciable difference in elevation that could be attributed to ASR test operations.
EPA-2	Examine the element of uncertainty that long term pumping in the deeper aquifer could cause compaction of the aquifer systems, drainage and subsequent oxidation of organic soils, and dissolution and collapse of susceptible rocks.	See EPA-1 response
EPA-3	Include testing to evaluate the potential for aquifer matrix dissolution, including land-surface deformation in the test areas. Coordination with Office of Ground Water, USGS, Reston, VA, might be helpful.	See EPA-1 response
EPA-4	In addition to compliance with conditions of the SDWA, if the recharge water is treated before injection, those treatment systems must comply with appropriate standards and policies for protection of surface waters and wetlands under the provisions of the Clean Water Act. These standards would impose conditions on treatment system construction activities in designated wetlands, and prohibit in-stream treatment. If those treatment systems include discharges back to surface waters, state water quality standards would have to be met in the receiving waters, under National Pollutant Discharge Elimination System permits.	Comment noted. The ASR facility will be constructed and operated after obtaining the necessary state and federal permits.

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EPA-5	<p>Additionally, the DPPDR/DEIS does not provide discussion or justification of how or why its conclusion, that only fecal coliforms exceeded NPDWR Maximum Contaminant Levels (MCLs), can be explained given the listings on the Florida 303(d) list of impaired waters. According to the 2002 Group One update to the 1998 list of impaired waters, Lake Okeechobee, which is to serve as the primary surface water source for aquifer injection water, is impaired for dissolved oxygen (DO), iron, fecal coliforms, total coliforms, and nutrients. Given that there is an MCL for iron in the source water, justification for not including this in the SDWA analysis should be included.</p>	<p>The DPPDR/DEIS indicates that total coliform is the only federal <u>primary</u> drinking water standard (DWS) that is exceeded in the source (surface) water at the ASR Pilot Project sites. It is our understanding that iron is a secondary DWS. The Florida 303(d) list of impaired waters is based upon a comparison of environment water quality monitoring results to Florida Surface Water Quality Criteria not NPDWR.</p>
EPA-6	<p>From the perspective of generating a sound basis of research information from which to judge the technology, EPA recommends routine sampling of injected and recovered waters for all National Primary and Secondary Drinking Water Standards at the onset and completion of both the injection and recovery phases of operation. This recommendation includes analysis of surface water, after treatment prior to injection, to be compared to all federal and state MCLs and other health-based standards for UIC compliance. It also includes comparison of these data with data analysis of the recovered water, prior to treatment and discharge, to evaluate possible changes in concentration levels before and after storage as an indicator of in-situ reactions. Lastly, this recommendation includes sampling and analysis after treatment prior to surface discharge for compliance with NPDES permit conditions and evaluation of an environmental indicator as determinants of non-degradation and non-impairment of the receiving water.</p>	<p>The proposed monitoring associated with cycle testing of the ASR Pilot Projects already includes periodic analysis for primary and secondary DWS parameters for water “after treatment and prior to injection” and “prior to treatment and discharge”. As stated above, the proposed monitoring is not only for regulatory compliance but also to improve our understanding of subsurface geochemical reactions. We will emphasize this point in Section 9.3 Monitoring of the DPPDR.</p>
EPA-7	<p>Florida has implemented state rules more stringent than federal regulations to ensure that injection activity does not endanger USDWs. Since Florida has been authorized to implement the UIC program, the State has authority and flexibility to establish additional or more stringent requirement it regards necessary to protect USDWs. Therefore, a determination of compliance with UIC Program requirements must come from the Florida Department of Environmental Regulation (FDEP).</p>	<p>UIC permit application has been filed with FDEP. FDEP continues to be an active participant of the project delivery team.</p>
EPA-8	<p>We also note that the DPPDR/DEIS (pg. 10-3) references that the “...USEPA indicated a willingness to consider a risked-based approach to permitting facilities without disinfection” since “...anecdotal data indicated that these [fecal coliform] bacteria were found to die off in the subsurface.” EPA indicated its willingness to consider the risked-based approach along with a list of conditions that would have to be met to implement this approach in correspondence dated February 9, 1999, to the COE commenting on “Restudy” issues.</p>	<p>At the present time – and as indicated in the DPPDR/DEIS – disinfection facilities are part of the design for the ASR Pilot Projects. Ongoing research via the Fate of Microorganisms in Aquifers Study may in the future provide a basis for testing the concept of storing non-disinfected water via the ASR Pilot Projects. It should be emphasized that it is not an assumption of the DPPDR/DEIS and will of course require close coordination and concurrence with FDEP and EPA to ensure protection of public health.</p>

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EPA-9	<p>Recovery water that is to be discharged into South Florida surface waters may also require treatment (or control of the discharged volumes) if these waters do not meet criteria for state water quality standards (Class I or III) for the targeted receiving waters. The Final PPDR and Final EIS (FPPDR/FEIS) should identify those receiving waters, their use designation, the standards to be met for those designated waters, and the projected timeframes for NPDES permitting. The document should also identify whether or not any of the proposed receiving waters are currently identified on the State's 303(d) list of impaired waters, discuss how that would affect the ability to obtain a State NPDES permit and condition requirements for such a permit for surface discharge. Lastly, the FPPDR/FEIS should also discuss treatment technologies which might be required prior to discharge to meet water quality standards for all designated waters.</p>	<p>The DPPDR/DEIS indicated the name, location, and classification of the water bodies targeted for ASR purposes. Section 3.3 discusses the water quality of receiving waters. Section 4 identified the treatment proposed at each site to achieve the standards and permit requirements. The Kissimmee facility, upstream of Lake Okeechobee, will discharge to the Kissimmee River, which is impaired for nutrients. A TMDL for phosphorus has been established for Lake Okeechobee. However, the impact of the phosphorus TMDL is expected to be minimal given that no net increase in phosphorus loading as a result of the discharge of recovered ASR water is anticipated. All ASR pilot facilities will obtain a NPDES permit. Based on the available information, the report currently specifies aeration as the only post-storage treatment process. However, the design for each facility will have pipe fittings and adequate space to install additional treatment processes, such as metals removal prior to discharge of recovered water, should additional treatment be required.</p>
EPA-10	<p>Analysis prior to discharge should also assess the potential products of in-situ geochemical reactions which occur during water storage. Discharge parameters should be identified to reflect the presence of any new pollutant generated by in-situ chemical reaction and leaching from, or dissolution of, the aquifer matrix. In addition, the State will need to ensure that these chemical or physical actions do not result in any contaminant in the USDW in excess of the NPDWR MCLs. If constituents are found to be in excess of the MCLs, further injection would be in violation of the SDWA unless the State issued a variance. As reported in the DPPDR/DEIS, based on initial investigations, contaminants of concern could include metals such as mercury.</p>	<p>As noted above, recovered water prior to discharge will be periodically analyzed for the full suite of primary and secondary DWS parameters to identify parameters of concern.</p>
EPA-11	<p>Although these types of geochemical reactions are not fully understood, the quality of the recovery water planned for surface discharge into the Everglades could be of concern. While planned bioassays (pg. 10-2) may verify the presence or absence of such geochemical reactions and/or determine their effects on test species, Stormwater Treatment Area (STA) treatment of pre-discharge waters may still be advisable to help remove any aquifer reaction products in addition to reducing total phosphorus (TP) concentrations.</p>	<p>The design contemplates the need to retain the "first flush" of water recovered from the ASR wells via an onsite pond. These ponds, however, are not designed as stormwater treatment areas (STAs). It should be noted that many proposed CERP ASR facilities will be located adjacent to reservoirs, and these facilities may serve to stabilize water quality prior to re-introduction of ASR-stored water into water bodies of the State.</p>

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EPA-12	<p>The text (pg. 4-3) states “[c]oliform, considered an indicator of pathogen by the USEPA, is regulated under the SDWA and is limited to 4 colony forming units per 100 milliliters (4 cfu/100 ml)...” Because much of the regulatory discussion for microbiological contaminants includes criteria for different sized systems, Section 141.63 of 40 CFR gives the following criteria: Maximum contaminant levels (MCLs) for microbiological contaminants. The MCL is based on the presence or absence of total coliforms in a sample rather than coliform density. . . Any fecal coliform-positive repeat sample or E. coli-positive repeat sample, or any total coliform-positive routine sample constitutes a violation of the MCL for total coliforms. For purposes of the public notification requirements in subpart Q, this is a violation that may pose an acute risk to health. Accordingly, EPA considers the presence of any fecal coliforms as an indicator of pathogens as opposed to the threshold of 4 cfu/100 ml.</p>	<p>The 4 cfu/100 ml concentration quoted from the DPPDR/DEIS references the State of Florida groundwater standard for allowable concentrations of total coliform bacteria. We will clarify this reference accordingly. We acknowledge that any detection of fecal coliform bacteria is a potential pathogen indicator.</p>
EPA-13	<p>Will an aquifer test be performed at each test site prior to cycle testing? If so, a description of the monitoring wells and proposed tests should be provided in the FPPDR/FEIS.</p>	<p>An aquifer performance test (APT) will be conducted at each exploratory/ASR well prior to cycle testing, as indicated in Table 27 and Section 9.3.2 Background Monitoring of the DPPDR. Preparation of a detailed monitoring plan for the APT is a requirement of the UIC permitting process. An APT has already been conducted at the Hillsboro ASR Pilot Project site, and the results of this test have been forwarded to the Technical Advisory Committee (TAC). The DEIS describes the APT and its potential environmental effects. Section 6.2.3 NPDES Permitting identifies the need for such an NPDES permit to facilitate brackish water discharges from the exploratory/ASR well to the surface water body during the APT.</p>
EPA-14	<p>Because disinfection process using chloramines or chlorine dioxide results in known and unknown disinfection by-products which may have adverse health effects, EPA recommends exclusion of these treatment options.</p>	<p>Concur. Pilot sites that had proposed using chemical disinfection have been changed to filtration systems, with the exception of the Moore Haven alternative, which we are no longer proposing for construction but have retained in the document for analysis purposes.</p>
EPA-15	<p>We recommend inclusion of analysis of all NPDWR standards after treatment prior to injection and after withdrawal prior to treatment for the duration of the pilot studies.</p>	<p>As indicated above, we have accounted for periodic monitoring of the full suite of DWS parameters during recharge and recovery of the proposed ASR Pilot Projects, as will be stipulated as a specific condition of the UIC Permit.</p>

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EPA-16	<p>We are pleased to note that cleanups are addressed in the Recommendations section (pg. 11-2). Item ‘g’ states that the non-federal project sponsor “[a]ssumes complete financial responsibility for all necessary cleanup and response costs of any CERCLA regulated materials located in, on, or under lands, easements, or rights-of-way that the Government determines necessary for the construction, cycle testing, operation, or maintenance of the projects.” Accordingly, we assume that any contamination of the aquifer would be remediated. The FPPDR/FEIS should discuss remediation and provide several plausible scenarios of contamination and cleanup (e.g., cleanup of accidental injection of contaminated recharge water into upper FAS).</p>	<p>In the event of accidental recharge of contaminated water into the aquifer, the ASR well would be pumped – and recovered water treated as necessary prior to discharge into the adjacent surface water body – until such time as near-background conditions are re-established in the aquifer.</p>
EPA-17	<p>We also note that one of the ASR objectives (pg. 1-13: #10) refers to ASR performance relative to geographic location of the wells. We believe that the performance of ASR wells drilled in different geologies is an important variable to consider when assessing ASR technology. The rate of recovery, confinement, transmissivity, and aquifer reactions could vary for ASR wells in different geologies and should be pilot tested to determine consistency and reliability. Assessment of how the ASR recharge-and-recovery methodology performs in different geologies is particularly important from a regional ASR perspective relative to siting ASR wells at appropriate locations having high probability for success. This assessment should reflect current evaluations of lineaments in the area of CERP projects, with the possible inclusion of additional monitoring wells and studies of fate and transport near and in identified lineaments. Other geographic conditions, such as the quality of the nearby receiving waters, could also be important.</p>	<p>We have recently conducted an inventory of photo lineaments in the study area and agree that these features should be considered during evaluation of ASR performance upon completion of cycle testing.</p>
EPA-18	<p>In addition to recharge and discharge water treatment technologies, selection of methods for collecting source water from area surface waters for aquifer recharge that minimize effects on fish eggs, larvae, and juveniles is also important. EPA defers to the FWS and their state counterparts regarding appropriate techniques to minimize the entrainment of fish life stages inhabiting source waters.</p>	<p>We have coordinated our design efforts with the U.S. Fish and Wildlife Survey (USFWS) and Florida Fish and Wildlife Conservation Commission (FFWCC) with respect to the canal intake/discharge structures to minimize the potential for fish entrainment and impingement.</p>
EPA-19	<p>It is unclear (pg. 1-8) if a NEPA document will be prepared for the ASR Regional Study similar to the present ASR Pilot Projects. The FPPDR/FEIS should discuss this.</p>	<p>The ASR Regional Study will produce a technical report documenting the findings of data collection and modeling results, and in itself, is not an action producing or authorizing document. It, therefore, would not require NEPA documentation. That said, it is likely that any change in the proposed CERP ASR capacity based on the results of the ASR Pilot Projects and ASR Regional Study will result in the need for an updated CERP document and plan, with corresponding NEPA evaluation.</p>

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EPA-20	Regarding ASR wells, page 1-4 indicates a “total combined pumping capacity of 1 billion gallons of water per day” while page ES-2 references a “1.66 billion gallons per day storage capacity.” Are these differences perhaps between pilot versus project wells or is there an inconsistency in the DPPDR/DEIS? The FPPDR/FEIS should discuss this. Additionally, page 9-3 states that a recharge rate of approximately 5 million gallons per day per well will be used. The FPPDR/FEIS should discuss how the cycle test rate will be used to extrapolate projected storage capacity in billion of gallons per day. This discussion should also address error.	Page 1-4 of the PPDR will be modified to reflect the correct CERP ASR capacity of 1.66 billion gallons per day as indicated on page ES-2 of the DPPDR. The per-well capacity of 5 mgd correlates to 1.66 billion gallons per day with the current number of proposed CERP ASR wells (333).
EPA-21	Page 7-1 states that “[a] number of major [ground] water users were identified in each case; however, the impact to the identified users is not anticipated to be problematic.” While this may be true for the five pilot wells covered in this EIS, the level of impact of ASR withdrawals on existing ground water users may be quite different for the 333 ASR wells proposed for full-scale CERP project implementation. We assume this will be addressed in the ASR Regional Study.	That is correct.
EPA-22	Additionally, this section indicates that it is anticipated that none of the five project sites will have a permanent “footprint” greater than five acres. The FPPDR/FEIS should clarify whether this is surface area and what the accompanying subsurface projections would be, including whether there are any regulated facilities within the subsurface projections which generate, store, treat, or dispose of materials which could be introduced into the FAS or upper aquifers. If such facilities are present within the areas, protective measures which would reduce risk of contamination should be discussed.	By the term “footprint,” we mean the surface area of the land resources needed to implement the project. In other sections of the DPPDR/DEIS (notably Section 4.4 Groundwater Modeling), we present calculations indicating the projected subsurface areas' effects of the proposed ASR Pilot Projects. In no case have we identified potential sources of subsurface contamination within the area of estimated ASR Pilot Project influence.
EPA-23	What test species will be used for bioassaying the quality of the recovery water intended for discharge into the Everglades system? Are these species indicative of the Everglades and relatively sensitive to changes in water quality?	Screening bioassays – conducted as part of the ASR Regional Study -- will initially focus on standard indicator organisms to allow comparison with typical bioassays. Once the initial screening bioassays are complete, indigenous species will be evaluated for use as test species. More detailed bioassays via mesocosm studies with indigenous species will follow during the actual pilot testing period.
<b>Department of the Interior</b>		

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DOI-1	The alternatives section of the document does not evaluate fish entrainment reduction alternatives, nor identify selection criteria for a preferred alternative. Information on entrainment screening and mitigation information should be included, as well as integrated into Table 2-1.	Section 5.1 and Appendix D of the PPDR describe the selection process and criteria used to develop the preferred alternatives for the pilot projects. Entrainment reduction alternatives is primarily a mitigative measure; it is not the purpose of the pilot tests to demonstrate efficiencies of different entrainment reduction techniques. However, other alternatives than screening were analyzed and a selection of entrainment alternatives for the pilots was based on construction costs. All sites will be using an in-bank sumps, except Caloosahatchee which has a wet well in the intake pump station. The impacts of the pump are analyzed as a part of the total impacts of each system at each site, and therefore do not warrant a separate analysis. In addition, all sites will include a shunt pipe to collect and monitor actual entrainment to identify if this indeed will be an issue for a full scale project and to change operations of the pilot if it is a problem.
DOI-2	The section of Fish and Wildlife resources appears to be general, rather than site specific, information. This is especially true of wildlife sections. Additional detail to make these sections compatible with site specific level of detail and format of rest of document may be found in the FWS draft CAR.	The Fish and Wildlife Resources information was taken directly from the FWS draft FWCAR. Additional information can be found in "Section III: Area Setting" of that document. The level of detail is adequate in evaluating the effects of the pilot projects to fish and wildlife resources. Please note: the level of detail and format are determined by the anticipated effects, risks, or changes to a specific resource, and, thus, more detail is given to resources, such as Geology, based on the nature of the project to impact those resources.
DOI-3	Specific criteria for cessation of recovered water discharge needs to be defined. FWS is willing to collaborate with USACOE and SFWMD in developing such criteria for inclusion in the final EIS.	Cessation parameters for DO, pH, and salinity will be exceedances of the water quality permit standards. For temperature, entrainment, and fish stress/kills, the Corps will continue to coordinate with the USFWS and FFWCC on setting criteria.
DOI-4	The analysis of water quality impacts from ASR pilot discharges assuming complete mixing of the discharge water with the average base flow conditions at each site can be misleading. Many sites occur on highly controlled systems and flow may vary greatly. It would be appropriate to include "worst case" scenarios of ASR discharge during low or zero flow intervals. An appropriate, a site specific scenario should be developed for each location based on an analysis of site flows over a long period of record.	The analysis included in the EIS is done using the assumption of average flow conditions in the receiving water bodies. However, the analysis also uses the assumption that the recovered water quality matches the native groundwater quality which will only be true during the later stages of a recovery event. While it is true that "worst case" scenarios would be better reflected using no-flow conditions, the normal ASR pilot operating plan includes a requirement that recovery ceases if water quality standards are violated. To protect and predict ecological impacts associated with recovery, multiple WQ monitoring and bioassay testing will be performed as part of the ASR Regional Study.
DOI-5	A more thorough treatment or additional planning is needed to address and minimize the potential impacts associated with the first recovery cycle.	The USACE and SFWMD are currently working with the FDEP to develop a cycle-testing plan that minimizes potential impacts associated with the first recovery cycle. Discussions have centered on limiting the period of recovery and ensuring that adequate mixing in the receiving water bodies occur.

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DOI-6	An additional unknown impact is the unknown effect of geochemical changes during water storage in the aquifer and the subsequent effect of this water on fish and wildlife after discharge into the surface water system. At this time, we preclude the study team from anticipating that the potential impacts to fish and wildlife are minimal. It would be more accurate to say that we acknowledge the uncertainties and have devised a monitoring and adaptive management plan to deal with the potential problems as they arise.	We concur the effects of geochemical changes to fish and wildlife in receiving waters is an unknown effect and will be added to the Uncertain, Unique, or Unknown Risks analysis of the pilot projects. However, due to the total contribution of recovered water to receiving water, the treatment required pre-discharge, and the monitoring of recovered water with conditions to stop operations, we anticipate minimal impacts to fish and wildlife resources. The uncertainties of geochemical changes in discharged recovered water is a more appropriate concern for a full scale ASR project will larger quantities of water will be discharged.
DOI-7	Project location: In this section should be information on the process that was undertaken to arrive at site selection through alternative analysis. If NEPA or other documented decision making processor this selection was used, it should be specified. The reader should be referred to section 2.1 of the EIS for further information on siting alternatives.	Concur. The EIS will be revised to refer the reader to Section 2.1 for the siting analysis. A more detailed analysis of the siting is described in Section 4.2.1 of the PPDR.
DOI-8	"Page 12 Section 1.7.2: The document currently reads, "all discharged ASR water is required to meet primary drinking water standards, including dissolved oxygen content." It is recharged water that needs to meet primary drinking water standards, not discharged water..."	Noted. The text has been corrected. Discharged water is required to meet surface water quality standards applicable to the receiving body.
DOI-9	"Issues eliminated form detailed analysis: We suggest adding: 'The impacts of the C-43 Basin Storage Project'... "	Concur. It has been added to Section 1.7.3.
DOI-10	Page 15, Section 2.1. Document references to the Exploratory Well Siting Memorandum that is available in Jacksonville or West Palm Beach. This should be included as an appendix for the reader.	We agree the document is important background information as to the process and criteria used in selection sites. Section 4.2.1 of the PPDR has a summary in greater detail of the siting analysis and we believe is sufficient for explaining the conditions that were used to screen locations.
DOI-11	P 16, Section 2.1. The issue of the presence of fish larvae at the Kissimmee site is somewhat misstated. The issue is that the presence of spawning and nursery habitat for recreationally important fish, such as black crappie, makes this site more environmentally sensitive for locating multiple wells.	The paragraph has been modified to better identify the concern of this area. The second and third sentences read, "The Kissimmee site was also identified as having a higher possibility of impacts to fish larva and recreationally important fish due to entrainment at the intake structures. The vegetated littoral area along the Kissimmee River could provide fish spawning and nursery habitat. "
DOI-12	Towards the end of this section and in other pertinent places in the document (i.e., env. effects section), it should be noted that there is a lack of entrainment screening at the Townsend canal intake for pumping up into the header canal. While there is no clear picture of fishery resources in the Townsend Canal, it is open to the Caloosahatchee River and similar fish communities may be present and subject to entrainment.	There is a "trash" rack on the Townsend Canal pumping station, which prohibits large fish, turtles, gators, etc. from becoming entrained. The SFWMD has discussed this issue with the USFWS and have informed them that the operation of existing pumping station will most likely be grossly modified (if not eliminated) when the C-43 Reservoir project is constructed (in a couple of years) – so, there is no current intent to add any fish entrainment protection to this structure. This will be noted in the report.

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DOI-13	P19, Section 2.2: Since it is stated that the intent of the district is to pursue a variance for secondary drinking water standards, the ramifications of such should be discussed here or in the environmental effects section.	The ramifications of the water quality criteria exemptions (WQCE) for secondary DWS parameters such as Iron, Color, and Aluminum are expected to result in no impact to human health. The implications of these WQCEs on wildlife are minimal as the recovered water is likely to have lower levels of these parameters than the receiving waters.
DOI-14	Pg 20-21, Section 2.2: This section should include more information on alternatives to treat other potential undesirable constituents and physical properties of recovered discharged water (metals, radium, temperature, etc.).	The following text will be added: "Water recovered from the ASR wells may be at a significantly different temperature or contain undesirable constituents such as heavy metals, trace levels, or radioactive decay byproducts. Prior to pilot testing, it is not possible to predict the need for or the type of ancillary treatment that recovered water may require prior to discharge. The water treatment facilities will be designed so that the recovered water can be run back through the existing treatment trains or through treatment trains specifically added to remove the problem constituents. If temperature differences are problematic, some attenuation can be achieved by routing the recovered water through the on-site storage ponds prior to discharge."
DOI-15	"In the discharge section of all the alternatives, discussion is limited to only one re-aeration alternative - cascade aeration. While this may prove to be the best alternative, there are other re-aeration techniques that should at least briefly be described as part of the analytic and planning process . . . Also, since undesirable metals are likely to be constituents of the discharge, more planning details for the additional treatment procedures referenced to treat these constituents should be available in the document. This section states that there will be "provisions for future process additions..." Please define how long it would take to install the "process additions" to ensure that undesirable metals are not discharged into receiving water bodies."	While it is possible to include a review of all possible aeration treatment alternatives in the document, the implications to fish and wildlife of one aeration process over another is not substantial as long as the final re-aerated water meets the 5 mg/l standard. Regarding the treatment of undesirable metals, it is not possible at this time to predict the need for, type of treatment, or speed at which additional treatment units can be installed to treat recovered water. Suffice to say that if recovered water requires additional treatment prior to discharge, the added treatment units will be designed and installed as quickly as possible to minimize program delays.
DOI-16	Section 3.1: This section should include a brief description of the old river channel ox bows remnants that provide most of the aquatic resources for this section of the river.	Concur. Information on oxbows has been added to Section 3.1.
DOI-17	This section describes the topography of each site. The paragraph on the Hillsboro site states that the site is "relatively flat," then goes on to state that the topography ranges from 15 National Geodetic Vertical Datum (NGVD) to 26 NGVD. Unless explained, this difference in elevation contradicts the descriptive term "relatively flat." In addition, the elevation of the Hillsboro ASR site is described as "about 10 feet NGVD." At this juncture, specific elevations should be available for each location. No elevation is provided for the Port Mayaca and Kissimmee sites.	No change is warranted. The site is relatively flat, with variations at the man-made levees. Topography for Port Mayaca and Kissimmee have been added.

