APPENDIX A

WILDLIFE SURVEY AND ASSESSMENTS

Biological Assessment for Anadromous Fish Species

The following are excerpts from the Biological Assessment conducted by NMFS. Section numbering reflects the format of the original document.

1.4 Analysis Summary

The NMFS and USFWS provided a list of threatened, endangered, and proposed candidate species that may occur within the Wanapa Energy Center study area in letters dated July 23, 2003. The list included bald eagle (*Haliaeetus leucocephalus*), bull trout (*Salvelinus confluentus*), and seven anadromous fish species. This BA addresses potential impacts on the Pacific salmon and steelhead species. NMFS is responsible for endangered, threatened, and candidate anadromous fish species under NOAA Fisheries' jurisdiction in Oregon. Bull trout and the bald eagle are addressed in a separate BA for the project.

The results of the impact analysis are discussed for the anadromous fish species in Sections 4.3. Consultation on the MSA is provided in Section 4.3.5. A summary of the impact analysis is provided in **Table 1.4-1**.

Table 1.4-1
Impact Summary for Anadromous Fish Species

Species	Evolutionarily Significant Unit (ESU)	Federal Status	Summary Findings
Chinook salmon (*Oncorhynchus tshawytscha*)	Upper Columbia River spring-run	Endangered	May affect, not likely to adversely affect critical habitat for Snake River fall-run chinook and Snake River spring/summer-run chinook salmon.
	Snake River spring/summer-run	Threatened	May affect, not likely to adversely affect the continued existence of the species.
	Snake River fall-run	Threatened	
Sockeye salmon (*O. nerka*)	Snake River (Salmon River)	Endangered	May affect, not likely to adversely affect critical habitat. May affect, not likely to affect the continued existence of the species.
Steelhead (*O. mykiss*)	Middle Columbia River	Threatened	May affect, not likely to adversely affect the continued existence of the species.
	Upper Columbia River	Endangered	
	Snake River Basin	Threatened	

3.0 BASELINE CONDITIONS

3.1 Water Resources

3.1.1 Columbia River and Wanaket Wildlife Management Area

The proposed generating plant site lies directly adjacent to the south bank of the Columbia River, the region's dominant surface water feature. The project site is located on a bluff overlooking the Columbia River approximately 2 miles east of McNary Dam, which is operated by the USACE for hydroelectric power. The Umatilla River is located approximately 4 miles west of the plant site and flows into the Columbia River at the City of Umatilla. The plant site is located within a small closed subbasin that includes the Wanaket Wildlife Management Area immediately south and east. The subbasin is adjacent to the Columbia-Umatilla plateau hydrologic subbasin of the Umatilla River, which is to the south and west. **Figure 3.1-1** illustrates the surface hydrologic system that includes the Columbia and Umatilla rivers.

The Columbia River discharges an average of approximately 191,000 cfs at McNary Dam, which is located 2 miles to the west of the proposed plant site. Flow in the Columbia River and discharge at the dam vary seasonally and year-to-year. High flows usually occur from April to June and range from 350,000 cfs to 600,000 cfs. Low flows occur from August to November and range from 65,000 cfs to 85,000 cfs.

The proposed power plant site is currently undeveloped and has no defined natural drainage channels or subbasin outlets. The site is located on a bluff overlooking the Columbia River with an approximate height of 160 feet above normal river level. The area is considered semi-arid, receiving 8 to 10 inches of rainfall annually with most precipitation occurring between October and April. The site is relatively flat with thin but permeable soils – normal precipitation would percolate into the ground or evaporate. Excessive volumes of run-off would probably enter the Wanaket Wildlife Management Area and accumulate in wetland ponds. The Wanaket Wildlife Management Area contains 60 ponds or wetland habitats that range in size from approximately 0.25 to 10.5 acres (CTUIR and BPA 2001).

Terrestrial Habitat

The regional vegetation is located in the Steppe Region of northeastern Oregon. The dominant vegetation community is a shrub-steppe with big sagebrush (Franklin and Dyrness 1973). These

natural communities have been highly modified by the development of irrigated and dryland agriculture wherever soils are sufficiently deep to support agricultural crops and adequate natural precipitation or irrigation water are available.

Wildlife habitat within the project study area consists primarily of a fragmented patchwork of irrigated agricultural lands, grasslands, and remnant areas of shrub-steppe. Although shrub-steppe habitat is considered an important habitat type for area wildlife, the shrub-steppe habitat within the project area has received considerable habitat fragmentation resulting from increased development and human presence within the area. The quality of this habitat has been further degraded by the encroachment of nonnative weed species to the area. Other wildlife habitats within the area include wetland and riparian habitats. Riparian woodlands within the study area occur primarily along the banks of ephemeral and perennial creeks, lakes, ponds, and drainages. Wetlands within the study area are limited to small depressional areas and areas along the edges of ephemeral and perennial water bodies.

4.0 SPECIES EVALUATIONS

4.1 Species Evaluated and Listing Status

Three Federally listed anadromous fish species (chinook salmon, sockeye salmon, and steelhead) occur in the Columbia River including the section above and below the McNary Dam. In total, these species are comprised of seven ESUs (see **Table 1.4-1** for listing by ESU). In addition, habitat along the Columbia River has been designated as critical habitat for Snake River fall-run chinook salmon, spring/summer-run chinook salmon, and Snake River sockeye salmon. The following information provides a summary of the occurrence of salmon and steelhead in the Columbia River. More specific information related to the biological requirements of each species/ESU is provided in Section 4.2.

Three chinook salmon ESUs utilize the Middle Columbia River as a migratory route for adults and juveniles: Upper Columbia River spring-run, Snake River spring/summer-run, and Snake River fall-run. Critical habitat for the Snake River fall-run and spring/summer-runs chinook salmon ESUs is located upstream of the proposed Wanapa Energy Facility. The timing of the adult spawning runs into the Columbia River drainage occurs during the spring, summer, and fall. Juvenile chinook salmon may spend from 3 months to 2 years in freshwater before they migrate downstream in the Columbia River to the Pacific Ocean.

The Snake River sockeye salmon ESU utilizes the Columbia River as a migratory route for adult spawners and juveniles. Critical habitat was designated in the Snake River drainage, which is located upstream of the proposed Wanapa Energy Facility. Juvenile sockeye salmon usually spend 1 to 2 years in freshwater and then they migrate to the Pacific Ocean. After 1 to 3 years, they return to the Columbia River for their spawning migration.

Three steelhead ESUs utilize the Middle Columbia River as a migratory route. The Middle Columbia ESU occupies the Columbia River Basin from above the Wind River in Washington and the Hood River in Oregon including the Yakima River in Washington (NMFS 2002). The Middle Columbia River also lies within critical habitat designated for the Middle Columbia steelhead ESU. All steelhead in the Columbia River Basin are summer-run, inland steelhead. Life history characteristics of most Middle Columbia steelhead rear for 2 years and spend 1 to 2 years in the ocean before they re-enter freshwater. Adults can remain in freshwater for up to a year before they spawn. Nonanadromous Columbia River redband trout can coexist with the anadromous form within this ESU (NMFS 2002). The Upper Columbia River ESU and Snake River ESU occupy

habitats located upstream of the Middle Columbia River (i.e., upstream from the Yakima River for the Upper Columbia ESU and the Snake River Basin in Washington, Oregon, and Idaho for the Snake River ESU).

Biological Requirements

The relevant biological requirements are those that are necessary for the listed species to survive and recover to naturally-reproducing population levels, at which time protection under the ESA would no longer be necessary (NMFS 2003). The biological requirements associated to the species being evaluated in this BA include increased migration survival and improved habitat characteristics (quality and food availability) that function to support successful migration. The current status of the seven listed species is that their biological requirements are not being met (McClure et al. 2000).

4.2.1 Snake River Fall-run Chinook Salmon

The ESU for the Snake River fall-run chinook salmon includes the mainstem portion of the Snake River and all tributaries from the confluence with the Columbia River to the Hells Canyon complex. The decision to designate the various chinook salmon forms (fall and spring/summer-runs) is based on genetic analyses.

In the Columbia River Basin, adult chinook salmon that migrate upstream past Bonneville Dam from August through October are categorized as fall-run fish. After adults enter the Columbia River, they reach the mouth of the Snake River from mid-August through October (Waples et al. 1991). Spawning occurs in the lower reaches of large tributaries in October through November (NWPPC 1989). Adults return to the Snake River at ages 2 to 5, with age 4 the most common age at spawning (Chapman et al. 1991).

Fall chinook salmon use the mainstem areas or lower portions of major tributaries for spawning or rearing (Waples et al. 1991). Juvenile fall chinook salmon migrate to the sea slowly as subyearlings. Fry are usually abundant in May through June and tend to linger in the lower Columbia River during their outmigration. A considerable portion of their first year may be spent in the estuary. Overall, NOAA Fisheries estimates that the median growth rate over the base period (1980 to 2000) ranges from 0.94 to 0.86 for Snake River fall-run chinook salmon (McClure et al. 2000).

Abundance trends for the Snake River fall-run chinook salmon have shown an overall decrease since the 1940's. Irving and Bjornn (1981) estimated that the number of fall-run chinook declined from 72,000 during 1938 to 1949 to 29,000 during the 1950's. Further declines have occurred after the completion of the Hells Canyon complex of dams, which blocked access to primary production areas in the late 1950s.

As a result of hydropower development, the most productive areas of the Snake River for chinook salmon are now inaccessible from blockage or inundation (NMFS 2003). The upper reaches of the mainstem Snake River were the primary areas used by fall-run chinook salmon, with only limited spawning activity reported downstream of RM 272.

4.2.2 Snake River Spring/Summer-run Chinook Salmon

Spring/summer chinook salmon occur in several subbasins of the Snake River such as the Grande Ronde, Salmon, Tucannon, Imnaha, and tributaries. In addition to these major subbasins, three small streams (Asotin, Granite, and Sheep Creeks) that enter the Snake River between Lower Granite and Hells Canyon Dams provide relatively small areas of spawning and rearing habitat (CBFWA 1990).

In the Snake River, spring- and summer-run chinook salmon exhibit similar life history characteristics. Both are stream-type fish, with juveniles that migrate to the Pacific Ocean as yearly smolts. Depending mainly on the location within the basin (and not on run type), adults tend to return after 2 or 3 years in the ocean. Both forms spawn and rear in small, high-elevation streams (Chapman et al. 1991). However, spring-run chinook spawn earlier and at higher elevations compared to summer-run chinook. Median population growth estimates for Snake River spring/summer over the base period (1980 to 2000) range from 0.96 to 0.80 (McClure et al. 2000).

Habitat for chinook salmon has been affected by the construction and operation of irrigation dams and diversions, inundation of spawning areas by impoundments, and siltation and pollution from sewage, farming, logging, and mining. In addition, the construction of hydroelectric and water storage dams without adequate provision for adult and juvenile passage in the upper Snake River has kept from all spawning areas upstream of Hells Canyon Dam (NMFS 2003).

Upper Columbia River Spring-run Chinook Salmon

This ESU is comprised of spring-run chinook populations found in the Columbia River tributaries between the Rock Island and Chief Joseph Dams, which include the Wenatchee, Entiat, and Methow River Basins. Although fish in this ESU are genetically similar to spring chinook in adjacent ESUs (i.e., mid-Columbia and Snake), they are distinguished by ecological differences in spawning and rearing habitat preferences (NMFS 2003). For example, spring-run chinook in Upper Columbia River tributaries spawn at lower elevations (500 to 1,000 meters) compared to the Snake and John Day River systems.

The life history characteristics of the Upper Columbia River spring-run chinook salmon are similar to the Snake River spring-run fish. The spring run includes adult chinook that move upstream past the Bonneville Dam from March through May. Spawning typically occurs in the late summer or early fall (Myers et al. 1998). Median population growth estimates for Upper Columbia River spring chinook over the base period (1980 to 2000) range from 0.85 to 0.83 (McClure et al. 2000).

Salmon in this ESU must pass through nine Federal and private dams during migration runs. Access to historical spawning grounds is prevented by the Chief Joseph Dam. Degradation of remaining spawning and rearing areas has occurred due to urbanization, irrigation projects, and livestock grazing along riparian corridors (NMFS 2003).

Snake River Sockeye Salmon

The only remaining sockeye in the Snake River system are found in Redfish Lake, which is located on the Salmon River. The nonanadromous form (kokanee), which occurs in Redfish Lake and elsewhere in the Snake River basin, is included in this ESU. Historically, Snake River sockeye were abundant in several lake systems in Idaho and Oregon. However, all populations have been extirpated in the past century, except fish returning to Redfish Lake.

Sockeye runs into Redfish Lake have been affected by the Sunbeam Dam, which was constructed in 1910 approximately 20 miles downstream of the lake. The dam was partially removed in 1934 in order to restore sockeye access to the lake. Evidence is mixed as to whether the restored runs are anadromous forms, nonanadromous forms that became migratory, or fish that strayed from outside the ESU (NMFS 2003).

The life history of most sockeye salmon includes spawning in a lake system, where juveniles rear for 1 to 3 years before they migrate to the sea (Gustafson et al. 1997). The off-spring of the lake-type sockeye salmon return to the natal lake system after spending 1 to 4 years in the ocean. Sockeye salmon enter the Columbia River in May and pass the Bonneville Dam from late May through August.

Upper Columbia River Steelhead

The Upper Columbia River steelhead occupies the Columbia River basin upstream of the Yakima River and includes the Wenatchee, Entiat, Methow, and Okanogan River basins. The river valleys are deeply dissected and exhibit low gradients, except for the extreme headwater areas (Franklin and Dyrness 1973).

All Columbia River steelhead are considered summer steelhead (West Coast Steelhead Biological Review Team 1997). Steelhead in the Upper Columbia River ESU remain in freshwater for up to a year before spawning, which is characteristic of other inland steelhead ESUs (i.e., Snake and mid-Columbia River basins). Smolt age is usually dominated by 2-year old fish. Based on limited data, steelhead from the Wenatchee and Entait Rivers return to freshwater after 1 year in saltwater, while the Methow River steelhead are mainly age-2 ocean fish (Howell et al. 1985). Some of the oldest smolt ages (up to 7 years) have been reported for this ESU (NMFS 2003). The relationship between anadromous and nonanadromous forms in this ESU is unclear. Median population growth estimates for Upper Columbia River steelhead over the base period (1980 to 2000) range from 0.94 to 0.66 (McClure et al. 2000).

Middle Columbia River Steelhead

The Middle Columbia River steelhead ESU occupies the Columbia River basin above the Wind River in Washington and the Hood River in Oregon and continues upstream to include the Yakima River, Washington. Summer steelhead are widespread throughout the ESU, while winter steelhead occur in Mosier, Chenowith, Mill, and Fifteenmile Creeks in Oregon, and in the Klickitat and White Rivers in Washington. The John Day River probably represents the largest native, natural spawning steelhead stock in the region (NMFS 2003).

Most steelhead in this ESU smolt in 2 years and spend 1 to 2 years in saltwater before returning to freshwater where they remain up to a year before spawning (Howell et al. 1985). All steelhead upstream of The Dalles Dam are summer-run fish. The Klickitat River, however, produces both

summer and winter steelhead. Most rivers in the region produce about equal numbers of both age-1 and 2-ocean steelhead (NMFS 2003). The Klickitat River is an exception since age-2 ocean fish dominate the summer steelhead numbers. A nonanadromous form co-occurs with the anadromous steelhead form in this ESU. The two forms may be isolated in terms of reproduction, except where barriers exist. The estimated median population growth rate for Middle Columbia River steelhead over the base period (1980 to 2000) ranges from 0.88 to 0.74 (McClure et al. 2000).

Snake River Basin Steelhead

This ESU occupies the Snake River basin of southeast Washington, northeast Oregon, and Idaho. The region is ecologically complex and supports a diversity of steelhead populations. However, the populations have been grouped due to genetic and meristic data (West Coast Steelhead Biological Review Team 1997). Spawning habitat in this ESU occurs in areas of open, low-relief streams situated at high elevations (up to 2,000 meters) (NMFS 2003).

Fish in this ESU are considered summer steelhead which enter freshwater from June through October and spawn during the following March through May period. Based on migration timing, ocean age, and adult size, Snake River steelhead are classified into two groups, A- and B-run fish. A-run steelhead (mainly age-1 ocean fish) enter freshwater during June through August. B-run steelhead (mainly age-2 ocean fish) enter freshwater during August through October. The size of B-run fish typically are 75 to 100 millimeters longer than A-run fish at the same age. Both groups usually smolt as 2- or 3-year-old fish (Hassemer 1992 as cited in NMFS 2003). As a whole, the estimated growth rate is 0.91 to 0.70 over the base period (1980 to 2000) (McClure et al. 2000).

Analysis of Effects

4.3.1 Direct Impacts

Direct effects of an action are the immediate effects of the project on species or its habitat. Direct effects result from the agency action and include the effects of interrelated and independent actions. Future federal actions that are not a direct effect of the action under consideration (and not included in the environmental baseline or treated as indirect effects) are not evaluated.

To assist in the evaluation of the effects of the Proposed Action on the seven listed ESA salmonids and their habitat, a checklist matrix (**Table 4.3-1**) was used according to guidance in NMFS (1996). Definitions for the population/environmental baseline indicators are provided in the guidance as well. The portion of the Columbia River adjacent to the proposed Wanapa Energy Center is a migration corridor for both adults and juveniles.

4.3.1.1 Construction

The Proposed Action would not result in any substrate disturbance or bottom alteration in the Columbia River. An existing intake would be used and so no new construction would be required in the river. Therefore, no benthic habitat or macroinvertebrates would be removed or reduced due to construction activities in the Columbia River. Benthic macroinvertebrates represent food sources for juvenile and adult salmonids.

Construction of the power plant, pipelines, and transmission lines would result in soil disturbance, which could result in transport of sediment during rain events. This potential transport of sediment and water could enter nearby drainages or wetlands and cause an adverse effect on surface water quality. The potential is somewhat limited due to the distance to the Columbia River (500 feet from the plant boundary and 1,600 to 2,000 feet from new roads), relative flatness of the terrain, and existing vegetation, which could slow or stop sediment movement. However, in construction areas immediately adjacent to surface water drainages or wetlands, there would be increased potential for affecting storm water quality. If trenching is used for the gas pipeline crossing of canals, none of the water bodies are used by the ESA salmonids. The construction of drainage relief culverts for transmission line road culverts would not contribute flow to water bodies used by ESA salmonids.

Construction activities utilize vehicles, equipment, chemicals and oils in conducting day-to-day project construction. The use of these components can sometimes result in leaks or spills to the ground, which could potentially cause surface water contamination. In addition, a construction site would have chemical toilets in various locations available for use by the construction crews.

Table 4.3-1
Checklist for Documenting Environmental Baseline and Effects of Proposed Action on Relevant Indicators

Diagnostics/ Pathways:	Population and Environmental Baseline (list values or criterion and supporting documentation)			Effects of the Action(s)			
Indicators	**Functioning Adequately**	**Functioning at Risk**	**Functioning at Unacceptable Risk**	**Restore[1]**	**Maintain[2]**	**Degrade[3]**	**Compliance with ACS**
Subpopulation Characteristics							
Subpopulation Size		✓			✓		
Growth and Survival		✓			✓		
Life History Diversity and Isolation		✓			✓		
Subpopulation Trend		✓			✓		
Persistence and Genetic Integrity	✓				✓		
Water Quality							
Temperature	✓				✓		
Sediment			✓		✓		
Chemical Contam./Nutrients		✓			✓		
Habitat Access							
Physical Barriers		✓					
Habitat Elements							
Substrate Embeddedness	N/A	N/A	N/A		✓		
Large Woody Debris	N/A	N/A	N/A		✓		
Pool Frequency and Quality	N/A	N/A	N/A		✓		
Large Pools	N/A	N/A	N/A		✓		
Off-channel Habitat	N/A	N/A	N/A		✓		
Refugia[4]	N/A	N/A	N/A		✓		
Channel Conditions and Dynamics							
Wetted Width/Max. Depth Ratio	N/A	N/A	N/A		✓		
Streambank Condition		✓			✓		
Floodplain Connectivity	N/A	N/A	N/A		✓		
Flow/Hydrology							
Change in Peak/Base Flows		✓			✓		
Drainage Network Increase	✓				✓		
Watershed Conditions							
Road Density and Location	✓				✓		
Disturbance History		✓			✓		
Riparian Conservation Areas		✓			✓		
Disturbance Regime		✓			✓		
Integration	✓				✓		

Watershed Name: Columbia River Location: Above McNary Dam

[1]For the purposes of this checklist, "restore" means to change the function of an "functioning at risk" indicator to "functioning adequately," or to change the function of a "functioning at unacceptable risk" indicator to "functioning at risk" or "functioning adequately" (i.e., it does not apply to "functioning adequately" indicators). Restoration from a worse to a better condition does not negate the need to consult/confer if take will occur.

[2]For the purposes of this checklist, "maintain" means that the function of an indicator does not change (i.e., it applies to all indicators regardless of functional level).

[3]For the purposes of this checklist, "degrade" means to change the function of an indicator for the worse (i.e., it applies to all indicators regardless of functional level). In some cases, a "functioning at unacceptable risk" indicator may be further worsened, and this should be noted.

[4]Refugia = watersheds or large areas with minimal human disturbance having relatively high quality water and fish habitat, or having the potential of providing high quality water and fish habitat with the implementation of restoration efforts. These high quality water and fish habitats are well distributed and connected within the watershed or large area to provide for both biodiversity and stable populations.

Note: Adapted from discussions on *Stronghold Watersheds and Unroaded Areas* in Lee, D.C., J. R. Sedell, B. E. Rieman, R. F. Thurow, J. E. Williams, and others. 1996. Chapter 4: Broadscale Assessment of Aquatic Species and Habitats. In: T. M. Quigley and S. J. Arbelbide (Eds.). *An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins Volume III*. U.S. Department of Agriculture, Forest Service, and U.S. Department of Interior, Bureau of Land Management, Gen Tech Rep PNW-GTR-405.

Although highly unlikely, the chemical toilets can develop leaks, which could potentially result in contamination of surface water, especially during storm events.

The proposed project would have several programs to minimize the potential for construction activities to impact surface water quality. Under federal and state regulations, the project would be required to develop and implement a Stormwater Pollution Prevention Plan (SWPPP) for the construction phase. The SWPPP would identify all the possible activities and incidents that could contaminate storm water or surface water and would contain Best Management Practices (BMPs) that would be implemented to prevent contamination. In addition, the proposed project would be required to implement an Erosion Control Plan that would be specifically focused on procedures and practices to prevent transport of sediment. Examples of BMPs and related measures include installation of silt fences, installation of hay bales in storm water channels, installation of a storm water retention pond to collect storm water generated on the plant site, procedures for handling chemicals and oils, emergency response procedures and maintenance of spill response equipment. All construction personnel, including contractors, would be trained on these plans and would be expected to implement all appropriate measures. The construction areas would be inspected on a biweekly basis or after a storm event for implemented prevention and management measures, evidence of leaks or spills and developing erosion areas. These inspections would be documented and identified problems would be addressed immediately. By implementing these measures, no adverse water quality impacts to the Columbia River would occur. Therefore, construction would not affect the listed salmonid species or their habitat.

4.3.1.2 Diversion of Water from the Columbia River

Water for the proposed power plant would be obtained from the Port of Umatilla's regional raw water supply system under an existing municipal water right and use permit (Permit #49497). Water withdrawal for the project would be 10 to 13 million gallons per day, which represents 12 to 13 percent of the Port of Umatilla total water right. No water would be discharged into the Columbia River as part of project operation. The potential impacts of water withdrawal (up to 62 cfs) on Columbia River federally listed salmon species for the Port of Umatilla's water supply were analyzed in a Biological Assessment (CH2M Hill 1993), as part of the Army Corps of Engineers 404 permit for construction of the water intake pump station in the Columbia River near Umatilla, Oregon. NMFS provided a concurrence letter dated March 4, 1994. Since the proposed water volume for the Wanapa Project is within the Port's water volume capacity, no new water rights in the Columbia River would be required. Depletions were accounted for in previous National Environmental Policy Act and Section 7 analyses. Although the initial NOAA fish

concurrence on the port's permit is based on an expectation that there would be an analysis of the cumulative effects of the 404 permitting process, analysis or effects determinations regarding 404 permitting do not apply to water rights diversions (Water Works & Sewer Board of the City of Birmingham vs. U.S. Army Corps of Engineers 1997). As indicated in the Umatilla Generating Project Environmental Impact Statement (BPA 2001), the Port of Umatilla withdrawal volume represents an extremely small portion of Columbia River base flows (less than 0.005 percent of low flow conditions).

The intake system would follow the NMFS criteria for minimizing impingement and entrainment impacts on Columbia River bull trout. The maximum approach velocity of water would be 0.4 cfs and the intake screen would consist of 0.125-inch openings. No new construction would be required for the intake area, since existing structures would be used. In addition, entrainment would not be a concern for the salmon and steelhead species, since early life stages would not be present in the Columbia River. In summary, water withdrawal from the Columbia River for this project would not result in adverse effects on the listed salmonid species or their habitat.

Indirect Effects

Indirect effects of the Proposed Action would occur later in time with reasonable certainty. Indirect effects may occur outside of the project area directly affected by the Proposed Action. Indirect effects might include other federal actions that have undergone Section 7 consultation but would result from the action under consideration. These actions must be reasonably certain to occur, or be a logical extension of the Proposed Action.

No indirect effects would be expected for the Proposed Action. The use of the existing intake ports would not result in additional lighting requirements. Therefore, the salmonid species would not be attracted to the intake area and subjected to increased predation.

Effects on Critical Habitat

NMFS designates critical habitat based on physical and biological features that are essential to the listed salmonid species. Critical habitat is currently designated in the Columbia River near the proposed Wanapa Energy Center for Snake River fall-run chinook, Snake River spring/summer-run chinook, and Snake River sockeye. Essential features of the critical habitat areas include substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food (juvenile only), riparian vegetation, space, and safe passage conditions

(50 CFR 226). Effects to critical habitat related to these features are included in the effects analysis described in Sections 4.3.1 and 4.3.2.

Cumulative Impacts

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation". Other activities within the Umatilla River watershed have the potential to impact fish and their habitat within the Proposed Action area. Future federal actions, including the ongoing operation of hydropower facilities, hatcheries, and land management activities are being (or have been) reviewed through separate Section 7 consultations. The electrical transmission line corridor south of U.S. Highway 730 could be expanded to provide new transmission line interconnections with McNary Substation (Wallula Project). The Port of Umatilla previously consulted with the USFWS and NMFS on their intake structure for the current intake capacity, and therefore, potential cumulative water withdrawal and entrainment effects have been evaluated. As discussed in Section 4.1.3, effects of the Proposed Action would add a relatively minor incremental effect to other cumulative actions in the watershed for the listed salmonid species and their habitat.

Determination

Effect on Critical Habitat

No effect on habitat for Snake River fall-run chinook, Snake River spring/summer-run chinook, and Snake River sockeye. The Proposed Action could potentially affect water quality in construction areas due to stormwater runoff and spills. By implementing stormwater runoff, erosion control, and spill control and containment measures, effects would be minor. Stormwater runoff or spills would not be expected to reach critical habitat for the ESA salmonids. Water withdrawal for the Proposed Action was evaluated in a previous consultation for the Port of Umatilla.

Effect on the Continued Existence of the Species

No effect on listed salmonid species in the Columbia River. Although potential effects to water quality could occur as a result of soil disturbance, storm water runoff, and spills or leaks, changes are expected to be minor due to implementation of soil erosion, storm water pollution control, and

spill prevention measures. Stormwater runoff or spills would not be expected to reach water bodies inhabited by ESA salmonids. Similarly, water withdrawal effects have been considered in the previous BA for the Port of Umatilla intake system. Potential entrainment/impingement effects are avoided by adherence to NMFS screen and intake velocity criteria. Therefore, the Proposed Action would not likely jeopardize the continued existence of the listed salmonid species. The individual and combined effects of all parts of the Proposed Action would not be expected to impair currently properly functioning habitats, appreciably reduce the functioning of already impaired habitats, or affect the long-term progress of impaired habitats toward proper functioning condition essential to the long-term survival and recovery at the population level.

MSA Effects Analysis

Background information on the MSA as it applies to EFH for the listed Pacific salmon species is provided in **Section 1.3**. As described in **Section 4.3** of this BA, the Proposed Action may result in short-term adverse effects on habitat features involving water quality due to construction activities. These potential effects include introduction of sediment and contaminants into local drainages due to soil disturbance, stormwater runoff, or spills or leaks. These potential effects would be minimized by implementing erosion control, stormwater runoff control, and spill control and containment measures.

No additional conservation measures are proposed to protect EFH for the listed salmon species.

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Biological Assessment for Bull Trout and Bald Eagle

The following are excerpts from the updated Biological Assessment conducted by USFWS. Section numbering reflects the format of the original document.

Analysis Summary

The USFWS provided a list of threatened, endangered, and proposed candidate species that may occur within the Wanapa Energy Center study area in a letter dated July 23, 2003. The list included bald eagle (*Haliaeetus leucocephalus*), bull trout (*Salvelinus confluentus*), and seven salmon species. This BA addresses potential impacts on the bald eagle and bull trout. NMFS is responsible for endangered, threatened, and candidate Pacific salmon under NOAA Fisheries' jurisdiction in Oregon. The Pacific salmon species are addressed in a separate BA for the project.

The results of the impact analysis are discussed for the bull trout and bald eagle in Sections 4.1 and 4.2, respectively. A summary of the impact analysis is provided in **Table 1.3-1**.

Table 1.3-1
Impact Summary for Bull Trout and Bald Eagle

Species	Scientific Name	Federal Status	Summary Findings
Bull trout	*Salvelinus confluentus*	Threatened	May affect, not likely to adversely affect.
Bald eagle	*Haliaeetus leucocephalus*	Threatened	No effect to nesting birds; may affect, not likely to adversely affect individual roosting and foraging birds.

3.0 BASELINE CONDITIONS

3.1 Water Resources

3.1.1 Columbia River and Wanaket Wildlife Management Area

The proposed generating plant site lies directly adjacent to the south bank of the Columbia River, the region's dominant surface water feature. The project site is located on a bluff overlooking the Columbia River approximately 2 miles east of McNary Dam, which is operated by the USACE for hydroelectric power. The Umatilla River is located approximately 4 miles west of the plant site and flows into the Columbia River at the City of Umatilla. The plant site is located within a small closed subbasin that includes the Wanaket Wildlife Management Area immediately south and east. The subbasin is adjacent to the Columbia-Umatilla plateau hydrologic subbasin of the Umatilla River, which is to the south and west. **Figure 3.1-1** illustrates the surface hydrologic system that includes the Columbia and Umatilla rivers.

The Columbia River discharges an average of approximately 191,000 cfs at McNary Dam which is located 2 miles to the west of the proposed plant site. Flow in the Columbia River and discharge at the dam vary seasonally and year-to-year. High flows usually occur from April to June and range from 350,000 cfs to 600,000 cfs. Low flows occur from August to November and range from 65,000 cfs to 85,000 cfs.

The proposed power plant site is currently undeveloped and has no defined natural drainage channels or subbasin outlets. The site is located on a bluff overlooking the Columbia River with an approximate height of 160 feet above normal river level. The area is considered semi-arid, receiving 8 to 10 inches of rainfall annually with most precipitation occurring between October and April. The site is relatively flat with thin but permeable soils – normal precipitation would percolate into the ground or evaporate. Excessive volumes of run-off would probably enter the Wanaket Wildlife Management Area and accumulate in wetland ponds. The Wanaket Wildlife Management Area contains 60 ponds or wetland habitats that range in size from approximately 0.25 to 10.5 acres (CTUIR and BPA 2001).

3.1.2 Cold Springs Reservoir

Cold Springs Reservoir is located approximately six miles southeast of the proposed plant site and six miles northeast of Hermiston, Oregon, off State Road 207. This reservoir is operated by the

Hermiston Irrigation District (HID) and is part of the BOR's Umatilla Reclamation Project. The original Umatilla Reclamation Project was initiated by the BOR in 1905 to supply full or supplemental irrigation water to approximately 34,000 acres of agricultural land in north central Oregon. The East Division of the Umatilla Reclamation Project is the HID and consists of Cold Springs Dam and Reservoir (constructed in 1908), Feed Canal Diversion Dam and Canal and Maxwell Diversion Dam and Canal. The Feed Canal Diversion Dam is located on the Umatilla River, approximately 1.5 miles southeast of Echo, Oregon. The dam raises the water level in the riverbed to provide diversion into the 25-mile-long Feed Canal (maximum operational capability of 220 cfs per second). The Feed Canal conveys river water to the Cold Springs Reservoir.

Diversion continues throughout the winter and spring months until June when diversion and flow in the canal are ended. Water is released from the reservoir for irrigation use throughout the summer and early autumn months. The reservoir has a total active capacity of 44,600 acre-feet, a normal storage capacity of 38,000 acre-feet for irrigation, 1,530 acres of water surface, and 12 miles of shoreline. During the summer and fall months, water is discharged for irrigation use and flows through canals to agricultural areas. Irrigation drain water is collected in drain canals and ultimately returns to the Umatilla River near Hermiston.

Activities were initiated in the mid-1980s under the Umatilla Basin Project to restore instream flows in the Umatilla River for anadromous fish but maintain irrigation water for continued use. These activities included channel modifications, construction of fish ladders, fish traps and fish screens and construction of water exchange facilities to deliver irrigation replacement water from the Columbia River. The Columbia River Pumping Plant was built on the Columbia River just downstream of the Sand Station Recreation Area and the Columbia-Cold Springs Canal was constructed to convey water from Lake Wallula, which is created by McNary Dam, to Cold Springs Reservoir.

Historical water quality information for Cold Springs Reservoir was very limited. In order to obtain comprehensive and current data, the Wanapa project conducted reservoir sampling in August 2004 and May 2005. Appendix A presents a summary of the data collected and a comparison with estimated plant effluent and state water quality standards.

The plant effluent will meet all applicable chemical water quality standards. Depending on the time of year, effluent temperature may exceed reservoir temperature but the general state temperature standard should not be exceeded. Since the reservoir does not have salmonid species present, the temperature standards specific to those species are not applicable.

Terrestrial Habitat

The regional vegetation is located in the Steppe Region of northeastern Oregon. The dominant vegetation community is a shrub-steppe with big sagebrush (Franklin and Dyrness 1973). These natural communities have been highly modified by the development of irrigated and dryland agriculture wherever soils are sufficiently deep to support agricultural crops and adequate natural precipitation or irrigation water are available.

Wildlife habitat within the project study area consists primarily of a fragmented patchwork of irrigated agricultural lands, grasslands, and remnant areas of shrub-steppe. Although shrub-steppe habitat is considered an important habitat type for area wildlife, the shrub-steppe habitat within the project area has received considerable habitat fragmentation resulting from increased development and human presence within the area. The quality of this habitat has been further degraded by the encroachment of nonnative weed species to the area. Other wildlife habitats within the area include wetland and riparian habitats. Riparian woodlands within the study area occur primarily along the banks of ephemeral and perennial creeks, lakes, ponds, and drainages. Wetlands within the study area are limited to small depressional areas and areas along the edges of ephemeral and perennial water bodies.

The proposed power plant would occupy approximately 47 acres of a 195-acre site. Construction of the access road would remove approximately 4 acres. Vegetation within the power plant footprint and most of the access road consists of grassland-steppe habitat that has been burned. This shrub-steppe habitat for these project components is considered low quality due to the loss of shrub species as a result of the burn in 2001.

Construction of the gas, discharge water, and intake water pipelines would result in temporary disturbance to vegetation and wildlife habitat. Vegetation would be removed within a 100-foot width for the gas and discharge pipelines, and a 50-foot-width for the water intake pipeline. The estimated disturbance to vegetation types in acres is listed in **Table 3.2-1**. The majority of the disturbance would occur in irrigated cropland. Approximately 22 acres of grassland-steppe and shrub-steppe habitat would be disturbed during pipeline construction. Most of this disturbance area is grassland-steppe, with smaller patches of shrub-steppe. As described for the plant site, the majority of the area classified as shrub-steppe and grassland was severely burned by a recent wildfire and the current vegetation consists of exotic annual and perennial weed species. After construction is completed, the disturbed areas would be reclaimed using a seed mix recommended by the Natural Resource Conservation District in Pendleton for native grasses or the CTUIR

Wanaket Wildlife Management Area staff. The estimated recovery period for grasses would be one growing season. Shrubs would require 25 to 50 years to naturally recolonize the affected areas.

Table 3.2-1
Proposed Action Construction Disturbance (Acres) to Vegetation and Wildlife Habitat for the Gas/Water Discharge and Water Intake Pipelines

Vegetation/Wildlife Habitat	Gas/Water Discharge Pipelines	Water Intake Pipeline	Access Road
Grassland and shrub-steppe	21.7	1.7	8.5
Irrigated cropland	75.7	0	0
Wetland	<0.1	0	0
Rural residential	21.9	0	0
Industrial	0	1.7	0
Highway/railroad	1.1	0	0
Total	120.4	3.4	8.5

Construction of the transmission line would remove vegetation at the power pole sites and cause temporary surface compaction from vehicle and equipment use. The types of vegetation and wildlife habitat in the transmission ROW are listed in **Table 3.2-2**. The majority of the affected habitat would consist of grassland and shrub-steppe and irrigated cropland. The grassland shrub-steppe communities are low quality because of a recent fire and dominance by weedy species. Vegetation would recover from surface compaction within the first growing season. Permanent vegetation removal would occur at tower sites. Each site would require a temporary work area of 0.25 acre and a permanent area of 0.05 acre. In total, tower construction would result in temporary disturbance to 6.3 acres and permanent removal of 1.3 acres for the towers. No permanent disturbance would occur in wetland habitat. Short-term disturbance to cover and foraging areas for wildlife would occur as a result of transmission line construction.

Table 3.2-2
Proposed Action Construction Disturbance (Acres) to Vegetation and Wildlife Habitat for the Transmission Line ROW

Vegetation/Wildlife Habitat	Acres
Grassland and shrub-steppe	40.9
Irrigated pasture	34.8
Wetland	2.5
Rural residential	0.2
Industrial	21.7
Highway	0.9
Total	101.0

4.0 SPECIES EVALUATIONS

4.1 Bull Trout

4.1.1 Potential Occurrence in Project Area

For listing purposes the range of bull trout was broken into distinctive population segments. The USFWS listed the bull trout within the Columbia River basin as threatened under the ESA on June 10, 1998. Subsequent to this listing, the USFWS listed this species as threatened within the coterminous United States on November 1, 1999.

The following information describes the occurrence of bull trout within the project area. Bull trout occur in the Columbia River drainage. It is not present in Cold Springs Reservoir. The Columbia River near the McNary Dam is located within the Columbia River Distinct Populations Segment (DPS) for bull trout. The Columbia River Basin Bull Trout DPS includes all naturally spawning populations in the Columbia River Basin within the U.S. and its tributaries, excluding bull trout found in the Jabridge River in Nevada. In 2002, a draft recovery plan was prepared for this species in the Columbia River (USFWS 2002). The section of the Columbia River above and below the McNary Dam is part of the Umatilla-Walla Walla Recovery Unit, which is one of 22 units designated for bull trout in the Columbia River Basin. Within the Umatilla-Walla Walla Unit, critical habitat has been designated for the Umatilla and Walla Walla River basins (USFWS 2004). The closest stream to the project study area is the mainstem portion of the Umatilla River. The Columbia River is not part of the critical habitat designation.

Use of the Columbia River mainstem by Umatilla and Walla Walla bull trout is unknown (USFWS 2002). Access to the Columbia River from both the Umatilla and Walla Walla Rivers is limited to those times of the year (usually November through May) when flows and temperature are more suitable for bull trout. When the Columbia River is accessible, adults and subadults use the Columbia River for foraging and overwintering.

The Umatilla River enters the Columbia River just below the McNary Dam at rivermile (RM) 264. The recovery plan identified one local bull trout population, the upper Umatilla Complex, that includes the North and South Fork Umatilla Rivers (USFWS 2002). The mainstem portion of the Umatilla River is considered adult migration and overwintering habitat and seasonal subadult rearing habitat. It is likely that bull trout use the Umatilla River as a migration corridor as a

connection with the Columbia River. Construction of the Three Miles Dam in 1914 created a migratory barrier for migratory bull trout in the Umatilla River basin.

The Walla Walla River basin drains into the Columbia River above the McNary Dam. Historically, bull trout used the mainstem Walla Walla River as a migratory route to the Columbia River. The majority of the current distribution in this basin is contained in the headwater reaches on the Umatilla National Forest in Oregon and Washington. Passage barriers and unsuitable habitat have isolated remaining bull trout populations within the basin. The mainstem Walla Walla River from the forks to the confluence with the Columbia River is considered year round subadult rearing and adult overwintering habitat (USFWS 2002). Migration habitat is provided from Cemetery Bridge in Milltown-Freewater downstream to the mouth.

4.1.2 Habitat and Life History

Two distinct life-history forms, migratory and resident, occur throughout the areas inhabited by bull trout. Migratory forms rear in natal tributaries before moving to larger rivers (called fluvial form) or lakes (adfluvial form) or the ocean to mature (anadromous). Migratory bull trout may use a wide range of habitats including 2nd to 6th order streams with variation by season and life stage (USFWS 1998a). Seasonal movements may range up to 300 kilometers (187 miles) as migratory fish move from spawning and rearing areas to overwintering habitat in downstream reaches of large basins. The resident form may be restricted to headwater streams throughout its life.

Habitat in the Columbia River (above and below McNary Dam) provides overwintering and foraging habitat for adults and subadults, while the Umatilla River provides adult overwintering and seasonal rearing for juvenile bull trout. Both rivers serve as a migration corrridor for adults. Specific characteristics for these types of habitats are not known for this section of the Columbia River and Umatilla River. In general, habitat components that appear to influence bull trout distribution and abundance include water temperature, cover, channel form and stability, valley form, spawning and rearing substrates, and migratory corridors (USFWS 1998b). Bull trout usually are associated with the coldest stream reaches within basins (USFWS 1998a). All life stages are associated with complex forms of cover such as large woody debris, undercut banks, boulders, and pools. Adults can reside in reservoirs, lakes, and large rivers such as the Columbia. Radio-tagging surveys in the Columbia River in the Rock Island and Rocky Reach Reservoirs showed considerable variation in depths and velocities used by tagged bull trout (BioAnalysts 2002). Average depths ranged from approximately 5 to 8 meters with slow to relatively high velocities. Migrant bull trout tended to occupy deeper water than resident fish.

Bull trout in the Umatilla-Walla Walla Recovery Unit exhibit both fluvial and resident life histories (USFWS 2002). Both forms spawn in headwater tributaries from late August through November. After spawning is completed, fluvial bull trout return to overwintering areas in the mainstem of both river systems until the following spring when the upstream migration begins, presumably in response to increasing water temperatures. In the summer and fall periods, bull trout inhabit lower order tributaries or the upper mainstem portions of the Umatilla and Walla Walla Rivers.

4.1.3 Impact Evaluation

4.1.3.1 Direct Impacts

Direct effects of an action are the immediate effects of the project on species or its habitat. Direct effects result from the agency action and include the effects of interrelated and independent actions. Future federal actions that are not a direct effect of the action under consideration (and not included in the environmental baseline or treated as indirect effects) are not evaluated.

To assist in the evaluation of the effects of the Proposed Action on bull trout and its habitat, a checklist matrix was used according to guidance in USFWS (1998a). Definitions for the population/environmental baseline indicators are provided in the guidance as well.

Construction

Construction of the power plant, pipelines, and transmission lines would result in soil disturbance, which could result in transport of sediment during rain events. This potential transport of sediment and water could enter nearby drainages or wetlands and cause an adverse effect on surface water quality. The potential is somewhat limited due to the relative flatness of the terrain and existing vegetation, which could slow or stop sediment movement. However, in construction areas immediately adjacent to surface water drainages or wetlands, there would be increased potential for affecting storm water quality.

Construction activities utilize vehicles, equipment, chemicals and oils in conducting day-to-day project construction. The use of these components can sometimes result in leaks or spills to the ground, which could potentially cause surface water contamination. In addition, a construction site would have chemical toilets in various locations available for use by the construction crews.

Although highly unlikely, the chemical toilets can develop leaks, which could potentially result in contamination of surface water, especially during storm events.