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DOI-18	<p><u>Page 56, Section 3.8.1., Surface Water Quality.</u> The first paragraph on this page discusses limitations in analytical methods for water samples, but does not discuss the significance of these limitations. We recommend the discussion be broadened to facilitate the reader's understanding.</p>	<p>No discussion is warranted in the text. There was no impact from not using CLP methods as those analytical methods are not sufficient enough to meet the data quality objectives of this sampling program. The actual procedures used were better suited to meeting the data quality objectives.</p>
DOI-19	<p><u>Page 58, Section 3.8.1., Surface Water Quality.</u> The second paragraph on this page refers to Table 19 of the PPDR. We could not find Table 19 in the PPDR.</p>	<p>Concur. The text will be corrected to refer to Table 3.3-16 of the PPDR.</p>
DOI-20	<p><u>Page 64-65, Section 3.10., Vegetation.</u> The ASR site characterizations include portions of the draft FWCA Report the Service provided in November of 2003. Additional information contained in the draft FWCA Report described the existing conditions in more detail. This additional text should be added to this section to more accurately describe the existing conditions present at these locations.</p>	<p>Section 3.10 has been updated with vegetation information provided in the draft FWCA.</p>
DOI-21	<p><u>"Page 64, Section 3.10., Vegetation, Hillsboro ASR Pilot Project.</u> The information in this section refers to a Wetland Rapid Assessment Protocol that was performed for the Site 1 Impoundment Project. The subset of the site where the ASR will be located is not a monoculture of Australian pine lacking ground cover as stated; rather, it is a disturbed area where Bahia grass and Australian pine are dominant. In the November 6, 2003 FWCA Report, the Service provided the following site specific vegetation information for the ASR location; we suggest this information be inserted into the final EIS. . . "</p>	<p>The first paragraph in Section 3.10 described the results of the WRAP. The second paragraph described the conditions around the well sites, including the text reproduced in this comment, and, therefore, does not need to be inserted. In order to clarify the conditions at the site, the WRAP reference and its findings will be removed.</p>
DOI-22	<p><u>Page 64, Section 3.10., Vegetation, Kissimmee Site (Lake Okeechobee ASR Pilot Project).</u> This section should include a description of the 30 to 40 foot wide emergent and floating leaf vegetative community along the littoral channel slope edge. This is probably one of the site's most ecologically important communities, as it provides a number of functions, including spawning beds for black crappie and other fish species.</p>	<p>Concur. Information will be added from the FWS draft and final FWCAR on the littoral vegetation.</p>
DOI-23	<p><u>Page 65, Section 3.11., Fish and Wildlife Resources.</u> There appears to be a major document format shift in this section to general, rather than site-specific information presentation. This is especially true for wildlife sections – birds, reptiles and amphibians, and mammals.</p>	<p>See response to DOI-2.</p>

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DOI-24	<p>Page 65, Section 3.11., Fish and Wildlife Resources, Fisheries Resources. There appears to be inconsistency in format relative to listing fish common and scientific names. Either all common names should be used, or, if using scientific names, use it for all species the first time the fish is referenced and italicize them. There is also a large recreational fishery for black crappie (<i>Pomoxis nigromaculatus</i>) and bluegill (<i>Lepomis macrochirus</i>) in Lake Okeechobee which should be mentioned.</p>	<p>We concur. Text will be corrected and recreational fishery will be added to Section 3.11.</p>
DOI-25	<p>"Page 66, Section 3.11., Fish and Wildlife Resources, Migratory Birds and Mammals. "The general discussion of the south Florida ecosystem for migratory birds and mammals is inconsistent with other parts of the document which are more site-specific and detailed. We suggest that this section be reworked to include site-specific habitat information, including habitat quality and/or utilization for migratory birds and mammals in keeping with the purpose of the 'Affected Environment' section of the draft EIS. . . ."</p>	<p>See response to DOI-2.</p>
DOI-26	<p>Page 75-81, Section 3.14., Hazardous, Toxic and Radioactive Waste. Acreages should be provided for each site (Port Mayaca, Kissimmee, Moore Haven, etc.) and sub-unit (<i>i.e.</i>, cattle livestock pen, ornamental nursery, former mining operation, etc.).</p>	<p>The Port Mayaca site is approximately 5 acres in size. The current land use is of canal right-of-way. The Kissimmee Site will require approximately 5 acres of land which were formerly used as pasture. The Moore Haven site (no longer being proposed for construction) would require less than 5 acres and currently is used as a canal right-of-way and parking for a public boat landing. The Caloosahatchee and Hillsboro sites are both portions of land parcels that were used for long-term crop agriculture. We believe the Draft EIS adequately captures these land uses.</p>
DOI-27	<p>Page 78, Section 3.14., Hazardous, Toxic and Radioactive Waste, Port Mayaca Site. Sediment spoil material (40,000 cubic yards) was removed from Lake Okeechobee and placed at this location. The draft EIS states that the material was tested for possible contamination, and reports that chemicals of potential concern were not detected. References should be cited to provide verification to the reader.</p>	<p>This information was received by the Corps via oral communication with SFWMD project managers. The very fact that the material was buried on-site would indicate that the soil testing results indicated no exceedances of FDEP's Soil Cleanup Target Concentrations.</p>
DOI-28	<p>Page 83, Section 3.18., Recreation Resources, Kissimmee River site. This section should mention the littoral shelf adjacent to the ASR site that provides habitat for spawning of recreationally important species (<i>e.g.</i>, black crappie and bluegill). It should also emphasize the high recreational and economic value of the black crappie fishery in this section of the river.</p>	<p>Concur. It is recognized that there is a littoral shelf adjacent to the ASR site that provides habitat for recreationally important species. This project will not negatively impact the fisheries here and will therefore have no harmful effect on the fish population. Information will be added to notate the significance of the fishery in the area.</p>
DOI-29	<p>Page 83, Section 3.18., Recreation Resources, Moore Haven site. This paragraph states that the "river fishery is of low quality. . ." Evidence or a citation for this statement should be included. Hybrid striped bass should be added to the list of frequently caught species at this site.</p>	<p>Statement has been retracted.</p>

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Comment Number	Comment	Response
DOI-30	<p><u>Page 100-101, Section 4.6., Surface Hydrology, Caloosahatchee River ASR Pilot - Project.</u> The level of detail in the Caloosahatchee section is not consistent with that for other projects. If this is because Caloosahatchee is further along in its design phase, it should be so stated for the reader.</p>	<p>Indeed, the Caloosahatchee was further along in detail designs at the time of drafting the EIS. However, the additional details in the report are related to additional components at this site, mainly the treatment pond, and warranted additional information in the text.</p>
DOI-31	<p><u>Page 107, Section 4.8.1., Surface Water.</u> The first paragraph states, "In general, the recovered water will have to meet the water quality standards applicable to the receiving water body." The use of the term "in general" implies that there would be times that the water quality standards would not apply. When would this occur?</p>	<p>During the initial recovery event (Cycle 1), discharge would continue for 30 days or until chloride concentrations in the recovered water match the native groundwater. Since the native groundwater concentration of chloride is above the surface water quality standard, the later part of the first recovery event would be an instance of recovered water not meeting surface water quality standards.</p>
DOI-32	<p><u>Page 108, Section 4.8.1., Surface Water.</u> A factor which should be included in potential water quality impacts is the magnitude of flow in the receiving water body during well discharge. Many of these sites are on highly flow-controlled systems and flow can vary significantly. This becomes particularly important during the first recovery period when the likelihood of high levels of total dissolved solids, chlorides, sulfate, and other minerals in the discharge is great. There should be a stated commitment in the ninth paragraph (and any subsequent decision documents) to avoid first recovery period discharges during low flow periods. There should be further discussions about alternatives to reduce the potential 15-day exceedances of water quality criteria during the first recovery period and potential impacts arising from it.</p>	<p>The following text will be added: "The USACE and SFWMD will minimize the impact of the initial recovery cycle by making an effort when possible to schedule this recovery during periods when flow is available in the receiving body."</p>
DOI-33	<p><u>Page 109, Section 4.8.1., Surface Water.</u> The discussion of thermal water quality criteria should include an explanation that these criteria were set with industrial or municipal cooling water discharges in mind. Consequently, the standard does not address discharges with a lower temperature than the receiving body. Because of the standard's warmer water discharge limitation, it should be made clear that meeting the thermal water quality standard does not imply that there will be no impact to biota.</p>	<p>The following text will be added: "Although the difference in temperature between the recovered water and the receiving waters are expected to be minimal, meeting the thermal water quality standard does not mean that there will be no impact to biota. Any impact to biota from thermal discharges is however expected to be minimal."</p>
DOI-34	<p><u>Page 110, Section 4.8.1., Surface Water.</u> In the first paragraph, it's not clear what parameters are being continuously monitored in addition to water temperature. We suggest that chlorides and TDS be measured, or conductivity as a surrogate. We believe that pH should be continuously measured.</p>	<p>There is no plan currently for continuous measurement of pH. However, pH will be measured frequently as part of the regular testing of recovered water as well as sample water from monitoring wells</p>

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Comment Number	Comment	Response
DOI-35	<p>Page 110-122, Section 4.8.1., Surface Water. The analysis of discharge impacts can be misleading because of the complete mixing assumption, which relies on average base flow conditions at each site. Many sites occur on highly controlled systems and flow may vary greatly. It would be meaningful and appropriate to include “worst case” scenarios of ASR discharge during low or zero flow intervals. An appropriate, site-specific scenario should be selected for each site based on an analysis using daily aggregated low site flows over a long period of record. For example...”</p>	<p>It is true that the low flow condition would present a "worst case" scenario for receiving water impacts. The analysis for the low flow condition is not presented in the EIS because it would show the obvious result of the receiving body water quality matching the recovered water quality in the immediate location of the discharge. The Corps agrees that this will be come a critical issue if ASR is widely deployed in CERP; however, for the purposes of the Pilot PPDR/EIS, the analysis presented is adequate given the limited information available regarding actual recovered water quality.</p>
DOI-36	<p>We are also concerned that only 13 years of flow and water quality data are used for the analysis, particularly considering the document’s analysis in Tables 4-2 through 4-4 and the accompanying text. If these were all the available data, some discussion of confidence is warranted. The document should provide readers with an appreciation of how sufficiently the data characterize drought and high flow conditions.</p>	<p>We disagree. The analysis of 13 years of data provides an adequate representation of the highly managed system during the recent past. The analysis would not change significantly if re-done using a 31 year period. Additional confidence in this type of analysis would require actual data for recovered water quality.</p>
DOI-37	<p>Page 112, Section 4.8.1., Environmental Effects, Surface Water Quality, Hillsboro ASR Pilot Project. The Service favors the idea of routing recovered water through the filtration pond prior to discharge to the Hillsboro Canal provided the pond water quality is consistent with, or better than, that of the Hillsboro Canal.</p>	<p>The Hillsboro site has an existing quarry pit (not filtration pond) that could be used to route first-flush and backwash water. Provisions will be made in the design to allow use of the above-ground filters in both recharge and recovery mode should the recovered water have particulate matter.</p>
DOI-38	<p>Page 114, Section 4.8.1., Surface Water, Port Mayaca Site. The ramifications or significance of excess iron in the receiving stream should be discussed at the end of the carryover paragraph from page 113. In the first sentence of the first full paragraph on this page, the “magnitude of the possible impact” is also due to concentrations of pollutants and the physical characteristics (e.g., dissolved oxygen, temperature, and pH) in the discharge water. We recommend avoiding using words like “periodically” to indicate a sampling frequency (as in the third full paragraph). It gives the reader the impression that the sampling effort will be minimal. If there is a set sampling schedule, it should be stated.</p>	<p>Comment noted. Text has been modified accordingly.</p>
DOI-39	<p>Page 136, Section 4.12., Fish and Wildlife Resources. The fifth paragraph is not accurate. There are no plans that we know of to monitor and/or characterize actual fish impingement/entrainment ratios. There will be fish community sampling work in the vicinity of the ASR wells and monitoring of ichthyoplankton entrainment at the Kissimmee site.</p>	<p>The USFWS and FWC has participated in meetings to discuss using a shunt pipe at the ASR facilities to determine if fish larvae are passing the intake screen. The ASR surface facilities have been designed with the necessary sampling port and a shunt pipe will be installed at all pilot facilities for monitoring purposes.</p>
DOI-40	<p>"Page 137, Section 4.12, Fish and Wildlife Resources, 'Response to Service’s Comments, Bullet 1...indicates that intake velocities recommended by the Service may not be feasible, but that the project will incorporate the lowest velocity that is feasible..."</p>	<p>At this point in design, we agree that the velocities can be achieved as recommended by the Service and intend to implement these recommendations. If further designing prove the velocity is unattainable, we will consult with the Service prior to construction to adopt appropriate management measures.</p>

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Comment Number	Comment	Response
DOI-41	<p><u>Bullet 4</u> - The intent of this recommendation was to indicate that there are additional water quality standards besides drinking water standards that the Corps and District need to take into consideration for this project. The U.S. Environmental Agency (EPA) has developed many water quality standards based on toxicity to aquatic resources and these have been adopted by many, if not all, states. In most cases, these tests and associated detection levels should be attainable in any EPA certified laboratory.</p>	<p>Comment noted. In addition to testing for the typical standard water quality criteria constituents, toxicity and bioaccumulation studies will be performed as part of the ASR Regional study.</p>
DOI-42	<p><u>"Page 138, Section 4.13., Threatened and Endangered Species.</u> Since listed species are located in proximity to the proposed sites and may use the sites during construction and operation, document should be changed to state that the effects are anticipated to be negligible and discountable for all listed species identified in the draft EIS ... In general, a better discussion of the potential effects of the pilot project on listed species should be included to support the statement that the effects are negligible for these projects."</p>	<p>Document has incorporated statement that impacts would be anticipated to be negligible. The discussion of impacts to listed species is adequate, with exception of state listed species and fish species, for which discussions have been added.</p>
DOI-43	<p><u>Page 138, Section 4.13., Threatened and Endangered Species, second bullet.</u> Fences are not known to be effective at excluding large mammals if they wish to enter a site. Fences should be designed so that small mammals and reptiles could pass under them by raising them between 0.5 and 1 foot above land surface. The fences described would be more effective at excluding human entry, not wild animal entry.</p>	<p>Fences were added as a measure provided by USFWS during ESA consultation. The size of the pilots are small and habitat is limited. The fence does not preclude animals from going around the facility, or cut them off from suitable habitat. We will continue to coordinate with the service on practical measures of installing a fence to allow for animal passage.</p>
DOI-44	<p><u>Page 138, Section 4.13., Threatened and Endangered Species.</u> The fourth bullet from the bottom of the page discusses gopher tortoise relocation. Please note that a permit from the FWC for gopher tortoise relocation is required prior to moving any tortoises and the relocation should be performed by a qualified environmental consultant. Conservation measures in this introduction section should be added to the individual species discussion sections.</p>	<p>Comment noted.</p>
DOI-45	<p><u>Page 139, Section 4.13., Threatened and Endangered Species.</u> Coordination with the FWC would not be required under Section 7 of the Endangered Species Act; please include the appropriate state statute that directs action agencies to coordinate with the FWC.</p>	<p>Concur. Coordination is conducted under the Fish and Wildlife Coordination Act. Text will be corrected.</p>

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Comment Number	Comment	Response
DOI-46	<p><u>Page 140, Section 4.13., Threatened and Endangered Species, Everglades Snail Kite.</u> This section should note that copper is likely to bioconcentrate from periphyton to apple snails along with direct uptake by snails through sediments and the water column. The following information should also be included. "The Sediment Quality Assessment Guidelines TEC for copper is actually 32 mg/kg and is protective of aquatic life. This level does not address potential bioaccumulation or biomagnification issues. An Interim Action Level of 85 mg/kg copper in sediments is being proposed by the Service to minimize risk to snail kites."</p>	<p>Regardless of which standard is used, the treatment pond will not be constructed or operated to attract or support snail kites or apple snails. The depths and slope of the treatment pond will be maintained at levels too high to support vegetation. The potential for copper to bioconcentrate from periphyton to snails will be added to the text.</p>
DOI-47	<p><u>Page 141 and 142, Section 4.13., Threatened and Endangered Species, West Indian Manatee.</u> This section lacks adequate detail on the effects of the action on manatees as it relates to water temperatures. The Service's intention by mentioning "an analysis of the anticipated discharge timing (presumably during droughts and the dry season) and the seasonal occurrence of manatees in the project area would facilitate an analysis of effects" in the draft FWCA Report was to initiate this analysis for inclusion in the draft EIS. Such an analysis would enable adequate assessment of temperature-related effects at pilot ASR sites.</p>	<p>Groundwater temperature in the Floridan Aquifer in South Florida ranges between 18 - 31 degrees C with an average of 25.6 degrees C and a St Dev. of 1.4 degrees. More than 90% of the data indicated temperatures greater than 24 degrees. We used an average temperature of 25.5 degrees and a minimum temperature of 24 degrees. Average receiving water temperatures at the 4 sites ranges from 17.3 degrees in the winter to 31 degrees in the summer. Temperatures below 68 degrees F or 20 degrees C are harmful to manatees. This temperature data indicates that in the winter, the ASR discharge will not lower receiving water temperatures to below 20 degrees C. We will be monitoring discharge temperature as required in FDEP permits. Extreme differences in temperature are a "stop condition" of the pilots.</p>
DOI-48	<p><u>Page 142, Section 4.13., Threatened and Endangered Species, Audubon's Crested Caracara and Bald Eagle.</u> These sections should outline measures that will be implemented to reduce the potential effects of the actions on caracaras and bald eagles to the extent that they become insignificant and discountable. These sections should not simply reiterate the statements contained in the draft FWCA Report since that document contained only our recommendations and not the actions the Corps and District plan to implement to protect these species.</p>	<p>The document states that species are not currently known to inhabit the site, surveys will be conducted prior to construction, and management measures followed in order to restrict impact to these species. In the July 14, 2004 letter, the Service concurred with the USACE determination of "not likely to adversely effect" based on the assessment and measures outlined in the draft EIS.</p>
DOI-49	<p><u>"Page 143, Section 4.13., Threatened and Endangered Species, Florida Panther.</u> Since providing our draft FWCA Report, new information on panthers and the manner in which we consult on land and water development projects is changing areas of concern as well as what activities may have effects on this species. The Service will provide a revised section in our final FWCA Report ... "</p>	<p>The USACE has reviewed the Final FWCA Report and the July 14, 2004 letter submitted in compliance with the Endangered Species Act. It appears updated information as relates to the Florida panther was limited to an extension of it's range. We have noted in the Final EIS that it has the potential to be found at any of the pilot sites.</p>
DOI-50	<p><u>Page 159, Section 5.2., Fish and Wildlife Considerations.</u> The conditions that would require the immediate cessation of recovered water discharge should have specific criteria so that they are implementable. The Service would be glad to work with the Corps in developing such criteria for inclusion in the final EIS.</p>	<p>Obtained permits set the water quality parameters. Additional parameters related to temperature, entrainment, and fish stress or kills will be developed with the Service and FFWCC.</p>

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Comment Number	Comment	Response
<b>Natural Resources Conservation Service</b>		
NRCS-1	<p>With regards to the surface water levels and the irrigation supply provided by the Header Canal and the Caloosahatchee River ASR Pilot Project, it is stated that the SFWMD has agreed to terminate withdrawals from the header canal associated with testing the pilot projects during extremely dry periods. We believe this would be the optimal time to test recovery from the ASR to mimic the actual purpose of the ASR pilot project. This should have added benefit of alleviating drought conditions and may provide a potential economic benefit to citrus growers. This assumes chloride levels in recovered water do not exceed acceptable levels for citrus.</p>	<p>We agree that ASR recovery during periods of drought would provide benefits to local water demands. The cycle testing plan developed for the pilot project has a 2-year duration that includes several periods of recharge (lasting 6 months) followed immediately by recovery. Recovery will last until the chloride concentration in the recovered water reaches 90% of the 250 milligram per liter standard for drinking water – which will probably last for between a few days to a few months for each cycle. Immediately following the recovery period, the next recharge period cycle will begin. Given this testing schedule, the recharge and recovery periods will probably fall “in and out of sync” with regional wet and dry periods over the two year period. It would be preferable to be consistent with the duration of recharge periods so that the “recovery efficiency” of the system can be observed and projected with some confidence. However, if a prolonged drought takes place, the SFWMD has agreed to suspend the well testing so that local demands will not be impacted.</p>
NRCS-2	<p>Concerning surface water quality for the Caloosahatchee River ASR Pilot Project: careful attention to the chloride concentration of recovery water must be given during drought periods when flow to the Header Canal may be restricted. Recovered water may be a larger percentage of flow during these times. The aggregate chloride concentrations in the Header Canal should be maintained at an acceptable level for the citrus irrigation to ensure producers are not negatively impacted.</p>	<p>During “normal” dry seasons, the pump station on the Header Canal is operated almost continuously to supply the local agricultural demands. When water is recovered from the ASR system during these times, it will represent a very small percentage (less than 5%) of the total flow in the Header Canal. During extreme drought conditions, the SFWMD has agreed to suspend the well testing so that local demands will not be impacted – either by withdrawals or discharges that could otherwise impair the water for local use.</p>
<b>Florida Department of Environmental Protection</b>		
FDEP-1	<p>(PPDR) Page 1-8. Section 1.4 Other Related Studies and Projects. There should be a reference to the Fate of Microorganisms Study being conducted in conjunction with the SFWMD. A discussion of this study is included in every individual Project Management Plan (PMP) for the pilot projects.</p>	<p>The Fate of Microorganisms Study had been included in the Project Management Plan for each CERP ASR Pilot Project. Since that time, it’s importance with respect to these pilot projects has been somewhat diminished with the commitment to install disinfection facilities at each site. Phase I of the subject study will be made available in the next month or so. It is unclear if regulatory agencies will allow for continued research that might ultimately allow storage of non-disinfected water on a trial basis as part of the ASR Pilot Projects. Therefore, it was omitted from the PPDR to avoid confusion. At such time as research confirms that public health can be maintained, we might revisit this possibility.</p>

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FDEP-2	Page 3-1. 3.1.1.1.2. Minor point: There is evidence that the Hawthorn Group sediments may be as old as late Oligocene. The statement: "The lithology of the Hawthorn Group is composed primarily of greenish-grey colored phosphatic lime mudstone with minor clay, sand, and limestone" is confusing in that limestone is described as a primary and a minor constituent. Perhaps reword to clarify. The Arcadia Formation should be mentioned, as it is locally part of the upper Floridan aquifer system.	Text has been revised.
FDEP-3	Page 3-2. 3.1.1.1.3. The Suwannee Limestone is not present throughout the South Florida region. Although this is noted in 3.1.1.1.4, for consistency, it should be noted in this section as well.	We will revise accordingly
FDEP-4	Page 3-2. 3.1.1.1.4. Minor to trace amounts of quartz, clay, pyrite, gypsum, and organics are locally present in these undifferentiated carbonates.	We will revise accordingly
FDEP-5	Page 3-2. 3.1.1.2. In southwest Florida, there are permeable zones in the Intermediate, which is why it is known as the intermediate aquifer system/confining unit. In the CERP region, not all of the Miocene sediments are confining as implied by the text.	We will revise accordingly
FDEP-6	Page 3-38. Table 3.3-10. Notes. Mention new arsenic standard for drinking water.	We are aware the new arsenic standard is scheduled to change in 2005. The existing water quality has demonstrated that arsenic concentrations do not exceeded the new standard.
FDEP-7	Page 6-3. Table 6.1-1. Anticipated Permits and Regulatory Authority should include an entry stating: NPDES Stormwater Permit...FDEP - Tallahassee.	Comment noted
FDEP-8	"Page 6-5. Section 6.2.5. Water Quality Criteria Exemptions (WQCE). The applicant needs to be made aware of the following: a) A WQCE will require approximately six to eight months to process . . . b) State and federal underground injection control regulations require that the injection activity not adversely affect the health of persons. . . . c) Monitoring will be required in both the ASR storage zone (and possibly in an overlying aquifer near each injection well) for any facility requesting a WQCE. The monitoring section (9.3.3) does not seem to specifically address this monitoring requirement. d) It is extremely important to determine the best quality ground water in the ASR storage zone . . ."	Comment noted.