The proposed project would have several programs to minimize the potential for construction activities to impact surface water quality. Under federal and state regulations, the project would be required to develop and implement a Stormwater Pollution Prevention Plan (SWPPP) for the construction phase. The SWPPP would identify all the possible activities and incidents that could contaminate storm water or surface water and would contain Best Management Practices (BMPs) that would be implemented to prevent contamination. In addition, the proposed project would be required to implement an Erosion Control Plan that would be specifically focused on procedures and practices to prevent transport of sediment. Examples of BMPs and related measures include installation of silt fences, installation of hay bales in storm water channels, installation of a storm water retention pond to collect storm water generated on the plant site, procedures for handling chemicals and oils, emergency response procedures and maintenance of spill response equipment. All construction personnel, including contractors, would be trained on these plans and would be expected to implement all appropriate measures. The construction areas would be inspected on a biweekly basis or after a storm event for implemented prevention and management measures, evidence of leaks or spills and developing erosion areas. These inspections would be documented and identified problems would be addressed immediately. By implementing these measures, no adverse water quality impacts to the Columbia or Umatilla Rivers would occur. Therefore, construction would not affect bull trout or their habitat.

Water discharge into Cold Springs Reservoir would have no effect on bull trout.

Diversion of Water from the Columbia River

Water for the proposed power plant would be obtained from the Port of Umatilla's regional raw water supply system under an existing municipal water right and use permit (Permit #49497). Water withdrawal for the project would be 10 to 13 million gallons per day, which represents 12 to 13 percent of the Port of Umatilla total water right. No water would be discharged into the Columbia River as part of project operation. The potential impacts of water withdrawal (up to 62 cfs) on Columbia River federally listed salmon species for the Port of Umatilla's water supply were analyzed in a Biological Assessment (CH2M Hill 1993). Since the proposed water volume for the Wanapa Project is within the Port's water volume capacity, no new water rights in the Columbia River would be required. Depletions were accounted for in previous NEPA and Section 7 analyses. As indicated in the Umatilla Generating Project EIS (BPA 2001), the Port of Umatilla

withdrawal volume represents an extremely small portion of Columbia River base flows (less than 0.005 percent of low flow conditions).

The intake system would follow the NMFS criteria for minimizing impingement and entrainment impacts on Columbia River bull trout. The maximum approach velocity of water would be 0.4 cfs and the intake screen would consist of 0.125-inch openings. No new construction would be required for the intake area, since existing structures would be used. In addition, entrainment would not be a concern for bull trout in the Columbia River, since early life stages would not be present. In summary, water withdrawal from the Columbia River for this project would not likely adversely affect bull trout.

4.1.3.2 Indirect Effects

Indirect effects of the Proposed Action would occur later in time with reasonable certainty. Indirect effects may occur outside of the project area directly affected by the Proposed Action. Indirect effects might include other federal actions that have undergone Section 7 consultation but would result from the action under consideration. These actions must be reasonably certain to occur, or be a logical extension of the Proposed Action.

No indirect effects would be expected for the Proposed Action. The use of the existing intake ports would not result in additional lighting requirements. Therefore, bull trout would not be attracted to the intake area and subjected to increased predation.

4.1.3.3 Cumulative Impacts

Cumulative effects are defined in 50 CFR 402.02 as “those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation”. Other activities within the Umatilla River watershed have the potential to impact fish and their habitat within the Proposed Action area. Future federal actions, including the ongoing operation of hydropower facilities, hatcheries, and land management activities are being (or have been) reviewed through separate Section 7 consultations. The electrical transmission line corridor south of U.S. Highway 730 could be expanded to provide new transmission line interconnections with McNary Substation (Wallula Project). The Port of Umatilla previously consulted with the USFWS and NMFS on their intake structure for the current intake capacity, and therefore, potential cumulative water withdrawal and entrainment effects have been evaluated. As discussed in Section 4.1.3, effects of the Proposed

Action would add a relatively minor incremental effect to other cumulative actions in the watershed for bull trout and their habitat.

4.1.3.4 Determination

Effect on Critical Habitat

The Proposed Action would not result in effects on designated critical habitat in the Umatilla River and its headwater tributaries.

Effect on the Continued Existence of the Species

May affect, not likely to adversely affect bull trout in the Columbia and Umatilla Rivers. Although potential effects to water quality could occur as a result of soil disturbance, storm water runoff, and spills or leaks, changes are expected to be minor due to implementation of soil erosion, storm water pollution control, and spill prevention measures. Similarly, water withdrawal effects have been considered in the previous Biological Assessment for the Port of Umatilla intake system. Potential entrainment/impingement effects are avoided by adherence to NMFS screen and intake velocity criteria. Therefore, the Proposed Action would not likely jeopardize the continued existence of bull trout. The individual and combined effects of all parts of the Proposed Action would not be expected to impair currently properly functioning habitats, appreciably reduce the functioning of already impaired habitats, or affect the long-term progress of impaired habitats toward proper functioning condition essential to the long-term survival and recovery at the population level.

Bald Eagle

4.2.1 Potential Occurrence in Project Area

The bald eagle (*Haliaeetus leucocephalus*) was downlisted to Federally threatened on July 12, 1995. This species was proposed to be delisted in 1999 (64 FR 47755); this listing decision is currently pending. The bald eagle also is protected under the Bald Eagle Protection Act and the Migratory Bird Treaty Act. No designated critical habitat has been identified for the study area.

The closest known bald eagle nest site to the project area is a false nest structure in a cottonwood tree that occurs along the Umatilla River near Stanfield, Umatilla County. This structure was built and tended by immature nonbreeding eagles over the last 5 years: no mature eagles have attempted

to use this site for nesting. Relative to the project area, this nest structure occurs greater than 7 miles from the proposed power plant site and occurs greater than 4 miles from the proposed water and gas pipeline ROW.

Relative to the project area, more than 30 wintering bald eagles are observed on the Wanaket Wildlife Area annually. The primary attraction to the wildlife area is the relatively high concentrations of waterfowl that utilize the areas' wetland ponds. Bald eagles are also known to winter at Hat Rock State Park and Cold Springs National Wildlife Refuge (Allen 2003; Quaempts 2003). Hat Rock State Park occurs more than 2 miles east of the proposed power plant site and greater than 2 mile from the proposed water and gas pipeline ROW. The Cold Springs National Wildlife Refuge occurs approximately 4 miles southeast of the proposed power plant site. However, the proposed water and gas pipeline ROW would come within approximately 0.5 mile of the refuge boundary. From 1991 to 2003, mid-winter surveys at Cold Springs National Wildlife Refuge recorded approximately 3 eagles per year on average (Allen 2003).

4.2.2 Habitat and Life History

Bald eagle nests are typically found in mature, heterogeneous stands of multi-storied trees that have sturdy branches at sufficient height for nest support and protection (Grubb 1976; Anderson and Bruce 1980). Optimum nest sites are typically found in proximity to open water, which provides an adequate food source (Marshall et al. 1996); however, they also may use uplands and arid valleys (Edwards 1969). In Oregon, breeding habitat is associated with large water bodies that support adequate fish populations and suitable trees for nesting. Nest trees typically consist of large ponderosa pine (*Pinus ponderosa*), mixed Douglas-fir (*Pseudotsuga menziesii*), and sitka spruce (*Picea sitchensis*)/western hemlock (*Tsuga heterophylla*) forest types (Marshall et al. 1996).

Winter habitats generally include areas of open water, adequate food sources, and sufficient diurnal perches and night roosts (Grubb and Kennedy 1982). Wintering bald eagles often congregate in large numbers at communal roosts; however, roosts located in less populated areas may be used by individuals or small groups (Grubb and Kennedy 1982). Eagles are attracted to large bodies of water, but they also may occur in arid valleys (Edwards 1969). In Oregon, wintering habitat occur wherever there is an adequate food supply, mainly in the form of carrion, or trapped, crippled, or dying fish, birds, or mammals. Roosting sites, which can be 20 or more miles from feeding sites, are often in stands of mature conifers, but can also occur in large deciduous trees on basin floors (Marshall et al. 1996).

4.2.3 Impact Evaluation

4.2.3.1 Direct Impacts

As stated above only one bald eagle nest site has been documented within the project region. This nest is a false nest structure that occurs along the Umatilla River near Stanfield, Umatilla County, and is located approximately 7 miles from the proposed power plant site and powerline structures, and approximately 4 miles from the proposed water and gas pipeline ROW. Based on the distance of the nest structure from the proposed surface disturbance activities (i.e., power plant, water and gas pipeline, and powerline) and the lack of nesting attempts by adult eagles at this site, no impacts to breeding eagles would occur as a result of project construction and operation.

Occurrence by bald eagles within the project area would be limited to migrating and wintering eagles. Primary winter use within the project area would include the Wanaket Wildlife Area, Hat Rock State Park, and Cold Springs National Wildlife Refuge. Although wintering eagles has been recorded within the project region on an annual basis, no established roost sites or communal roosts have been identified within two miles of the project study area. Consequently, no impacts to established roost sites or communal roosts would be anticipated from the construction and operation of the proposed action. Potential impacts to individual eagles that may occur within the project area would be limited to indirect effects from increased noise levels and human presence.

Potential impacts to foraging bald eagles would result in the incremental long-term loss of approximately 2.6 acres of wetland habitat and 71 acres of grassland/shrub-steppe habitat from the construction of the water and gas pipeline, electrical powerlines, and ancillary facilities (i.e., access roads and water intake pipeline). Impacts also would result in the incremental long-term loss of approximately 47 acres of grassland/shrub-steppe habitat from construction and operation of the power plant facility. However, based on the amount of potentially suitable foraging habitat in the project region, impacts to foraging bald eagles would be low.

As part of the proposed project, a new 4.4-mile, 500-kV electrical powerline segment would incrementally increase the collision potential for foraging bald eagles, particularly on the Wanaket Wildlife Area where most foraging activity within the project area has been documented. In order to minimize the collision potential for foraging eagles on the Wanaket Wildlife Area, standard designs, as outlined in Mitigating Bird Collision With Power Lines (APLIC 1994), will be incorporated into the design of the electrical powerlines, in coordination with the CTUIR. Relative to potential electrocution hazard, powerline configurations less than 1kV or greater than 69 kV

typically do not present an electrocution hazard, based on conductor placement and orientation (APLIC 1996). Consequently, no electrocution impacts would be anticipated for bald eagles from the operation of the proposed 500-kV power line.

4.2.3.2 Indirect Impacts

Because participants in the Wanapa Energy Center have requested to deliver water to the Cold Springs Reservoir, a federal irrigation project administered by the BOR, the BOR must decide whether to accept this water in conjunction with existing uses and rights pertaining to this reservoir. The USFWS administers the Cold Springs Reservoir National Wildlife Refuge, which includes the reservoir surface area and adjacent lands. The ongoing management for waterfowl, fisheries, and threatened and endangered species will be considered in the BOR decision.

The discharge of cooling water would contribute approximately 2.8 cfs (average) or 3.7 cfs (maximum) to Cold Springs Reservoir via the Feed Canal. The addition of water to the reservoir would be a beneficial impact to fish and wildlife such as waterfowl and shorebirds. This would represent a beneficial impact to bald eagle, since fish and waterfowl are potential food sources.

Cooling water discharge would not adversely affect water quality in Cold Springs Reservoir and alter food sources for bald eagle. Based on analyses of Columbia River water and estimation of effluent quality, plant effluent would meet Oregon water quality standards. The NPDES permit, to be issued by Oregon DEQ, would include specific requirements for monitoring the plant effluent and mass/concentration limits for particular parameters. These limits would be imposed for any parameter that might prevent the attainment of a water quality standard applicable to the reservoir. Results of monitoring would be reported to the Oregon DEQ on a monthly basis. Since the plant effluent would be strictly monitored for potential impacts under the NPDES permit, no significant adverse effect on surface water quality would occur.

4.2.3.3 Cumulative Impacts

The Proposed Action would remove approximately 2.6 acres of wetland habitat and 71 acres of grassland/shrub-steppe habitat out of approximately 3,000 acres on the basalt outcrops that extend eastward along the banks of the Columbia River. Based on the boundaries of the Wanaket Wildlife Area and the Port of Umatilla, it is unlikely that future industrial development would remove additional shrub steppe habitat in this area. Expansion of electrical transmission lines into the

McNary Station could contribute additional collision hazards for bald eagle. However, by implement collision reduction measures, additional risks would likely be minor.

4.2.3.4 Determination

Effect on Critical Habitat

No effect.

Effect on the Continued Existence of the Species

No effect to nesting bald eagles, based on the lack of known nest sites within the project area. No effect to established winter roosts or communal roost sites within 2 miles of the project area. May affect, not likely to adversely affect individual roosting and foraging bald eagles within the project area as a result of increased noise and human presence during the construction and operation phases of the project, and from the incremental long-term loss of potentially suitable foraging habitat for this species.

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APPENDIX B

WILDLIFE TABLES

Table B-1
Special Status Species Identified for the Wanapa Power Plant

Common Name	Scientific Name	Status[1]	Range and Habitat Association	Potential for Occurrence Within the Project Area	Eliminated From Detailed Analysis	References
MAMMALS						
Washington ground squirrel	Spermophilus washingtoni	FC; OR-E	This species occurs in isolated grassland remnants in northern Gilliam, northern Morrow, and northwest Umatilla counties. It primarily inhabits grassland and low sagebrush; however, it also has been documented using wheat fields and rocky hillsides. Occupied areas tend to have deep, sandy soils and a heavy cover of perennial and annual grasses and forbs.	Extremely low. The Oregon population of this species is confined mainly to natural grasslands on the U.S. Naval Boardman Bombing Range in Morrow County, approximately 15 miles west of the project area. This species also occurs in isolated remnant grasslands in northern Gilliam, northern Morrow, and northwest Umatilla counties, approximately 10 miles south of the project area.	Yes. It is highly unlikely that this species would occur within the project area, based on its known range south and west of the project area.	Marshall et al. 1996.
White-tailed jackrabbit	Lepus townsendii	OR-U	In Oregon, this species primarily occurs east of the Cascade Range. Habitat for this species consists of sagebrush and grassland communities, but occurs most often in areas with an abundance of native grasses. It is unlikely to occur in habitats consisting of dense sagebrush in valleys or in sagebrush/ rabbitbrush/ greasewood flats and shadscale communities that are occupied by black-tailed jackrabbits.	Extremely low. Relative to the project area, this species has been documented in the Pendleton area in Umatilla County, approximately 20 miles southeast of the project area.	Yes. It is highly unlikely that this species would occur within the project area, based on its known range southeast of the project area.	Marshall et al. 1996.

Table B-1 (Continued)

Common Name	Scientific Name	Status[1]	Range and Habitat Association	Potential for Occurrence Within the Project Area	Eliminated From Detailed Analysis	References
BIRDS						
American white pelican	*Pelecanus erythrorhynchos*	OR-V	In Oregon, three breeding colonies occur in southern Oregon at Pelican Lake (Lake County), Upper Klamath Lake (Klamath County), and at Malheur Lake (Harney County). Post-breeding gatherings occur on Malheur Lake, in other lake basins, and on reservoirs east of the Cascade Range, including those on the Columbia River. Habitat for this species consists of shallow-water areas and marshes, reservoirs and lakes, and along major rivers.	Low to moderate. Occurrence by this species within the project area would be limited to migrating and foraging individuals. This species has been observed on the Wanaket Wildlife Area and adjacent Columbia River annually during wildlife surveys.	No.	Marshall et al. 1996.
Ferruginous hawk	*Buteo regalis*	OR-C; FWS	This species occurs in lowlands and prairies east of the Cascade Range, mainly in Baker, Harney, Malheur, Morrow, Umatilla, and Wallowa counties. Nests occur in juniper trees, on rocky outcrops, ledges, and low cliffs in sagebrush valleys and rolling grasslands. Manmade structures such as transmission towers as well as artificial nest structures also are sometimes used for nesting. Primary habitat for this species includes grassland, sagebrush, and juniper communities.	Low. No nesting records by this species have been documented within the project area. However, nest sites have been recorded in Umatilla County.	No.	Johnsgard 1990; Marshall et al. 1996.

Table B-1 (Continued)

Common Name	Scientific Name	Status[1]	Range and Habitat Association	Potential for Occurrence Within the Project Area	Eliminated From Detailed Analysis	References
Swainson's hawk	*Buteo swainsoni*	OR-V	This species breeds mainly in grassland valleys and agricultural areas of Baker, Malheur, Umatilla, Union, Wallowa, and Wasco counties. Nesting records also have been documented in Gilliam and Morrow counties. Nests occur in willow, juniper, or other small trees, and on manmade structures such as utility poles as well as artificial nest platforms. Primary habitat for this species includes low rolling bunchgrass prairies and agricultural areas with scattered trees.	Low. No nesting records by this species have been documented within the project area. However, potentially suitable habitat could occur within the project area.	No.	Johnsgard 1990; Marshall et al. 1996.
Bald eagle	*Haliaeetus leucocephalus*	FT	Over 95 percent of Oregon's nest sites for bald eagles occur within five areas including Columbia River below Portland, Oregon coast and coast range, the high Cascades, Klamath Basin, and upper Williamette River Basin. The remaining 5 percent of nests occur in the Blue/Wallowa Mountains area. Nest sites occur primarily in ponderosa pine, mixed conifer, and sitka spruce forests within close proximity (<1 mile) of large bodies of water. Wintering eagles occur in	Low to moderate. The closest known bald eagle nest site is a false nest structure located greater than 7 miles from the Wanaket Wildlife Area, near Stanfield in Umatilla County. Wintering eagles occur primarily along the Columbia River and at Hat Rock State Park. Multiple observations of foraging and roosting individuals have been documented annually on the Wanaket Wildlife Area.	No.	Kirsch 2002; Marshall et al. 1996.

Table B-1 (Continued)

Common Name	Scientific Name	Status[1]	Range and Habitat Association	Potential for Occurrence Within the Project Area	Eliminated From Detailed Analysis	References
			every county in Oregon, but most eagle concentration areas occur in the Klamath and Harney Basins and along the Snake and Columbia rivers. Winter roost sites are often in stands of mature conifers, but also will roost in large deciduous trees on basin floors.			
American peregrine falcon	*Falco peregrinus anatum*	OR-E	This species occurs statewide in Oregon. Nesting by this species has been documented along the Columbia River as far east as Dalles in Wasco County. Nesting is restricted to natural shelves, ledges, and potholes on high cliffs. Preference for nest sites include cliff-sites near waters and cliff heights ranging from about 115 to 800 feet (mean = 165 feet).	Low. No suitable nesting habitat occurs along the Columbia River within the project study area. However, it is possible that this species could occasionally forage on the Wanaket Wildlife Area and other potentially suitable habitat within the study area.	No.	Kirsch 2002; Marshall et al. 1996.
Long-billed curlew	*Numenius americanus*	OR-V	This species occurs in portions of Gilliam, Morrow, and Umatilla in Northern Oregon, and in Baker, Malheur, Harney, Lake and Klamath counties in eastern and southern Oregon. Habitat for this species includes level to gently sloping or rolling terrain with short vegetation. In northcentral Oregon, areas of	High. This species is known to breed on Wanaket Wildlife Area within the project area.	No.	Dechant et al. 2001; Quaempts 2003.

Table B-1 (Continued)

Common Name	Scientific Name	Status[1]	Range and Habitat Association	Potential for Occurrence Within the Project Area	Eliminated From Detailed Analysis	References
			shrubs or downy brome intermixed with patches of Sandberg's bluegrass is preferred over areas of dense forbs, antelope bitterbrush and bunchgrass.			
Yellow-billed cuckoo	*Coccyzus americanus*	FC; OR-C	This species is currently a rare, irregular visitor to Oregon with no known breeding population in the state. Single birds, presumed to be floaters or migrants, are periodically observed in willow-black cottonwood riparian areas east of the Cascades in the southern portion of Oregon. This species occurs in large riparian forests, especially those with cottonwood overstories and dense willow understories.	Extremely low. No known nest sites or observations have been documented within the project area. Habitat within the project area is marginal.	Yes. The potential occurrence by this species within the project area would be highly unlikely and would be limited to individual migrants.	Marshall et al. 1996, 2003.
Western burrowing owl	*Athene cunicularia hypugea*	OR-C; FWS	This species breeds in non-mountainous areas in all counties east of the Cascades and in Jackson County. Nesting occurs primarily in mammal burrows, but also may use manmade structures such as culverts. Habitat consists of sagebrush-steppe, grassland, and pastureland on relatively level terrain. Nest sites typically occur where soil and/or vegetation has been	High. This species is known to breed on the Wanaket Wildlife Area within the project area.	No.	Marshall et al. 1996.

Table B-1 (Continued)

Common Name	Scientific Name	Status[1]	Range and Habitat Association	Potential for Occurrence Within the Project Area	Eliminated From Detailed Analysis	References
			disturbed through overgrazing, fire, construction, or farming.			
Grasshopper sparrow	*Ammodramus savannarum*	OR-V	This species occurs at disjunct breeding sites in Harney, Jackson, Lane, Baker, Wallowa, Morrow, and Umatilla counties with the most consistent reports from grassland remnants in Morrow and western Umatilla counties. Relative to the project area, nest sites have been documented near Boardman, Heppner, Pilot Rock, Lexington, and Nye. Habitat for this species includes grasslands, particularly bunchgrass and shortgrass communities, which may have some shrub cover.	Low. No known occurrence by this species has been documented within the project area. The closest known occurrence is from Boardman located approximately 20 miles west of the project area. However, potentially suitable habitat may be present within the project area.	No.	Marshall et al. 1996.
Loggerhead shrike	*Lanius ludovicianus*	OR-V	This species occurs in lowland steppe habitats east of the Cascade Range. In eastern Oregon, this species in found mostly in sagebrush and juniper-steppe. This species is not found in chaparral, grasslands, or in areas under intensive cultivation. In southeastern Washington, highest densities of shrikes were found in flat terrain, deep soils, and relatively high horizontal and vertical	Low. No known occurrence by this species has been documented within the project area. However, potentially suitable habitat may be present within the project area.	No.	Marshall et al. 1996.

Table B-1 (Continued)

Common Name	Scientific Name	Status[1]	Range and Habitat Association	Potential for Occurrence Within the Project Area	Eliminated From Detailed Analysis	References
			structural diversity. Nest sites occur in the interior of shrubs and small trees.			
Black-throated sparrow	*Amphispiza bilineata*	OR-PR	This species breeds primarily in southeast Oregon in Harney and Malheur counties; however, birds have been observed carrying nesting material in Klamath and Wheeler counties and elsewhere east of the Cascades. This species typically occurs in a narrow zone between valleys or playa floors and steep rocky areas. Alluvial fans having rocks or coarse gravel are typical nest sites for this species. Depending on location vegetation can include juniper, sagebrush, and saltbush.	Extremely low. No known nest sites or observations have been documented within the project area. The project area occurs outside of the known breeding range for this species.	Yes. The potential occurrence by this species within the project area would be highly unlikely and would be limited to individual migrants.	Marshall et al. 1996.
REPTILES						
Western painted turtle	*Chrysemys picta*	OR-C	This species occurs in the Williamette Valley and as far south as Corvallis and east along the Columbia River drainage. It has been documented on Irrigation Wildlife Area and Umatilla National Wildlife Refuge in Morrow County, and on the Wanaket Wildlife Area in Umatilla County. Habitat consists of slow-moving or still, shallow	High. This species has been documented within the project area on the Wanaket Wildlife Area in Umatilla County.	No.	Marshall et al. 1996; Quaempts 2003.

Table B-1 (Continued)

Common Name	Scientific Name	Status[1]	Range and Habitat Association	Potential for Occurrence Within the Project Area	Eliminated From Detailed Analysis	References
			waters with soft bottoms, basking sites, and an abundance of aquatic vegetation.			
AMPHIBIANS						
Blotched tiger salamander	*Ambystoma tigrinum melanostictum*	OR-U	This sub-species is known only from Mosier, Hood River County; southern Klamath County south of Klamath Falls; Harney Basin in Harney County; and near Leslie Gulch, Malheur County. This sub-species breeds in a variety of seasonal and permanent water bodies, including reservoirs and stock watering ponds. Terrestrial adults spend most of their life in burrows.	Extremely low. No known individuals or populations of blotched tiger salamanders are known to occur within the project region.	Yes. It is highly unlikely that this species would occur within the project area, based on its known range of this species.	Marshall et al. 1996.
Western toad	*Bufo boreas*	OR-V	This species is widely distributed in Oregon, but is absent in Williamette Valley and valleys of the Great Basin. Habitat for this species includes forested and brushy areas from sea level to high mountains. Breeding occurs in springs, ponds, shallows of lakes, and slow moving streams. During dry weather, it occurs under damp woody debris or in burrows.	Moderate. This species is widely distributed throughout much of Oregon including Umatilla County. However, potentially suitable habitat may be present within the project area.	No.	Marshall et al. 1996.

Table B-1 (Continued)

Common Name	Scientific Name	Status[1]	Range and Habitat Association	Potential for Occurrence Within the Project Area	Eliminated From Detailed Analysis	References
Woodhouse's toad	*Bufo woodhousii*	OR-PR	This species has a spotty distribution in Oregon in Malheur County and from records along the Columbia River in Gilliam, Morrow, and Umatilla counties. Specifically, this species was found in Umatilla National Wildlife Refuge in 1994 and 1995. Habitat for this species is variable occurring near human habitations, riparian areas, sagebrush flats, and fields.Breeding occurs in permanent waters, including streams, lakes, ponds, and reservoirs; however, it also has been observing in shallow temporary ponds in Morrow County. Daytime activities are spent beneath debris, in rodent burrows, or self-dug burrows.	Low. No known occurrence by this species has been documented within the project area. However, potentially suitable habitat may be present within the project area.	No.	Marshall et al. 1996.
Northern leopard frog	*Rana pipiens*	OR-C	Historical records indicate that this species once occurred in wetlands along the Columbia River from Wasco County to Umatilla County and in the Snake River drainage in Malheur and southern Baker counties. However, intensive surveys conducted in the early 1970's along the Columbia River did not	Low. No known occurrence by this species has been documented within the project area. However, potentially suitable habitat may be present within the project area.	No.	Marshall et al. 1996.

Table B-1 (Continued)

Common Name	Scientific Name	Status[1]	Range and Habitat Association	Potential for Occurrence Within the Project Area	Eliminated From Detailed Analysis	References
			turn up this frog. Habitat from this species includes marshes and meadows and surrounding hay fields and grassy woodlands.			
Columbia spotted frog	*Rana luteiventris*	FC; OR-U	This species occurs in eastern and central portions of Oregon at elevations ranging from 1,706 feet to 6,400 feet. This species inhabits marshy ponds or lake edges, or algae-covered overflow pools and streams.	Extremely low. No known individuals or populations of this species are known to occur within the project region. The project area occurs below the elevational range of this species.	Yes. This project does not occur within the known distribution or elevational range of this species.	Marshall et al. 1996; USGS 2002.

[1]Status:

FT = Federally listed as threatened.
FC = Federal candidate.
FWS = USFWS species of special concern.
OR-E = State-listed as endangered in Oregon.
OR-C = Sensitive species categorized as critical in Oregon.
OR-V = Sensitive species categorized as vulnerable in Oregon.
OR-PR = Sensitive species categorized as peripheral or naturally rare in Oregon.
OR-U = Sensitive species categorized as undetermined status in Oregon.

Table B-2
Amphibian and Reptile Species Observed in Wanaket Wildlife Area Wetlands
April 29 – May 1, 2002

Wetland No.	Great Basin Spadefoot	Pacific Tree Frog	Bull Frog	Western Painted Turtle	General Wetland Characteristics
1					Relatively deep wetland with limited vegetation
2	X	X			Relatively shallow wetland with abundant nearshore vegetation
3					Relatively shallow wetland with abundant nearshore vegetation
4				X	Relatively shallow wetland with abundant nearshore vegetation
5				X	Relatively shallow wetland with abundant nearshore vegetation
6		X			Relatively deep wetland with abundant nearshore vegetation
7					Relatively shallow wetland with abundant nearshore vegetation
8					Dry
9a				X	Relatively deep wetland with rocky shoreline and limited vegetation; carp present
9b					Dry
10					Relatively shallow wetland with abundant nearshore vegetation
11				X	Relatively deep wetland with rocky shoreline and limited nearshore vegetation; carp present
12					Relatively deep wetland with rocky shoreline and limited nearshore vegetation; carp present
13a				X	Relatively deep wetland with rocky shoreline and limited nearshore vegetation; carp present
13b					Dry
14a					Dry
14b				X	Relatively deep wetland with rocky shoreline and limited nearshore vegetation
14c				X	Relatively deep wetland with rocky shoreline with limited nearshore vegetation
14d					Dry
15			X		Relatively deep wetland with rocky shoreline and limited vegetation
16					Relatively deep wetland with rocky shoreline and limited vegetation
17a					Relatively shallow wetland with abundant nearshore vegetation
17b					Relatively deep wetland with rocky shoreline and limited nearshore vegetation; carp present
18				X	Relatively deep wetland with rocky shoreline and limited vegetation; carp present
19			X	X	Relatively shallow wetland with abundant nearshore vegetation
20			X		Relatively shallow wetland with abundant nearshore vegetation

Table B-2 (Continued)

Wetland No.	Great Basin Spadefoot	Pacific Tree Frog	Bull Frog	Western Painted Turtle	General Wetland Characteristics
21			X		Relatively deep wetland with rocky shoreline and one shallow vegetated bay
22a					Relatively shallow wetland with abundant nearshore vegetation
22b					Relatively deep wetland with one shallow vegetated area
23a				X	Relatively deep wetland with limited nearshore vegetation
23b				X	Relatively deep wetland with rocky shoreline and limited nearshore vegetation
23c					Dry
23d			X	X	Relatively deep wetland with limited nearshore vegetation except in several shallow areas
24a					Dry
24b					Dry
24c				X	Relatively shallow wetland with abundant nearshore vegetation
24d				X	Relatively deep wetland with rocky shoreline and limited nearshore vegetation
25a			X	X	Relatively deep wetland with limited nearshore vegetation
25b					Dry
26a					Relatively shallow wetland with abundant nearshore vegetation
26b					Relatively shallow wetland with abundant nearshore vegetation
26c				X	Relatively deep wetland with rocky shoreline and limited nearshore vegetation
32					Dry
34					Relatively shallow wetland with abundant nearshore vegetation
35			X	X	Relatively deep wetland with rocky shoreline and limited nearshore vegetation
36			X	X	Relatively deep wetland with rocky shoreline and limited nearshore vegetation
37			X		Relatively deep wetland with rocky shoreline and limited nearshore vegetation
38			X	X	Relatively deep wetland with limited nearshore vegetation except in several shallow areas
39			X	X	Relatively deep wetland with limited nearshore vegetation except in several scattered shallow areas
40				X	Relatively deep wetland with rocky shoreline and limited vegetation; carp present
41a					Relatively shallow wetland with abundant nearshore vegetation
41b					Relatively shallow wetland with abundant nearshore vegetation
42					Dry
43a					Relatively deep wetland with rocky shoreline and limited nearshore vegetation
43b					Relatively shallow wetland with abundant nearshore vegetation

Table B-2 (Continued)

Wetland No.	Great Basin Spadefoot	Pacific Tree Frog	Bull Frog	Western Painted Turtle	General Wetland Characteristics
44					Relatively deep wetland at one end and shallow vegetated area at other end
45					Dry
46					Relatively shallow wetland with abundant nearshore vegetation
47				X	Relatively shallow wetland with abundant nearshore vegetation
48				X	Relatively deep wetland with limited nearshore vegetation except in several shallow areas
49					Relatively shallow wetland with abundant nearshore vegetation
50			X		Relatively shallow wetland with abundant nearshore vegetation
51			X		Relatively shallow wetland with abundant nearshore vegetation
52a					Relatively deep wetland with limited nearshore vegetation
52b					Dry
53					Dry
54					Dry
55					Dry
56	X				Relatively shallow wetland with abundant nearshore vegetation

Total Wetlands Examined = 69.
Total Wetlands Surveyed = 53.
Dry Wetlands = 16.
Total Wetlands with Frog Species = 16.
Total Wetlands with Western Painted Turtle = 23.

Table B-3
Amphibian and Reptile Species Observed in Wanaket Wildlife Area Wetlands
May 22 – May 23, 2002

Wetland No.	Surveyed	Examined Not Surveyed	Great Basin Spadefoot	Pacific Tree Frog	Bull Frog	Western Painted Turtle	General Wetland Characteristics
1		X					Relatively deep wetland with limited vegetation
2	X		X	X		X	Relatively shallow wetland with abundant nearshore vegetation
3		X					Dry
4	X						Relatively shallow wetland with abundant nearshore vegetation
5	X						Dry
6		X		X			Relatively deep wetland with abundant nearshore vegetation
7		X					Dry
8		X					Dry
9a		X					Dry
9b		X					Bedrock shoreline w/steep edges.
10		X					Dry
11		X					Relatively deep wetland with rocky shoreline and limited nearshore vegetation; carp present
12		X					Relatively deep wetland with rocky shoreline and limited nearshore vegetation; carp present
13a		X				X	Bedrock shores, steep sidebanks, limited vegetaton
13b		X					Dry
14a		X					Dry
14b		X					Relatively deep wetland with rocky shoreline and limited nearshore vegetation
14c		X					Relatively deep wetland with rocky shoreline with limited nearshore vegetation

Table B-3 (Continued)

Wetland No.	Surveyed	Examined Not Surveyed	Great Basin Spadefoot	Pacific Tree Frog	Bull Frog	Western Painted Turtle	General Wetland Characteristics
14d	X			X			Dry
15	X						Relatively deep wetland with rocky shoreline and limited vegetation
16		X					Relatively deep wetland with rocky shoreline and limited vegetation
17a		X					Relatively shallow wetland with abundant nearshore vegetation
17b		X					Relatively deep wetland with rocky shoreline and limited nearshore vegetation; carp present
18		X					Relatively deep wetland with rocky shoreline and limited vegetation; carp present
19		X					Relatively shallow wetland with abundant nearshore vegetation
20	X						Relatively shallow wetland with abundant nearshore vegetation
21		X					Relatively deep wetland with rocky shoreline and one shallow vegetated bay
22a		X					Dry
22b		X					Relatively deep wetland with one shallow vegetated area
23a		X					Relatively deep wetland with limited nearshore vegetation
23b		X					Relatively deep wetland with rocky shoreline and limited nearshore vegetation
23c		X					Dry
23d		X					Relatively deep wetland with limited nearshore vegetation except in several shallow areas
24a		X					Dry
24b		X					Dry

Table B-3 (Continued)

Wetland No.	Surveyed	Examined Not Surveyed	Great Basin Spadefoot	Pacific Tree Frog	Bull Frog	Western Painted Turtle	General Wetland Characteristics
24c		X					Relatively shallow wetland with abundant nearshore vegetation
24d		X					Relatively deep wetland with rocky shoreline and limited nearshore vegetation
25a		X					Relatively deep wetland with limited nearshore vegetation
25b		X					Dry
26a		X					Relatively shallow wetland with abundant nearshore vegetation
26b		X					Relatively shallow wetland with abundant nearshore vegetation
26c		X					Relatively deep wetland with rocky shoreline and limited nearshore vegetation
32		X					Dry
33		X					Dry
34		X					Relatively shallow wetland with abundant nearshore vegetation
35		X					Relatively deep wetland with rocky shoreline and limited nearshore vegetation
36	X						Relatively deep wetland with rocky shoreline and limited nearshore vegetation
37	X			X			Relatively deep wetland with rocky shoreline and limited nearshore vegetation
38	X			X	X		Relatively deep wetland with limited nearshore vegetation except in several shallow areas
39		X					Relatively deep wetland with limited nearshore vegetation except in several scattered shallow areas

Table B-3 (Continued)

Wetland No.	Surveyed	Examined Not Surveyed	Great Basin Spadefoot	Pacific Tree Frog	Bull Frog	Western Painted Turtle	General Wetland Characteristics
40		X					Relatively deep wetland with rocky shoreline and limited vegetation; carp present
41a		X					Dry
41b		X					Dry
42		X					Dry
43a	X						Relatively deep wetland with rocky shoreline and limited nearshore vegetation
43b		X					Relatively shallow wetland with abundant nearshore vegetation
44		X					Dry
45		X					Dry
46		X					Dry
47		X					Dry
48	X						Relatively deep wetland with limited nearshore vegetation except in several shallow areas
49		X					Dry
50		X					Relatively shallow wetland with abundant nearshore vegetation
51	X						Relatively shallow wetland with abundant nearshore vegetation
52a	X						Relatively deep wetland with limited nearshore vegetation
52b		X					Dry
53		X					Dry
54		X					Dry
55		X					Dry
56	X						Relatively shallow wetland with abundant nearshore vegetation
n.a.	X			X		X	Vegetated shallow resulting from ditch leak.
TOTALS	**15**	**56**	**1**	**6**	**1**	**3**	**28 Dry**

APPENDIX C

WANAPA ENERGY CENTER
WATER SUPPLY, USE, AND DISCHARGE

WANAPA ENERGY CENTER
WATER SUPPLY, USE, AND DISCHARGE
Draft 8-25-04

Water Supply

The Wanapa Energy Center will utilize approximately 12.4 cubic feet per second (cfs) or 5,550 gallons per minute for all plant uses except drinking water and domestic consumption. Columbia River water will be withdrawn at an existing pump station located approximately 2.5 miles from the plant site. The plant's raw water will be purchased under a contract from the Regional Water System. The Port of Umatilla originally constructed the Regional Water System and this system is operated by the City of Hermiston. The Regional Water System takes its water from the Columbia River under an existing water right.

To supply water to the project, the project intends to build an interconnection facility, supply pipeline, and metering facilities. In addition, the project will procure and install an additional pump in the existing pump well in the pumping platform at the Columbia River. All supply systems and the pump will be constructed in accordance with all applicable laws, codes, standards, and permits.

The raw water from the Regional Water System will be filtered before it is storage in the raw water storage tank at the project Site.

Water Usage

Table C-1 shows the plant water requirement for one block (650-megawatt [MW]) and two Blocks (1,300-MW) operation. It is worth noting that the maximum flows represent instantaneous water flow during the plant operation at the hottest hour of the day when the ambient dry bulb temperature is at 109 degrees Fahrenheit (°F).

Table C-1
Wanapa Energy Center – Raw Water Supply

Annual Average, And Maximum Flow Rate	*Raw Water Supply Two Blocks*	*Raw Water Supply One Block*
Average flow rate (annualized over 12 months)	*5,550 gallons per minute* *12.4 cfs* *8.02 million gallons per day (MGD)* *24.6 acre-feet/day* *8,979 acre-feet/year*	*2,775 gallons per minute* *6.18 cfs* *4.01 MGD* *12.3 acre-feet/day* *4,490 acre-feet/year*
Maximum flow rate	*7,975 gallons per minute* *17.7 cfs* *11.5 MGD* *35.2 acre-feet/day* *12,864 acre-feet/year*	*3,988 gallons per minute* *8.85 cfs* *5.6 MGD* *17.6 acre-feet/day* *6,432 acre-feet/year*

Raw water from the Regional Water System will be metered and filtered before it is used. Since Columbia River water is already high quality, most of the plant's water will only require filtration for removal of suspended solids. This filtered water will supply most of the plant's water needs, and it will be used primarily for cooling system make-up. The remainder of this filtered water will be used for general plant water. Downstream of the filter, the water will be routed to the plant cooling tower as cooling tower makeup and the raw water storage tank. The make up water for the cooling tower constitutes the largest quantity of the plant water needs. The cooling tower provides cooling water for the steam surface condensers, the hydrogen coolers for the electric generators, gas and steam turbine lube oil coolers, and other miscellaneous plant coolers. The water from the raw water storage tank will be used for the gas turbine evaporative coolers, steam cycle make up, plant fire protection system, and miscellaneous wash water.

A small percentage of raw water from the raw water storage tank will be further treated by reverse osmosis (R.O.) or by a cation, anion, and mixed bed demineralization system to remove most of the dissolved ions. This "deionized" water will be stored in a demineralized water storage tank. The "deionized" water from this tank will be used as make-up to the steam turbine cycle which requires a very high quality water to prevent corrosion or deposition in the steam cycle.

The dissolved ions that are removed in the R.O. or demineralization process, called R.O. reject, will be returned to the cooling system as make-up.

Since the Columbia River water is good quality for power plant cooling, it can be cycled six times in the cooling tower. This means that the water in the cooling system is re-circulated, and a portion is lost from the cooling tower due to evaporation, until the dissolved ions in the cooling tower water (which are <u>not</u> lost in evaporation) are concentrated six times. In order to maintain this level of concentration at six times, some water from the cooling tower will be discharged and replaced by raw water. The water that is removed from the tower is called cooling tower blowdown. The cooling water will be treated with small concentrations of additives to prevent corrosion and microbiological growth in the system components. These additive concentrations are usually less than 10 parts per million in the recirculating water and the additives are almost completely consumed, absorbed, evaporated, or reacted with system surfaces or the dissolved ions in the cooling water. These additives are expensive – they are added in sufficient enough quantities to protect the cooling system but only negligible amounts are discharged with the cooling system blowdown. Without these additives, the cooling system would very quickly begin to experience significant corrosion, deposit buildup, and microbiological/algae growth. If these continued, the system would begin to lose heat exchange efficiency, would require more raw water and would necessitate a higher rate of blowdown (and discharge). Eventually, the system could experience a catastrophic component failure or could require such a high rate of cleaning, maintenance, and repair that the plant could become uneconomical to operate.

Cooling system additives are primarily chemicals with minimal toxicity, no heavy metals, and no persistent pesticides. Corrosion and deposit inhibitors are phosphate and phosphonate based with small amounts of polymeric dispersants. They work by passivating metal surfaces and preventing corrosion and by interfering with the precipitation of salts, such as calcium carbonate, as deposits. Very small quantities of one or more microbiocides also will be added to prevent the growth of microbes in the system – microbial growth can accumulate as deposits in the system and interfere with heat exchange surfaces or operating components. Generally, chlorine, in the form of sodium hypochlorite (a low level chlorine compound), is used, and fed intermittently at low levels. If the chlorine level in the plant discharge water was believed to be excessive (above permit levels) then it can be removed by de-chlorination of the cooling tower blowdown before discharge. Sulfuric acid also will be added to the cooling system to maintain pH – this will add sulfates to the recirculating water.

Blowdown from the cooling system will predominantly contain dissolved ions that were originally found in the incoming river water. Ions added during plant operation will be negligible. The mass loading of these ions will be almost the same (and some components will be

lower) as if the Columbia River water was utilized once through the plant and then discharged. Only the flow rate of water will be six times less.

Water Discharge

Plant wastewater, most of which will be cooling tower blowdown (<85^{o}F), will be piped to a large holding pond on the plant site. The retention time of the pond will vary according to the time of year, from hours to days. When the plant wastewater is in the holding pond, it will generally decrease in temperature (depending on the ambient temperature) and some dissolved ions will precipitate and settle out in the pond. The discharge from this pond will be monitored for flow and a number of other parameters based on the discharge permit's requirements. The monitored components will be determined during the National Pollutant Discharge Elimination System (NPDES) permitting process. 40 Code of Federal Regulations (CFR) 423, which establishes New Source Performance Standards (NSPS) for discharges from steam electric generating plants, requires certain parameters to be monitored which include pH, oil and grease, total suspended solids, and possibly free available chlorine. Other parameters may be added depending on the results of modeling and water quality impact analysis. All required monitoring will be conducted and wastewater parameters will be closely evaluated before discharge.

Table C-2 shows the quantities of the plant discharge water for both one block (650-MW) and two block (1,300-MW) plant.

Table C-2
Plant Discharge Water

Annual Average, And Maximum Flow Rate	*Wastewater Discharge Two Blocks*	*Wastewater Discharge One Block*
Average flow rate (annualized over 12 months)	*1,088 gallons per minute* *2.4 cfs* *1.6 MGD* *4.8 acre-feet/day* *1,752 acre-feet/year*	*544 gallons per minute* *1.2 cfs* *0.8 MGD* *2.4 acre-feet/day* *876 acre-feet/year*
Maximum flow rate	*1,507 gallons per minute* *3.4 cfs* *2.2 MGD* *6.7 acre-feet/day* *2,449 acre-feet/year*	*754 gallons per minute* *1.7 cfs* *1.1 MGD* *3.35 acre-feet/day* *1,224.5 acre-feet/year*

The water from the holding pond will be pumped (low head pumping) and it will travel through a pipeline for approximately 6 miles to Cold Springs Reservoir at an average flow rate of approximately 600 gallons per minute. Careful engineering using approved calculation-modeling techniques and proper outfall design will be selected to promote rapid mixing and minimal water quality impacts. The final design of the delivery pipe may include extension out into one of the deeper areas of the reservoir so that good mixing can be achieved even during low reservoir levels. This type of diffuser design may include a horizontal diffuser outlet that is situated on or near the bottom. Discharge outlets may be positioned to promote high velocity, vertical and horizontal mixing, and would be selected based on typical water movement through the reservoir across an operating year.