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Comment Number	Comment	Response
FDEP-9	A) Cycle Testing - It appears that a period of long-term injection is to take place before recovery is attempted to develop a Target Storage Volume (TSV). If this is done, monitoring of ground water quality in the ASR storage monitor wells will need to occur to determine if arsenic concentrations storage in the ASR are of concern. These may not be present in the recovered water if a large amount of water is injected and relatively little water is recovered, but it may nevertheless be present in the aquifer because of injection.	Long-term recharge will occur at select ASR Pilot Project sites, but not all of them (see original and revised cycle testing plan). Monitoring of storage-zone monitor wells has always been part of the monitoring plan as part of the overall cycle testing plan, including sampling and analysis for arsenic.
FDEP-10	b) Objective 2 and throughout: Please use "recovery efficiency" instead of "recoverability". This document will go to an audience that is largely familiar with ASR issues.	Due to differences of opinion regarding definition of the term "recovery efficiency," we have purposefully used the term "recoverability," which we define as the amount of water stored that can be recovered to meet project objectives consistent with regulatory requirements and without harm to the ecosystem.
FDEP-11	c) To fulfill cycle test objective 3, we need to analyze water quality data from "shorter and longer storage intervals during cycle testing to estimate the relationship of storage time with recovery efficiency and water quality."	Concur, but this does not necessarily mean different storage periods. This same result could be accomplished through the use of several onsite monitor wells located at different distances from the ASR well. The Port Mayaca site – with its relatively large number of monitor wells – is an ideal site to conduct this analysis.
FDEP-12	d) Suggest reword of objective 4: Evaluate water-quality changes during the exposure of recharge water to Upper Floridan Aquifer (UFA) rock matrix.	We will revise accordingly
FDEP-13	e) Suggest reword of objective 9: Evaluate geochemical changes as the injected freshwater front moves through the aquifer to and from the ASR well.	We will revise accordingly
FDEP-14	f) It appears that the cycle test plan and objectives between this Draft PPDR and that of the Regional Study are in synch, however, since the elimination of the Moore Haven site due to budgetary constraints, the objective of observing long term water-rock geochemical interactions during long periods of storage (see Figure 4-2 in Draft EIS) will not be achieved. The following inset text is taken from a review of the Draft PPDR cycle test plan for the Regional ASR study by June Mirecki (USACE) and Jon Arthur (FDEP Florida Geological Survey). The text is repeated here to underscore the need for hydrogeochemical data collection during long periods of storage. The comment also addresses the expected differences between the hydrogeological frameworks at Caloosahatchee compared to the Lake Okeechobee sites. These potential differences may warrant revision of the Caloosahatchee cycle test plan as described below.	We recognized the need to modify the cycle testing plan (June 2003) given the uncertain status of the Moore Haven site and have done so (see revised cycle testing plan). We have previously received the subject comments from Dr. Mirecki and Dr. Arthur. Indeed, they both played a significant role in the development of the June 2003 cycle testing plan. Recognize, however, that we must balance the desire to have long-term storage periods with the desire to demonstrate system performance (i.e., recoverability [see response above]). We believe we've struck the appropriate balance between these two somewhat conflicting scientific requirements.

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FDEP-15	g) If the Moore Haven site has been completely eliminated from the plan rather than just tabled for the time being, we suggest that the PDT review the cycle test objectives in consideration of the overall cycle test goals. A cycle test with long-term storage is required to complete the overall assessment of water-rock interactions during CERP ASR. With cost savings from elimination of the Moore Haven site, the funds dedicated to water quality analyses and sampling can be redistributed to the other Pilot/Regional ASR sites to improve coverage of data collection.	The Moore Haven site has been eliminated from the "Recommended Plan," but retaining this site in the subject documents preserves the ability to revisit this decision should additional funds become available.
<p><b>Florida Department of Transportation</b></p>		
FDOT-1	Districts One and Six request that the Army Corps of Engineers clarify whether or not the installation of the ASRs (and their surrounding areas of influence or impact) will generate the imposition of any new or expanded permitting restrictions on any proposed future FDOT stormwater treatment features/facilities to be located within or near such areas.	It is not anticipated that any of the Pilot ASR wells or associated facilities will affect new or future FDOT permits, nor would the operations of the pilot facilities impact ground water tables or future FDOT storm water management facilities. USACE and SFWMD will coordinate the siting of future CERP ASR sites with FDOT.
FDOT-2	While the documents provide some discussion of seasonal groundwater tables, the District One Drainage Engineer requests that the Corps clarify/address whether the ASR storage and recovery activities will impact seasonal high groundwater tables in the vicinity of any State highways. In District One, those facilities are SR 78 in Okeechobee County, US 27 in Moore Haven, and SR 80 in Hendry County. The district is particularly concerned about how any changes resulting from the ASR operations would affect the base/sub-base of existing roadways, as well as any existing or future FDOT stormwater management facilities.	By storing water in the Floridan Aquifer System during wet periods via ASR wells, and recovering this stored water back to the surface water bodies from which it originated, the ASR wells will mitigate not exacerbate seasonally high groundwater levels.
FDOT-3	"District Four is conducting an extensive corridor analysis as part of the PD&E study for the Western Broward/Palm Beach Connector . . . The alignment of the Coral Ridge Drive Corridor, which is one of the corridors under consideration, would traverse the proposed Hillsboro Impoundment from south to north, using the proposed internal levee that is intended to divide the impoundment into two compartments. The construction of a 4-lane or 6-lane divided roadway atop this levee would require a levee width of approximately 200 feet. The Department is interested in obtaining an opinion from the ACOE regarding the collocation of a road with the proposed levee within the Hillsboro Impoundment, and the feasibility of further consideration of this corridor."	The potential Coral Ridge Drive Corridor will not be impacted by the Hillsboro ASR Pilot Project. The pilot project, located along Loxahatchee Road, is approximately two miles west of the proposed corridor. However, the proposed corridor may not be compatible with the proposed Site 1 Impoundment project, a CERP project to construct a 1,600 acre impoundment which the Corridor would transverse. An update on the status of the proposed Site 1 Impoundment may be obtained from Kathy Collins/SFWMD project manager at 561-682-2534 or Jeff Couch/USACE project manager at 904-232-1467.

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FDOT-4	With regards to Sections 6.2 (Permitting) and Sections 9.1 and 9.5.4 of the Draft Plan document; and Page 17 of the Draft EIS document, there are potential implications for SR 78 and SR 80 in terms of access. The Corps is advised that any new or significant modifications to existing access points on these roadways will require review and possible FDOT driveway (access) permits, pursuant to Rules 14-96 and 14-97, Florida Administrative Code. Please also be advised that SR 80 is a four-lane, divided highway and is a segment of the Florida Strategic Intermodal System (SIS), and as such has more restrictive standards and permitting requirements. The Corps, prior to construction, is required to provide site plans and access information to the District One Access Management Administrator.	During construction, the existing entrance on S.R. 80 (leading to the operations center) will be used for access into the Berry Grove property. This entrance and road is currently used by the grove for heavy truck traffic associated with ongoing citrus production. During construction of the pilot project facility (which will last a period of between 6 to 8 months), a bulldozers/excavator, a cement truck, dump trucks, and some light support trucks will enter and exit the property – perhaps once or twice a day. During subsequent cycle testing, sampling crews and/or operations crews will visit the property in a van or pickup truck – once a day or every other day – for 2 years. The project documents will require the construction contractor to submit a Maintenance of Traffic Plan for the entrance where construction traffic will impact a state highway. “Traffic Control Through Work Zones” - FDOT Index Series 600 current design standards will be adhered to with the traffic plan submittal. Index Sheet 665 will be included with the project documents General Details sheet for reference.
<b>Florida Department of State, Division of Historical Resources</b>		
SHPO-1	We reviewed the referenced Draft EIS, and concur with the determination that no historic properties will be affected by the project.	No response is needed
<b>South Florida Regional Planning Council</b>		
SFRPC-1	We have reviewed the DEIS and find it generally consistent with the goals and policies of the Strategic Regional Policy Plan for South Florida (SRPP)	No response is needed
<b>Florida Fish and Wildlife Conservation Commission</b>		
FWC-1	Include discussion of FWC issues in Sections 1.7.1 and 6.3 of the DEIS, including that the draft and final FWCA Report have been submitted to the COE and were also included as an appendix to the USFWS draft FWCA Report.	We concur. Information has been added to Section 1.7.1 and 6.3 of the Final EIS.

**List of Comments to the DEIS**

<b>Comment Number</b>	<b>Comment</b>	<b>Response</b>
FWC-2	<p>Include discussion of state-listed species in the DEIS. Section 4.13 of the DEIS discusses potential impacts to federally threatened and endangered species, but does not include discussion of species solely listed by the State of Florida. State-listed species require at least a brief discussion in the final EIS. Discussion of the potential impacts to each of these species, as well as FWC and Florida Natural Areas Inventory observational data where available, were provided for each of these species in the FWC December 2003 draft FWCA Report.</p>	<p>Discussion of state listed species have been added to sections 3.13 and 4.13, including discussions of observational data where listed, impacts to these species, and management measures that will be implemented to minimize impacts. We concur that more information on Federally listed species is within the text due to consultation requirements under the Endangered Species Act. However, detailed information on both Federally listed and State listed species is within the draft and Final FWCAR of each agency, and readers are directed to these texts for additional information.</p>
FWC-3	<p>Monitor entrainment of aquatic organisms. Section 5.2 of the DEIS indicates that sampling for entrained organisms will be performed at all sites, yet Section 4.12 of the DEIS and Section 9.4 of the PPDR indicate that this sampling will only be performed at the Kissimmee River site. We request that intake pumps at all sites be fitted with sampling gear. Monitoring of entrainment is especially necessary, since one of the "stop conditions" for the pilot project is a "significant entrainment event."</p>	<p>All sites will be fitted with sampling gear. The appropriate changes in the text will be made.</p>
FWC-4	<p>Use wildlife-protective water quality criteria. The ASR pilot projects may affect water temperature and dissolved oxygen, and introduce contaminants such as metals and radionuclides, into receiving water bodies and downstream waters. Existing FDEP and U.S. EPA standards for drinking water may not offer adequate protection to fish and wildlife. Therefore, we agree with the USFWS that wildlife-protective water quality criteria should be employed for key water quality parameters such as temperature, dissolved oxygen, metals, and radionuclides. Section 4.12 of the DEIS states: "Although the benefits of this level of testing are recognized, the feasibility of detecting to this level of criteria at the laboratories hired to conduct these tests is questionable." We request that laboratories be selected based on their ability to measure water quality parameters at levels significant to sensitive wildlife and aquatic organisms.</p>	<p>Comment noted.</p>
FWC-5	<p>Set specific criteria for ASR Pilot "Stop Conditions". Discharge of degraded water to receiving water bodies may result in impacts to the fish and wildlife species that use the downstream habitats. "Stop Conditions" have been identified for the protection of fish and wildlife species in the receiving water body habitats. The COE and SFWMD should work closely with FWC, USFWS, DEP, EPA, and other agencies to define specific criteria for each "stop condition".</p>	<p>Comment noted.</p>

**List of Comments to the DEIS**

Comment Number	Comment	Response
FWC-6	<p>Mixing of the recovered water with receiving water bodies is a best-case scenario. The dilution of the recovered water was calculated based upon average flows, temperatures, and chloride concentrations within the canals. These calculations can be misleading, as the canals are highly managed and have periods of heavy flows combined with periods of no flow. Discharges of recovered water that occur with minimal or no canal flow could lead to minimal dilution. Although the recovered waters (after aeration) should have better dissolved oxygen concentrations than the receiving waters, the recovered waters may contain high levels of heavy metals, disinfection by-products, chlorides, chloramines, and other constituents that may harm fish and wildlife species. We request a more detailed discussion of the dilution effect, taking into account low flows, rather than focusing solely on average flows.</p>	<p>Chloramines have been eliminated as a possible disinfection agent as of this time. If one assumes zero flow in the receiving body, then dilution of discharge will be minimal. Actual water quality conditions in the receiving body are not predictable under this "worst case" scenario without better information on recovered water quality which will be available only after commencing pilot testing.</p>
FWC-7	<p>Discharge of recovered water for 15 days. The DEIS indicates that after initial recharge, water will be recovered and discharged for up to 15 days. These discharges may exceed state standards for chlorides and total dissolved solids, and may therefore be detrimental to aquatic species in the receiving waters. The FWC suggests these discharges either be eliminated or executed under high flow conditions when the maximum amount of mixing is possible. Additionally, please update the DEIS to include discussion of the effects of this discharge on aquatic fauna.</p>	<p>As part of the NPDES and CERPRA permitting process, the duration of, and flow conditions under which recovery discharges will be made to the receiving body will be determined. Additional information on the impact to aquatic fauna is unavailable at this time given that no operational data is available prior to pilot testing.</p>
<p><b>Southwest Florida Regional Planning Council</b></p>		
SWFRPC-1	<p>The documents have been reviewed and at this time we wish to submit no comments. This recommendation will be discussed at the next scheduled council meeting. Should council action differ, you will be notified.</p>	<p>No response is needed.</p>
<p><b>Audubon of Florida</b></p>		
AUD-1	<p>We are interested in seeing a written explanation from the Project Delivery Team on how the elimination of the Moore Haven site will affect the ability of the pilot projects and the regional study to evaluate the uncertainties associated with ASR.</p>	<p>The primary purpose of conducting ASR testing at the Moore Haven site was to provide a better spatial evaluation of ASR performance around the perimeter of Lake Okeechobee. The Port Mayaca and Kissimmee sites provide information north and east of Lake Okeechobee. The more ASR systems in the area of Lake Okeechobee, the greater comfort the Project Delivery Team would have in its evaluation. That said, there is nothing unique about the Moore Haven site that specifically requires that ASR testing be conducted there. In fact, the Caloosahatchee River ASR Pilot Project downstream of Moore Haven, but also located adjacent to the Caloosahatchee River, mitigated the deferral of Moore Haven testing and still provides the spatial coverage desired.</p>

**List of Comments to the DEIS**

Comment Number	Comment	Response
AUD-2	There should be a more extensive discussion of how the pilot projects coordinate with the regional study to help evaluate the effects of ASR on the Everglades ecosystem.	Table ES-1 in the Executive Summary summarizes the integrated nature of the CERP ASR Pilot Projects and CERP ASR Regional Study and the concurrency with which both projects answer technical questions regarding full-scale CERP ASR implementation. We believe the Draft documents capture the integral relationship between these projects.
AUD-3	The pilot projects must generate the data needed for the ecological analyses proposed in the regional study and the pilot project documents must describe this relationship clearly.	Concur. We believe the draft documents capture this integral relationship between these projects. Table ES-1 of the PPDR and Table 1-1 of the draft EIS summarize the integrated nature of these projects in answering technical questions, including the ecological uncertainties.
AUD-4	To ensure adequate evaluation of the ecological impacts of ASR implementation, Audubon supports the recommendations made by the USFWS and urges their incorporation into the pilot projects.	Recommendation made by USFWS have been incorporated into the pilot projects and USFWS continues to be an active participant in the pilot project implementation.
AUD-5	The final EIS should include a detailed review of the ecological information needed from the pilot projects (for the regional study) to satisfy the ecological requirements of the project. An evaluation of the time needed for data collection to sufficiently address these issues should be included, and the pilot project schedule be adjusted accordingly.	We have over 2 years of baseline water quality monitoring and 1-1/2 years of baseline ecological monitoring prior to ASR cycle testing. Additional ecological monitoring will occur during the 2-year ASR cycle testing period. Upon completion of ASR cycle testing, an additional 6 months of ecological monitoring will be conducted. Section 5.0 Environmental Commitments outlines this information. We believe the schedule meets the project needs to sufficiently address the issues.
<b>Authur R. Marshall Foundation and Florida Institute, Inc.</b>		
ARM-1	A primary concern remains lack of an ASR Contingency Plan, that would serve as a guide for data requirements in the ASR pilot program so as to provide preliminary assessment of ASR costs and effectiveness for full scale ASR implementation, thus to provide basis for analysis of alternatives; otherwise, such data may escape.	During the formulation on the CERP program, several alternatives to storing and supplying water to south Florida were evaluated. A primary concern during CERP formulation was the physical lack of storage area locations for the total storage volume needed for Everglades restoration. ASR was concluded to be the best alternative to store and meet the supply at the scale needed. In addition, the CERP plan has under gone public and peer review. An ASR contingency plan is being developed in case efficiency of ASR is not as expected, or if the pilot tests, through data collection, demonstrate that ASR will have unacceptable negative effects to human health or the environment. A draft work plan is currently underway for scheduled completion in FY 2005.
ARM-2	Depicting generally impermeable layers of the Florida lithology as absolutely impermeable and confining, and not including monitoring of potential deep well injection contaminant mixing.	Disagree. The Pilot Project Design Report does not portray the various aquifer confining units as entirely impermeable. In fact, numerical modeling of all pilot projects assumed that the Hawthorn Group and other similar layers were low permeability units as opposed to impermeable. This characterization is generally accepted by most practicing engineers and geologists.

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Comment Number	Comment	Response
ARM-3	Holding that an advantage of ASR is that it precludes evaporation, when this is a disadvantage that decreases water available by approximately 50%, per analysis herein and attachments	Water to be stored via ASR wells is water that would otherwise be discharged to tide and lost from the regional system. Any water stored via ASR systems does not decrease evaporation as it would otherwise be lost from the regional system. In fact, by storing this water and recovering it later, ASR can actually increase evaporation during dry times by returning water to surface water bodies.
ARM-4	Pursuing ASR over Dynamic Storage and Sheet Flow as described in CERP Section 2, when lack of Dynamic Storage and Sheet Flow is the driving need for ASR, and it appears intuitive that restoring natural system functions aggressively may be more cost-effective than pursuing ASR on a grand scale.	Opinion noted
ARM-5	Bypassing of virtually all natural processes, especially those that provide water quality, and a failure to address recharge of the surficial aquifer, which furnishes much drinking water to Florida citizens.	Opinion noted
ARM-6	Holding that ASR is fully consistent with federal & state objectives/the Comprehensive Everglades Restoration Plan (CERP) goals & objectives when ASR is only partially consistent with same.	We disagree. During the formulation of CERP, the full-scale implementation of ASR provided additional regional storage to meet the objectives of CERP. Also envisioned in CERP, these pilot projects for ASR are designed to address the technical and regulatory questions that are necessary for full implementation of ASR.
ARM-7	Lack of detailed ASR component analysis and system analysis in context of operational availability, reliability, and capability, such that full cost-effectiveness analysis of alternatives may be precluded.	The purpose of these three pilot projects is to address as many of the technical and regulatory questions that have been raised about ASR. Since the pilot projects are a test of the operational, reliability, and capability of the system, we expect to extrapolate their performance to the full-scale implementation of the ASR as envisioned in CERP. A full cost-effective analysis will not be performed until the Project Implementation Report, currently scheduled for 2010.
ARM-8	Lack of time to absorb the 1350+ pages and make cogent comments during the present comment period, and difficulty in obtaining the documentation to do so. [15 day extension was welcomed!]	The USACOE follows guidelines in the Council on Environmental Quality Regulations for implementing the NEPA. The guidelines call for a 45 day comment period for a draft EIS, followed by a 30 day comment period for the Final EIS. Because the document was a description of a pilot test (not a whole bank of ASR wells), and these tests will be of limited duration, small in scale, using known water treatment and recovery technology, and the report is not particularly long or complex (180 pages of DEIS), a lengthy comment period was not viewed as appropriate and would be unprecedented. We did provide an additional 15-day extension to requestors, which allowed a total 60 days from noticing in the register. In addition, the Notice of Availability in the federal register, letters sent to interested parties and organizations, public meeting notices, and the website all listed a contact person for obtaining a copy of the document as well as it being posted on the web. All requestors were sent a copy of the document within 24 hours of the request.

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Comment Number	Comment	Response
ARM-9	Lack of time in the 3 – 5 minute comment limit at Boca Raton, 6/8/04, to fully express concerns. (Clearly a workshop format would have been the preferred approach; see EAC minutes, attached.)	While there are no standard operating procedures for conducting a public meeting, the staff on hand made the decision to limit the speakers to 3 to 5 minutes based on the number of speaker cards received. This method has been used in the past for USACE public meetings. If speakers had written material they were reading, they were encouraged to either condense the document to fit in the time allowed, or submit the comments at the meeting or to Rebecca Weiss before the comment period ended. Staff was around to answer questions from individuals both before and after the meeting. The staff at the SFWMD and the USACE have held workshops throughout this project.
ARM-10	Need for extension of the public comment period by a few more days on behalf of the public	A 15-day extension was provided to all requestors, which allowed a total 60 days from noticing in the register for review.
ARM-11	Lack of a failsafe mode to operate pilot project pumps during hurricane or tropical storm flood emergencies, when there are predictable extended power outages	We concur. It is true that the pilot projects have not been designed to operate in failsafe mode. This is not necessary nor is it a very cost effective way to utilize resources. If power disruption occurs for some finite duration, the pilot projects will simply be shut off. The provision of emergency power for the pilot projects would have necessitated the installation of emergency generators, fuel tanks, and possibly transformers. The overall cost of such provisions would far outweigh the small benefits derived.
ARM-12	Insufficient number of presentation hand-outs for the audience, and insufficient readability of the visual presentation (print too small)	Comment noted.
ARM-13	Presentation of a perfectly layered Florida stratigraphy, and statistical denial that there is interaction or environmental impacts due to deep well injection, when there is statistical evidence that there is: ASR Team: Interaction is extremely slight. However ASR approach does not appear to provide data to define slight. How soon after pumping will sinkholes form was a question asked. Report, attached, provided to ASR Team provided some insight from a previous test: Very soon after pumping begins.	Concur. The supposition that injected wastewater from the Boulder zone will mix with injected freshwater from pilot ASR wells is possible but unlikely. First of all, the location of most wastewater injection wells precludes mixing between these two different waters. No wastewater injection wells are located within a 5-mile radius of any of the pilot projects. Secondly, the boulder zone is separated from the ASR storage zone by at least 500 to 1,000 feet of fine-grained, low permeability limestone. Lastly, monitoring wells screened within the storage zone and BELOW the storage zone should be adequate to detect any upward wastewater plumes. Sinkholes are not expected to form as a result of ASR operations based on experience at existing ASR sites in Florida.
ARM-14	Public concerns include USACE engineering failures of the past, and the engineering attitude that the ASR fix will work.	We disagree, but opinion is noted.
ARM-15	Public presentations have idealized the approach; a few examples (not the total picture) of idealizing the presentations include perfectly layered Florida lithology or stratigraphy, when it is not.	There is a limitation to the complexity we can present via MS-PowerPoint. The draft EIS and PPDR went into more detail on the actual stratigraphy at the pilot sites, and we will be collecting the data as part of the Pilots and ASR Regional study.