Table C-3 shows the comparison of reservoir water quality, Wanapa wastewater quality and applicable water quality standards. For most parameters, concentrations of specific ions are higher in the wastewater discharge than in the reservoir. Wastewater concentrations for metals have been estimated as total recoverable concentrations which are always equal to or greater than the dissolved concentrations. However, water quality standards for metals are expressed as dissolved concentrations.

Estimated concentrations for ions in the wastewater will meet the Oregon Department of Environmental Quality (ODEQ) standards, and will not exceed state water quality standards. For almost every parameter, the concentration in the wastewater is less than 50 percent of the water quality standard. This indicates that the quality of the wastewater will be very good and would not negatively impact reservoir quality for the intended primary and secondary use. As discussed, the project will apply for a NPDES discharge permit from ODEQ for discharge to Cold Springs Reservoir. The permit application will include detailed information about the following:

- *Raw water quality and treatment;*
- *Plant processes and how wastewater is generated;*
- *Flow rates with seasonal variations;*
- *Water treatment – specific types and feed rates of treatment chemicals, material safety data sheets of those chemicals;*
- *Wastewater storage and pumping operations;*
- *Wastewater quality – average and maximum concentrations;*

Table C-3
Comparison of Cold Springs Reservoir Water Quality with Estimated Effluent Quality

Analyte	*Units*	*Reservoir (average)*	*Estimated Effluent*	*Lowest Applicable Aquatic Life Water Quality Standard*
Total Recoverable Antimony – Sb	*µg/l*	*0.112*	*0.700*	
Dissolved Antimony – Sb	*µg/l*	*0.114*		*1,600*
Total Recoverable Beryllium – Be	*µg/l*	*0.033*	*0.042*	
Dissolved Beryllium – Be	*µg/l*	*0.025*		*5.3*
Total Recoverable Cadmium – Cd	*µg/l*	*0.014*	*0.074*	
Dissolved Cadmium – Cd	*µg/l*	*>0.008*		*1.1*
Total Recoverable Copper – Cu	*µg/l*	*2.03*	*5.80*	
Dissolved Copper – Cu	*µg/l*	*1.05*		*12*
Total Recoverable Iron – Fe	*µg/l*	*979*	*685*	
Dissolved Iron – Fe	*µg/l*	*19.7*		*1,000*
Total Recoverable Lead – Pb	*µg/l*	*0.511*	*0.800*	
Dissolved Lead – Pb	*µg/l*	*0.016*		*3.2*
Total Recoverable Mercury – Hg	*µg/l*	*0.00193*	*0.00160*	
Dissolved Mercury – Hg	*µg/l*	*0.00054*		*0.012*
Total Recoverable Nickel – Ni	*µg/l*	*0.65*	*1.50*	
Dissolved Nickel - Ni	*µg/l*	*0.09*		*160*
Total Recoverable Selenium – Se	*µg/l*	*0.45*	*0.75*	
Dissolved Selenium – Se	*µg/l*	*0.42*		*5*
Total Recoverable Silver – Ag	*µg/l*	*0.020*	*0.011*	
Dissolved Silver – Ag	*µg/l*	*0.017*		*0.12*
Total Recoverable Thallium – Th	*µg/l*	*0.191*	*0.074*	
Dissolved Thallium - Th	*µg/l*	*0.172*		*40*
Total Recoverable Zinc – Zn	*µg/l*	*2.33*	*8.9*	
Dissolved Zinc - Zn	*µg/l*	*0.13*		*110*
Alkalinity	*mg/l*	*78*	*188*	*20*[1]
Chloride	*mg/l*	*9.8*	*20.0*	*230*
pH	*S.U.*	*9.12*	*7.5-8.5*	*7 – 8.5*
Phenolics	*mg/l*	*0.01*	*0.053*	*2.56*

[1] *Minimum concentration.*

- ***Reservoir water quality and hydrology;***
- ***Beneficial uses of the reservoir and applicable water quality standards; and***
- ***Estimated effects of wastewater on reservoir water quality.***

ODEQ will carefully evaluate this information and will request additional detail on any parameter of concern. The agency utilizes a software/workbook program that performs a "reasonable potential analysis" for each pollutant of concern and develops water quality based effluent limits (WQBELs). The spreadsheets used in these calculations have been developed based on U.S. Environmental Protection Agency's (USEPA's) methodology "Technical Support Document for Water Quality-Based Toxics Control (TSD)." This methodology was developed by USEPA and uses a number of equations to compare wastewater quality against water quality standards and receiving water quality. The equations that are applied are highly conservative and do not allow a receiving water to approach the standards closely, i.e., the receiving water quality is maintained at significantly lower concentrations than the applicable standards. The results of the application of this program are made available to all requestors.

It is important to note that in the application of this program and calculation of WQBELs, ODEQ will use the maximum concentration of each potential pollutant. Permit limits will be developed that will be protective of the reservoir as if the maximum concentration of each pollutant was discharged 365 days a year. This adds additional protection and minimizes potential impacts to the reservoir. In addition, the facility also will probably be required to conduct regular aquatic toxicity testing – this involves placing aquatic organisms, usually daphnids and fish, in plant effluent and measuring the potential toxicity to living organisms.

State water quality standards have been developed (and are regularly evaluated and modified) based on actual aquatic and wildlife toxicity and human health data. The standards are designed to be conservative and highly protective and take into consideration such aspects as potential bioaccumulation (an example would be the recent reduction in the state water quality standard for selenium which can demonstrate bioaccumulation potential). The NPDES permit that will be issued for the Wanapa Energy Center will have to be re-applied for and renewed every 5 years – the wastewater will be re-evaluated each time against current water quality standards and existing receiving water quality.

When evaluating water quality impacts, Oregon water quality standards and regulations (OAR 340-041-0053) allow the use of a mixing zone in determining how a wastewater discharge will meet state water quality standards. A mixing zone is an area of a receiving water body that is

calculated using flow and water quality data (of both the wastewater and receiving water), physical data about the receiving water, and other site-specific information. According to Oregon standards, the wastewater discharge must meet acute water quality standards at end-of-pipe to prevent acute toxicity to organisms in the mixing zone. However, the concept of a mixing zone is to allow a small area in the receiving water body where chronic water quality standards are temporarily exceeded. At the edge of the mixing zone, chronic standards must be met so that the rest of the water body is protected. An additional requirement is that no water quality standard can be exceeded in the receiving water even under low flow conditions. The State will evaluate the calculated mixing zone and the potential water quality impacts associated with it. The mixing zone will be carefully evaluated to make sure that organisms passing through it will not experience lethality. It also will be evaluated to assure that the overall integrity of the reservoir will be protected. There is a specific multi-step procedure for evaluating the overall acceptability of the mixing zone. Since the wastewater should meet water quality standards at end-of-pipe, the mixing zone analysis will be primarily used to determine if good mixing will be achieved and overall quality of reservoir water will be protected. ODEQ will evaluate and determine what temperature and total dissolved solids (TDS) standards will apply to the reservoir – since temperature and TDS of the effluent will exceed that of the reservoir, especially in the summer, the mixing zone analysis will probably be applied to insure that water quality is maintained in the reservoir at all times of the year.

Bureau of Indian Affairs, Bonneville Power Authority, and Bureau of Reclamation (Reclamation) will have an opportunity to review the draft NPDES permit before it is formally issued and comments will be evaluated and addressed by ODEQ. USEPA Region X also will review the draft NPDES permit and provide comments to ODEQ. There will be a 30-day public review and comment period for the permit after initial cooperating agency review.

Finally, after the NPDES permit is in place and the Wanapa Energy Center begins operation, the plant will be required to sample its effluent in the first 30 to 90 days of operation (after full operating output is achieved). The effluent must be tested not only for the parameters listed in the NPDES permit but for the 126 priority pollutants. The results of this sampling and analyses will be submitted to ODEQ for review; ODEQ can then modify the NPDES permit for additional parameters and limits if necessary. The facility will be required to submit monthly Discharge Monitoring Reports (DMRs) with all the monitoring and analytical information required by the permit. These DMRs also can be provided each month to Reclamation. The data in the DMRs are evaluated every month by ODEQ and if the plant exceeds its permit limits, plant personnel

will be contacted for explanation and resolution. Exceedance of permit limits can result in Notices of Violation and enforcement action, including fines.

The ODEQ's discharge permitting process requires detailed modeling, data analysis, and direct application of state water quality standards for any proposed discharge of wastewater to a water of the state. Since Cold Springs Reservoir is considered a water of the state, this process will be strictly followed. The discharge from Wanapa will be required to meet all state and federal water quality standards, which are specifically selected to protect aquatic organisms, wildlife, human health, and agricultural uses. The operations of Wanapa Energy Center will comply with all applicable water quality standards and associated discharge permit limits that are required by ODEQ.

Potential Impacts to Cold Springs Reservoir

Plant discharge water will meet all applicable water quality standards, which are designed to be protective of aquatic and wildlife species. Impacts to aquatic and wildlife use and irrigation use of the reservoir are expected to be negligible. The quality of the plant discharge water will be monitored on a daily basis; if any chemical parameter changes significantly, it will be addressed immediately in order to protect the quality of final plant discharge water.

Because of regulatory and public interest in the potential for bioaccumulation, an evaluation of water quality in Cold Springs Reservoir and the effect of plant discharge water was conducted. Many environmental chemicals, both organic and inorganic, will tend to accumulate in the tissues of organisms beyond the concentrations found it the environment. Although often thought of as deleterious, some materials, particularly certain trace and rare-earth metals, accumulate naturally and are critical components in biochemical processes, acting, for example, as coenzymes in certain reactions. For critical ions, such as calcium, organisms' mechanisms may be specifically adapted to scavenge and sequester critical nutrients and elements. Bioaccumulation factors (tissue concentrations/ambient concentrations) for some aquatic organisms exceed 1000 for many elements, including trace and rare-earth metals, and are over 100,000 for some elements, such as phosphorus, vanadium, and molybdenum (Cowgill 1976).

Bioaccumulation is defined as the net accumulation of a chemical in an organism (or a specific tissue) that results from environmental exposure. Bioaccumulation can only occur if the rate of uptake exceeds the rate of elimination. For essential materials, mechanisms accumulate needed amounts but then typically eliminate what is not needed. Organisms that have evolved in

environments rich in certain elements also have developed adaptions that provide for normal physiology in the face of atypical environmental concentrations. Such mechanisms do not work for all chemicals or in all organisms, however. The intense accumulation of artificial organic molecules (e.g., DDT) in biological tissues to many times the environmental concentrations resulted in unforeseen food web and life cycle consequences.

For toxic effects to occur in an exposed organisms (e.g., fish) chemicals must first be accumulated by the organism above normally regulated levels. That is, it is not the ambient concentrations (for example, measured concentrations in Cold Springs Reservoir) that organisms respond to, but only to the levels (of metals for example) which become associated with the organism (either in them or on them). Thus, only if chemicals are bioavailable do they represent a hazard to the organism. There are several factors that can influence bioavailability, most notably water hardness, but also the presence of organic compounds, which sorb metals and reduce their bioavailability.

As described above, most metals tend to bioaccumulate, often to high levels, when measured directly under field or laboratory conditions. However, even when accumulated to many time ambient levels, toxic effects may not be observed (Drexler et al. 2003). There are numerous factors, both abiotic and biological, that interact to affect the toxicity of a bioaccumulative element.

Some metals have been shown to be more of a concern than others. Selenium, for example, has been shown to be of concern, as has mercury. The serious problems associated with selenium bioaccumulation were well documented in the Kesterson Wildlife Refuge in California. Accumulation of mercury in fish tissues has resulted in sporadic warnings about consumption of both natural and farm-raised salmonids.

Because of the well-researched issues with selenium and mercury, ambient water quality criteria for these two materials are based on bioaccumulative potential. The Criteria Maximum Concentration (CMC) and Criteria Continuous Concentration (CCC) for inorganic mercury are 1.4 and 0.77 µg/L, respectively, based on dissolved concentration (USEPA 2002). The mean concentration of dissolved mercury measured in Cold Springs Reservoir is 0.00082 µg/L (total = 0.0051 µg/L). The estimated effluent concentration of total mercury is 0.00160 µg/L, which is approximately 1/3 of the mercury concentration under existing conditions. Effluent, therefore, should not increase the ambient levels of inorganic mercury, and existing or future mercury concentrations should not pose a significant bioaccumulative problem, assuming

mercury remains in an inorganic form. Inorganic mercury can convert to methyl mercury under the right chemical conditions. Methyl mercury is highly bioaccumulative, and criteria are not necessarily reflective of the potential for organic to bioaccumulate. The tendency of conversion to organic mercury in Cold Springs Reservoir has not been determined. [Additional information to be added on the factors that determine the potential for conversion.]

The CCC for selenium is 5.0 µg/L. The CMC is based on the relative proportions of selenate and selenite, which are unknown in Cold Springs Reservoir. The mean concentration of dissolved selenium measured in Cold Springs Reservoir is 0.41 µg/L; the estimated total selenium concentration in the effluent is 0.75 µg/L. Effluent might, therefore, slightly increase the concentration of selenium in the Reservoir. However, the estimated effluent concentration is still well below the selenium CCC and should not pose and toxicological or bioaccumulative problems.

References

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APPENDIX D

PUBLIC COMMENT LETTERS AND RESPONSES

Letter 1

United States Department of the Interior

U.S. GEOLOGICAL SURVEY
Reston, Virginia 20192

DEC 2 4 2003

Mr. Philip Sanchez
Superintendent, BIA, Umatilla Agency
PO Box 520
Pendleton, OR 97801

Mr. Sanchez,

1-1 The U.S. Geological Survey has reviewed the Draft Environmental Impact Statement for the Proposed Wanapa Energy Center and has no comments to offer.

Thanks.

Brenda J. Johnson

Brenda J. Johnson

Responses to Letter 1

1-1 Thank you for your time and your letter.

Letter 2

United States Department of Agriculture | Forest Service | Pacific Northwest Region | .O. Box 3623 Portland, OR 97208-3623 333 First Avenue Portland, OR 97204

File Code:2580

Date: December 22, 2003

Philip Sanchez
Superintendent Umatilla Agency
Bureau of Indian Affairs
P.O. Box 520
46807 B Street
Pendleton, OR 97801

Dear Mr. Sanchez:

The Air Resources portion of the WANAPA Draft EIS has been reviewed – the following comments are submitted for your review and consideration. As a result of potentially adverse effects on Class I areas and the Columbia River Gorge National Scenic Area (CRGNSA) of steadily increasing pollutant loadings in the Columbia Basin this office has a well established interest and concern over new basin emission sources such as WANAPA. We did not receive a copy of the draft document and we're not aware of its existence until late in the comment period. Holiday schedules are also a factor leading to these comments being somewhat general and cursory and perhaps do not do justice to issues described below.

Within a 50km radius of the proposed WANAPA facility there has been substantial industrial point source emission growth. The most significant is the Boardman Coal Fired Power Plant built in 1979 – since that time a large number of smaller sources have been built and a number of gas fired power plants have recent permits but are not yet constructed. While the WANAPA facility would be a significant addition to this mix of sources its impact alone is relatively small in comparison to the total air pollution loading in this area. Under NEPA a cumulative effect analysis, particularly of the power plant sources is required. The WANAPA draft document does not adequately recognize this pre-existing problem – to put these issues in perspective a full cumulative analysis is needed. We do not discount the risk to human health from this cumulative effect, however as a land management agency, our concerns are focused on the effect from WANAPA and the surrounding array of existing and permitted sources on cultural resources, visibility, and acid (sulfur & nitrogen) deposition in the Columbia River Gorge National Scenic Area and on the surrounding Class I wilderness and parks. This cumulative effect should be analyzed and disclosed.

2-1

The analysis provided in the draft document borrowed heavily from the WANAPA PSD permit application analysis. The analysis required under NEPA compared to that normally provided for PSD is quite different. In PSD the analysis focuses primarily on the individual source effects with a minimal amount of analysis on the contribution to effects in Class I areas from the background sources or background conditions. By being single source focused PSD analyses tend to discount and minimize effects since the intent is to secure a permit for a client. The intent under NEPA is full disclosure of environmental effects. This NEPA analysis reads like a PSD application and as such is inadequate – particularly on the cumulative effect perspective discussed in the previous paragraph.

Responses to Letter 2

2-1 Cumulative Impacts in Class I Areas. Class I areas are areas such as National Parks and Wilderness Areas that are designated for special protection under the Clean Air Act. Impacts of NO_2, PM_{10}, visibility, nitrate, and sulfate deposition in Class I areas resulting from Wanapa have been evaluated using the CALPUFF dispersion modeling system and its associated pre- and post-processing algorithms. The information included below also is available in the PSD application, on file with the USEPA. Impacts were assessed at the following Class I areas:

- Eagle Cap Wilderness Area
- Goat Rocks Wilderness Area
- Mount Adams Wilderness Area
- Strawberry Mountain Wilderness Area
- Mount Hood Wilderness Area
- Columbia River Gorge (not technically a Class I area, but evaluated in the Class I impact analysis)

Air quality impacts of NO_2 and PM_{10} in the Class I areas are provided in the Final EIS in Section 3.5.2.2.

Dry and wet deposition results from Wanapa are summarized in **Tables** _____ and _____, and are compared to appropriate deposition significance thresholds established in Federal Land Manager guidance. Acid deposition in the Columbia River Gorge is of particular interest in the analysis, as acid deposition affects not only natural resources, but also cultural resources such as rock art in and near the Columbia River Gorge. The results of the modeling analysis demonstrate that potential impacts from Wanapa would be far below the deposition significance thresholds, including an impact of less than 5 percent of the significance threshold in the Columbia River Gorge.

2-1 Cont'd

TABLE _____
NITROGEN DEPOSITION ANALYSIS RESULTS

Class I Area	Maximum Nitrogen Deposition Flux (kg/ha/yr)	Location of Maximum Impact	
		X (km)	Y (km)
Eagle Cap	0.000228	408.965	201.127
Goat Rocks	0.000102	113.990	286.053
River Gorge	0.000247	144.100	197.499
Mount Adams	0.000173	106.239	255.923
Mount Hood	0.000167	106.373	167.993
Strawberry Mountain	0.000124	321.326	68.133

TABLE _____
SULFUR DEPOSITION ANALYSIS RESULTS

Class I Area	Maximum Sulfur Deposition Flux (kg/ha/yr)	Location of Maximum Impact	
		X (km)	Y (km)
Eagle Cap	0.000048	408.965	201.127
Goat Rocks	0.000021	113.990	286.053
River Gorge	0.000048	144.100	197.499
Mount Adams	0.000036	106.239	255.923
Mount Hood	0.000038	106.373	167.993
Strawberry Mountain	0.000026	321.326	68.133

Visibility impacts from Wanapa are summarized in **Table** _____, and compared to the 5 percent extinction criterion established in Federal Land Manager1 guidance. This threshold represents a perceptible change in visibility.

Responses to Letter 2

TABLE _____
VISIBILITY ANALYSIS RESULTS

Class I Area	?b_{ext} Maximum Impact (%)[1]	Location of Maximum Impact		Date of Maximum Impact	# of Days >5%
		X (km)	Y (km)		
Eagle Cap	0.77%	450.411	149.251	4/14/1998	0
Goat Rocks	1.16%	120.832	286.134	10/1/1998	0
River Gorge	1.97%	143.958	201.494	10/26/1998	0
Mount Adams	2.37%	110.874	255.953	1/4/1999	0
Mount Hood	0.94%	103.322	179.574	1/3/1999	0
Strawberry Mountain	1.16%	328.837	68.519	1/24/1999	0

[1]Values listed under "maximum impact" are the maximum predicted percent change in light extinction coefficient.

The modeled changes in the extinction rate from Wanapa are less than the 5 percent threshold at each Class I area on all days of the year.

Though the extinction rate from Wanapa's impacts is below the appropriate threshold, we conducted additional review to assess the cumulative effect on visibility in the Class I areas from this project and other past, present, and reasonably foreseeable projects in the Northwest. The results of this analysis are presented below.

[1] The Federal Land Managers include the land management agencies under the U.S. Department of the Interior (U.S. Forest Service, BLM, and National Park Service).

Several air quality modeling analyses have been conducted by the Bonneville Power Administration (BPA) to assess the cumulative impacts of power generation projects in the Northwest and their impacts on Class I areas. The BPA's Phase I study examined the air quality impacts of 45 proposed combustion turbines in BPA's service area in the Northwest. Two scenarios were modeled in this study: a worst-case scenario that included the impacts from all 45 facilities (totaling 24,000 MW of generation), and a second scenario that included impacts from 28 facilities (totaling 11,000 MW of generation). Both analyses account for much more future power generation development than is currently expected in the Northwest. The results of the BPA study showed no violations of any National Ambient Air Quality Standard for criteria pollutants such as SO_2, NO_x, and PM_{10}. The study did, however, indicate that visibility degradation was a potential area of concern.[1]

[1]Bonneville Power Authority, "Phase I Results – Regional Air Quality Modeling Study," August 1, 2001.

2-1 Cont'd

Several air quality modeling analyses have been conducted by the Bonneville Power Administration (BPA) to assess the cumulative impacts of power generation projects in the Northwest and their impacts on Class I areas. The BPA's Phase I study examined the air quality impacts of 45 proposed combustion turbines in BPA's service area in the Northwest. Two scenarios were modeled in this study: a worst-case scenario that included the impacts from all 45 facilities (totaling 24,000 MW of generation), and a second scenario that included impacts from 28 facilities (totaling 11,000 MW of generation). Both analyses account for much more future power generation development than is currently expected in the Northwest. The results of the BPA study showed no violations of any National Ambient Air Quality Standard for criteria pollutants such as SO_2, NO_x, and PM_{10}. The study did, however, indicate that visibility degradation was a potential area of concern.[1]

Since the Phase I study, additional studies of regional visibility have been performed that removed power development projects that have since been canceled from the list of sources considered in the modeling studies. A recent study for the Plymouth Generating Facility evaluated impacts from the following baseline source group on nearby Class I areas.[2]

- Fredonia Facility
- Rathdrum Power
- Frederickson Power
- Coyote Springs 2
- Goldendale Energy Project
- Hermiston Power Project
- Chehalis Generating Facility
- Goldendale (The Cliffs)
- Big Hanford Project
- Mint Farm Generation
- Wallula Power Project
- Satsop CT Project – Phase I
- Satsop CT Project – Phase II
- Wanapa Energy Center
- Plymouth Generation

[1] Bonneville Power Authority, "Phase I Results – Regional Air Quality Modeling Study," August 1, 2001.