**List of Comments to the DEIS**

Comment Number	Comment	Response
ARM-16	No significant mixing of deep well injections, when there is evidence to the contrary. [See McKenzie, 1976; McNeil, 2000]	Concur. The supposition that injected wastewater from the Boulder zone will mix with injected freshwater from pilot ASR wells is possible but unlikely. First of all, the location of most wastewater injection wells precludes mixing between these two different waters. No wastewater injection wells are located within a 5-mile radius of any of the pilot projects. Secondly, the boulder zone is separated from the ASR storage zone by at least 500 to 1,000 feet of fine-grained, low permeability limestone. Lastly, monitoring wells screened within the storage zone and BELOW the storage zone should be adequate to detect any upward wastewater plumes.
ARM-17	Advantage of ASR is inhibiting ET when simple analysis show that ASR may result in as much as a 50% loss in water productivity/availability [of water stored/to water available]	Concur. ASR storage will not allow recovery of 100% of injected freshwater. Losses will occur due to mixing and dispersion. The CERP estimated that up to 70% of the injected water would be ultimately recovered via ASR. Even if only 50% of the water were to be recovered, this would still result in a net gain to the system as compared to ET losses in South Florida. For instance, annual ET in some parts of the Everglades has been documented to exceed rainfall (German, 2000). In addition, a better comparison would be between ASR water recovered versus NET recharge rather than just rainfall. Much rainfall runoff the land and is not recovered.
ARM-18	The public perception is that this is more a sales job than an integrated approach to science and technology (S&T) that will benefit the Everglades ecosystem.	Opinion noted. However, this is a public meeting held to take comments on the Draft Environmental Impact Statement in accordance with National Environmental Policy Act.
ARM-19	Extend the Public Comment Period by 45 Days [USACE Rep indicates extension is underway]	Please see response to ARM-8.
ARM-20	Conduct a workshop that will allow more participation by the public	There have been many public meetings held since 1999 regarding the ASR Pilot Projects, and we have attempted to incorporate public comments throughout this process. It is common practice to place time limits on verbal comments, and this is conducted out of respect for all meeting attendees. Written comments were accepted until July 6, 2004.
ARM-21	Brief the public on the status of the ASR Contingency Plan . Such a workshop will not satisfy public concern over lack of an ASR Contingency Plan that was promised in January 2001. The public interprets the inaction as pushing ASR as the default mode regardless of ASR Pilot Program outcome. [An ASR Contingency Plan provides risk management, should ASR not be implement able on the scale projected.] As part of risk management, some actions may be needed now, rather than later, however such actions, including long lead items, have yet to be identified, absent in ASR Contingency Plan.	As part of the ASR Contingency Planning, public meetings/workshops will be scheduled to solicit input.

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Comment Number	Comment	Response
ARM-22	"The present approach still does not fully address: 1) A full cost accounting of ASR over a 50 year life cycle with O&M costs . . . 2) Cost-effective analysis of alternatives as required by CERP Section 7.5.3 . . . 3) Cost benefit to the environment of both alternatives, i.e., ASR & CERP Section 2 Baseline . . . 4)Contingency Plan if ASR proves less cost-effective and less implement able than plan projected. "	The purpose of the pilot project is to test the technology, demonstrate its performance, and answer technical questions about the proposed 333-well full-scale CERP ASR Program. The pilot projects are not the place to conduct full-scale cost evaluations for the whole CERP. The pilot project looks at construction and operational costs for the two years that it will operate. Once the pilot projects are completed, this data will be summarized in the Technical Data Report currently scheduled for 2009. Additional cost evaluations will be completed as part of a Project Implementation Report currently scheduled for 2010, including a cost-effective analysis.
ARM-23	Include an ASR Contingency Plan in the next printed version of the SFWMD Strategic Plan Document	According to the schedule, the ASR Contingency Plan should be developed prior to next year's edition of the SFWMD 10-year Strategic Plan.
ARM-24	Add the adjective "generally" so this reads "generally impermeable to reflect impermeable is not absolute." Also, graphically depict the typical Florida karst layering with fractures, fissures, and caverns small and large that occur naturally, rather than perfectly separated uniform layers, as graphically depicted in Figure 3-1, page 43, of the EIS (Generalized Regional Hydrogeology).	We concur. We will change this language to "low permeability units" rather than impermeable deposits.
ARM-25	"First paragraph statement: 'The advantage of aquifer storage, in contrast to surface water storage in reservoirs, is that water does not evaporate...' With respect to the production of water, the repression of evaporation [ET] is not an advantage, or selling point. REFERENCES: The Water Resources Atlas of Florida ...and Florida Waters ... indicates that rainfall exceeds ET by 25% on average... Since ASR is estimated to return less than 75% of water stored, i.e. there is a 25% loss in water production, the relative gain is approximately 50% in water production, in ASR V. Dynamic Storage & Sheet Flow."	Text will be changed to read, "An advantage of an ASR system is water normally lost to tide can be captured and stored. During dry events, water will be recharged back into the natural system where it can directly rehydrate that system or evaporate, contributing to a natural rain-driven cycle. It is important to note, however, that these pilot projects are not designed to compare their capability with other forms of storage. The cost effective analysis that compares different measures (ASR, flowways, and reservoirs) will be performed as part of the PIR currently scheduled for 2010.
ARM-26	"The ASR advantage statement would better read: The main advantage of ASR is providing a place to store excess water in extremely wet years, and in emergency flood conditions, absent other storage, and to recover water in dry years when it is needed. ...or words to that effect. This also applies to similar statements further in the text, i.e., Page ES-1."	Concur. Text will revised.
ARM-27	It remains to be seen whether diverting water which normally went to EPA dynamic storage and sheet flow will affect the delicate balance of ET v. rainfall. What must be considered in an integrated fashion, based on cost-effectiveness analysis per CERP Section 7.5.3: Increase (or decrease?) in spatial extent of natural areas that was the source of ET, verses non-natural methods of storage that impedes ET.	The cost effective analysis that compares different measures will be performed as part of the PIR currently scheduled for 2010.

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Comment Number	Comment	Response
ARM-28	<p>"The public remains unconvinced that the high-tech, high-risk, high-cost approach is the best interest of the future of Florida, when the low-tech, low-risk, low-cost, provided great benefit to the state at no cost. A detailed economic analysis as part of a peer-reviewed ASR contingency plan would go a great length to convincing the public that the government was taking a strategically correct and sound approach. Additionally, touting ASR as a water storage technology that required very little land appears to invite more development than restoration, when South Florida's carrying capacity to absorb more population growth has been obviously exceeded ... "</p>	<p>Comment noted. A draft work plan for ASR Contingency Planning is currently underway for scheduled implementation in FY 2005.</p>
ARM-29	<p>"Preface Page 2, regarding the statement: Operating Pilot tests will also provide insight into likely operational costs aiding in a comparison of ASR technology with conventional storage technologies such as surface water reservoirs. What about comparison with natural storage, such as Dynamic Storage and Sheet Flow as discussed in CERP Section 2.3.1? How will estimates of energy consumption (electricity/fossil fuel) be made and projected over the 50 year life cycle of CERP, such that it can be compared to natural storage and storage technologies alternatives, per CERP Section 7.5.3? In such comparison how will the positive aspects of ET in water production be compared with the ASR loss of water, to come up with evaluation of alternatives as required by CERP Section 7.5.3, with respect to water production, i.e., water made available by ASR V. water made available by a restored natural ecosystem, and related cost-effectiveness, in terms of cost of clean water per 1000 gallons? Make the information, especially costs comparison, available to the public as the data is developed. . . "</p>	<p>These pilot projects are not designed to compare their capability with other forms of storage. The cost effective analysis that compares different measures ( ASR, flowways, reservoirs) will be performed as part of the PIR currently scheduled for 2010.</p>
ARM-30	<p>This is June 2004. CROGEE is being re-engineered, as is the Science Coordination Team as it is transformed to the Science Coordination Group; The approach to ASR is also being taken from a concept to pilot project implementation. The question arises: What fully independent group is presently available to independently review the ASR PPDR/DEIS, and provide comments by July 6, 2004. Put the ASR PPDR/DEIS document through independent peer review.</p>	<p>Disagree. The DRAFT PPDR was reviewed by an independent group of scientists and engineers from the FDEP, consultant experts, and academia. Several hundred comments were generated from this review and the original draft report was revised accordingly.</p>

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Comment Number	Comment	Response
ARM-31	<p>Page 1-1 &amp; 1-2, Paragraph 1.1, BACKGROUND, regarding the statement: Many questions immediately arise .... What does it cost compared to other options? The ASR pilot program would appear to provide the next step by providing initial cost data for analysis of alternatives. However cost data appear to be of little concern in this document. Cost is noted as a constraint in Paragraph 1.5.1, subparagraph 9: Funding limitations of the project as stated in WRDA 1999 and 2000 [\$1.7 million. The PPDR preface notes that Operating pilot tests will also provide insight into likely operational costs, however, funding is not considered in the Project Scope; Paragraph 9.8.3 notes the project will have no operations and maintenance costs.[!?] It is worrisome that the Moore Haven site has been terminated due to projected cost overruns of the ASR pilot project.</p>	<p>Disagree. The pilot project team did undergo several iterations of technology evaluation and screening. Cost were considered in conjunction with other important goals and technical objectives. In addition, O&amp;M applies to after the 2-year pilot study is completed. Therefore, only operating costs during the two-year pilot study have been accounted for in the PPDR. The operating data collected will be invaluable in estimating future costs for larger ASR systems in support of the CERP. The Moore Haven site was deferred due to a desire to stay within the Congressionally authorized project amount and keep on schedule. It is not a cost overrun.</p>
ARM-32	<p>Page 1-7, Paragraph 1.3, Regarding the statement: Potential Advantages of using ASR technology for these objectives include: *[bullet #1] Reduced costs compared with surface storage facilities. Provide actual cost comparisons. Include comparisons with both reservoirs and Dynamic Storage = Sheet Flow, as described in CERP Section 2.</p>	<p>Disagree. These pilot projects are not designed to compare their capability with other forms of storage. The cost effective analysis that compares different measures ( ASR, flowways, reservoirs) will be performed as part of the PIR currently scheduled for 2010.</p>
ARM-33	<p>Eliminates water losses due to ET and seepage is an inaccurate and misleading statement.[Bullet #5] Requires limited land acquisition: Ignores natural system by ignoring need to increase spatial extent of natural areas [wetlands] to decrease the need for ASR. [Bullet #6] Provides the ability to recover large volumes of water during severe droughts, presumably when reservoirs would be low. Ignores natural system by concentrating on unnatural storage and failing to appreciate the variation in nature, including extreme droughts I.e., leads to conclusion that ASR is more about water supply than restoration, and to connect it with the latter is misleading the public, as well as unethical, given that “Enhance Ecological Values and related objectives” are touted as the primary objectives. Provide analysis of alternatives, including costs of each alternative and a breakdown of how much water as a percentage of total daily available (mgd) will be handled by: (1) ASR Technology; (2) Reservoirs; (3) Sheet Flow .</p>	<p>The purpose of the pilot project is to test the technology, demonstrate its performance, and answer technical questions about the proposed 333-well full-scale CERP ASR Program. The pilot projects are not the place to conduct full-scale cost evaluations for the whole CERP. The pilot project looks at construction and operational costs for the two years that it will operate. Once the pilot projects are completed, this data will be summarized in the Technical Data Report currently scheduled for 2009. Additional cost evaluations will be completed as part of a Project Implementation Report currently scheduled for 2010, including a cost-effective analysis.</p>

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Comment Number	Comment	Response
ARM-34	<p>We appreciate an extension of the comment period by 15 days. However, the failure to extend the public comment period based on the EvCo request (as well as the State request) begs a question regarding the sincerity of the CERP Public Outreach Program in touting public involvement. The Everglades Coalition, and apparently others, have requested extension of the comment period so they can be involved. It is fairly clear that the public has had difficulty in accessing the documentation, relative to government stakeholders, and they are less technically educated. Thus, it would seem prudent to extend the comment period for public relations, and/or hold workshops in the future when more education of the public is needed. It did take several hours of work over the 4<sup>th</sup> of July weekend to complete this comment. More public comment period is needed in the form of workshops.</p>	<p>The USACOE follows CEQ guidelines for implementing the NEPA. These guidelines call for a 45 day comment period for a draft EIS, followed by a 30 day comments period for the Final EIS. Because the document was not atypical, a lengthy comment period was not viewed as appropriate. We did provide an additional 15-day extension to requestors, which allowed a total 60 days from noticing in the Federal Register. Additional time for an initial comment period for NEPA for a pilot test of such limited duration and scale would be unprecedented. In addition, it is an inaccurate statement that the State requested extra time to comment. In fact, the State did not request an extension, but supplied all comments within the 45 day comment period, although by law, under the Coastal Zone Management Act, they could have done so.</p>
ARM-35	<p>V4 Page 1-15, Paragraph 1.6 - There is nothing in the Project Scope about scoping costs of the pilot project as the means to project same to a larger scale. Include costs, and tracking of same, in PROJECT SCOPE</p>	<p>Costs for the pilot projects are useful tools to estimate future costs and will be strongly considered during the Project Implementation report (PIR) phase, but the monitoring requirements are much higher for the pilot projects reflecting the burden of answering regional scientific questions to evaluate the CERP ASR Program.</p>
ARM-36	<p>V4 Page 3-1, Regarding Figure 3.1-1 presenting a typical hydrogeologic cross section through the study area. Figure 3.1-1 is not found in Section 3. In the List of Figures Figure 3.1-1 is listed on page 12, causing the reader to have to find where the Figure is located, because it is not referenced as being on page 12, in the paragraph that mentions it, in Section 3. Lead the reader to Figure 3.1-1 on page 12 in the paragraph that references it in Section 3.</p>	<p>Comment noted. Changes will be made in the documents to aid in finding figures.</p>
ARM-37	<p>Identify who this is by replacing "I" with District Engineer recommends. Otherwise, you don't find this out until four pages later, and it is still not clear that it is the District Engineer making the recommendations, and to whom he is making the recommendations.</p>	<p>Comment noted. However, this is standard USACE language developed from our Office of Counsel.</p>

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Comment Number	Comment	Response
ARM-38	<p>Maddox, Copland, et al (Florida Geological Survey, 1991) provided a Background Hydrogeochemistry “baseline” for a ground water quality monitoring program under the Water Quality Assurance Act (1983); additional requirements were placed on Florida Department of Environmental Protection (FDEP), then FDER per F.S. Chapter 403.063. The report provides a narrative assessment of potential risks based on existing data, and establishes the requirement to obtain additional data on a periodic basis. This baseline, and presumably subsequent data, required by the Act, provides a reality check on the potential contamination of Florida aquifers by unnatural means. However this narrative assessment of risk based on pertinent data is not found in PPDR references or narrative. Incorporate this “baseline” REFERENCE and subsequent data as may be available, into the DRAFT ASR PPDR.</p>	<p>Reference will be added.</p>
ARM-39	<p>Summary, Page ii, Regarding the statement: Interaction between aquifers should not be an issue due to the intermediate confining layers. Same comment as noted in first statement on Volume 1: Statement implies impermeable is absolute. In the karst topography of Florida, it is not. There are many fracture and fissure “sneak circuits” in the Florida limestone stratigraphy that cannot be ignored. A more acceptable term for this is semi-confining layer. See REFERENCES, attached.</p>	<p>Text has been changed to, "Interaction between aquifers is not considered likely due to the presence of confining layers, though monitor wells will be installed to confirm the integrity of the confining layers."</p>
ARM-40	<p>Additionally, due to such stratigraphy, there has been some indication that Underground Injection Control (UIC) has not worked in completely controlling contaminants as there is evidence that the bolder zone is drifting up to aquifer waters. However, no such references are found in Volume 2. REFERENCE (McKenzie, 1976): The results of [the Belle Glade] research investigations by the USGS indicated that the waste [injected into the lower Floridan] continued to move upward and laterally [into the upper Floridan]. A hydraulic connection between the injection zone and the overlying monitoring zone is implied.</p>	<p>We concur; however, the Belle Glade injection well was not screened within the Boulder Zone, it was screened at a much higher elevation. Since that time all injection wells have been installed much deeper in order to minimize such problems in the future. In addition, the Belle Glade well is one of the few such wells located around Lake Okeechobee. The following text will be added: The QO Chemicals injection well discharged directly into the Upper Floridan Aquifer before such practices were deemed inappropriate. This is not the same as upward migration of effluent from the Boulder Zone."</p>
ARM-41	<p>As we understand the approach of the ASR PDT, there will be extensive mapping of underground structure using state of the art methodology to ascertain the nature of the stratigraphy and related “sneak circuits” realistically referred to as “semi-confining layer”. This is a case where a head in the sand approach may be very revealing. Re-write this statement to read: Interaction between aquifers will be closely monitored.</p>	<p>We concur. The change will be made to the report.</p>

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ARM-42	<p>"Page 14, paragraph 1.7.3, ISSUES ELIMINATED FROM DETAILED ANALYSIS, regarding the statement: The Following issues were not considered important or relevant . . . 1. Effects of full scale ASR. . . to be evaluated under the project implementation reports for each region, currently scheduled for 2010. The top down focus of the ASR PPDR/EIS from start to finish, relative to concerns of the public, and all government and non-government geologists we have encountered, ought to be on the effects of full scale ASR systems, using any and all data that is developed from the pilot program. This paragraph indicates focus on a bottom up approach, rather than a top-down approach required for an integrated effort. If it is true that this is viewed as not important at this time, eliminate the paragraph as it gives the public the wrong impression. . . "</p>	<p>Disagree. Section 1.7.3 <i>Issues Eliminated from Detailed Analysis</i> is important and relevant to this document. The issue of the effects of the full scale ASR program was brought up throughout public meetings and through scoping. Although the affects of the full scale ASR program is outside of the scope of this pilot project analysis, it is important to include it as an issue raised, and why it will not be covered in this document. However wording will be changed to "issues were not considered within the scope of the proposed action" so as to not imply they are unimportant.</p>
ARM-43	<p>Page 18, paragraph 2.2 COMPONENT ANALYSIS, regarding the statement: Various components or measures comprise the "surface facilities". These components offer a variety of choices for the ASR site designer. There is no component analysis of component operational availability (Ao) or reliability (Ro), and/or system Ao or Ro, which is based on an analysis of component Ao and Ro . . . Using ASR Pilot project data, provide a detailed analysis of ASR component failure rates, success probability, and maintenance time, during ASR operations &amp; maintenance (O&amp;M) [such as mean time between critical failure (MTBCF)] to project Ao and Ro and Co ratios, or percentages, for full implementation of ASR, thus to determine ASR system effectiveness.</p>	<p>The suggested approach is one means of evaluating component performance. We will evaluate use of this option at the time of pilot project completion.</p>
ARM-44	<p>"Page 149; Paragraph 4.22. SOCIOECONOMICS, regarding the statements: It is not anticipated that there will be any long term impacts as a result of implementing the ASR PP . . . Positive monetary benefits realized by those firms and persons involved with construction of the project may offset any short-term negative impacts . . . Construction and ongoing operation/maintenance of all the ASR test wells will generate a positive economic impact for the local region, and the state of Florida as a whole. While all this may ring true, for the local region and the state of Florida, it is not necessarily true for the nation, as the rest of the states are contributing their federal tax dollars. Could this give rise to national objections as a tax and spend program and/or a jobs program for Florida? How would an outsider view this? . . . To avoid possible controversy, eliminate the comments on the monetary benefits for the region and the state of Florida, thus to avoid the impression that ASR is a jobs program, more than an Everglades restoration plan, to federal taxpayers."</p>	<p>A small scale technical study is not expected to have a large NED impact. The regional impacts from the land purchases and construction are more significant and important to the local economy. All impacts will be temporary and insignificant. The regional economic impacts are an element of constructing the project, and may help to offset any local losses due to disruption of recreation in the area. This is not a job program, but any time funds are spent, regional impacts occur. The section has been amended to show which benefit are national or regional in nature, and emphasize the temporary, indirect aspect of these impacts.</p>

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ARM-45	Page 151, Energy Requirements and Conservation, regarding the statement: Electricity will be used to run the pumps, power the filtering and disinfection process, and power the various ancillary components at each location. Are alternative power supplies, such as generators, available for use during emergency excess water situations that can be expected during hurricanes or tropical storms when power outages for long periods of time are the norm? We note that when considering O&M, programmed maintenance or failure down-time could be critical in emergency operations, as the number of wells in operation increases.	The pilot projects have not been designed to operate in failsafe mode. This is not necessary nor is it a very cost effective way to utilize resources. If power disruption occurs for some finite duration, the pilot projects will simply be shut off. The provision of emergency power for the pilot projects would have necessitated the installation of emergency generators, fuel tanks, and possibly transformers. The overall cost of such provisions would far outweigh the small benefits derived.
ARM-46	If such alternative power sources are not available during the pilot program, how will operational availability and operational reliability (mean time between critical failure, etc.) of such emergency components be assessed?	We concur. The evaluation of fracturing and failure due to high pressures is covered under the ASR Issue - "Pressure Induced Changes" and is being evaluated via the ASR Regional Study.
ARM-47	Page 151, On Energy Conservation in the title Energy Requirements and Conservation. There appears little or no discussion of energy conservation per se, and no approach to analysis of alternatives for energy conservation, as required by CERP Section 7.5.3. Expand on energy conservation approaches including analysis of alternatives in the next version of the document.	We concur. Energy conservation has not been discussed in the document; however, during the design phases of work, energy requirements have been looked at closely to minimize usage and seek opportunities for conservation.
ARM-48	Page 153, Paragraph 4.29, UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS, regarding the statement: Alternatives include a minimal loss of land which is negligible when compared to land consumption related to other methods of water storage. The first official objective of CERP, per CERP Table 5-1, is: Increase the total spatial extent of natural areas. Given the first stated goal and the rest of the CERP Table 5-1 goals & objectives, clearly the preferred alternative is natural storage, per CERP Section 2., Dynamic Storage and Sheet Flow, i.e., increased spatial extent of sheet flow. Thus, the last part of the above sentence, beginning with which, is antithetical to CERP Table 5-1 Goals & Objectives.	Disagree. The ASR pilot projects are designed to test the technical uncertainties of ASR implementation. Comparison with other storage options will be covered in the ASR contingency and more thoroughly in any large-scale ASR project. Section 4.29 is meant to cover only the impact associated with the pilot project implementations.
ARM-49	To avoid adverse environmental impacts, institute a full cost accounting analysis of alternatives per CERP Section 7.5.3, that considers ASR v. land purchase to increase the total spatial extent of natural area, per CERP Table 5-1 Objective 1, and the restoration of the natural system, per CERP Section 2 dynamic storage and sheet flow, integrated with the overall goals and objectives of CERP Table 5-1. (See Appendix); place more emphasis on restoring the River of Grass.	Disagree. See response to comment ARM-22.