[2] Plymouth Generating Facility, "Contribution to Regional Haze."

The Plymouth Generating Facility study was evaluated using the same MM5 meteorological data set as the Class I area impact analysis for Wanapa. Additionally, the range of dates for the meteorological data from the two analyses (March 19, 1998 to March 16, 1999) is identical. For these reasons, the results from these two analyses may be compared on a day-by-day basis. For every date that the Plymouth Generating Facility analysis resulted in a visibility impact greater than 5 percent at any Class I area, the impacts from Wanapa's analysis for that same date are provided for comparison in **Tables** _____ and _____. Dates with impacts from Wanapa greater than 0.4 percent are bolded in the tables.

Responses to Letter 2

Table _____
Wanapa Energy Center and Cumulative Visibility Impacts Comparison

Class I Area	Season	Date	Cumulative Δb_{ext} (%)	Wanapa Δb_{ext} (%)
Columbia Gorge National Scenic Area	Fall	10/6/1998	7.99	0.00
Columbia Gorge National Scenic Area	Fall	10/21/1998	5.05	0.00
Columbia Gorge National Scenic Area	Fall	10/30/1998	7.10	**1.30**
Columbia Gorge National Scenic Area	Fall	11/3/1998	8.52	0.00
Columbia Gorge National Scenic Area	Fall	11/7/1998	5.84	0.00
Columbia Gorge National Scenic Area	Winter	12/23/1998	12.51	0.00
Columbia Gorge National Scenic Area	Winter	1/3/1999	8.60	**1.11**
Eagle Cap Wilderness Area	Fall	9/29/1998	5.13	0.26
Mt. Adams Wilderness Area	Winter	12/23/1998	6.94	**1.71**
Mt. Adams Wilderness Area	Winter	1/4/1999	5.01	**2.37**
Mt. Hood Wilderness Area	Fall	10/19/1998	5.29	**0.57**
Mt. Hood Wilderness Area	Fall	11/3/1998	7.58	0.00
Mt. Hood Wilderness Area	Winter	12/22/1998	6.82	0.00
Mt. Hood Wilderness Area	Winter	12/23/1998	8.03	0.00
Mt. Hood Wilderness Area	Winter	1/2/1999	5.00	**0.93**
Mt. Hood Wilderness Area	Winter	1/3/1999	16.70	**0.94**

[1] The "Oil-Fired Winter" result includes emissions from the Fredonia and Chehalis power plants operating in an oil-fired mode.

Table _____
Wanapa Energy Center and Cumulative Visibility Impacts Comparison on Winter Days with Oil-Firing at Fredonia and Chehalis Facilities

Class I Area	Season	Date	Cumulative Δb_{ext} (%)	Wanapa Δb_{ext} (%)
Columbia Gorge National Scenic Area	Oil-Fired Winter	12/17/1998	5.57	0.00
Columbia Gorge National Scenic Area	Oil-Fired Winter	12/23/1998	12.51	0.00
Columbia Gorge National Scenic Area	Oil-Fired Winter	1/3/1999	8.60	**1.11**
Columbia Gorge National Scenic Area	Oil-Fired Winter	1/26/1999	5.13	0.03
Goat Rocks Wilderness Area	Oil-Fired Winter	1/7/1999	6.15	0.01
Goat Rocks Wilderness Area	Oil-Fired Winter	1/23/1999	7.20	0.00
Mt. Adams Wilderness Area	Oil-Fired Winter	12/23/1998	6.95	**1.71**
Mt. Adams Wilderness Area	Oil-Fired Winter	1/1/1999	6.04	0.00
Mt. Adams Wilderness Area	Oil-Fired Winter	1/4/1999	5.02	**2.37**
Mt. Hood Wilderness Area	Oil-Fired Winter	12/22/1998	6.82	0.00
Mt. Hood Wilderness Area	Oil-Fired Winter	12/23/1998	8.03	0.00
Mt. Hood Wilderness Area	Oil-Fired Winter	1/2/1999	5.76	**0.93**
Mt. Hood Wilderness Area	Oil-Fired Winter	1/3/1999	16.72	**0.94**

The total number of days with extinction rate changes from Wanapa greater than 0.4 percent and with cumulative impacts greater than 5 or 10 percent are summarized in **Table** _____.

Responses to Letter 2

2-1 Cont'd

The total number of days with extinction rate changes from Wanapa greater than 0.4 percent and with cumulative impacts greater than 5 or 10 percent are summarized in **Table _____.**

Table _____
Total Days with Wanapa Energy Center Impacts >0.4 percent and
Cumulative Impacts >5 percent or 10 percent
Days with Wanapa Energy Center Contribution

Class I Area	Days with Cumulative Change in Extinction >5%	Days with Cumulative Change in Extinction >10%
Eagle Cap Wilderness Area	0	0
Goat Rocks Wilderness Area	0	0
Columbia Gorge National Scenic Area	2	0
Mt. Adams Wilderness Area	2	0
Mt. Hood Wilderness Area	3	1
Strawberry Mountain Wilderness Area	0	0

Letter 2 Continued

2-2

From a suite of long term monitoring in the Columbia River Gorge there is ample evidence of existing adverse effects on visibility (from IMPROVE monitoring), on ecosystem disturbance from lichen monitoring, and on cultural resources. Additionally there is ample evidence of risk from high ozone concentrations. Existing deposition rates in the Gorge are approximately 10-12 kg/ha/yr for both sulfur and nitrogen. Comparing these rates to a critical load estimate of 1-2 kg/ha/yr it is evident that deposition rates are well in excess of that needed to maintain healthy undisturbed ecosystem conditions. Very real concern exists about harm to other cultural resources (such as rock art) from the acidic component of this deposition – as the federal agency with responsibility for the Columbia River Gorge National Scenic area the Treaty Rights Tribes have requested our assistance in protecting these cultural resources from the damaging effects of air pollution. In winter the Gorge is the primary outlet of polluted stagnant air draining out of the Columbia Basin. With the close proximity of the river channel, which acts as a natural drainage channel in winter, a substantial contribution to this problem comes from the industrialized region around Umatilla. There is a significant body of information as well as previous documentation in prior NEPA documents detailing these concerns. These issues are not recognized or addressed in the Air Resources portion of the WANAPA Draft EIS document.

Conversely, in summer there is evidence of high ozone levels in the Eastern Gorge – under westerly summertime flow this ozone background is transported into the basin and is potentially made worse by basin emission sources. At times the prevailing flows reverse in summer and higher ozone concentrations are re-circulated back into the gorge and up the east slopes of the adjacent Cascades Class I areas. While WANAPA is a small incremental contributor to this potential problem it does contribute and as such an analysis and disclosure of the issue should be provided.

We take the protection of cultural resources in the CRGNSA very seriously. This is an issue the Umatilla Tribe, BIA, and the USDA FS share common ground. We hope you will agree it is an issue that deserves a fair review. We appreciate this opportunity of share our concerns with you. Please include this office in further distributions of information pertaining to this NEPA review.

Sincerely,

ROBERT G. BACHMAN
Air Resource Specialist

Cc: BPA (Bob Beraud, Tom McKinney) email only

Responses to Letter 2

2-2 An analysis of increases in ozone concentrations resulting from Wanapa emissions was conducted and is available from the USEPA in the Wanapa PSD application. Though ozone is not directly emitted from Wanapa, increases in ozone concentrations may result from photochemical reactions involving VOC and NO_x from the proposed facility.

Windroses of the appropriate meteorological data (Umatilla Army Depot and Walla Walla Regional Airport) for 1995 through 1999 were analyzed for the 6 months that are typically designated as "ozone season" (April-September). The windroses show that winds measured at these stations during the ozone season months from 1995 through 1999 blew from the southwest approximately 30 percent of the time (up to 36 percent for some years), which is more than any other direction. Winds blew from the northeast less than approximately 9 percent of the time. Given the relatively flat terrain of northeastern Oregon and southeastern Washington, it is not expected that the distribution of wind directions would change appreciably from the meteorological stations and the proposed site (approximately 2 miles from the Umatilla Army Depot and approximately 57 miles southwest of the Walla Walla NWS site). Since the proposed facility is located to the northeast of the Columbia River Gorge and Mount Hood Class I areas, emissions from the proposed Wanapa Energy Center can be expected to blow towards these areas approximately 9 percent of the time during the ozone season.

Ozone (O_3) impacts from the proposed Wanapa Energy Center are estimated using the Scheffe Method.1 Based upon the estimated NO_2 and VOC emissions from the proposed Wanapa Energy Center, the 1-hour ozone increment may be estimated. The 8-hour ozone increment for the proposed facility is estimated from the 1-hour increment using a scaling factor of 0.7.2 The results of the analysis showed that Wanapa would have maximum ozone impacts of 0.0119 ppm (8-hour average) and 0.0171 ppm (1-hour average). National Ambient Air Quality Standards for the 8-hour average is 0.080 ppm and 0.120 ppm for the 1-hour average.

[1] The Scheffe Method is a screening procedure, based upon a series of applications of the Reactive Plume Model-II (RPM-II), which calculates the 1-hour O_3 increment due to VOC and NO_X point sources. Scheffe, Richard D., *VOC/NO_x Point*. USEPA, Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina. EPA-450/2-78-027R. September 1998.

[2] USEPA, Support Center for Regulatory Air Models. *Screening Procedures for Estimating the Air Quality Impact of Stationary Sources - Revised.* Research Triangle Park, North Carolina. USEPA-454/R-92-019. October 1992.

Responses to Letter 2

TABLE ____
TOTAL OZONE IMPACT INCREMENTS

Averaging Period	Facility Ozone Increment (ppm)	Background Ozone Increment (ppm)	Total Ozone Increment (ppm)	NAAQS Standard (ppm)
8-hour	0.0119	0.0646	0.0765	0.0800
1-hour	0.0170	0.0790	0.0960	0.1200

[1]The Scheffe Method is a screening procedure, based upon a series of applications of the Reactive Plume Model-II (RPM-II), which calculates the 1-hour O_3 increment due to VOC and NO_X point sources.
Scheffe, Richard D., *VOC/NO_X Point*. USEPA, Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina. EPA-450/2-78-027R. September 1998.
[1]USEPA, Support Center for Regulatory Air Models. *Screening Procedures for Estimating the Air Quality Impact of Stationary Sources - Revised*. Research Triangle Park, North Carolina. USEPA-454/R-92-019. October 1992.
[1]USEPA, Office of Air and Radiation. *EPA's Revised Ozone Standard Fact Sheet*. Research Triangle Park, North Carolina. July 17, 1997.

Letter 3 Continued

d. A 25- by 300-foot gravel parking area would be established by BPA along the west side of Ferry Road. BPA would provide and install parking curbs as directed by the District. A controlled access point would be developed for overflow public parking on the remaining open area. The parking area would serve the public users of the adjacent Corps of Engineers operated park area.

3-1 The four items outlined above would be incorporated into a real estate permit to BPA as site-specific conditions. Other than the site-specific conditions, the remaining terms of the permit will follow the standard Department of the Army format.

If Bonneville Power Administration wishes to pursue this expansion given the conditions outlined above, please provide this office with a letter of application. We also need to receive a current aerial photograph of the McNary substation area with the expansion area superimposed on the photo.

If you need further information, please call me at 509-527-7324 or contact me by email at Paul.S.Shampine@usace.army.mil.

Sincerely,

Paul Shampine
Real Estate Specialist

Enclosures

HERRES/RE

GARLAND/RE

BROWN/OD-TN

SHAMPINE/tp

IM-SM

RE

Responses to Letter 3

Letter 3

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
201 NORTH THIRD AVENUE
WALLA WALLA WA 99362-1876

REPLY TO
ATTENTION OF

December 20, 2002

Real Estate Division

Ms. Michelle E. Doiron, Realty Specialist
Bonneville Power Administration
6 West Rose, Suite 400
Walla Walla, Washington 99362

Dear Ms. Doiron:

The Walla Walla District has considered the Bonneville Power Administration (BPA) request for use of additional Department of the Army (Army) property on the McNary Lock and Dam Project (the Project) to expand the existing McNary Substation. Sheet 2, Revision 6, McNary Substation Plot Plan, serial 83526 received from BPA in July, 2002, shows a proposed expansion of 160 feet to the east of the existing east side perimeter fence. Given the proposed expansion, approximately 130,000 square feet of Army land would be removed from Project and public use.

The Walla Walla District (the District) would make the property available to BPA under the following conditions:

a. There is a water control isolation valve in the northeast corner of the desired property that may fall within the perimeter of the substation expansion. The valve is pictured in Enclosure 1. The valve would have to be relocated by BPA or made accessible to Project employees or contractors at all times.

b. BPA would be required to plant a row of trees on 15-foot centers along the new eastern fence line to screen the substation. The District would determine the species and size of the trees. A manual irrigation system for watering the trees would have to be installed by BPA on the existing water line in the northeast corner of the expansion area.

3-1

c. There are three access openings to an abandoned sewer line system that are located within the proposed expansion area as shown in Enclosure 2. The access openings would be addressed and a joint decision made by the District and BPA whether to leave them intact or remove them. Removal would be performed by BPA and the area restored as required by the District.

Responses to Letter 3

3-1 This comment letter was written in 2002 and included as an attachment to a letter from the U.S. Army Corps of Engineers (USACE). Although this letter was not specifically written in response to the Draft EIS, the following comment is being provided. Following a decision to construct the line, BPA would prepare and submit detailed transmission line plans and specifications to the USACE.

Letter 3 Continued

d. A 25- by 300-foot gravel parking area would be established by BPA along the west side of Ferry Road. BPA would provide and install parking curbs as directed by the District. A controlled access point would be developed for overflow public parking on the remaining open area. The parking area would serve the public users of the adjacent Corps of Engineers operated park area.

3-1 The four items outlined above would be incorporated into a real estate permit to BPA as site-specific conditions. Other than the site-specific conditions, the remaining terms of the permit will follow the standard Department of the Army format.

If Bonneville Power Administration wishes to pursue this expansion given the conditions outlined above, please provide this office with a letter of application. We also need to receive a current aerial photograph of the McNary substation area with the expansion area superimposed on the photo.

If you need further information, please call me at 509-527-7324 or contact me by email at Paul.S.Shampine@usace.army.mil.

Sincerely,

Paul Shampine
Real Estate Specialist

Enclosures

HERRES/RE

GARLAND/RE

BROWN/OD-TN

SHAMPINE/tp

IM-SM

RE

Responses to Letter 3

Letter 4

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
201 NORTH THIRD AVENUE
WALLA WALLA WA 99362-1876

REPLY TO
ATTENTION OF

December 30, 2003

Real Estate Division

Mr. Philip Sanchez
Superintendent, Umatilla Agency
Bureau of Indian Affairs
PO Box 520
Pendleton, OR 97801

Dear Mr. Sanchez:

We have reviewed the Draft Environmental Impact Statement (DEIS) for the Wanapa Energy Center near Hermiston, Oregon, and have the following comments.

All proposed transmission line footprints cross Federal property managed by the Corps of Engineers (Corps). Existing permits held by the Bonneville Power Administration (BPA) will have to be reviewed to determine their adequacy once the final footprint has been determined. Normal review process for the Corps takes approximately 120 days. It is requested that detailed plans and specifications for the transmission lines be provided as soon as possible for our review.

On page 2-25 of the DEIS, it is stated that, "The McNary substation would be expanded...on land acquired from the USACE..." This statement implies that BPA has already secured an amendment to their permit for the additional property required for the substation. BPA requested a preliminary review of their substation expansion in 2002. A copy of our response to their request is enclosed. We still require an official request to initiate the substation expansion permit amendment.

4-1

The portions of the DEIS concerning cultural resources indicate that considerable background information has been reviewed. An effort has been made to address Federal cultural resource laws; however, there seems to be a little confusion.

a. It appears that the entire project may require Federal Section 106 review under the responsibility of the Corps because the project would not be undertaken but for the cooperation of the Corps. While the Tribal HPO's will be consulting parties along with the Corps and the SHPO, they will not typically be the first contact for the Project Agency.

Responses to Letter 4

4-1 BPA notes the conditions listed in the December 20, 2002, letter from Mr. Shampine and would submit the information requested following a decision to expand McNary Substation. The statement cited in the Draft EIS has been modified to read, …"on land to be acquired…" (Section 2.3.5.1) in the Final EIS.

Letter 4 Continued

4-2 b. The statement on page ES-8 mentions the presence of monitors, etc. This infers that part of the Section 106 review process has already been completed and decisions about mitigation requirements have been determined. The 106 process has not been initiated. That will occur when the agency receives detailed plans of proposed ground disturbance. The Corps has the responsibility to initiate and complete the review process, make a determination of effect (in consultation with others), submit the determination to the SHPO and the Tribes, and secure concurrence with the determination. Any needed avoidance measures or mitigation actions will be determined in consultation between the Project Agency, the Corps, the Tribes, and the SHPO.

4-3 c. A statement on page ES-9 says that if "ancestral remains" are discovered during the project, the CTUIR will be notified. If any human remains are inadvertently discovered on Corp property (during the project, on any property which is the responsibility of the Corps for cultural resources review) the Corps must be notified first. The only exception may be if the county coroner's office were the first to be contacted. It would then be the Corps' responsibility to initiate the appropriate inadvertent discovery protocol.

If you have any questions regarding the cultural resources comments contained above, please contact Ray Tracy, staff archaeologist, at 509-527-7286. If you have any questions regarding the permits for the transmission lines or the substation expansion, please contact me at 509-527-7331. I can also be reached by e-mail at Nancy.J.Herres@usace.army.mil.

Sincerely,

Nancy J. Herres
Realty Specialist

Enclosure

Responses to Letter 4

4-2 Cultural resource clearance surveys would be completed on USACE lands when detailed plans for proposed ground disturbance are completed. Typically, the USACE would lead the Section 106 compliance effort for any activities on USACE lands, not the entire project. However, the USACE has indicated that the BIA can take the lead on 106 compliance for USACE land within the project area.1 The USACE, or county coroner, also would be notified first in the event of any unanticipated cultural resource discoveries on USACE land that would be administered under the Native American Grave Protection and Repatriation Act (NAGPRA).

4-3 A protocol would be established for the project that would include the requirement specified in the commenting agency's letter that "If any human remains are inadvertently discovered on the Corp property (during the project, on any property which is the responsibility of the USACE for cultural resources review) the Corp must be notified first, unless the county coroner's office would be the first to be contacted."

[1] Personal communication, Catherine Dickson, CTUIR THPO, 2/18/04.

Letter 5

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

December 31, 2003

Reply To
Attn Of: ECO-088

Ref: 01-078-BIA

Philip Sanchez
Bureau of Indian Affairs
46807 B Street
Pendleton, OR 97801

Dear Mr. Sanchez:

The U.S. Environmental Protection Agency (EPA) has completed its review of the draft Environmental Impact Statement (EIS) for the proposed **Wanapa Energy Center** (CEQ No. 030515) in accordance with our authorities and responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. The draft EIS has been prepared in response to a proposal to construct and operate a natural gas-fired power plant near Umatilla, Oregon and to distribute the generated power over the Federal Columbia River Transmission System. The EIS evaluates the applicant's proposed power plant and multiple transmission line and pipeline alignments as well as the No Action alternative. The applicant's proposed project is identified as the agency-preferred alternative in the draft EIS.

Based on our review and evaluation, we have assigned a rating of EC-2 (Environmental Concerns - Insufficient Information) to the draft EIS. This rating, and a summary of our comments, will be published in the *Federal Register*. A copy of the rating system used in conducting our review is enclosed for your reference.

Our concerns are related to the following topics which are discussed in greater detail in the enclosure to this letter:

- *Project-Related Impacts and Needed Mitigation Measures;*
- *Air Quality;*
- *Cumulative Effects;*
- *Consistency with the Federal Columbia River Power System Biological Opinion;*
- *Range of Alternatives;*
- *Coordination with other Decision Making Processes; and*
- *National Pollutant Discharge Elimination System (NPDES) Permit.*

Thank you for the opportunity to provide comments on the draft EIS. I urge you to contact Bill Ryan of my staff at (206) 553-8561 at your earliest opportunity to discuss our comments and how they might best be addressed in the EIS.

Sincerely,

Judith Leckrone Lee, Manager
Geographic Implementation Unit

Enclosures

cc: Tom McKinney, BPA

Letter 5 Continued

U.S. Environmental Protection Agency Comments
on the
Draft Environmental Impact Statement (EIS)
for the
Proposed Wanapa Energy Center

Project-Related Impacts and Needed Mitigation Measures

We are concerned that a number of yet-to-be-developed plans, procedures and surveys identified in the EIS would generate information that appears to be necessary to define the affected environment and effects from the proposed project and/or identify necessary mitigation measures. We believe that such information should be developed and presented in the EIS, per the direction of the implementing regulations for the NEPA to "insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken" (40 CFR 1500.1(b)) and to "include appropriate mitigation measures not already included in the proposed action or alternatives" (40 CFR 1502.14(f)). For example, the draft EIS indicates or suggests that the following efforts have not yet been completed, but would be after issuance of the Record of Decision (ROD) for the project:

5-1

- Conduct pre-construction weed inventory - needed to define affected environment, impacts and mitigation;
- Conduct breeding raptor surveys - needed to define affected environment, impacts and mitigation;
- Conduct avian breeding surveys - needed to define affected environment, impacts and mitigation;
- Conduct surveys of special status reptiles and amphibians - needed to define affected environment, impacts and mitigation;
- Develop site-specific construction traffic flow plan - needed to define affected environment, impacts and mitigation;
- Develop stormwater pollution prevention plan - needed to define mitigation;
- Develop spill prevention and control plan - needed to define mitigation;
- Develop dust control measures - needed to define mitigation;
- Develop vegetation reclamation procedures, erosion control measures, and noxious weed control measures - needed to define mitigation.

These efforts appear to be necessary to define project-specific effects and identify measures needed to mitigate identified impacts. Consequently, they should be completed and presented in the EIS. We recommend that the Bureau of Indian Affairs (BIA) and Bonneville Power Administration (BPA) ensure that all necessary analyses/studies are included in the EIS so that effects and appropriate mitigation approaches are defined and disclosed to the public (in the EIS) before decisions are made, as directed by the NEPA regulations.

The clear identification of the specific mitigation measures that would be employed with

Responses to Letter 5

5-1 The commenting agency is correct in saying that certain inventories, surveys, and plans were not included in the Draft EIS. Several of the plans (storm water and traffic) requested by the commenter are typically not included in an EIS, as they cannot be defined until the final engineering design phase of the project is completed. This phase occurs after a ROD has been reached by the appropriate agencies. Since the publication of the Draft EIS, additional wildlife surveys were completed by CTUIR Wildlife Biologist Eric Quampts, and that information has been updated in Section 3.4.1.3; impacts have been updated in Section 3.4.2.3. No new mitigation measures were identified as a result of these surveys.

As discussed in Section 3.4.1.1, an inventory of noxious and invasive weeds was developed for the Wanaket Wildlife Management Area. This study is representative of the project area because it is directly adjacent and is of a contiguous land use. Therefore, a new study was not warranted. Impacts and mitigation were likewise discussed in the Draft EIS in Section 3.4.2.3. Noxious weed control plans are appropriately addressed during the final project design and engineering phase, which typically occurs post EIS.

The development of a storm water pollution prevention plan and spill prevention and control plan would occur when the Notice of Intent to Discharge Storm Water is submitted to the USEPA (tribal lands) and ODEQ (non-tribal lands), just prior to the initiation of construction.

A traffic flow plan would be developed, in cooperation with local officials, at the time that design and engineering plans are finalized, just prior to construction.

The development of vegetation reclamation procedures, erosion control measures and dust control measures also would be addressed using best management practices as part of final project design and the plans already discussed.

Letter 5 Continued

5-1 project implementation, the identification of locations where they would be applied, and a discussion (citing applicable reports, papers, etc.) of their effectiveness in avoiding or reducing effects are needed to define project-related impacts reported in the EIS.

Air Quality

We are concerned that the information presented in the air quality section of the EIS is overly general, with little project-specific information presented to inform the public and decision maker of expected emission levels or impacts. While the EIS does present emissions and dispersion modeling information developed for the Prevention of Significant Deterioration (PSD) permit application, that information represents only a portion of the emissions and impacts that would result from the construction and operation of the proposed power plant. Consequently, we recommend that the EIS be revised to include the additional information discussed below.

Construction Emissions - Pollutants that would be emitted from construction-related activities should be explicitly identified, quantified and presented in the EIS.

Hazardous Air Pollutants - Page 3.4-6 of the EIS indicates that the proposed facility would be a source of hazardous air pollutants (HAPs). The EIS should identify the HAPs that would be emitted from the facility, the amounts emitted quantified, and their effects assessed.

Impact Assessments - The presentation of dispersion modeling results presented in the EIS should be revised to ensure that results from the most current analyses conducted for
5-2 the PSD permit are presented. The discussions should also clearly identify all of the sources included in the dispersion modeling analysis. As written, it is difficult to determine which sources (on the facility and off the facility) have been included in the modeling discussed in the EIS.

Ammonia - The EIS should include an assessment of the ammonia emissions from the facility. This analysis should identify the amount of ammonia that would be emitted from the project and include an assessment of the effects from those emissions.

Start-up Emissions - The pollutants that would be emitted during start-up conditions should be quantified and presented in the EIS. An assessment of the effects from these emissions (and their significance) should also be included in the EIS.

Cooling Tower Vapor Plumes and Drift -We were unable to determine how the conclusions related to cooling tower vapor plumes from the proposed facility have been reached. Discussions beginning on page 3.4-20 of the draft EIS present the general findings of analyses conducted for another project and lead to the conclusion that vapor plumes from the proposed plant are not "predicted." We recommend that the analysis include a discussion of how the information and conclusions cited are applicable to the currently proposed project. Without such a discussion, the conclusions do not appear to

Responses to Letter 5

5-2 Construction Emissions. During the approximately 24-month construction process, emissions would consist of fugitive dust and combustion exhaust emissions from construction equipment and vehicles. Fugitive dust emissions would result from dust entrained during project site preparation, on-site travel on paved and unpaved surfaces, and aggregate and soil loading and unloading operations. Wind erosion of disturbed areas also would contribute to fugitive dust.

Combustion emissions would result from diesel construction equipment, various diesel-fueled trucks, diesel-powered equipment (welding machines, electric generators, air compressors, water pumps, etc.), and locomotives delivering equipment, and vehicle emissions from workers commuting to the construction site.

Table ____ shows the estimated average annual heavy equipment exhaust and fugitive dust emissions for on-site construction activities over the 24-month construction schedule.

Table ____

Annual Emissions Estimated During On-site Construction (Tons Per Year)

	PM_{10}	NO_x	CO	VOC	SO_x
Construction Equipment	1.4	20.2	7.0	1.64	0.66
Fugitive Dust	39.6				
Total Emissions	41.0	20.2	7.0	1.64	0.66

Source: Wallula Genration.

The construction of the pipelines and transmission line would generate short-term emissions including fugitive dust and construction equipment exhaust emissions. Fugitive dust would be controlled by conventional construction practices (e.g., road watering, covering of dust piles, etc.) to comply with state, local, or federal regulations.

5-2 Cont'd

Hazardous Air Pollutant (HAP) Emissions and Ambient Impacts. Wanapa would emit the following hazardous air pollutants (HAPs) to be regulated by the USEPA under the project's Title V Operating Permit. HAPs are probable or known carcinogens that may be linked to health effects in humans from long-term exposure. The following table shows the emission rates and ambient impacts for each HAP.

Table _____

Pollutant	Potential Emission Rate (lb/hr)	Potential Emission Rate (tpy)	Ambient Impact (24-hour) (ug/m^3)	Ambient Impact (Annual) (ug/m
1,3-Butadiene	1.08E-03	4.72E-03	5.71E-04	3.25E-04
Acetaldehyde	0.10	0.44	5.31E-02	3.02E-02
Acrolein	1.60E-02	7.03E-02	8.49E-03	4.85E-03
Benzene	3.01E-02	0.13	1.59E-02	9.08E-03
Ethylbenzene	8.02E-02	0.35	4.25E-02	2.42E-02
Formaldehyde	1.78	7.8	9.42E-01	5.38E-01
Hexane	0.54	2.36	2.85E-01	1.63E-01
Naphthalene	3.26E-03	1.43E-02	1.72E-03	9.84E-04
PAH	5.52E-03	2.42E-02	2.92E-03	1.66E-03
Propylene Oxide	7.27E-02	0.32	3.85E-02	2.19E-02
Toluene	0.33	1.43	1.72E-01	9.84E-02
Xylenes	0.16	0.70	8.49E-02	4.85E-02

These emission levels qualify Wanapa as a major source of HAPs under the National Emission Standards for Hazardous Air Pollutants (NESHAP) program. The applicable standards under the NESHAP program would be regulated under the projects' Title V Operation Permit, to be issued by the USEPA. Emissions of HAPs from the turbines are controlled through the use of the oxidation catalyst control device.

Ammonia. Wanapa would emit ammonia from the steam generator stacks at a maximum concentration of 5 ppm, per the draft air quality permit from the USEPA. This emission rate would result in a maximum annual ambient impact (at the receptor with the highest concentration of ammonia) of 1.20 parts per billion (ppb). Ammonia impacts from Wanapa at other locations within the 10 kilometer monitoring grid are much lower than this amount. This maximum impact can be compared with typical background concentrations of ammonia in grassland areas of 10 ppb.

Start-Up Emissions. Startups of the individual gas turbines are characterized in terms of the length of shutdown time, and the corresponding steam drum metal temperature during startup. Depending on the length of time that has elapsed since the unit last shut down, the type of startup is referred to as a "cold," "warm," or "hot" start.

Responses to Letter 5

Emissions of NO_x, VOC, and CO have been estimated for each of the three types of starts, as shown in **Table _____** below.

Table _____
Estimated startup emissions of NO_x, VOC, and CO (per turbine)

Type of Start	Length of Start (hrs/start)	NO_x Emissions (lb/start)	VOC Emissions (lb/start)	CO Emissions (lb/start)
Hot Start	2	204.32	31.27	618.28
Warm Start	2.75	282.73	42.66	882.42
Cold Start	3.5	361.14	54.04	1146.56

Emissions from an estimated number of startups are considered in the dispersion modeling analyses for Class I and Class II air quality impacts, and for Class I acid deposition and visibility impacts.

Cooling Tower Drift. The effects of cooling tower drift on vegetation have been re-evaluated based on additional deposition information. This information is presented in _____.

CO_2 emissions. Emissions of carbon dioxide (CO_2), methane, and nitrous oxide from Wanapa have been estimated at the rates shown in **Table _____** below when operating at maximum firing rates for an entire year.

Table _____
Greenhouse Gas Emissions from Wanapa Energy Center

Pollutant	Annual Emissions (1,000 tons)	Global Warming Potential (GWP*), 100-yr	Annual Emissions, CO_2 Equivalent (1,000 tons)
CO_2	4594.6	1	4594.6
Methane	0.28	21	5.8
N_2O	0.0055	310	1.7
Total			4602.2

*Global Warming Potential: A measure of how much a given mass of greenhouse gas is estimated to contribute to global warming. It is a relative scale which compares the gas in question to that of the same mass of carbon dioxide, whose GWP equals 1.

This quantity of CO_2 emissions from Wanapa corresponds to 4.17 teragrams of CO_2. According to the USEPA's GHG Inventory 2004, "Inventories of U.S. GHG Emissions and Sink: 1990-2002," the U.S. emitted a total of 5,782.4 teragrams (Tg) of CO_2 in 2002. The Oregon Department of Energy, in their "Report on Reducing Oregon's Greenhouse Gas Emissions" (http://www.energy.state.or.us/climate/gggas.htm), forecasts statewide CO_2 emissions of 67.017 million tons in 2005.

Letter 5 Continued

5-2

be supported. Conclusions related to the potential significance of impacts from cooling tower drift should also be better supported with additional discussion. The information presented does not support the conclusion of "anticipated low level of impact."

CO_2 Emissions - The EIS should present estimated CO_2 emissions from the project, contrasted with state, regional or national CO_2 budgets.

Cumulative Effects

The NEPA regulations require Federal agencies to evaluate direct and indirect effects (including cumulative effects). The NEPA regulations define cumulative effects as those that result from the incremental impact of the proposed project when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes these actions (40 CFR 1508.7). We recommend consulting *Considering Cumulative Effects Under the National Environmental Policy Act* issued by the Council on Environmental Quality in 1997 in the further development of the cumulative effects analysis for this EIS.

5-3

Air Quality - The EIS presents no evidence that a project-specific cumulative effects analysis has been conducted in the development of this EIS, as required by the NEPA regulations (see 40 CFR 1502.16). Section 6.3.4 of the EIS presents a very general discussion of modeling that has been conducted in the development of the PSD application and by BPA in evaluating broad-scale effects of additional power generation in the region. The EIS provides neither the results of those analyses nor any discussion of how those analyses are sufficient to assess cumulative effects consistent with NEPA direction. While the BPA studies provide valuable insights into potential effects from new power generation sources, they do not represent a comprehensive cumulative effects analysis because they do not account for contributions from existing sources or reasonably foreseeable non-power generation sources. In the context of NEPA, cumulative effects are those that result from the incremental impact of the action (in this case, the Wanapa Energy Center) when added to other past, present, and reasonably foreseeable future actions. With the exclusive focus of the BPA studies on proposed power generating sources, important elements of a cumulative effects analysis are not contained in the evaluation. Consequently, we recommend that the EIS be revised to include an analysis of cumulative effects, consistent with the direction of the NEPA regulations.

5-4

Biological resources - In describing the cumulative effects that are apparently associated with water withdrawal, Section 6.3.3 of the EIS states that the "potential cumulative withdrawal effects as well as entrainment effects have already been considered" with respect to the water intake structure. The reports or studies where these effects have been evaluated should be cited and their results summarized and presented in the EIS. Lacking this information, the EIS contains no assessment of the cumulative effects associated with water withdrawal from the Columbia River.

Responses to Letter 5

5-3 A dispersion modeling analysis was conducted for Wanapa to assess the impacts of the proposed project, combined with the impacts of nearby sources and baseline emissions in the area within 10 km of Wanapa. This area is designated as a Class II area for air quality standards. In the initial dispersion modeling analysis for this area (Class II analysis), emissions of NO_x and PM_{10} from Wanapa resulted in impacts above the significant impact thresholds (see **Table 3.5-7**). These results triggered a more refined modeling analysis of the total impacts in the area (NAAQS analysis), and of the deterioration in air quality in the area since the PSD baseline dates (PSD Increment analysis). These refined modeling analyses included impacts from other sources in the area that might also affect the air quality.

The following procedures were followed to identify the nearby sources and determine which to include in the NAAQS and PSD Increment analyses:

- Determined the distance from Wanapa to the furthest location exhibiting a significant impact. This distance was 1.5 km for NO_2 and 17.09 km for PM_{10}, and is called the Significant Impact Area (SIA).

- Obtained emission inventories from the Washington Department of Ecology (Ecology) and the Oregon Department of Environmental Quality (DEQ) for all industrial sources located within the SIA plus 50 km (i.e., 51.5 km from Wanapa for NO_2 sources and 67.09 km away for PM_{10} sources).

- A screening method, based on allowable emission rates and distance from the facility, was applied to screen out sources with impacts too low to significantly affect air quality within the SIA. As a conservative measure, the emission thresholds that would trigger inclusion in the nearby source inventory were halved from those recommended under Oregon DEQ modeling guidance (i.e., it was made more difficult to exclude sources from the refined modeling analysis). Additionally, before removing a source from the list, it was modeled using a screening dispersion model (SCREEN3) to verify that it would not have a significant impact at any location within Wanapa's SIA.

- The remaining nearby source list was included in NAAQS and PSD Increment analyses for Wanapa. Emissions from these sources were modeled at their maximum allowable emission rates. This method contrasts with the PSD modeling analyses performed for most other power projects in the Northwest, which only included recent actual emissions from nearby sources. This more conservative method ensures that the modeling analysis accounts for reasonable foreseeable future growth of surrounding industrial facilities.

5-3 Cont'd

The final list of industrial sources included in the modeling analysis is shown below.

Table ____
Industrial Sources Included in the Class II Area Nearby Source Inventory

Facility	Location
ConAgra, Inc.	Umatilla, OR
HPP Generating	Hermiston, OR
Hermiston Generating	Hermiston, OR
Umatilla Generating	Hermiston, OR
PGE Boardman	Boardman, OR
NW Pipeline (Plymouth Plant)	Plymouth, WA
Proposed Wallula Power Plant	Wallula, WA
PG&E Gas Transmission NW	Wallula, WA
Blue Mountain Asphalt	Hermiston, OR
J-M Manufacturing	Umatilla, OR
Umatilla Ready Mix	Hermiston, OR
Burns Funeral Service	Hermiston, OR
Hermiston Foods	Hermiston, OR
JR Simplot Company	Hermiston, OR
U.S. Army Umatilla Chemical Depot	Hermiston, OR
Northwest Pipeline Corporation	Stanfield, OR
Lamb-Weston, Inc.	Hermiston, OR
Celpril Industries, Inc.	Hermiston, OR
Pacific Chemical Corp	Boardman, OR
Gunderson Northwest	Finley, WA
Boise Cascade	Wallula, WA
Transtate Asphalt	Richland, WA
Plymouth Energy LLC	Plymouth, WA
Plymouth Tomato Farm	Plymouth, WA
Hermiston Rock Products	Hermiston, OR

In the NAAQS analysis, the impacts of the maximum allowable emissions from Wanapa and the surrounding industrial sources were modeled. A background concentration was added to the modeling results to represent background pollutant concentrations from farming activities, mobile sources, natural pollutant concentrations, and more distant sources. A conservative background concentration was obtained by using the monitored concentrations at the NO_2 and PM_{10} monitors located at the Coyote Springs Plant in Boardman, Oregon. For the 24-hour PM_{10} standard, a monitored concentration of 105 mg/m^3 was used in the analysis. This concentration represents the single highest day of ambient PM_{10} concentrations from a year of data. (The second-highest daily concentration was 81 mg/m^3, and the average concentration was 20 mg/m^3). This background concentration, representing the single highest day of observed concentrations at the monitor, was added to the maximum impact from the dispersion modeling results. This method results in a very conservative estimate of emissions, since in reality, the highest impacts are unlikely to occur on the same day as the highest background concentration. The annual average from the monitoring data was used for the background concentration for the annual averaging period.

Responses to Letter 5

In the PSD Increment analysis, the impacts of the maximum allowable emissions from Wanapa and the surrounding industrial sources were modeled. The purpose of the PSD Increment analysis is to measure the change in ambient air concentrations after specified PSD baseline dates as a result of new sources of emissions constructed after those dates, and pre-baseline sources of emissions that have been retired since those dates. To provide a conservative estimate of impacts, it was assumed that all sources in the area were installed after the PSD baseline dates.1 An evaluation of vehicle emissions and ship/barge emissions in the nearby area also was conducted to determine whether emissions from those sources have increased since the baseline dates and should be included in the analysis. The evaluation concluded that efficiency gains and switching to lower-sulfur fuels over time has more than offset any traffic increases from mobile sources. Since the net emissions of mobile sources have decreased over time, these emissions were not included in the modeling analysis.

The results of both the NAAQS and PSD Increment analyses have been included in the Final EIS page in Section 3.5.2.2.

1The PSD baseline dates for PM_{10} are 1/6/75 for major sources, 8/7/77 for minor sources in Oregon, 12/14/77 for minor sources in Washington, and 6/24/94 for minor sources on Tribal lands. The PSD baseline dates for NO_2 are 2/8/88 for major sources in all areas and minor sources in Oregon, 2/11/92 for minor sources in Washington, and 6/9/90 for minor sources on Tribal lands.

5-4 The potential impacts of water withdrawal from the Columbia River on federally listed salmonid species were accounted for in the previous National Environmental Policy Act (NEPA) and Section 7 analyses for the Port of Umatilla Water Supply. The potential effects of withdrawing up to 62 cfs for the Port of Umatilla were analyzed in a Biological Assessment in 1993. A concurrence letter was written by NMFS on March 4, 1994 that stated, "…NMFS concurs with USACE's determination that the proposed construction of water intake pump station in the Columbia River near Umatilla, Oregon (Permit Application Number 93-00941) is not likely to adversely affect listed Snake River sockeye salmon, Snake River spring/summer, or Snake River fall chinook salmon." The proposed water volume for the Wanapa Project is within the Port's 62 cfs volume analyzed in the previous NEPA and Section 7 evaluations.

Letter 5 Continued

Consistency with the Federal Columbia River Power System Biological Opinion

The EIS does not present an assessment of whether the proposed water withdrawal from the Columbia River for the project would conform with the requirements of the 2000 Biological Opinion (BO) issued by the National Marine Fisheries Service (NOAA Fisheries). It is our understanding that analyses in the BO are based on withdrawals that are being used (not those
5-5 that are permitted). Because the proposed withdrawal is part of a water right that is not currently being used, it appears to fall outside the analyses and findings of the BO. Consequently, the EIS should present a demonstration that the proposed withdrawal would conform with the BO and the conservation objectives it is designed to achieve. As part of this analysis, the EIS should identify mitigation measures that would be implemented when the target flow objectives of the BO are not being met.

Range of Alternatives

We are concerned with the narrow range of alternatives being evaluated in the draft EIS. The EIS does not include an evaluation of alternative locations or sizes for the proposed power plant. While page 2-45 indicates that other sites in Umatilla and Morrow counties were considered prior to selecting the proposed site (presumably by the applicant), the EIS does not identify the sites considered nor does it indicate how each of the sites relates to the criteria used to determine the suitability of each site in meeting the purpose and need for the project. With the elimination of all alternatives to the applicant's proposed power plant from detailed review, the EIS essentially evaluates a single action alternative and a no action alternative. The other "alternatives" being evaluated (different pipeline and transmission line alignments) represent variations of project components that should be evaluated in the EIS, but do not represent alternatives to the proposed action as none of them would individually meet the purpose and need to generate and transmit power if selected.

5-6 The evaluation of a single power plant alternative seems to be inconsistent with the direction of the National Environmental Policy Act (NEPA) regulations to "present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options to the decision maker and the public" (see 40 CFR 1502.14). The EIS provides no evidence that BIA, as the lead Federal agency, has subjected the proposed power plant to an independent, hard look to ensure that reasonable alternatives (particularly related to plant location and size) have been rigorously explored and objectively evaluated in the EIS, per the NEPA regulations. Alternative plant locations and sizes could potentially meet the purpose and need for the project while reducing environmental (and other) effects. Alternative plant locations and sizes would also directly influence BPA's decision on whether and how to provide transmission service to the project (as well as associated effects and costs). Consequently, we believe that it is incumbent on BIA to ensure that the NEPA process is used to rigorously explore and objectively evaluate all reasonable alternatives to meet the underlying purpose and need (per 40 CFR 1502.13 and 1502.14), before Federal decisions are made and resources are committed. Results of such evaluations should be reported in the EIS.

Responses to Letter 5

5-5 The USEPA noted, in regards to the project's use of an existing water right from the Columbia River, that the Draft EIS did not address the applicability of NOAA Fisheries' 2000 Biological Opinion, issued under the Endangered Species Act, about impacts to listed species habitat from the management of the Columbia River by three federal agencies – BPA, the USACE and Reclamation. The Biological Opinion on operation of the Federal Columbia River Power System (2000) has no relevance to any aspect of the proposed Wanapa Energy Project because the Project would not affect river operations.

The Project would receive its water from an existing Regional Water System and would be a customer of the Port of Umatilla and the City of Hermiston under essentially similar purchase contract as Hermiston Generating, Umatilla Generating and the Port's other industrial customers The water in the Regional Water System comes from a pre-1979 water right belonging to the Port of Umatilla, which would conform to any applicable federal and state statutory and regulatory requirements. It appears from the precedent that this Project would be able to purchase all its water needs from the same regional water system if it is constructed at the same location, but outside tribal trust land. Therefore, due to the existence of water rights and the concurrence statement by NMFS noted above, the allocated water in the Regional Water System is available and would be used by other users similar to Hermiston Generating and Umatilla Generating power plants whether Wanapa Project is constructed or not. However, discussions with NOAA Fisheries would resolve whether the Project must take certain water replacement mitigation actions not required or implemented by similar projects to comply with the Endangered Species Act.

No change to the existing §404 permit, issued by the USACE for the Port's water supply, is necessary or currently planned. The federal authorizations related to the Wanapa Energy Project are BPA's transmission system interconnection at McNary Substation, federal authorizations related to the Wanapa Energy Project are BPA's transmission system interconnection at McNary Substation, Reclamation's license to store plant discharge water in Cold Springs Reservoir for irrigation use, the USEPA's new source air permit under the Clean Air Act, and BIA's approval of the lease; none of these actions concern operation of the Federal Columbia River Power System.