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ARM-50	The long-term productivity of clean water cost-effectively by ASR does not appear to provide a large scale source of water storage relative to a combination of the natural system and alternative technologies verses the ability of ASR pumps to store and recover volumes of water relative to the 150 billion gallons per day average that is rained on south Florida. Define the percent (%) of water relative to the total 150 billion gallon data point, that ASR will store and recover, given the range of 30 to 300 ASR wells, with operational availability and reliability (Ao * Ro) taken into account.	Comment noted. This comment is more apt for the full-scale ASR system, not for the small pilot projects
ARM-51	Page 153, paragraph 4.32, COMPATIBILITY WITH FEDERAL, STATE AND LOCAL OBJECTIVES, "regarding the statement: The proposed action is consistent with the overall goals and objectives of the CERP Project. The proposed action is consistent with the focus on ASR goals noted in the CERP, and the CERP Table 5-1 secondary goal of enhancing economic values and social well-being and the objectives of increasing availability of fresh water and reducing flood damage. However, the proposed action: Does little for Goal 1, enhancing Ecological Values, and the associated objectives . . . Thus, the statement that ASR is consistent with overall goals and objectives per CERP Table 5-1 misrepresents the facts, i.e., ASR not fully consistent with overall CERP goals & objectives as outlined in CERP Table 5-1 Goals and Objectives."	Disagree. During the formulation of CERP, the full-scale implementation of ASR provided additional regional storage to meet the objectives of CERP. In order to meet the demands of water for the ecosystem restoration, both a water source and water storage would need to be identified. As part of CERP, the ASRs would capture fresh water normally lost to tide (source) and store it for times needed (dry events). By doing so, hydroperiods within Lake Okeechobee and other ASR source water bodies could be operated to mimic a closer historic wet/dry cycle; impacted wetlands within the everglades ecosystem could be re-hydrated, retarding land and soil subsidence and exotic plant species invasion. In addition, harmful releases in wet seasons could be reduced. These are all objectives consistent with CERP. Also envisioned in CERP, these pilot projects for ASR are designed to address the technical and regulatory questions that are necessary for full implementation of ASR.
ARM-52	"Page 153, paragraph 4.32, COMPATIBILITY WITH FEDERAL, STATE, AND LOCAL OBJECTIVES, regarding the statement: It is expected that the proposed action is consistent with . . . federal objectives. It appears that ASR is only partially compatible with federal objectives, given the statement on the first page of CERP (Abstract): The recommended Comprehensive Plan achieves the restoration of more natural flows of water, including sheet flow, improved water quality and more natural hydroperiods in the South Florida Ecosystem. Given the ASR PPDR/EIS compatibility statements, make it clear on how ASR will contribute to restoring the historic attributes of the system aforementioned, in context of the definition of "to restore" the ecosystem, especially relative to function."	Disagree. This PPDR will not address any comparisons with other storage features as well as the impact of full-scale implementation of CERP. Please see response to ARM-51.
ARM-53	Public comment at Boca Raton 6/8/04 made it clear that the public sees the ASR high-tech approach as a wide divergence from CERP as outlined to Congress and the public, especially as reflected by unreasonable delay (3 years+) of an ASR Contingency Plan.	Comment noted. A draft work plan is currently underway for scheduled completion in FY 2005. See response to 52.

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ARM-54	<p>"Page 153, paragraph 4.32, COMPATIBILITY WITH FEDERAL, STATE AND LOCAL OBJECTIVES, regarding the statement: It is expected that the proposed action is consistent with ... state and local plan and objectives. Given the recent statement of Colleen Castille, Secretary, Florida Department of Environmental Protection, regarding the purchase of land, pushing ASR when the driving need for ASR is lack of land on which to restore dynamic storage and sheet flow, it appears that pushing ASR over restoring spatial extent and historic attributes is inconsistent with State &amp; Local objectives. Push restoration of River of Grass over ASR to meet state and local objectives."</p>	<p>We disagree. During the formulation of CERP, the full-scale implementation of ASR provided additional regional storage to meet the objectives of CERP. Also envisioned in CERP, these pilot projects for ASR are designed to address the technical and regulatory questions that are necessary for full implementation of ASR.</p>
ARM-55	<p>Page 153, Paragraph 4.31, INDIRECT EFFECTS, regarding the statements: The purpose of the proposed action is to provide better information to the larger CERP ASR program. Because of the small scale of these pilot wells, no indirect effects are expected. An indirect effect obvious to the public is the over focus on ASR that subsumes focus on alternatives in the form of an ASR contingency plan. The indirect result is a focus on high-risk, high-tech, high costs approach, without due consideration of low-risk, low-tech, low-costs advantages of natural restoration, the latter being the intended result of CERP. Another question raised at the Boca Raton Public Comment session: If we wait until 2010 for answers the ASR Pilot Project will produce, land buy opportunities will be lost, and so will the possibility of restoring the River of Grass. The ASR approach, absent an ASR contingency plan, begs the question, where is Everglades Restoration in CERP? Develop an ASR Contingency plan in parallel with the ASR pilot project endeavor, not after the fact.</p>	<p>Disagree. During the formulation of CERP, the full-scale implementation of ASR provided additional regional storage to meet the objectives of CERP. Also envisioned in CERP, these pilot projects for ASR are designed to address the technical and regulatory questions that are necessary for full implementation of ASR. The ASR contingency plan is scheduled to be complete in 2005, prior to the finish of the Pilots, and prior to any full scale ASR PIR. In addition, the SFWMD is actively pursuing land purchases identified for restoration efforts.</p>
ARM-56	<p>Maddox, Copland, et al (Florida Geological Survey, 1991) provided a Background Hydrogeological "baseline" for a ground water quality monitoring program under the Water Quality Assurance Act (1983); additional requirements were placed on Florida Department of Environmental Protection (FDEP), then FDER, per F.S. Chapter 403.063. Virtually all state water agencies including SFWMD, were parties to this report. Incorporate this "baseline" REFERENCE and subsequent data as may be available, into the ASR DEIS.</p>	<p>Reference has been added.</p>
<b>Friends of Six Mile Cypress</b>		
FCS-1	<p>Friends supports the goals of the ASR systems, which include permitting long term water storage, restoring historic flowways, managing storm water runoff, improving water quality, and restoring critical habitat.</p>	<p>The USACE and SFWMD appreciate your general support of the ASR Pilot Projects.</p>

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FCS-2	Friends applauds the current small-scale feasibility study to assess environmental impacts of the ASR wells. As a result of the unknown effects of the projects and how the wells could interact with each other and other water bodies, Friends supports continuing evaluation of scientific studies. The proposed plan for a total of 44 ASR wells in the River basin alone (Caloosahatchee) does seem excessive, and further studies should clearly document the need for safety of so many wells prior to construction. The citizens would like to urge managers to proceed cautiously and judiciously.	Our strategy of conducting these pilot projects and the ASR Regional Study – and the projected completion of these studies by the year 2010 – confirms the cautious, science-based process that your organization has requested.
<b>Legal Environmental Assistance Foundation</b>		
LEAF-1	The introduction section of the PPDR is inappropriate and subjunctive. It goes beyond introducing the facts and reads like an advertisement by an engineering firm looking to make a profit. It also attempts to justify ASR with irrelevant descriptions of ground water recharge. Recharging ground water by treating water and injecting potable water into surficial aquifers to halt or reverse salt water intrusion is a much different situation than recovering water and being able to put it in a fragile ecosystem.	Comment noted.
LEAF-2	Figure 1.3-1 remains the simplistic and disregarded idea of the "bubble theory". Homogeneous, fully confined, evenly layers aquifer does not represent reality. It is known that injected water does not reside in a simple "bubble", but migrates horizontally and vertically depending on pressure, confinements, and suspended solids in the native water. Injected water can also cause head and pressure changes.	The figure is used to illustrate the ASR concept to the general public, not to delve into the hydrogeologic complexities of the aquifer systems.
LEAF-3	The use of the term confinement to convince the public that injected water will not migrate vertically or horizontally into other aquifers is misleading. There is never true confinement, as layers separating the aquifers will seep in addition to whatever fissures are present. Indeed, the more confinement within an aquifer, the less water can be injected as the pressure increases to prevent such injection.	The word confinement is used in reference to overlying, relatively impermeable layers, not of the storage zone itself.
LEAF-4	Section 1.3 of the introduction misstates that ASR can also be used to assist in longer range water supply planning by storing water during wet years and recovering it in extended drought, as this is unproven. It is a statement based on no science, and studies show that recovery significantly decreases the longer water is stored.	While it is true that recoverability decreases with storage time due to mixing and migration, there are ASR systems in the U.S. that have stored water for longer periods of time than just seasonally, hence the western U.S.'s term for ASR known as "water banking".

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LEAF-5	The design report shows that there is a lack of focus on the affects the recovered water may have on the fragile South Florida ecosystem, particularly the Everglades.	The intent of the CERP ASR program is to investigate the hydrogeologic and engineering feasibility as well as the ecologic impact of large-scale ASR implementation in South Florida. The Pilot ASR Design Report is intended to describe the plan to design, construct, and operate the Pilot ASR facilities. Details regarding the associated hydrogeologic and ecological investigations designed to quantify potential ASR impacts to the Everglades as well as other ecosystems in South Florida are found in the ASR Regional Study Project Management Plan.
LEAF-6	The reports do not make any reference to meeting any level of phosphorus before discharging the stored water into surface water.	Presently, at the proposed ASR facility locations, there are no numerical surface water quality standards in force for phosphorus. Furthermore, the ASR storage and recovery process is likely to somewhat reduce the total phosphorus concentrations in recovered water relative to source water. This reduction in total phosphorus content will occur due to the filtration process which is expected to remove much of the particulate phosphorus prior to recharging the ASR well. Given that some of the aquifer matrix does contain trace quantities of phosphorus, it is possible that the stored water might cause some phosphorus to migrate from the aquifer matrix to the water column. As part of the water quality monitoring of recovered water, both total phosphorus (TP) and soluble reactive phosphorus (SRP) will be measured. This data will indicate the net effect of ASR treatment / storage on phosphorus concentrations and loads.
LEAF-7	The reports place too much emphasis on modeling the ecosystem effects of ASR on Lake Okeechobee rather the Everglades. They also focus too much on individual organisms rather than community responses. Efforts should be directed as determining long term ecological impacts that this type of water diversion may have on ecological communities of the Everglades. Given the short duration of the ASR Regional Study, these should have funding to continue after that study is complete.	The Pilot ASR Design Report is intended to describe the plan to design, construct, and operate the Pilot ASR facilities. Details regarding the associated hydrogeologic and ecological investigations designed to quantify potential ASR impacts to the Everglades as well as other ecosystems in South Florida are found in the ASR Regional Study Project Management Plan. The execution of the pilot ASR projects along with the ASR Regional Study will answer most of the questions regarding the ecological impact of large-scale ASR implementation. The planned phased implementation of full-scale ASR will allow time for additional information to be gathered.
LEAF-8	The PPDR states, "analytical parameters that may exceed secondary drinking water standards, FDEP will be petitioned for water quality criteria exemptions." This contradicts the EIS statement that exemptions may be applied for. The agencies should be frank and open with the public.	The EIS text will be corrected.
LEAF-9	The accuracy and reliability of the water sampling performed is questionable. The discussion of water quality sampling in Section 3 shows much of the data gathered is questionable. Data was discarded. It is difficult to know the quality of the data because the summary of validated water quality data in Appendix A has no explanation of abbreviations used to describe the data and they do not match those found in Section 3.	Disagree. Historical data was the best available. The ASR monitoring data was collected using state license laboratories and validated using EPS and FDEP standard procedures. If you are referring to the abbreviations for data qualifiers, these are standard abbreviations as used by FDEP and SFWMD. Please consult the FDEP for additional information.

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LEAF-10	The storm event water quality sampling remains inadequate. Storm data was invalid because samples were collected more than 48 hours after the event. There is no indication that the historical data is any more valid than the data the agencies were receiving from the contractor.	Disagree that storm event samples were “invalid”. When large hydrologic basins (Lake Okeechobee, Kissimmee River, WCA 1, Caloosahatchee River) experience significant rainfall events, (2-inches or more) the runoff hydrograph frequently lasts even longer than 48 hours. Thus the storm event samples collected as part of this project are representative of the quality of surface water that results from a storm event. Furthermore, while it has been demonstrated that for small urban areas that there is a strong correlation between rainfall events and runoff quality, this correlation is much weaker for large basins because of the effects of the timing of sub-basin flows as well as simple dilution, dispersion, and removal (gravity settling). In any case, after reviewing the storm event data, the project team elected to study the relationship between water quality and storm events for two of the locations (Hillsboro and Kissimmee). As anticipated, the analysis showed that there was little to no correlation between flow, rainfall events, and water quality at these two sites.
LEAF-11	Quarterly sampling does not give an accurate picture of the water quality of the source water for ASR. In agricultural areas where run-off of contaminants can occur heavily in short time intervals, more consistent water quality testing should be performed.	Disagree; the quarterly sampling program combined with the historical data review and the pilot water treatment studies provided adequate information to design the surface water treatment facilities.
LEAF-12	The statement based upon the USGS study by Reese in Section 4.4.2.2.6 of the PPDR indicates cycle testing beyond two years would improve recovery efficiencies at the Hillsboro ASR site. Although the study did show recovery efficiencies to increase, they never increased to the 70% rate that the Restudy is based upon. Most never had a recovery above 50%.	There is only one ASR system (City of Boynton Beach) that has been operational over a sufficient period of time to draw any definitive conclusions regarding long-term ASR system performance in South Florida. At that site, over 90% recovery efficiency has been reported. The other ASR sites in South Florida have shown improvement in recovery efficiency over time, but they simply have not been in operation long enough to observe the kind of improvement observed at Boynton Beach. The Boynton Beach system performance supports the 70% recovery efficiency assumption contained within the Restudy document.
LEAF-13	The recovery efficiency defined by Reese is not how the PPDR states it will define recovery for the pilots. Instead, recovery will be defined as how much water is recovered that does not exceed the TDS level of the receiving waters.	Reese’s proposed definition of recovery efficiency is appropriate from a purely scientific perspective for comparison purposes between ASR sites. That said, there is nothing incorrect about defining recovery efficiency based on an allowable TDS concentration upon recovery. In fact, it is our understanding that most operational ASR systems in Florida use this same approach, but in their case it is based on the maximum contaminant level (MCL) for chlorides or TDS at drinking water facilities – not the receiving water body’s quality -- that serves as the shut-off criterion.

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LEAF-14	Section 6.2.5 of the PPDR states obtaining water quality exemptions for the secondary drinking water standards are aesthetic and have no effects on human health. It does not focus on ecological affects. As a component of restoration, it should focus on ecological affects of the recovered water - including those caused by secondary drinking water standards. The lack of regulatory control focusing on ecological affects is all but admitted in Section 7.0.	The purpose of obtaining the Water Quality Criteria Exemptions is to satisfy the Underground Injection Control (UIC) criteria. These criteria are based upon primary and secondary drinking water standards because the Floridan Aquifer System is a potable water aquifer. Drinking water standards are established using human health criteria not ecological criteria. The ecological effect of discharging iron, color, and aluminum into the FAS groundwater system will be limited to potentially affecting microbial. This issue is being studied by the USGS as part of the ASR Regional Study.
LEAF-15	We are concerned that the storage time for the projects remains too short to draw any conclusions about long term multi-year storage as the full project contemplates. The longest storage time is 6 months at one site, the majority less than 3. Full scale implementation includes multiyear storage plans and this study is not adequate to determine if long-term storage is feasible.	We acknowledge that the multi-year storage feature of the CERP ASR Program cannot truly be replicated in the 2-year duration for cycle testing of the ASR Pilot Projects. That said, the 3- to 6-month storage durations identified in the cycle testing plan allow one to draw conclusions by extrapolating the results over successive cycles.
LEAF-16	Section 9.3.3.3 (PPDR) states "bioassays may be performed on the recovered water, to determine toxicity of the water to living organisms near the discharge area." This contradicts the EIS which states bioassays will be performed. Second, it is imperative that all possible ecological affects that recovered water may have on the environment be discovered and LEAF strongly urges this to be made a priority of the PPDR - not simply something to be done if funding is available.	The PPDR will be corrected to state that bioassays <i>will be</i> performed. The ASR Regional Study includes a suite of tasks that are intended to address all possible ecological effects
LEAF-17	Table 9.3-1 shows that phosphorus is not going to be sampled for at the discharge point. This is one of the nutrients plaguing the everglades and is important to meet the restoration goals of CERP.	Contrary to this comment, Table 9.3-1, Surface Water Samples at ASR Source / Receiving Waters, does include the collection and analysis of both total phosphorus (TP) and soluble reactive phosphorus (SRP).
LEAF-18	Although the DEIS states that "discharge nutrients like phosphorus could be problematic and requires some consideration", page 20, no testing, sampling, or design standards for the issue of phosphorus is discussed anywhere in the DEIS or PPDR.	Disagree. Sampling the recovered water for phosphorus will be done as part of the pilot studies. Removal of phosphorus by ASR is not a part of the CERP plan and is therefore not considered in this project
LEAF-19	The issue of phosphorus in recovered water is particularly troublesome because there is a significant increase in natural phosphate content in the aquifer. Will the stored water interact with the aquifer that may result in high phosphorus content in recovered water?	While it is true that the FAS matrix does contain phosphates, there is no existing data that indicates that this phosphate will mobilize and result in elevated phosphorus concentrations in the recovered water relative to the source water. As part of the project, the potential for mobilizing matrix phosphorus will be investigated to determine if this is a potential problem.

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LEAF-20	A parameter that does not necessarily have regulatory standards but could pose a serious ecological problem is the temperature of recovered water. Although the DEIS identifies it as an issue, the PPDR does not consider it a design requirement.	The ASR water quality and ecological team has preliminarily investigated the impact of the temperature of recovered water on surface water ecosystems. It appears that temperature impacts to receiving waters will be minimal. Nevertheless, extensive temperature measurements are currently being done to establish baseline surface water conditions at all sites. During recovery, temperatures will be measured up, at, and downstream of the discharge pipes.
LEAF-21	The DEIS states that the public and agencies have raised concerns about water rights to the recovered water, but the DEIS does nothing to address these concerns, or indicate who would have rights to the water when it is recovered.	The issue of CERP water rights is beyond the scope of the two-year testing plan referenced in the DRAFT Environmental Impact Statement for the ASR Pilot Projects. Simply put, the water recovered from the ASR Pilot Projects will be conveyed back to the water body from which it was supplied. There is no plan to allocate the recovered water from the pilot projects as there is no way to definitively quantify the amount recoverable. The cycle testing plan focuses on data gathering and analysis, not potential allocation of recovered water during this brief testing period.
LEAF-22	Section 4.3.2 misleads the reader by stating that a requirement of Class I UIC injection well permits that dispose of secondarily treated sewage is that the injected fluid remains in the injection zone and that no unapproved interchange of water between aquifers is allowed. This is a misstatement of the current situation. EPA has found that more than 40% of the Class I UIC wells in South Florida are injected fluids that migrate out of the injected zone.	Concur. DIW water has been known to migrate from the intended aquifer. However, there are no DIWs located near any of the pilot sites.
LEAF-23	Section 4.3.3 regarding the thickness of the confining layer is not even consistent with the geologic data presented in the PPDR. The data shows that the confining layer can be as little as 150-200 feet.	We do not concur. The Hawthorn Group --as indicated in both the PPDR and DEIS -- consists of several hundred feet of relatively impermeable sediments. Thinner intra-aquifer confining layers do exist within the Floridan Aquifer System.
LEAF-24	Page 114 of the DEIS states that an increase in chloride concentrations in the discharged water is not significant from a human health perspective. This disregards the ecological impacts. There is nothing in the DEIS as to monitor whether this increase will have any ecological impact.	Disagree. The EIS discusses the Regional ASR Study plan which includes studies of ecological impact of chlorides as well as other constituents.
LEAF-25	LEAF agrees with many of the concerns raised by the USFWS in the FWCAR. The USFWS states that it "has concerns regarding the quality of the recovered water (and reintroduction into the surface water)."p52. It also states, "If concentrations are high enough, chloramines, metals, mercury, radionuclides, dissolved solids, and chlorides could all have deleterious effects on downstream aquatic resources and water users." LEAF agrees with this concern and the DEIS lack of focus on water quality needed for ecological purposes that has not been addressed.	The USACE and the SFWMD, along with USGS, USFWS, and FFWCC have developed a monitoring program to test recovered waters for possible contaminants and the associated impacts. In addition, permits required for ASR operation and surface discharge have parameters for these contaminants which must be met. The projects also have "stop condition", criteria developed to cease operations if parameter exceed acceptable limits, at which point adaptive management of operations and consultation with applicable agencies would reconvene.

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LEAF-26	LEAF also agrees with the USFWS that "these concerns need to be addressed at the pilot project level" because the volume of the full implementation could be much higher.	The monitoring programs developed for the pilot projects are designed to determine contaminants and their effects in recovered water and the efficiency of the proposed treatment train to remove these contaminants. The data produced from these pilot monitoring programs will be used in designing and implementing any full scale ASR system, with the realization that higher volumes of water would be discharged, and thus higher volumes of any contaminants.
LEAF-27	LEAF agrees with the USFWS recommendation that "wildlife water quality criteria should be used during selection of available laboratory analytical methods to allow for comparisons of recharged and recovered water quality data and the determination of potential effect on downstream aquatic life."	Class III water quality standards will be met upon conveyance of recovered water to the canal/river, and these standards consider fish and wildlife being present in these water bodies.
LEAF-28	LEAF agrees with the USFWS recommendation that "the proposed USGS study for the effects of recharged waters on the native microbial ecology and biogeochemistry of the Upper Floridan Aquifer be funded to address potential effects of chloramines. If funded, the findings should be included in the final NEPA document and /or future decision-making."	Due to the potential effects of chloramines and by-products of this method of treatment, the recommended alternatives have eliminated this component as a treatment option and revised the alternatives to not include chemical treatment options.
LEAF-29	In relying exclusively on adaptive management as a proxy for actual cumulative impacts analysis, the DEIS fails to satisfy the NEPA's requirement to assess cumulative impacts.	Disagree. The DEIS has satisfied the EPA with regards to cumulative impacts assessment. This is a pilot study. Please refer to "How to read this document" in the Preface of the PPDR.
<b>Sierra Club</b>		
SECL-1	ASR is not consistent with the overarching goal of CERP and WRDA 2000. A contingency plan for ASR has not been produced.	Disagree. During the formulation of CERP, the full-scale implementation of ASR provided additional regional storage to meet the objectives of CERP. Also envisioned in CERP, these pilot projects for ASR are designed to address the technical and regulatory questions that are necessary for full implementation of ASR. A contingency plan is currently being developed. The ASR Pilot Projects were authorized by Congress via WRDA 1999 and 2000. An ASR Contingency Plan is currently being developed.
SECL-2	There is no comparative cost/benefit analysis between large-scale surface water storage and ASR.	Concur. This is a pilot project and not designed to analyze different storage options.
SECL-3	General performance measures for full-scale implementation are not identified.	It is not the purpose of the ASR Pilot project to identify the performance measures for full scale implementation. That is a formulation task for the ASR PIRs for each individual full scale project.
SECL-4	Monitoring, evaluation, cost/benefit analysis, and contingency planning should be analyzed by an independent science review panel.	The performance of the ASR Pilot Projects will undergo analysis and review by many independent experts including the National Academy of Sciences.

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SECL-5	The DEIS does not analyze a reasonable range of alternatives	Disagree. Alternatives for the Pilot ASR projects are the no action (do not conduct the pilot tests) and different arrangements of ASR treatment technology at different sites. Section 4.0 adequately analyzes the impacts of proposed alternatives. In addition, Section 2.0 of the draft EIS and Section 5.1 and Appendix D of the PPDR summarize the screening analysis taken to identify the selected alternatives.
SECL-6	The no action alternative is not adequately analyzed.	Disagree. The no action alternative is not to conduct the pilot study, i.e., not to gain information on the ASR technology and efficiency of Florida. This is clearly stated in the Draft EIS.
SECL-7	The DEIS does not analyze the environmental effects of the project.	Disagree. The Draft EIS analyzes the known range of anticipated impacts of the pilot scale project, as well as recognizes there are unknown impacts, to which the pilot has been designed to address.
SECL-8	The alternatives eliminated from detailed evaluation are not identified.	Disagree. Alternatives for the Pilot ASR projects are the no action (do not conduct the pilot tests) and different arrangements of ASR treatment technology at different sites. Section 2.0 of the draft EIS outline the selection of alternatives. Section 5.1 and Appendix D of the PPDR summarizes the selection criteria and process.
SECL-9	The USGS should be designated as a cooperating agency.	For the purposes of NEPA, cooperating agencies aid in preparation and coordination of the Draft EIS. USGS is a cooperating agency and member of the PDT; however, they are not an appropriate cooperating agency for NEPA.
<b>TGW Engineering Inc.</b>		
TGW-1	CERP is an attempt to restore the damaged environmental to its pre-manmade condition. A multitude of ASR wells would not be found in pre-manmade environment. It is not natural to pump billions of gallons of surface water in and out of groundwater.	Comment noted.
TGW-2	Adding 333 wells with a series of interconnecting pipelines, treatment systems, and electrical systems, all with associated appurtenances and impacts, will further impact the Everglades and render it to more control by mankind, all coming at a high cost for labor, O& M, etc.	The CERP ASR program was included in the Restudy (July 1999) document to augment surface storage and provide a multi-year storage alternative that could not be provided with additional surface storage.
TGW-3	The "fact" that ASR provides cheaper storage is debatable when full cycle costs are analyzed and probably is more expensive. When price fixing for sugar is taken out of the equation, land costs would drop, and ASR storage option would lose its charm. The administration should push to stop the sugar subsidies and this mega ASR concept.	The statement that ASR is less expensive than surface storage takes into account the smaller land requirements for ASR, and the rising costs of land.

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TGW-4	The added cost of these ASRs to supplement drinking water supplies needs to be done before \$45 million is spent on just a pilot study. Certainly, the biological treatment systems with additional land purchases for return to a more natural systems needs to be addressed as an option to ASR.	The ASR Pilot Projects are designed to address the technical uncertainties of implementing the full-scale CERP ASR Program, not to compare ASR to other storage options. CERP includes both surface storage and ASR, and in fact, is simulated to operate best when these storage options are co-located.
TGW-5	The statement and philosophy presented in the DEIS about value engineering being a somewhat meaningless requirement for this pilot project should be reconsidered. It is at this junction, more than any, that the tools of the VE and VA should be applied. A select team of nonpartisan experts should be an integral part of the process.	The statement regarding value engineering reflects the fact that we are purposefully choosing low-cost options for the pilot projects, and that these facilities may only operate 2 years coinciding with our test period. That said, we remain optimistic that result of the pilot projects will prove successful and that facilities will operate for years to come.
TGW-6	For public consumption, I would expect that a \$45 million project have a review of any minor cost saving measures. A typical VE study finds 10-20% savings; enough potential money saved to help pay consultants and government staff wages involved with the project.	Comment noted. Independent technical review of the design will be conducted, and that affords an opportunity similar to a VE study to achieve cost savings.
<b>Alex Larson</b>		
AL-1	Concerned we will mess up the ecosystem, or biosphere, of the aquifer by introducing foreign contaminants during storage. Once we have tested our pilot, the damage will be done, composition of critters in the aquifer would be changed, and can not reverse the damage. What are the repercussions of our tests?	Surface water will be treated prior to injection to minimize the potential for contamination. The potential impacts of pilot testing program, if any, will be miniscule in relation to the Floridan Aquifer system. No long-term, wide-spread, irreversible damage to the aquifer system is expected from ASR pilot testing.
AL-2	Don't believe in the bubble theory, or that brackish water would not mix with the treated water being stored.	Comment noted.
AL-3	When water is recovered, it would not be the water we restored, but a mixture of treated and native water.	It is true that the relative contributions of native groundwater and stored surface water that is returned to the surface will change as the recovery period proceeds.
AL-4	We are only testing water quality for approximately 10% of possible chemicals; more testing needs to be conducted, in particular ethion, and other pesticides, herbicides, etc. that are used or have been used in these agricultural lands in Florida, as well as petroleum products.	Monitoring for an extensive list of contaminants, such as the noted pesticides and petroleum products, will be done during pilot testing.
AL-5	1. Cost is 7 million per well; 42 million total – cost is prohibitive (and could be used for something else).	Comment noted. The cost per well is higher than normal due to the additional testing requirements for the ASR Pilot Projects.
AL-6	Run-off into canals affect cycle testing phase. Cycle tests should be monthly and dramatically increased since water constituent change.	The cycle-testing plan for each ASR will is designed to maximize the opportunity to gather operational as well as scientific data.
AL-7	Treatment process does not address removal of chemicals (pesticides and herbicides), only bacteria.	The ASR surface water characterization program did not detect any exceedances of primary drinking standards with the exception of E. Coli and Fecal Coliform.

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AL-8	Pitt study (USGS 1975) was not used as a reference. Study is a south Florida investigation that reported organisms could travel as much as 90 feet horizontally and 60 feet vertically from point of introduction and remain viable as much as 25 days in ground water. How do we know we are not contaminating the aquifer. If the treatment doesn't work, and we detect a microbial problem, how fast can we recover the water before we have a crisis?	The water sent down the ASR wells is not expected to travel farther than 1 mile from the wells. Monitoring wells located approximately 300 feet and 1000 feet from each ASR well will be tested to detect biological contamination. A "crisis" is unlikely to occur given the reduced viability of these organisms in groundwater.
AL-9	Agencies involved should review the mistakes they have made in the past and learn from them.	Comment noted.
AL-10	What type of site security do we have? How do we know someone can not tamper with the wells or water?	The security at the sites will be similar to security provided to typical potable drinking water wells. That is to say, the facilities will be gated and fenced with periodic site visits by operators.
AL-11	What precautions are we taking for wildlife disturbances during construction, and how can we assure our contractors are following our conditions?	During construction, the contractors are bound by the contract to protect fish and wildlife to the greatest extent practicable. Contractors are monitored on a daily basis during <u>construction to ensure compliance with the contract.</u>
AL-12	Project needs more public input, public distribution, and public understanding. CERP project has not been associated with a drinking water supply crisis, just Everglades restoration, and should be. People need to be aware there is a water crisis in Florida, and CERP has been initiated because of this.	Comment noted.
AL-13	Project needs more media participation and initiative from the media to cover the topics to get public interest.	Comment is noted, and we agree.
AL-14	For additional development in the future, where do we propose to get the water supply? If ASR does not work, what is the back up plan?	An ongoing "ASR Contingency" project is investigating alternatives other than ASR.
AL-15	Can't we get the same answers doing a smaller scale study with only one or two wells?	The current ASR pilot testing plan was designed with a minimal number of wells. Reducing the wells would limit the regional application of the resulting test data.
AL-16	The ASR pilot project is a mistake and I am fearful of the consequences.	Comment noted.
<b>Aaron Rubin</b>		
AR-1	The DEIS fails to analyze the suitability of an ASR system as a component of ecosystem restoration and specifically rejects consideration of full-scale implementation and consequences to the south Florida environment. The impermissible narrow focus of the DEIS to technical issues posed by individual well sites leads inexorably to its failure to comply with NEPA by failing to assess any meaningful alternatives.	You are correct; this EIS does not consider full-scale ASR implementation. This Draft EIS accompanied a PPDR, not a PIR, and is limited to the impacts associated with operating the pilot study, not for the full scale ASR program. The Corps will not be able to evaluate the viability of the overall ASR program for several years. The information used for that evaluation will come from the Pilot Projects.

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AR-2	The DEIS provides six purported alternatives, five of those determined to be preferred, simply matching specific modality and technology to each of the five established pilot ASR sites. The no action alternative is summarily rejected in a single paragraph of 1000+ page DEIS, PPDR, and appendices, concluding "the no action plan does not provide a solution to the need for information in order to prepare for a full-scale ASR CERP project.	The Draft EIS is for a pilot study. The no action alternative is to not conduct a pilot or explore ASR technology any further. Eliminating it as the alternative that does not meet established criteria only warrants limited discussion. The effects of implementing the no action alternative, however, are throughout Section 4.0 Environmental Effects.
AR-3	Never considered in the DEIS are the multitude of options for storage and retrieval of surface water consistent with the mandate of CERP to restore, preserve, and protect the South Florida ecosystem. Surface impoundment and wetland restoration, such obvious options in lieu of ASR, lie impermissibly outside of the listed alternatives as a direct consequence of the Corps presuming construction of ASR and limiting its NEPA analysis to technical details for each site.	This is correct; the DEIS discusses only options for ASR technology as that is the purpose of the pilot tests. A later PIR and NEPA document will cover the conceptual aspects of ASR and surface water technology.
AR-4	The plethora of potential adverse impacts from utilizing ASR to the exclusion of any other modality never fit within the purview of the DEIS and thus violate the letter and spirit underlying NEPA which Congress intended to provide decision makers with a sufficient understanding of alternatives and impacts to reach an informed and reasoned conclusion.	We do not concur. The narrow purview of this Draft EIS is only ASR <u>pilot</u> technology.
AR-5	I request a 45 day extension to the public comment deadline. It is essential for public as a whole, affected Florida residents, and advocacy groups be afforded sufficient time to review, analyze, and provide informed responses to the issues presented by the proposed project.	The USACOE follows guidelines in the Council on Environmental Quality (CEQ) Regulations for implementing the National Environmental Policy Act. These guidelines call for a 45-day comment period for a draft EIS, followed by a 30 day comments period for the Final EIS. Because the document was a description of a pilot test (not a whole bank of ASR wells), and because these tests will be of limited duration, small in scale, using known water treatment and recovery technology, the report is not particularly long or complex (180 pages of DEIS), a lengthy comment period was not viewed as appropriate. We did provide an additional 15-day extension to requestors, which allowed a total 60 days from noticing in the register for review. A 45-day extension of an initial comment period for NEPA for a pilot test of such limited duration and scale would be unprecedented.
AR-6	The cornerstone of the CERP attempt to restore the everglades is a 1.66 billion dollar scheme to impound, treat, and inject into aquifers for later retrieval and discharge, 1.7 billion gallons per day of contaminated surface water. The project to inject, treat, and retrieve such massive quantities of surface water is unprecedented in scale.	ASR is a significant component, but not the only storage option proposed for CERP (e.g., reservoirs, STAs, etc.). The project is indeed unprecedented in scale, hence the decision to conduct pilot projects to answer the technical questions regarding the proposed full-scale CERP ASR Program.

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AR-7	The receiving aquifers are poorly understood porous limestone structures adjacent to the sole underground drinking water source for millions of people in South Florida .	The proposed storage zones for CERP ASR wells coincide with the Floridan Aquifer System, which is separated by the surficial aquifer (used for drinking water supply) by several hundred feet of relatively impermeable sediments.
AR-8	The purpose of this massive project encompassing 333 wells and hundreds of water treatment facilities is to replace the surface water storage, filter and aquifer recharge functions of a natural wetland system and wildlife habitat now fragmented, drained, and replumbed by thousand miles of ditches and canals and innumerable water control structures.	We do not concur. The purpose of the CERP ASR Program is to supplement storage provided by surface water reservoirs, provide multi-year storage, minimize large-volume discharges to the St. Lucie and Caloosahatchee estuaries, and "get the water right".
AR-9	Despite the \$2 million price tag plus operational and maintenance expenses, the justification posited for ASR includes avoiding the cost of land acquisition for surface water storage.	ASR supplements the surface storage provided in CERP, and provides for multi-year storage that reservoirs cannot provide during extreme droughts.
AR-10	The documents encompass two volumes-DEIS and plethora of attachments that run over 1,200 pages. Much of the material is highly technical. In stark contrast, discussion of the no action alternative is about 300 words in length.	Comment noted.
AR-11	The sheer volume of material, complexity of the project, unusually narrow focus of alternatives, and huge significance to the environment of Florida justifies a reasonable extension of time for submission of comments.	See response to AR-5 above.
AR-12	The Corps afforded millions of Broward and Miami Dade County residents only a single presentation to explain the complex proposal, a mere 13 days before the cutoff time for comments. At that meeting, time constraints were such that 1 1/2 hours provided for public inquiry, restricting participants to time allotments to ask questions and provide comments.	There were 4 public meetings held to take comments from the public on the draft documents. Only one was heavily attended. Meetings were scheduled to be near the locations of the wells for the proposed pilots and approximately after a month of availability of the document so participants had time to review and come prepared to discuss concerns. It is unfortunate that time allotments were needed to organize the meeting; however, the public meeting did not preclude anyone from sending written comments on the project. In addition, numerous workshops and PDTs were held for the public, or open to the public for inquiry of ASR and our proposals throughout the 4 year planning process. Scoping for the pilots was conducted, and all issues were incorporated into the document. A draft document was prepared and the Corps chain of command completed review.
AR-13	Review by the public of the DEIS and plethora of appendices has been impeded by the lack of availability in hard copy or CD, and indeed, at the July 8th meeting, Corps personnel possessed two copies, only one which was provided to those in attendance.	The Notice of Availability in the Federal Register, the notices mailed to the public, the newspaper noticing meeting, and the Corps website all listed a contact person to receive copies of the documents. All requests were filled within 24 hours of the request. In addition, the website, everglades plan.org, had the full document for those with Internet access.

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AR-14	It has been made plain in the June 10, 2004 request for extension to comment period by the Sierra Club, NRDC, and many other organizations that not to grant a 45 day extension is tantamount to denial of their opportunity to comment. It should be apparent that where a project is not expected to yield sufficient data to reach any conclusion about its propriety until 2009, the Corps should not be greatly prejudiced by a 45-day delay in the NEPA process. Any race by the Corps to expend available funds implementing this project is far outweighed by the public interest in ensuring that decision making about a project described as the cornerstone of Everglades restoration be made in a rational and deliberative manner, consistent with the mandate of Congress and objectives in CERP.	Disagree. A 45 day comment period is customary for public review of a Draft EIS. The comment period was extended 15 days, providing 60 days to requestors.
AR-15	While assessments, considerations of and responses to public comment is mandatory under NEPA, that obligation should be construed by the Corps as more than a procedural hurdle, but rather an integral part of the decision making process. Public comment facilitating the Corps in assessing true alternatives to the proposed action among other critique, may well be essential to ensuring adequacy of a final EIS serving the ultimate purpose of providing decision makers with sufficient information to reach an informed and reasoned result.	Concur. Only with public input are we able to develop a full spectrum of possibilities and potential impacts of projects. We believe we have integrated public comments and concerns into our analysis, operations, monitoring requirements, and designs of the pilot projects.
<b>Bob Bangert</b>		
BB-1	My biggest problem with these test projects is that no independent technical review team has been appointed to do the testing. The COE will conduct all of the tests.	In fact, independent technical review is a fundamental component of all USACE projects including the Comprehensive Everglades Restoration Plan (CERP). There are two different levels of independent review. The first is independent <u>technical</u> review conducted on the many technical work products that are generated during the course of project implementation. The independent reviewers at this level consist of government and private sector experts. In addition, independent scientific review has been and will be conducted by members of the National Academy of Scientists. Independent scientific review will be conducted at major milestones in the projects, such as upon completion of the cycle testing portion of the project. Another example is upon completion of the Phase I regional modeling effort for the ASR Regional Study.
BB-2	The Corps makes presentations that greatly over-simplify critical theories about ASRs, especially the bubble theory. No mention of bubble movement, no mention of what effect the tremendous pressure will have on the confining layers, not enough water quality testing.	Regarding the comment on oversimplification, we have strived to balance the requests for detailed information with the need for general information that the public can understand within the presentation timeframe. With a project delivery team consisting of scientists and engineers, we certainly understand that the hydrogeologic system is more complex than can be displayed on standard presentation graphics. For those interested, we will make available the more detailed hydrogeologic graphics that recognize these complexities.

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BB-3	What about microbial populations that may exist or other contaminants, the effects of the project on Lake Okeechobee and the Everglades and lots more?	The ASR Pilot Projects will consist of functional, small-scale ASR systems that will allow for water quality monitoring of stored water in the subsurface and pressure effects of the regional CERP ASR program on confining layers to address the subsurface movement. Data gathered from the ASR pilot projects and other wells in the area will be used to conduct desktop analyses and regional groundwater models to specifically evaluate the pressure changes induced by the full-scale CERP ASR program. We have been evaluating microbial populations in both the surface water and the groundwater to evaluate potential interactions. It should be noted that the ASR Pilot Projects will disinfect the water prior to subsurface storage. The small-scale nature of the pilot projects should result in no conceivable effect on the natural systems of Lake Okeechobee or the Everglades. Monitoring of these natural systems during the course of the ASR Pilot Projects will provide the data necessary to evaluate the effects of the full-scale CERP ASR system on Lake Okeechobee and the Everglades.
BB-4	The Corps assumes that ASR is an accepted technology for use in the CERP. Isn't this a determination that should be made after the regional study is completed by an independent testing agency?	USACE and SFWMD strongly believe that ASR is an accepted and proven technology based on its performance for municipal water systems over the last 35 years nationwide and last 20 years in Florida. The ASR Pilot Projects and ASR Regional Study are designed to answer technical questions regarding the large-scale CERP ASR program, including the appropriate number of wells that will constitute this program. As stated above, independent technical and scientific review will be conducted during the course of these pilot projects, with continued opportunity for public comment as we proceed.
<b>Charles Hunt</b>		
CH-1	Please be sure the ASR concept is thoroughly tested before it is implemented.	Comment noted.
<b>Frank Janeczek</b>		
FJ-1	I would request more study before this technique is utilized. Please allow 5 years to pass before this practice is adopted current studies are not specific enough.	Comment noted. The pilot monitoring plan has been designed to gain information necessary to design and implement a larger scale system which would not negatively impact the human or natural environment. The sooner we can collect data on its efficiency and effects, the sooner we can incorporate it into the CERP plan as a viable alternative for the need of storage or eliminate it, as necessary.
<b>Michael Christensen</b>		

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MC-1	I protest this project most strongly. There are too many unknowns. Regardless of the safeguards, the potential for irretrievable damage, even the ability to assess the damage, should discourage all but the most reckless and shortsighted. This project should rightly be delayed for more public input.	Comment noted.
MC-2	Why we do not pursue above ground natural watershed and water storage is simply a matter of greed. Please save our aquifer, save our above ground environment, save our money. 46 million dollars would buy enough land to replace, rejuvenate, reclaim, restore, replenish vs. 46 million dollars for roughly 10 acres to con, conceal, concoct, conspire, condone.	Under the CERP, above ground storage is proposed. Part of the problem that CERP components seek to resolve is that there is not enough land in South Florida to store all the water that would be needed for Everglades restoration. ASR is therefore an option to meet that storage need. The pilot projects will test the efficiency of ASR wells to store water, as well as associated impacts through a monitoring program, with upfront costs to adequately cover the tests and gain information before planning of a full-scale ASR program.
<b>Ruth Clarke</b>		
RC-1	"I would hope the scientists reviewing these projects are truly independent, not attracted by peer review by the promise of grant money to enhance their universities and special interests."	The Project Management Plan (PMP) calls for an independent review of key study findings by members of the National Academy of Scientists.
RC-2	One concern is no alternatives are provided if ASR technology fails. The ASR contingency plan will be produced in 8 months.	There is a commitment by USACE and SFWMD to prepare a contingency plan should the overall CERP ASR Program need to be reduced as a result of findings of the ASR Pilot Projects and ASR Regional Study. This contingency plan is being prepared by other USACE and SFWMD staff.
RC-3	For wildlife and habitat, the original water preserve area footprint to buffer the north-south levee, control seepage, create flowways expanding sheetflow for the river of grass, proposed during the LECRWSP development, were replaced during the restudy by the 333 ASR well proposal. The result is that the footprint has been reduced tremendously by development, and delays increased the cost of needed land for the few reservoir storage projects that are being planned to see if reservoirs will hold water.	The CERP ASR Program was envisioned during the Restudy to "supplement" storage that could not be provided by surface reservoirs, including those identified in the Water Preserve Areas (WPAs).
RC-4	That water does not evaporate when it is stored underground as opposed to storage in reservoirs is not really a benefit since the planet's solar rainmaking cycle depends upon moisture being transpired or evaporated up into clouds to produce more rain.	ASR does not eliminate evaporation that could reduce the rainmaking cycle. ASR is a water storage technology for water that would otherwise be discharged to tide and lost from the regional water management system.
RC-5	Water quality is a huge concern both in the surface water injected into the ASR wells and the quality of what is recovered.	We have designed monitoring programs for the ASR pilot projects to better understand these issues. Regarding pressure change from the proposed regional ASR system, we will be gathering data to conduct desk-top analyses and regional groundwater modeling to evaluate the effects of pressure changes.

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RC-6	It strikes me that the impacts in the hydrogeology and flow patterns of the aquifer (used as backup supply to water supply in some cities in south Florida) comes under the heading of "risk management study which the EPA should have done years ago when it started permitting utility ASR isolated wells before the parameters of the aquifers and contaminants layers were known.	Comment noted.
RC-7	It looks like \$2 billion and years of delaying real wetlands Everglades restoration will preempt funding that would be better spent buying land and restoring sheetflow through the WCAs, raising eleven miles of Tamiami Trail needed to restore flow to Florida Bay, and buying up land available in the EAA before population pressures puts land cost in the stratosphere.	The ASR Pilot Projects – together with the ASR Regional Study -- are designed to answer technical uncertainties of the proposed \$1.6 billion CERP ASR program. We do not believe pursuit of the CERP ASR program constitutes “delaying real wetlands Everglades restoration.” In fact, the CERP ASR program is a key storage feature for Everglades restoration to “get the water right.”
RC-8	Wildlife has not benefited very much from the STAs using cattails to remove pollution, and hopefully SAV and PSTA STAs will do better in moving EAA runoff toward 10 ppb phosphorus.	Comment noted.
RC-9	Will endocrine disrupters be removed by UV and chloramination process used in the ASR water treatment plant?	The treatment facilities associated with the ASR Pilot Projects are not designed to remove endocrine disruptors, which are not likely to be present in quantities that could affect humans or wildlife. Many municipal water treatment systems rely on technologies other than membrane processes, and it is not clear why ASR systems would be held to a higher standard than utility systems designed to deliver water directly to the tap in homes. Admittedly, more research is needed regarding endocrine disruptors on the national level.
RC-10	Will secondary and tertiary treatment be required to get the water right for wildlife as well as humans?	No. Secondary and tertiary treatment will be used if we violate receiving surface water quality standards.
RC-11	I am concerned that the water quality regulations are being downgraded, and enforcement staff reduced. It is impossible to look at TMDLs as a positive substitute.	This comment is better addressed to FDEP, and not applicable to the Pilot Projects.
RC-12	Adaptive management should be able to change the priority of these costly ASR projects to wetland-upland acquisition and tree planting since less restoration will be possible with each passing year, and emphasis needs to be placed on pollution control and enforcement on a shorter time line than the long term plans have spelled out.	Adaptive management is a fundamental tenet of the Comprehensive Everglades Restoration Plan (CERP). That said, adaptive management should be based on data that will result from implementing the ASR Pilot Projects.
<b>Wetlands Alert, Inc</b>		

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WA-1	NEPA requires federal agencies to assess cumulative impacts, which are "impacts to the environment which results from incremental impacts of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency or person undertakes such actions." Without this information, it is impossible for your agency, other agencies, or the public to evaluate all of the direct, indirect, and cumulative impacts of the proposed agency actions, as required.	Cumulative impacts are addressed Section 4.27 in the DEIS. In addition, EPA has evaluated the dEIS and issued a lack of objections.
WA-2	The PPDR, Draft EIS, and other proposed COE actions referenced above fail to consider comprehensive cumulative impacts of COE actions, other agency actions, or entities and individual actions. Examples of such actions by the COE that will result in adverse cumulative impacts to the Everglades include the ETDM process and proposed 16.14 acre road widening project and the proposed 100,000,000 CEO funding of aquifer injected sewage effluent throughout Florida Keys.	Section 4.27 of the draft EIS discusses the cumulative impacts of the pilot ASRs on environmental resources. The permits and actions listed are not within the scope of the ASR pilot project and do not have a cumulative impact with the resources that would be impacted by the ASR pilot projects. A cumulative analysis of all CERP projects on the Everglades can be found in the Comprehensive Everglades Restoration Plan, Final Environmental Impact Statement.
WA-3	Two significant categories of adverse impacts by the proposed road projects referenced that will prevent restoration of the Everglades are 1) mining and permanent removal of the aquifer structure for raw materials to construct roads, and 2) paving hundreds of acres of natural recharge areas with impervious road surfaces. The Corps proposes to spend billions to attempt to recharge the aquifer artificially, while it continues to authorize paving every acre of natural area with impervious surfaces and dredging of pits that prevent natural recharge and further deplete the system. Restoration of the aquifer system is required as an underpinning for restoring sheetflow in the Everglades.	This comment appears to be related to rock mining and road construction, regulatory actions, and not related to CERP. No response is necessary.
WA-4	The Corps failed to consider further degradation of surface waters from ASR injections displacing contaminated groundwater, septic tank leachate, and aquifer injected sewage effluent and other pollutants into surface waters.	There is no indication that operation of the ASR Pilot Projects will come in contact with contaminated groundwater. The proposed storage zone is the upper portions of the Floridan Aquifer System -- and the relatively impermeable sediments of the Hawthorn Group -- isolate it from the overlying surficial aquifer where contaminants might be present. Monitor wells will be constructed and monitored to document this understanding.

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WA-5	No true alternatives were considered in the draft EIS and other referenced COE actions. Examples of viable alternatives include reducing further loss of natural recharge by refusing to permit additional increases in impervious surfaces (i.e. roads); increasing natural recharge and decreasing contaminated stormwater run-off by converting existing impervious surfaces to pervious surfaces; restoring the aquifer system by conversion of municipal water supply from ground water mining to open ocean desalination; reducing municipal water use by 50 % by creating closed loop municipal sewage systems that return treated effluent for use in flush toilet systems; and requiring waterless flush toilets for new construction and providing financial incentives for conversion of existing flush toilet to waterless systems.	This comment is not relevant to pilot tests. The pilot projects are designed to test relevant components of ASR technology.
WA-6	The duration of public comment period was grossly inadequate. A minimum of a 60 day extension was requested, and only 15 days was granted.	See response to ARM-8.
WA-7	The COE Jacksonville office released a Press Release on June 16, 2004 stating, "The federal government and the state of Florida have agreed to allow an independent scientific panel to review the massive \$8 billion, 30 year Everglades Restoration Plan. The review of CERP will be accomplished by the National Academy of Sciences..." Therefore, the timing of public comment period is premature, inappropriate, and should be suspended until after a comprehensive review of the entire proposed Everglades restoration plan by NAS, and publications of their conclusions and findings.	EPA has concurred with the findings of the draft EIS and issued a lack of objections. Therefore, comment period has ended on July 6, 2004 and additional extensions will not be granted. Delaying CERP implementation would only further degrade the Everglades ecosystem it has been authorized to restore.
WA-8	Information provided in the draft ASR PPDR and EIS is biased, scientifically unfounded, inadequate, and grossly misleading. For example, the unsubstantiated "bubble theory," which prevents mixing of injected fluids with existing ground water. Myriad peer-reviewed scientific publications document rapid flow a ground water in all layers of the referenced aquifer system, as well as the increase in lateral and vertical groundwater flow triggered by both groundwater injections and groundwater withdrawals.	We do not concur. The Project Management Plans were reviewed by the National Academy of Sciences (NAS), and their comments incorporated into our project plans. Groundwater flow in the Floridan Aquifer System is relatively slow (e.g., a few feet per year) as is documented in several USGS and FGS publications. The PPDR and DEIS indicate that mixing between stored water and native water will occur, hence the inclusion of geochemical research efforts to better understand this phenomenon.
WA-9	The pilot ASR PPDR and EIS are not in compliance with the goals and objectives for the \$8 billion Everglades restoration effort. In fact, they are in conflict with those goals and objectives.	The ASR Pilot Projects are part of the Restudy (July 1999) that provides the framework for Everglades Restoration. Congress authorized the ASR Pilot Projects via WRDA 1999 and 2000 to address the technical uncertainties of the full-scale CERP ASR Program.
WA-10	Request that copy of letters and attached correspondence is placed in the official file of record for the Draft ASR PPDR and EIS.	Copies of all correspondence and attachments have been added to the Administrative Record of the proposed projects.

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WA-11	Public comment are being requested by the ACOE for the draft EIS addressing three of the proposed 330 "ASR" wells the ACOE has proposed to construct with millions of tax dollars in the vicinity of the Everglades. This proposed action is an attempt to reverse the extensive damage the ACOE has caused to the Everglades by their Public Works and Regulatory actions. Despite the fact the draft EIS addresses 3 different proposed ASR wells in three locations, the public and agency staff were expected to produce comments in the same time frame as a single project. This is a hardship on American Taxpayers who fund these projects. The timing of my letter - on the 4th of July holiday- is not coincidental. The American taxpayers are tired of taxation without representation for federal pork-barrel projects by the ACOE and similar agencies.	The Draft EIS discusses elements of ASR technology at 5 pilot test sites. All sites were grouped together in one document because they are the same test being proposed at different sites to test the local geology, not 3 different projects. We believe this simplifies the review, not adds a hardship. The 3 pilot tests are temporary in operations, running for a limited time, and are not part of the overall proposed 330 well ASR Project.
WA-12	The COE Jacksonville office released a Press Release on June 16, 2004 stating, "The federal government and the state of Florida have agreed to allow an independent scientific panel to review the massive \$8 billion, 30 year Everglades Restoration Plan. The review of CERP will be accomplished by the National Academy of Sciences..." The timing of public comment period is inappropriate, and should be suspended until after a comprehensive review of the entire proposed Everglades restoration plan by NAS. The timing represents a waste of taxpayers money, since other agencies must review and provide comments on the grossly inadequate draft EIS.	EPA has concurred with the findings of the draft EIS and issued a lack of objections. Therefore, comment period has ended on July 6, 2004 and additional extensions will not be granted. Delaying CERP implementation would only further degrade the Everglades ecosystem it has been authorized to restore. Other reviewing agencies are fully qualified and it is within their purview to comment to the draft EIS. Opinion is noted.
WA-13	Please note the email correspondence received form Rebecca Weiss, contact person for another major ACOE project that will result in significant adverse cumulative impacts to the Everglades. She made it clear that civil works and regulatory divisions do not interact. The failure of the ACOE's civil works to consider the adverse cumulative impacts of their regulatory actions is evident in the draft EIS. Thus, the draft EIS is grossly inadequate in meeting the requirements of the NEPA.	The Corps Regulatory, Jacksonville District, considers 8,000 permits a year in Florida. Regulatory and Civil works do indeed interact in several way. Permits requiring an environmental impact assessment are often coordinated and prepared along with civil works planning. However, the burden of proof that a given permit does not impact resources is on the applicant. Civil works does not participate in reviewing applications. They are, however, aware of permitted actions within the scope of proposed civil worlds projects and assess impacts cumulatively. The ASR pilots are not anticipated to have any cumulative impacts.
WA-14	I request the ACOE to suspend all further actions on the draft EIS until NAS has conducted a complete review and released their findings; extend public comment period to a minimum of 60 days following NAS release and a comprehensive evaluation of all adverse cumulative impacts; provide a copy of the document describing the details and time frame for the NAS review of CERP.	EPA has concurred with the findings of the draft EIS, including the cumulative impact analysis, and issued a lack of objections. Therefore, comment period has ended on July 6, 2004 and additional extensions will not be granted.
<b>Public meetings:</b>		
Okeechobee		

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Comment Number	Comment	Response
PMOK	Any cost estimate per one million gallons of purified water?	The cost per million gallons is higher for the CERP ASR Pilot Projects owing to the greater scientific research that's needed to plan for the full-scale CERP ASR Program. The Restudy document assumed a cost estimate of approximately \$1.6 billion for 1.6 billion gallons per day of ASR capacity.
PMOK	Any plans when to start the first pump?	We anticipate that the first of the CERP ASR Pilot Project wells will be operational in early 2006.
PMOK	And this water that's cleansed is for the Everglades? Is it for the cities that need drinking water?	The water stored for the CERP ASR Pilot Projects will be conveyed back to the canal or river from which it came. It is not allocated. It is treated to meet water quality standards of the receiving water bodies. For the proposed full-scale CERP ASR program, which will require separate analysis and authorization, the water recovered will be for the benefit of the Greater Everglades ecosystem.
PMOK	I'm working on the Lake Okeechobee Water Shed Project, and they're designing their surface storage components right now. One of their problems is they don't know how much to design for because if ASR turns out it's not going to be, we're going to have to find another means of storage. Is your team responsible for coming up with alternative plans if this doesn't work or is that somebody else? I would like to know what they're doing.	A separate team of the RECOVER group has been tasked with developing an ASR Contingency Plan. That team will develop alternatives to the ASR storage option should it be determined that we can't implement the CERP ASR Program as envisioned in the Restudy document (April 1999). They are developing a work plan now to address the specific project elements for the ASR Contingency Plan.
PMOK	The Kissimmee chain of lakes was left out of the Everglades restoration. And north of Lake Kissimmee is 40 percent of Okeechobee watershed. There is a lot of possibility for storage up there either aboveground or perhaps even ASR. Are you restrained from being able to think about trying to put wells up there if it seemed like it might work or might help?	Currently, we do not envision locating CERP ASR wells north of Lake Okeechobee in the Upper Kissimmee Basin. Part of the reason is that the Lake Okeechobee ASR component assumes that the ASR wells are adjacent to Lake Okeechobee with the ability to manage its water levels directly. This ability would be somewhat compromised if the wells were not located in close proximity to Lake Okeechobee. That said, the proposed groundwater modeling of the Floridan Aquifer System to be conducted in the ASR Regional Study will result in a detailed plan that will include well locations.
PMOK	We have a lot of problems on the coast with dumping water into the estuaries. The Game Commission decides to clean Lake Kissimmee and Lake Toho. So they dump it all out the canals and you can't do one or harm the other. I would hope just by pulling excess water out of a lake and not dumping it down the canal into the estuary; it sounds like a good idea to me, if it would prevent dumping water down the canals.	One of the primary benefits of the full-scale Lake Okeechobee ASR Project will be the ability to better manage lake levels, and therefore minimize high-volume discharges to the estuaries.
PMOK	How many STAs are built and how many are still to be built, and are they ever going to be open to the public?	STAs are not being built as part of the ASR pilot projects.

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PMOK	Regarding the Kissimmee River site, are you going to build the whole structure here on that dike, plus the steps about aerating the water?	The diagram on the brochure reflects our intention of building ASR wells, monitor wells, water treatment facilities, pumps and piping, etc., all which should comfortably fit on a 2 to 3 acre parcel per 5 mgd of ASR capacity. Future ASR systems might require even less land on a per mgd basis.
PMOK	Are you starting construction this year?	Construction is planned for 2005, once the designs are complete and the necessary permits are in place.
PMOK	Does the restoration project for the Everglades depend upon this particular event?	The CERP ASR Pilot Projects are designed to answer technical questions regarding the proposed full-scale CERP ASR Program (333 wells). See Executive Summary and Section 1.4 for how ASR ties in with CERP.
La Belle		
PMLB	I'm glad this new technology is being used and shared with the public because it is important for present and future water problems.	Comment noted.
PMLB	What are the operation and maintenance costs? How will the regional development of this technology enhance the economy, for example by providing jobs?	Operation and maintenance (O&M) costs for the pilot projects will be determined following the 2-year testing period. It will include electrical costs due to pumps and treatment facilities, equipment maintenance, and water quality testing, and manpower to operate and maintain the facility. Job creation will not be a major factor for the pilot projects, but operators and maintenance crews will be needed for the proposed full-scale (333 well) CERP ASR program.
PMLB	There is no profits but only continuing expenses for this project and saving the Everglades in general. We are rushing into drilling all of the wells, while we still do not know much about the impacts of such activity.	We concur. There are no profits generated by the pilot projects. The Draft EIS assess the impacts and risks of the pilot projects and concludes that there is little to no effects on the environment by proceeding with the pilot projects. This is further demonstrated by observation of little to no impacts associated with other existing ASR facilities in Florida.
PMLB	How long will it be before you try to take out the water in the porous layer of the aquifer? What assurance is there that the water will be there when you want it?	We hope to complete construction in 2005, with testing (i.e., storing water underground) in 2006. The only assurance at this time that the stored water will be there is by inference from the existing Florida ASR facilities in operation.
PMLB	This project is not going to make any money. The holes drilled will be stressed. What do we do with the water once we find out the recovery period? It sounds too expensive. Why is this being rushed?	Again, the intent of the pilot projects is not to make money but to test the technology, demonstrate its performance, and answer technical questions about the proposed 333-well full-scale CERP ASR program. The recovered water will be conveyed back to the canal or river from which it came (in this case, the agricultural Header Canal located on the Berry Groves property).
PMLB	How much sharing of information is there for technology, especially in the government? Call the project 'experimental' not a 'pilot'.	The team has been and will be in contact with municipalities to learn from their existing Florida ASR facilities, and of course we intend to share our experiences with them. We believe the term "pilot" is correct and not "experimental" because ASR systems have operated in Florida for over 20 years now.

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PMLB	It would be nice for recreational use to actually be recreational use.	It's difficult to envision recreational use for the ASR pilot projects. However, as part of CERP, a CERP Master Recreation Plan is being developed to ensure the public gets maximum benefit of public lands and facilities while simultaneously providing for environmental restoration.
PMLB	I was happy to hear that you are projecting that the treatment processes for the ASR pilot projects are only going to involve filtration and then UV disinfection. Does that imply that the storm water runoff characterization study has already been complete and that those processes are based on that data?	The primary standards for Fecal Coliform and E. Coli are the only primary drinking water standards that were shown to be exceeded at the four viable ASR sites. The filtration and UV systems are designed to remove the biological contamination to below drinking water standards. During actual pilot testing, a full suite of primary and secondary drinking water quality standards will be tested for on a regular basis to ensure that water sent to the aquifer meets the criteria.
PMLB	Is the source water data publicly available?	Yes, the web site is: <a href="ftp://ftp.saj.usace.army.mil/pub/projects/ASR">ftp://ftp.saj.usace.army.mil/pub/projects/ASR</a>
PMLB	With regards to the C-43 project, I was surprised to hear that with all of these ASR projects, there is a reservoir component that is part of it, and it sounded like that was missing with the C-43. You were essentially pulling out of a canal and going directly into the treatment and then into the ASR. The reservoir component was not part of the pilot study. Now you are not going to have the full 6,000 acres because you don't have the 44 wells yet, but certainly, for the pilot study, don't you think that you would, or did I misunderstand that?	For the Caloosahatchee River ASR pilot, we will be pulling water out of a the Header Canal, then filtering through a treatment pond with an underdrain treatment system, then storing in the ASR well. This 2-acre pond design is intended to mimic the seepage behavior of a full-scale reservoir for ASR storage, such as proposed in the C-43 Basin Storage Reservoir project. The ASR pilot testing at Caloosahatchee is scheduled prior to the completion of the C-43 Basin Storage Reservoir at Berry Groves.
PMLB	Are you pumping directly from a canal (Caloosahatchee)?	We'll be pumping from the Header Canal -- an agricultural canal located on the Berry Groves property that gets its water by a large pump station that intersects the Townsend Canal.
PMLB	How really big in layman terms is this hole in the ground?	Each ASR well will be 24 inches in diameter, and upwards of 1,000 feet deep.
PMLB	Just because you negated the idea to dredge the Okeechobee Lake, does not mean it can't be looked at again, for example to build a mountain instead. This is a lot of money and rushed; we should go back and reconsider the lake.	The desired funding levels for the ASR Pilot Projects and ASR Regional Study correspond with the need to answer the technical questions to evaluate the efficacy of the proposed full-scale CERP ASR Program.
Stuart		
PMST	Should the Pilot Projects prove disappointing, if you're not able to recover as much water as you thought that you were going to, or if the quality of the water is deemed a failure, then what measures do you have in place right now for storing water in the future?	We are currently developing an ASR Contingency Plan to address other potential storage alternatives if CERP ASR doesn't prove as successful as hoped.
PMST	If the 333 ASR wells are largely ringing Lake Okeechobee, how is it that the recovered water is going to be introduced into the Everglades?	Two hundred of the 333 ASR wells are proposed around Lake Okeechobee, with the others in Hendry and Palm Beach counties. The CERP ASR wells benefit the Greater Everglades, as these areas are hydraulically connected. Recovered water will either be directly routed into natural areas or replenish water supply that would otherwise pull directly from natural areas.

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PMST	As we recover the water [from the treatment], since we've had a couple of these projects going for some years, does it require reverse osmosis treatment afterwards? Is it getting blended with the salt in that strata or is it coming back unsalted?	Recovered water will not undergo reverse osmosis treatment. The ASR concept is that the stored water pushes away (displaces) the brackish water in the aquifer, so that no treatment other than re-aeration is anticipated.
PMST	Was there a component of ASR that was to manage not only lake waters but river waters and to capture some of the peak discharges from, for instance, in the Loxahatchee's water shed, in C-51, the L-8, and the C-18 basin, there will be ASRs that will have a function of attenuating peak discharges?	The other CERP ASR components other than Lake Okeechobee (200 wells) were indeed associated with storing non-lake water such as Caloosahatchee (44 wells), L-8 basin (10 wells), C-51 (34 wells), Agricultural Reserve Reservoir (15 wells), and Site 1 Impoundment (Hillsboro Canal, 30 wells).
PMST	Are these projects mainly driven for the water quantity or quality issues?	The primary focus of the CERP ASR projects is water storage, though there is an inherent water quality improvement in the St. Lucie and Caloosahatchee estuaries by minimizing large-volume Lake Okeechobee releases to these estuaries as a result of the Lake Okeechobee ASR Project.
PMST	One of my concerns is that the concept of the bubble that will contain the freshwater from the brackish water. And as we increase development because of this tremendous influx into Florida, we are losing the first layer, the top layer of the water above the first layer of the confining or the limestone. And have you gotten any data regarding how far the bubble has gone?	Experience at other ASR sites in Florida over the past 20 years indicates that the stored water will displace (push away) the brackish water present in the aquifer, making the stored water available for recovery at a later date. Indeed, increased development and growth has placed a strain on the surficial aquifer, located above the confining unit. Therefore, the ASR concept as proposed in CERP should help better manage our available water resources.
PMST	The deep injection wells are starting to show water coming back up through the lower confining layer into the Floridan. As we lose more, what is it spatial? Is that the top one? What is the top one?	Deep injection wells that have indicated upward movement of effluent have occurred only at certain locations, such as Miami-Dade county. We are not aware of occurrences whereby this effluent has been discovered in the upper portions of the Floridan Aquifer System targeted for CERP ASR storage.
PMST	I would feel much more comfortable with this ASR program if it was an independent testing agency that was doing the testing, not the person that's going to do the work and who possibly could even make the tests come out the way they wanted them to.	The entire CERP program has a system of independent technical review conducted at key points of the program. In addition, independent scientific review by the National Academy of Sciences (NAS) has been and will be conducted. Note that NAS has conducted two separate reviews of project plans associated with the CERP ASR Program.
PMST	I object to the simplification that the project that you're pushing water down into the Floridan Aquifer and that there is a solid confinement area, you're going to hold it there and it's going to come back up. You're going to hold it right in that little bubble there. And that all the pressure of this billion and a half gallons of water going down there is not going to make more pressure. And what's the result of the pressure that we're putting down there? I'd like to see a lot less simplification and a lot more from independent study.	We believe there is pretty solid confinement above the upper Floridan aquifer based on the presence of Hawthorn Group sediments (e.g., clays, silts, marls, etc.). Note also that there is a limitation to the complexity we can present via MS-PowerPoint, and as professional hydrogeologists we're well aware of the complexities of the subsurface. We will be conducting desktop studies and groundwater modeling to address the potential pressure build-up from 333 wells. Remember, however, that the proposed pilot projects help to address issues like these, and that's why we're here soliciting public input.

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PMST	You know what seismic work is all about. Why don't they use it all around where you want to build these structures and get a complete picture of all the confining layers and their discontinuities down below ground instead of depending on a bunch of individual wells?	In fact, we've conducted a rather detailed marine seismic survey through Lake Okeechobee and along the Caloosahatchee, St. Lucie, and Kissimmee Rivers in the vicinity of the Lake to fill in data gaps between existing wells.
PMST	Where is the extra water [from the Floridan aquifer] going to go? When you put more water in, isn't there more water going to go out there? When you start pumping it out, aren't you going to suck saltwater in?	The brackish water displaced (pushed away) by virtue of the proposed ASR wells will move rather slowly radially away from the wells. It will not be an issue for the six proposed ASR wells associated with the CERP ASR Pilot Projects. Under the proposed 333 ASR well scenario, stored water will eventually displace brackish water offshore, but groundwater moves very slowly in the Floridan Aquifer System.
PMST	How about the pH in the water? You're pumping somewhat acidic surface water down into the limestone formation; it's going to fizz.	The pH of surface water is slightly acidic compared to the buffered waters in contact with limestone within the aquifer. However, it is not enough of a contrast to cause concern. That said, we will be conducting geochemical analysis and modeling to consider all chemical reactions that could result from storing surface water within the brackish Floridan Aquifer System.
PMST	What happens to all the dissolved organics and so forth? Isn't that going to tend to clog up the pores in the limestone?	We will be conducting geochemical analysis and modeling to consider all chemical reactions that could result from storing surface water within the brackish Floridan Aquifer System.
PMST	Is there any study going on as to what the operational energy requirements are going to be for this ASR?	There is no overall study ongoing, but at the conclusion of the pilot projects, energy consumption will be a consideration as we move forward with the recommended scale of ASR proposed in CERP.
PMST	Where is the highest concentration in the world of ASR wells in the same kind of area as we now have the 200, and how many are there?	The largest ASR system in the world to our knowledge is at the Las Vegas Valley Water District (150 million gallons per day capacity). The CERP ASR Program proposes an order of magnitude more ASR capacity (1.6 billion gallons per day), which is admittedly unprecedented in scale. Thus, the desire to conduct the proposed pilot projects to answer the myriad of technical questions to assure public safety and project success.
PMST	I don't understand why you can't cooperate with the people who have ASR wells today and work with them to get similar kind of data.	In fact, we have been compiling hydrogeologic, geochemical, and performance data from existing operational Florida ASR sites.
PMST	If we stay in a drought time for the next three years of your testing, how is that going to give us a fair sampling of what the rainy season would do?	A prolonged, severe drought would indeed limit our ability to conduct ASR testing. If that occurred, we would likely extend the testing period to complete our analyses. However, there would still be storm events where representative water quality conditions would exist for at least a short period of time.

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PMST	From an energy viewpoint, what in simple terms like KWH or horsepower, how much energy is it going to take on a single well to put five million gallons per day in? 24 hours, how much energy? And that would have to include the energy from the pressure filter pumps and all pumps involved.	The proposed pumps are approximately 175 horsepower for a 5 million gallon per day (mgd) ASR system. Some additional energy will be required for the ultraviolet light and filtration systems.
PMST	The Harbor Branch and other organizations have shown very clearly that the sewage wells, waste wells in the counties to our south, they're not as deep as they should be perhaps. They've shown very clearly that stuff is seeping back up and damaging the reefs and the offshore for the three counties south of us. To me that's a pretty good indication that the water from greater depths than you're proposing, the material that's forced in is coming back out in sufficient quantities in this case to be highly detrimental to our seashores to the south. And so I have trouble visualizing this nice, solid layer.	I believe you've misquoted the Harbor Branch scientists with regards to undisputed proof that water from deep injection wells is the cause for offshore algal blooms along the reef. A far simpler explanation for this phenomenon is the large amount of fertilizer from landscaping and sewage from septic tanks discharging offshore from the surficial aquifer and canal network.
PMST	I think that a large number of us have major problems with the concept that you can keep pumping and it's not going to come out. And the laws of unintended consequences I am terribly afraid are going to hit the next generation at the time we put these in operation.	The ASR Pilot Projects and ASR Regional Study should address this issue, prior to any large scale implementation of the CERP ASR Program.
PMST	How far have we proceeded with alternatives to this?	We are in the early planning stages of the ASR Contingency Plan.
PMST	Sugar is pulling out as the citrus lands weren't sacred any longer, the cost may be even less today on the sugar lands. I think these alternatives to the public are very important. What's the cost going to be? Are we going to get back to a good living water of four?	We are in the early planning stages of the ASR Contingency Plan.
PMST	What kind of micron level filtration are we talking about?	Multi-media filtration is capable of removing particles down to 10-20 microns.
PMST	What does water in an aquifer do for the water cycle? Surface water back to where it was before in the natural Everglades would certainly be a beneficial aspect. It should be taken into consideration over the water cycle.	On a regional or even sub-regional basis, the storage of surface waters in the aquifer is not likely to alter the water cycle. The proposed volumes for full scale ASR implementation and certainly for the pilot ASR projects are not large enough relative to the magnitude of the complete hydrologic cycle of South Florida.
PMST	I certainly hope we proceed here with viable alternatives.	The ASR Contingency Plan will be designed to identify viable storage alternatives if the proposed CERP ASR Program cannot be implemented at the scale proposed in the Restudy document (April 1999).
Boca Raton		

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Comment Number	Comment	Response
PMBR	ASR, on the scale proposed by the Corps, is unprecedented and constitutes an experimental use of unproven technology. Simpler and far more efficacious alternatives exist in the form of surface storage, which actually compliment the objectives of CERP and Everglades restoration rather than further diminish the natural environment contrary to the objectives set forth in implementing legislation.	We concur that the scale of the proposed CERP ASR Program (333 ASR wells) is unprecedented. We do not concur that the technology is unproven or experimental, as evidenced by its use in Florida for over 20 years now. Surface storage via reservoirs is already a major component of CERP, and ASR technology actually complements surface storage by co-locating these facilities together.
PMBR	The risks posed by ASR are unreasonable, the costs stupefying, and the benefits speculative at best. Along with concerns of injecting and recovering billions of gallons of partially-treated contaminated canal water into aquifers, include the fracture of underground structures, contamination of sole-source drinking water from existing contaminants and chemicals added in treatment, saltwater intrusion, and the potential loss of injected waters into other aquifers and water bodies.	The primary risk with CERP ASR is the proposed scale, not the technology itself. We would not consider treated water that meets all federal primary drinking water standards as "contaminated". Since we've determined that the water will meet the subject standards, we're unclear what the justification for use of the phrase "contamination of sole-source drinking water.." Our current design minimizes or eliminates the use of chemicals in the disinfection process. Finally, water unrecovered in the aquifer will serve to freshen it.
PMBR	Channelization of pumping surface waters pose an unreasonable risk to the endangered manatee, also put at risk by outbreaks of water quality, temperature, and dissolved oxygen in recovered waters.	Manatees are at no greater risk from the proposed facilities associated with the ASR Pilot Projects than they are elsewhere in the SFWMD canal network. Each ASR Pilot Project will be equipped with an aerator to increase DO levels, perhaps even greater than is present in the ambient surface water.
PMBR	Other endangered and threatened species, fish, and fish habitat are put at unreasonable risk from intake structures and water treatment particularly at the proposed site at the head of the Kissimmee River.	Design measures to limit or eliminate fish entrainment or impingement have been incorporated and coordinated with the USFWS and FFWCC.
PMBR	Chlorine disinfection and the use of sulfates in water treatment cause unacceptable harm and unreasonable risk to both the receiving aquifer and discharged water bodies and must be avoided. Alternative modalities for treatment of polluted injected water is only speculative.	The current design envisions no chlorine or sulfate usage. We again are unclear as to use of the term "polluted injected water" with respect to the ASR Pilot Projects.
PMBR	The proposed pilot sites in and of themselves may not be representative of the 300-plus sites proposed for final implementation. Choosing sites which are convenient and designed for maximum efficacy and minimal risk is not the way to design a pilot program designed to adequately assess the risks of unproven technology.	The pilot sites were chosen based on a series of objective criteria, but there is not enough information to say that one site will perform better than another from an ASR perspective. Instead, criteria, such as lands being in public ownership or being adjacent to a surface water body, made some sites more convenient, though not infallible.
PMBR	The Corps and the DEIS have not adequately addressed the conditions upon which ASR will be stopped, nor alternatives to be used if and when those stop conditions are reached.	In the unlikely event of aquifer "contamination", the ASR well will simply be pumped and the water treated prior to canal discharge until background water quality conditions in the aquifer are observed.

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Comment Number	Comment	Response
PMBR	My objections go well beyond the technical risks proceeding with an unproven and surely extensive hydraulic plumbing solution as the remedy for the repair of an ecosystem in near collapse. The ASR program in and of itself is a threat to the continued existence of the Everglades, contrary to the expressed intent of Congress in enacting legislation to protect this endangered national treasure.	Congress approved the Restudy document consistent with the adaptive management approach. The ASR Pilot Projects are a prudent means of answering technical questions raised consistent with the adaptive management approach.
PMBR	The purchase and protection of undeveloped lands and wetlands underlies any attempt at restoration. It is that component which the Corps has failed or refused to undertake, putting at risk the entire project, which is to protect and enhance the natural Everglades environment.	SFWMD has been quite aggressive in the purchase of lands identified for CERP.
PMBR	A primary concern remains lack of an ASR contingency plan that would serve as a guide for data requirements in the ASR Pilot Program so as to provide preliminary assessment of ASR quality and effectiveness for full-scale ASR implementation, thus to provide the basis for analysis of alternatives; otherwise, such data may escape.	The ASR Contingency Plan is currently being developed. It is not intended to be used a guide for data requirements. Instead, the PPDR/EIS coupled with the ASR Regional Study Project Management Plan are the guides for data collection.
PMBR	Other significant concerns include depicting generally impermeable layers of the Florida geology as absolutely impermeable and confining and not including monitoring of potential interactions. Holding that an advantage of ASR is that it precludes evaporation, when this is a disadvantage that decreases water availability by approximately 50 percent for analysis, and herein in attachments.	We do not believe our depiction of the ASR concept as being "absolute" in terms of the impermeable nature of confining units above the proposed ASR storage zone. Monitoring is included in the documents. Water that is discharged to tide is no longer available to the regional system and does not increase evaporation. Storing this water underground therefore does not decrease evaporation.
PMBR	I noted that the pumps will be powered by electricity, but there was no addressal of emergency operation using generators and fossil fuel. I wondered if that was going to be a consideration of the Pilot Program when you might have a hurricane or tropical storm where you really need to pump and there is no electricity.	Given the proposed 2-year testing period, emergency power is not required and we can simply shut the well down during an extreme event such as a hurricane.
PMBR	I think ASR is a terrific alternative to solve the problem we've got with the topography Florida has, the soil conditions and climate. I think ASR is a key component for a successful CERP program.	Comment noted
PMBR	We support moving forward with the Pilot Projects at this time.	Comment noted
PMBR	What are the track records for these other ASR wells that are around the country?	The vast majority of ASR systems around the country perform as designed, recovering virtually all of the water stored. Occasionally, the subsurface geology is not as well understood as hoped and performance is less than desirable.

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PMBR	Is there some place where the average citizen can find information on these other ASR projects that are around the country?	For the State of Florida, the Department of Environmental Protection (FDEP) is the repository for ASR system information. The US Geological Survey (USGS) also prepares reports summarizing ASR system information. The website <a href="http://www.asrforum.com">www.asrforum.com</a> also presents a summary of ASR information.
PMBR	What about the ASR wells that have been done? I have heard some big problems with those wells.	We're not familiar with the problems you refer to. Each ASR site presents some technical challenges, and most of these we can overcome via water treatment, pumping schemes, etc.

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PMBR	In the video, there was one sentence devoted to a mention of alternatives. The sentence was so quick, I didn't catch the alternatives. It was towards the end where you were talking about using the ASR wells and there was something very quick about alternatives.	An ASR Contingency Plan is being developed to identify alternative water storage technologies that can supplement the plan if the CERP ASR capacity (333 wells) is determined to be infeasible.
PMBR	Use your money now, buy up the EAA before the price is out of the sky.	SFWMD has been quite aggressive in the purchase of lands identified for CERP.
PMBR	Put a development moratorium on areas that are needed for CERP.	SFWMD staff coordinates applications for Environmental Resource Permit (ERP) permit and ensures consistency with CERP projects in their vicinity during the review process.
PMBR	This proposed ASR plan is contrary to nature.	One could argue that pumping a well for potable water supply is contrary to nature, but it is clearly in the public benefit.
PMBR	You do not present an alternative. You discount an alternative.	The primary alternative to conducting the ASR Pilot Projects is doing nothing at all, and that is the alternative that is required to be analyzed in the NEPA process.

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PMBR	We have to have more eyes looking at this process because right now it has a biased view. You want ASR to succeed, and that is going to influence this entire testing process.	The National Academy of Sciences (NAS) has conducted independent scientific review of our project plans, and will continue to be involved as data is gathered and analyses conducted.
PMBR	This is a huge waste of taxpayer dollars. It probably is going to be far greater than what has been proposed in the original 7.8 billion dollar plan. You could use some of that money right now by buying land.	It is prudent to conduct the necessary scientific analyses via the ASR Pilot Projects to answer technical questions about the regional CERP ASR Program. SFWMD has been quite aggressive in the purchase of lands identified for CERP.
PMBR	Your synopsis in the document did not discuss some of the monitoring processes. It did not discuss the detailed monitoring process that would be needed in a successful Pilot Project.	Both the Draft PPDR and DEIS discuss the proposed monitoring of the ASR Pilot Projects. This monitoring will be supplemented via additional funding from the ASR Regional Study, which will allow analysis from a wider perspective.
PMBR	Reviewing a massive document like the ASR DEIS in large PDF files via the website is more difficult than reading hard copies. It took very long to download.	Hard copies of the document were made available at local public libraries and at the SFWMD service center offices.
PMBR	When the water is being pumped down into the ground, what is used to protect the fish and wildlife?	The canal intake structure will be designed to protect fish and wildlife from being entrained in the water column prior to recharge into the ASR wells.
PMBR	Is this being used also for the natural cycle where we used to have the extreme highs and lows of water?	We hope to better manage water levels -- especially in Lake Okeechobee -- to minimize the extreme highs and lows that cause environmental degradation.
PMBR	In the lower part of the Everglades, where all the drainage in the canals are, it is just diverted into one location. Are the ASRs at all going to affect that change also?	The CERP ASR wells are predominantly located around Lake Okeechobee, Caloosahatchee River, and in Palm Beach County. Therefore, the benefits of CERP ASR will be more indirect in the southern part of the Everglades system.
PMBR	You will not have the results on the test wells until 2010. Suppose they don't work? By that time, the EAA is all golf courses and subdivisions. Then where do we go?	The ASR Contingency Plan is currently being developed, and that plan will recognize the timeframe to complete the ASR Pilot Projects and the ASR Regional Study.
PMBR	Even if your test wells check out, and you go ahead and do a whole lot of them, and you're pumping all that water down into the ground under tremendous pressure, what's to keep that from fracturing the limestone?	Evaluation of pressure effects of the ASR Pilot Projects on the aquifer system and overlying confining units will be addressed in the ASR Pilot Projects and ASR Regional Study.
PMBR	I think the proposal is outrageously expensive. Surface storage would be better.	CERP identifies surface storage (e.g., reservoirs) co-located with ASR wells as the best means of optimizing the storage of "excess" surface water currently discharged to tide. By excess, we mean water that is not required to maintain a healthy estuary or prevent saltwater intrusion in the surficial aquifer system.
PMBR	Another problem I see with pumping all this water down in the ground is you cut off the evapotranspiration.	Water that is discharged to tide is no longer available to the regional system and does not increase evaporation. Storing this water underground therefore does not decrease evaporation.

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PMBR	What's your measurements of a confined aquifer size wise, pressure wise? How many pounds of pressure are going to be impacted on the area of a confined aquifer, say pounds per square inch from the five or ten million gallons a day with the current pressure that's already there and that would be in addition to that pressure?	Evaluation of pressure effects of the ASR Pilot Projects on the aquifer system and overlying confining units will be addressed in the ASR Pilot Projects and ASR Regional Study.
PMBR	We would like to see a cost benefit analysis versus all the other types of reservoir structures, storage marsh, and littoral zones that could be created, LEC water supply.	CERP identifies surface storage (e.g., reservoirs) co-located with ASR wells as the best means of optimizing the storage of "excess" surface water currently discharged to tide. By excess, we mean water that is not required to maintain a healthy estuary or prevent saltwater intrusion in the surficial aquifer system. Due to the rising costs of land, cost comparisons between reservoirs and ASR systems favor ASR systems even more on a cost per gallon stored basis.
PMBR	In the Federal Science Subgroup Report of 1993, the first thing in the system-wide objectives is to maximize the spatial extent and landscape heterogeneity of the system to recovery of the ecological structure and function. . . I'd like to know how ASR fits that mandate of returning heterogeneity when you're going to be taking water out of the system and putting it underground rather than flooding and creating more wetlands?	CERP identifies surface storage (e.g., reservoirs) co-located with ASR wells as the best means of optimizing the storage of "excess" surface water currently discharged to tide. By excess, we mean water that is not required to maintain a healthy estuary or prevent saltwater intrusion in the surficial aquifer system.
PMBR	How many water treatment plants may be needed to function or to provide for 333 wells? How much will each water treatment plant cost? How many of those water treatment plants will we need? How much will it cost to retreat the water again on the way back up if trihalomethane or other unrecognized elements occur?	The ASR Pilot Projects and ASR Regional Study are the proposed means on addressing technical questions regarding the full-scale CERP ASR Program.
PMBR	What if the acidic waters require new wells to be drilled to replace cores that are rotted out or acidified out by waters? How can these costs be appropriated? When will the alternatives and the cost alternatives come forward?	The surface water to be stored is not acidic but has a relatively neutral pH. The ASR Contingency Plan will investigate alternatives should the CERP ASR Program be determined to be unimplementable at the 333-well scale.
PMBR	We have so few of these public meetings, I think you should think about extending them if people want to talk. The Urban Environment League would like another 45 days for the comment period.	Over the last few years, we have had many public meetings to solicit public input as we formulated our strategy to implement the ASR Pilot Projects. The public comment period was extended to July 6, 2004.
PMBR	I looked up the report online, but the only thing I could get was the current water quality. What does JU mean under water? I could not figure out any of the charts.	JU is a laboratory qualifier of the data gathered, with the U portion meaning the parameter was undetected.
PMBR	The disinfection you're using doesn't kill all pathogens and it won't remove endocrine disrupters.	It's our understanding that Ultraviolet (UV) disinfection is one of the most robust means of pathogen inactivation. Endocrine disruptors are indeed emerging contaminants of concern, and additional research is being undertaken by the EPA and USGS on behalf of the nation's drinking water supply systems.

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PMBR	My main concern is that we are each time moving further away from nature with these technological solutions.	Congress approved the Restudy document consistent with the adaptive management approach. The ASR Pilot Projects are a prudent means of answering technical questions regarding the proposed CERP ASR Program.
PMBR	In terms of alternatives for ASR, I would like to see a thorough analysis of buying EAA, limiting consumptive use permits, and implementing water conservation in urban areas, especially golf courses. I would like to see an evaluation of a combination of those alternatives, instead of each of them evaluated individually and discussed separately.	The ASR Contingency Plan will investigate alternatives should the CERP ASR Program be determined to be unimplementable at the 333-well scale.
PMBR	I think it would be very wise to buy the EAA land as early as possible.	The ASR Contingency Plan will investigate alternatives should the CERP ASR Program be determined to be unimplementable at the 333-well scale.
PMBR	ASR is not restoration. We're basically cutting out the large spatial scale (land component) of the Science Subgroup Report's three main characteristics of the Everglades.	Congress approved the Restudy document consistent with the adaptive management approach. The ASR Pilot Projects are a prudent means of answering technical questions regarding the proposed CERP ASR Program.
PMBR	It does not follow the definition of restoration. Merely recreating the form without the functions or the functions in an artificial figuration bearing little resemblance to a natural resource does not constitute restoration. We're making the Everglades more dependent on these technological solutions.	Congress approved the Restudy document consistent with the adaptive management approach. The ASR Pilot Projects are a prudent means of answering technical questions regarding the proposed CERP ASR Program.
PMBR	Where are we going to have a full analysis of surface water storage, with the operation and maintenance, cost benefit analysis over a 50-to-100 life cycle, and where is our contingency plan? The contingency plan should have been planned directly at the same parallel time period as this EIS.	The ASR Contingency Plan will investigate alternatives should the CERP ASR Program be determined to be unimplementable at the 333-well scale.
PMBR	What is it going to cost here over a 50 or 100 year life cycle for all the operation and maintenance, all the pumps, all the canals, all these water treatment plants?	The Restudy document estimates a total project cost of \$1.6 billion to implement the 333-well CERP ASR Program. These cost estimates will be revised pending the results of the ASR Pilot Projects and ASR Regional Study.
PMBR	I would like to see you go back to a land acquisition strategy.	SFWMD has been quite aggressive in the purchase of lands identified for CERP.
PMBR	These test projects are unamiable to future focus and sustainability and ecological wisdom.	Congress approved the Restudy document consistent with the adaptive management approach. The ASR Pilot Projects are a prudent means of answering technical questions regarding the proposed CERP ASR Program.
PMBR	Technological fixes have historically resulted in greater problems than they were purported to solve.	Congress approved the Restudy document consistent with the adaptive management approach. The ASR Pilot Projects are a prudent means of answering technical questions regarding the proposed CERP ASR Program.

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PMBR	We are concerned that these test sites have been chosen so that you will get favorable results and then want to go on and expand this program.	The pilot sites were chosen based on a series of objective criteria, but there is not enough information to say that one site will perform better than another from an ASR perspective. Instead, criteria such as lands being in public ownership or being adjacent to a surface water body made some sites more convenient, though not infallible.
PMBR	These expensive projects are problematic not only because of the costs involved, but also because by spending money on these things, you're not spending money on acquiring land. That would allow more natural flow to this River of Grass that supposedly belongs to the whole country and not just to development in South Florida.	Congress approved the Restudy document consistent with the adaptive management approach. The ASR Pilot Projects are a prudent means of answering technical questions regarding the proposed CERP ASR Program. SFWMD has been quite aggressive in the purchase of lands identified for CERP.
PMBR	There is danger that this technology will continue to artificially enable unsustainable growth throughout the entire state. Down here in South Florida, we've already outstripped the natural water supply and this is seriously damaging our ecosystem. We do not trust the SFWMD to do the best thing for the Everglades when their focus has seemed to be doing the best thing for development.	The CERP ASR Program was designed to supplement the storage provided by more conventional means (e.g., reservoirs) for the benefit of the natural systems, agriculture, and urban users.
PMBR	The Broward County Green Party opposes this solution and asks for a simpler approach that will actually restore habitat and promote sheetflow. Additionally, we must require water conservation from consumers and agriculture. Without that, all you are doing is saving water so people can use more of it. It's not going to last very long if you continue.	The CERP ASR Program was designed to supplement the storage provided by more conventional means (e.g., reservoirs) for the benefit of the natural systems, agriculture, and urban users.
PMBR	Once again, South Florida, Broward County, Palm Beach area is being used as a test or guinea pig for the COE. The problem is when will we see if this plan fails? After it's too late? How will the inspections take place to know if the water is being contained?	Congress approved the Restudy document consistent with the adaptive management approach. The ASR Pilot Projects are a prudent means of answering technical questions regarding the proposed CERP ASR Program. The National Academy of Sciences has been and will be involved with independent scientific review of the ASR Pilot Projects and ASR Regional Study.
PMBR	Since last summer I have been reporting violations on an Army Corps mitigation permit, and no one has come to inspect the project. No reports have been made. If the Corps has not addressed my concerns in the last year, what will their response be to a failure in wells and how will we know?	The performance of the ASR Pilot Projects will undergo analysis and review by many independent experts including the National Academy of Sciences.
PMBR	Has the Academy of Science reviewed our draft permit? Why didn't we get a Draft Programmatic EIS instead of a regular Draft EIS? I think tort reform is essential to Everglades restoration.	The NAS has twice reviewed project plans with respect to the ASR Pilot Projects and ASR Regional Study. The subject EIS pertains to the proposed ASR Pilot Project, not for the full-scale CERP ASR Program.

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PMBR	I think you could have done a little better on your time instead of cutting us short in your making of this public comment period. I'll be sending in additional comments. We need an extension of time for this comment period.	Over the last few years, we have had many public meetings to solicit public input as we formulated our strategy to implement the ASR Pilot Projects. The public comment period was extended to July 6, 2004.
PMBR	What happens when the contamination happens? What happens if the ASR system fails in 30 or 40 years? We need to exercise extreme caution.	We are unclear as to what contamination you are referring to because we have committed to ensure that water stored underground via the ASR Pilot Projects meets all federal primary drinking water standards. Monitoring systems will be put in place for the ASR Pilot Projects, and ultimately the full-scale CERP ASR Program.
PMBR	I am encouraging us to purchase land. Let's expand the reservoirs and the habitat for animals. Use the ASR for drought control. We would like to see an expansion of the reservoir system rather than risking our water supply.	The CERP ASR Program was designed to supplement the storage provided by more conventional means (e.g., reservoirs) for the benefit of the natural systems, agriculture, and urban users.
PMBR	We need the acquisition lands. If the wells mess up, what is the failsafe? There is no backup power. The people in Andrew were without power for four months down in Dade County.	Given the proposed 2-year testing period, emergency power is not required and we can simply shut the well down during an extreme event such as a hurricane.
PMBR	Have all the variables been factored in by all of your engineers?	The Project Management Plans for the ASR Pilot Projects and ASR Regional Study have considered input from several entities including the NAS, many state and federal agencies, and the public.
PMBR	What is the square footage of one of these wells? How much land does it take up for the whole system?	Each of the 5-mgd pilot project facilities will occupy anywhere from 2 to 5 acres, with larger scale systems requiring a somewhat smaller footprint due to co-location of facilities.
PMBR	You showed filtration going in. What about the filtration of the water coming back out?	The pilot project design will allow for water to be routed through the filters upon recovery, though this may not be necessary.
PMBR	The way many of the Corps studies are done, I've seen studies structured in ways to show what they want the final outcome to be even though that really wasn't what was going on. We've seen much of that throughout other dredge and fill projects.	The independent review conducted by NAS and the participation of federal, state, and local agencies and the public should allay some of these concerns.
PMBR	You never really look hard at alternatives.	The ASR Contingency Plan will investigate alternatives should the CERP ASR Program be determined to be unimplementable at the 333-well scale.
PMBR	Are you implying that the project has been approved and endorsed by the Academy of Sciences? I would urge you to involve the Academy each turn of the way as you go along through this process. I don't believe they've approved or endorsed any of it.	We did not say that NAS approved or endorsed the project -- only that we did our best to incorporate their comments into our plan of study.
PMBR	We are also seeing what we believe is deep well injection water percolating out on the reefs in South Florida. We were told that wasn't going to happen and that wasn't possible either. We don't believe there is the containment in these deep aquifers that you really believe there is.	We would be interested in reviewing the technical report that documents upward migration of effluent from deep injection wells onto the reefs. Note that the confining unit overlying the proposed ASR zone is different geologically from that relied upon by deep injection well systems.

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PMBR	The shallow water is being impacted in the ocean. If there were independent oversight, we could dive down there and inspect it. However, there is really no independent review on it.	The independent review conducted by NAS and the participation of federal, state, and local agencies and the public should allay some of these concerns.
PMBR	If our water is contaminated in Coral Springs, who is liable? Is there any liability with the Corps?	With our commitment to treat the stored water to federal primary drinking water standards, we remain unclear about the source of contamination to which you refer.
PMBR	I don't think you managed the time well enough. I was upset that these distinguished, very learned people who have worked very hard to comprehend this issue have to fast-talk and then get called rude. I don't think you managed this meeting as well as you could have, especially since it's our only hearing.	There have been many public meetings over the last few years as the ASR Pilot Projects have been formulated. There have been 4 meetings (including this one) in the past week to cover issues related to the release of the draft documents. To say that this is the only forum for the public to comment on these projects is inaccurate. It is common practice to limit verbal public comment at public meetings out of respect to the other meeting attendees. There is still ample time (July 6, 2004) to comment in writing if more detailed comments are desired to be provided.
PMBR	Can your filters filter out Cryptosporidium?	Our filtration and UV disinfection processes are designed to preclude Cryptosporidium -- if present -- from being recharged into the ASR wells.
PMBR	There are many future things that you might be breeding down in that anaerobic environment that nobody has ever heard of and that there are no tests for. Then they come into our water systems.	Disinfecting the water prior to storage should limit bacterial growth. In any case, the water stored will not enter public water supply systems without treatment.
PMBR	I don't think this process has been researched well enough at all. I don't think you should do it.	The ASR Pilot Projects and ASR Regional Study are the proposed means of addressing technical questions regarding the full-scale CERP ASR Program.
PMBR	Is there some way that we can see the Academy of Science's review and comments?	There's a link on the evergladesplan.org website.