5-6 In order to diversify the tribal source of income, and reduce its reliance on casino business and federal grants, CTUIR decided to develop an industrial base on the land held in trust for them. Therefore, one of the primary aspects of the project's purpose and need is to provide a steady, and reliable source of revenue derived from an industrial base to the CTUIR. This clarification of the purpose and need is further discussed in Section 1.2. Since the Tribes considered other tribal lands on the reservation not to be suitable for industrial development and construction of a power plant, they designated the land in Section 7 for this purpose. The tribe's goal for the development of a power plant on this land would be to supply power for its own use and the Northwest market. The BIA's permission is required in order to lease this tribal land at this location.

Letter 5 Continued

Coordination with other Decision Making Processes

Page 1-10 of the draft EIS indicates that the proposed wastewater discharge to Cold Springs Reservoir would require approval of the U.S. Department of Interior Bureau of Reclamation (BOR), yet it does not appear that the BOR is a cooperating agency on this EIS. Because more than one federal agency is involved in what must be considered either the "same action" or "a group of actions directly related to each other because of their functional interdependence" (see 40 CFR 1501.5), it appears that the BOR should be an active, formal participant in the further development of this EIS. Having the BOR conduct a separate and independent environmental review may result in improperly segmented consideration of environmental impacts and failure to explore viable alternatives that could mitigate impacts. To ensure a thorough environmental review of the project in its entirety, EPA recommends that BIA work with the BOR to include an expanded evaluation of wastewater discharge alternatives and associated effects in any further evaluation and document development . We recommend that

5-7 BIA invite the BOR to become a cooperating agency on this EIS to ensure that spirit and intent of the NEPA and its implementing regulations to evaluate potential Federal decisions in an integrated and interdisciplinary manner are met (see Section 102 of NEPA and 40 CFR 1500.2(c), 1500.4(k), 1501.2(d)(3), 1502.14, 1502.15, 1502.16).

Page 1-12 of the draft EIS indicates that Oregon Energy Facility Siting Council (EFSC) approval is required for ancillary facilities (natural gas and wastewater pipelines) that cross non-Federal or non-Tribal public and private lands. The EIS also states that these decisions would require a separate state-administered process. We recommend that the BIA work with the EFSC to better align the current EIS process with the EFSC process, consistent with the NEPA regulations direction to integrate NEPA requirements with other environmental review and consultation requirements (see 40 CFR 1500.4(k)). Better coordination would allow issues identified and analyses conducted in satisfying State of Oregon requirements to be reported in the EIS. This will provide the public and the decision makers with a more complete understanding of the issues and effects of the project in its entirety, prior to decisions being reached.

National Pollutant Discharge Elimination System (NPDES) Permit

Wastewater discharge from the proposed plant would to waters regulated by the State of Oregon. As a consequence, the NPDES permit needed for the preferred alternative would be

5-8 issued by the Oregon Department of Environmental Quality (ODEQ). We recommend revising Tables 1.3-1 and 1.4-1 to indicate that the NPDES permit needed for the proposed project would be issued by the ODEQ. The discussion in the last paragraph on page 3.2-14 should also be revised to indicate that the necessary NPDES permit would be issued by the State of Oregon.

Responses to Letter 5

5-6 Cont'd

The presentation of alternatives in the EIS reflects the complexity of jurisdictions and authorities involved in siting an economic development project on both tribal and non-tribal lands. The EIS discussed alternative energy development options for the site, as well as alternative locations for siting a power plant on other tribal lands in Section 2.5. The Board of Trustees for CTUIR has determined that the best use of Chapter 7 tribal trust land is energy development. As such, the Proposed Action, and alternative design of lateral facilities, do meet the purpose and need, to provide revenue to CTUIR, as stated in Section 1.2.

5-7 As recommended by the USEPA, the U.S. Department of Interior, Reclamation was invited by BIA to be a cooperating agency and Reclamation has agreed.

The USEPA recommended that the BIA coordinate the siting process with Oregon's Energy Facility Siting Council (EFSC). It was not expected that the State of Oregon through its Department of Energy (ODOE) EFSC would permit the natural gas pipeline located outside of the tribal land. However, after further discussion with ODOE, it was determined that the project would likely go through the EFSC process for permitting of the water pipelines and other ancillaries that do not fall within Tribal and/or Federal jurisdiction. EFSC has specific procedures[1] that would apply in pursuing the permitting of the gas pipelines. All efforts would be made to align these processes as much as possible.

Through the early development of this project, it was recognized that re-use or disposal of plant discharge water from Wanapa would be a complex issue, requiring a creative solution. Initial ideas for discharge included returning the water to the Columbia River, providing water to the adjacent Wanaket Wildlife Refuge, land applying, and discharge into another water body. These alternatives were eliminated from consideration for a variety of reasons. A discussion of the alternatives considered but eliminated are included in Section 2.5.5 of the Final EIS.

[1] Oregon EFSC procedures and processes are in accordance with requirements of the Oregon statutes which can be found in (www.energy.state.or.us/siting) under the heading, "Energy Facility Siting (the sitting process, standards and laws)."

5-8 The plant discharge water to Cold Springs Reservoir would be regulated and permitted under the State of Oregon's NPDES permit program. Storm water discharges from the plant site during construction and subsequent operation would be regulated and permitted under the USEPA Region 10's NPDES permit program. Storm water discharges from construction of the linear facilities not located on tribal trust land would be regulated and permitted under the State of Oregon's NPDES permit program. **Tables 1.3-1** and **1.4-1** have been revised to incorporate the recommended comment about the ODEQ and NPDES.

Letter 6

Umatilla County
Board of County Commissioners

Commissioners

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December 29, 2003

Mr. Philip Sanchez
Bureau of Indian Affairs
46907 B Street
Pendleton, OR 97801

RE: Draft EIS for Wanapa Energy Center

Dear Mr. Sanchez:

Umatilla County offers the following comments for the draft Environmental Impact Statement (EIS) for the Wanapa Energy Center. In addition to making our comments part of the record we would also appreciate a direct response from you. Where the EIS is a disclosure document and not a record to demonstrate compliance with standards, as is the case with the standard regulatory process, we request you tell us how the Bureau of Indian Affairs intends to address our concerns.

6-1

NATIONAL AND REGIONAL POWER PERSPECTIVE
The natural gas-fired electric power generating facility will rely on natural gas, a non-renewable fuel source. The recently adopted federal energy policy discourages reliance on non-renewable energy sources. We support a diverse power generation system, including combined-cycle natural gas, wind, coal *and hydroelectric* generation. Because we support the use of hydro power, we hope that the proposed Wanapa project is not intended to replace the McNary or other hydro projects. As a matter of public interest and public policy, this should be addressed in the EIS and elsewhere.

The utilization of natural gas for generating electricity has gained acceptance in the industry, but there is the side-effect on the price of natural gas. As that price is driven up, there is a proportionate effect on consumers both of natural gas and the electricity which is generated by using that fuel source. We would like to see some analysis in the EIS of those cause-effects, and of the question whether consumer's costs for both are affected beneficially or negatively.

6-2

AIR QUALITY - Health, Environmental and Economic Concerns
The Wanapa project will have a measurable impact to air quality. While our

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Responses to Letter 6

6-1 As presented in the Draft EIS, the electrical energy needs of the Northwest would grow beyond the existing generation capacities. Projects such as Wanapa are needed to provide for the growth demand of the Pacific Northwest. The proposed natural gas-fired power plant would not replace hydropower sources. The Umatilla Board of Commissioners correctly points out that the use of natural gas for power generation influences the price of natural gas used by consumers and other industries. It is expected that the Wanapa Project would operate on the basis of long-term power contracts. As a consequence, the price of power is not expected to fluctuate over a wide range, even though it is possible that the short-term price of natural gas may increase or decrease sharply.

In the report *Convergence: Natural Gas and Electricity in Washington* (2001), the Washington State Office of Trade & Economic Development (OTED) creates a more cautionary picture of future natural gas supply in light of potentially high cumulative demand. A summary of that report has been added below.

Although OTED agrees that enough natural gas reserves and transmission line capacity can be developed to support the predicted expansion of the natural-gas fired electricity generation market in the Pacific Northwest, the report warns that the timing of new plants coming online and the expansion of the region's ability to deliver low-priced gas would significantly impact the stability of the market.

As stated in the report, "if all of the necessary events don't occur in the proper sequence, the industry may experience price spikes leading to temporary economic dislocation, long-term upward pressure on gas prices, or both." The report further cautions that "wholesale electricity and natural gas prices are subject to extreme price volatility, and increasing convergence of the electricity and natural gas markets means that extreme events are likely to affect both markets simultaneously."

Inflated natural gas and electricity prices also could translate into higher residential rates, as was seen in 1999 and 2000 when a combination of high electricity prices, reduced natural gas inventories, and a heavy reliance on natural gas for electricity generation forced sizable and sustained natural gas rate increases. The table below provides average natural gas bill information for households in 1999 and 2000, demonstrating the substantial rate increases that occurred due to volatility in the natural gas market. Furthermore, due to the purchasing mechanisms in place in Washington, volatility in the wholesale electricity market is often passed on to retail customers.

Table ____
Average Monthly Household Natural Gas Bill for Washington Utilities

Provider	Customers	Jan 1999	Jan 2000	Sep 2000	Jan 2001
Puget Sound Energy	591,000	$41	$47	$61	$77
Cascade Natural Gas	145,000	$37	$41	$45	$60
Avista	119,000	$27	$31	$42	$55
Northwest Natural Gas	38,000	$32	$36	$49	$49

Source: OTED 2001.

Letter 6 Continued

communities tolerate a limited impact to the airshed, particularly where an individual project will meet federal air quality standards, we are concerned about the cumulative impact to human health, the environment and the local economy. The Department of Environmental Quality's Oregon Air Quality Data Summaries documents human health and environmental conditions in the Columbia Basin. Despite our rural character, or perhaps because of it, the Columbia Basin has a number of conditions threatening our airshed health. Power generation facilities are one. In the context of the EIS, our concern is not only the specific air contaminants attributable to the Wanapa project, but also the cumulative integer Wanapa contributes to the regional airshed and whether it may preclude other development.

6-2

The EIS does not impartially address the cumulative air impacts. For example, the EIS draws a comparison between Wanapa and the Boardman Coal-fired plant. A more accurate comparison would be one of the existing gas-fired plants. There are many reasons to distinguish the coal-fired plant: it utilizes older technology but was permitted under different standards; it is an economical and fiscally feasible facility; it has reliable contracts for coal derived from the United States; it is a reliable source of power; and it contributes significantly to the tax base of Morrow County.

The EIS references a 2002 BPA study that projected the impact of up to 24,000 MW of power generation in the area. The study concluded there "were no expected exceedences of ambient air quality standards" (Page 6-4). However, the BPA study did not measure air discharge from other sources, such as manufacturing, agriculture, and the Umatilla Chemical Depot incinerator. It is misleading to isolate power plants as part of the analysis in order to promote the proposed project, when the airshed is impacted by a vast number of point and non-point source pollution sources.

The EIS should judiciously describe the precise impact Wanapa would have on the regional airshed, and the associated avoided economic development opportunities.

6-3

WATER

The Wanapa project will utilize 23 cfs of water, or 34 percent of the Port of Umatilla/Hermiston 155 cfs water right. . This volume of water is portrayed in the EIS as a relatively small amount compared to the total Columbia River flow. While we support the use of Columbia River water, by permitted and yet-to-be-permitted water right holders, we are again concerned about the avoided or displaced opportunities this presents. Those 23 cfs of water could serve a city the size of Umatilla or be used to support other industry, or, to recharge declining aquifers (such as the designated Critical Groundwater Areas in the Lower Umatilla

Responses to Letter 6

The price of natural gas would vary due to the market conditions, increase in competition, competing fuels and the development of new technologies. Regardless of current supply and demand and future predicted market characteristics, the use of gas, its cost, and the potential for new gas reserve development (or alternatives to it) is determined by market forces.

Therefore, the benefit to the consumer would come from the stability and reliability of supply of power. Natural gas fired plants would provide diversity of fuel and flexibility of operation that would aid the stability of the power market, particularly in the years when hydropower generation is reduced by drought.

6-2 (a) Cumulative Effects. See response to Comment 2-1 for cumulative effects analysis for Class I areas and response to Comment 5-3 for cumulative effects analysis for Class II areas.

(b) Future Growth. Some concern is expressed about the air quality impacts for PM_{10} in the Class II areas having the potential to preclude future industrial growth in the Hermiston/Umatilla area. It appears that this concern may stem from the way the results of air quality dispersion modeling were presented in Section 3.5.2.2. In fact, the dispersion modeling analysis evaluated air quality concentrations at a total of 20,339 locations within 10 km of Wanapa. The project impacts presented in **Table 3.5-8** of the Draft EIS show the modeled impacts at the single location that received the maximum impact for each pollutant and averaging period. Impacts from Wanapa at most other locations are substantially lower. To help illustrate this point, the following figures showing the impacts of Wanapa emissions within 10 km surrounding the facility are provided. These figures show not only the location of highest impact, but also the other locations within the modeling evaluation for a comparison of relative impacts. These figures show that most areas near the facility have ambient impacts far below maximum impact from the facility.

Responses to Letter 6

Figure H-3
Significance Analysis: Maximum 24-Hour Average PM_{10} Concentrations for 1997
(Significance Level = 5µg/m³)

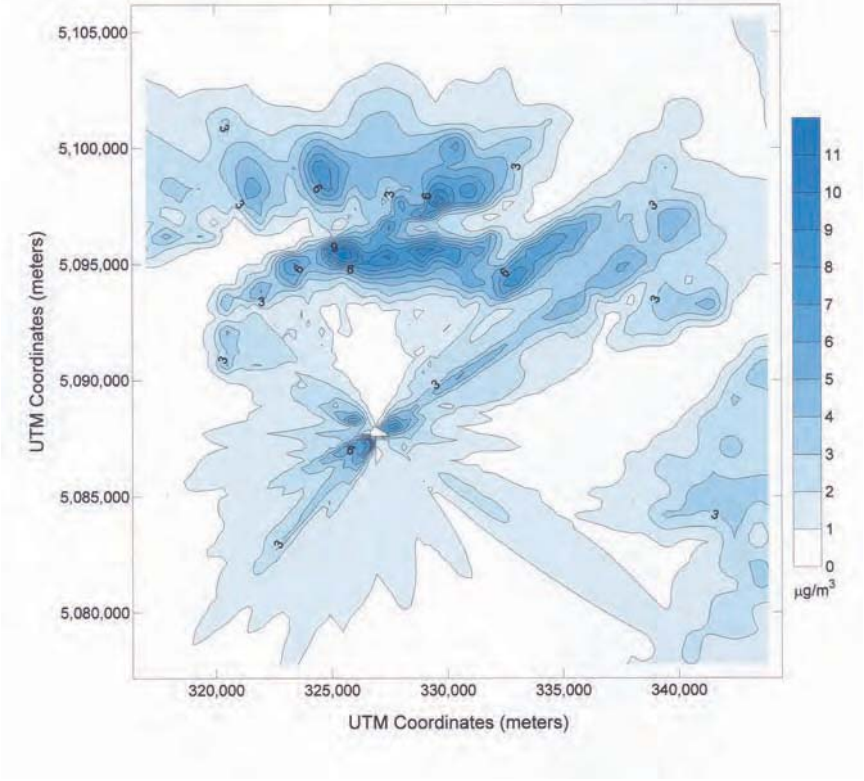
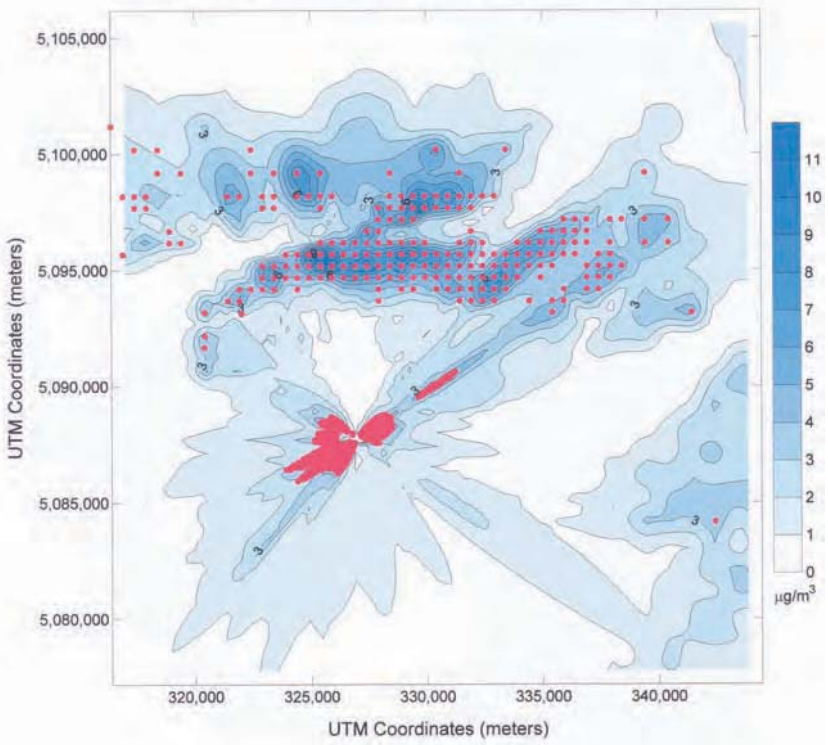


Figure H-4
Significance Analysis: Maximum 24-Hour Average PM_{10} Concentrations for 1995
(Significance Level = 5µg/m³)
Receptors with impacts above the significance level are shown in red.



Responses to Letter 6

Figure H-5
Significance Analysis: Maximum Annual Average PM_{10} Concentrations for 1999
(Significance Level = 1μg/m³)

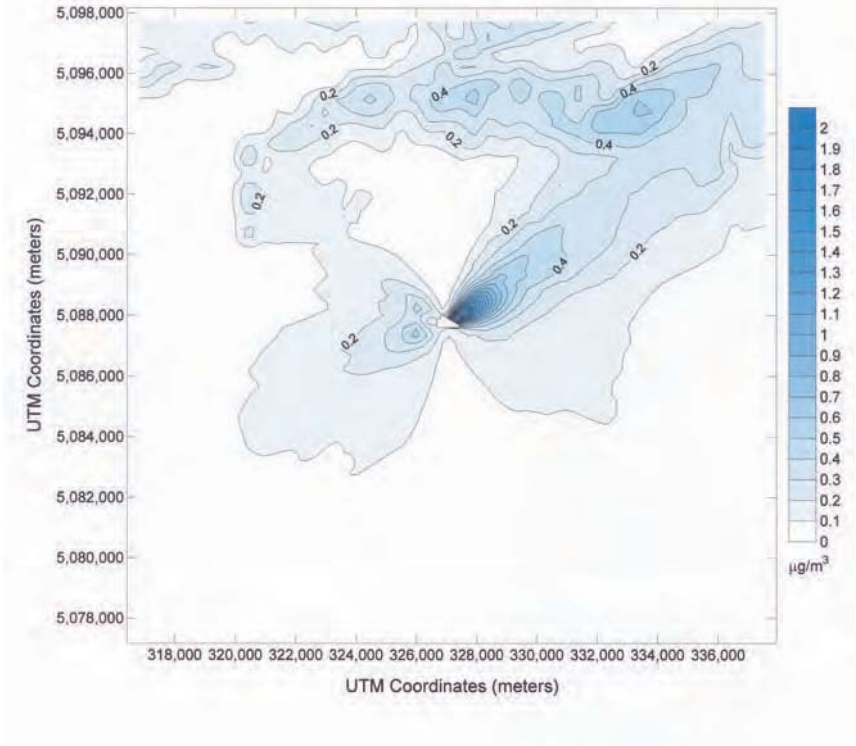
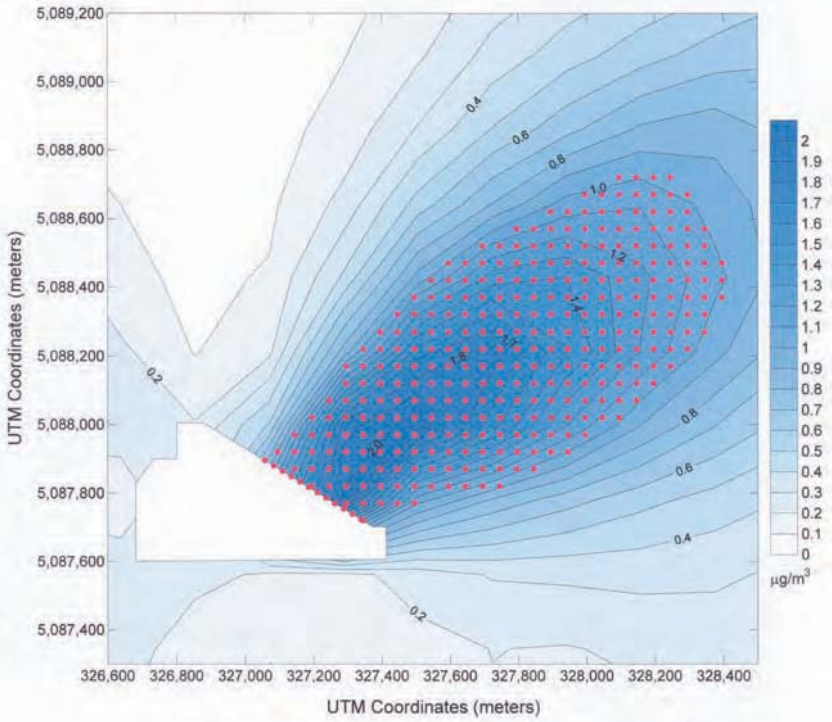


Figure H-6
Significance Analysis: Maximum Annual Average PM_{10} Concentrations for 1999
(Significance Level = 1μg/m³)
Receptors with impacts above the significance level are shown in red.



(c) Comparison between Wanapa and Boardman Coal-fired Plant. The comparison of emissions from Wanapa to the Boardman coal-fired power plant was made to contrast the relative air pollution impacts of using natural gas power to those of coal. This contrast in fuel types is important to the discussion, but as the Board of Commissioners correctly notes, a comparison to other natural gas fired plants also is important. Wanapa would operate with the best available control technology (BACT). **Table 3.5-5** summarizes the emission levels for NO_x and CO emissions from the plant and provides a comparison to other recently built and/or permitted natural gas fired power plants in the region. This comparison to other natural gas fired plants shows that from the nine such plants, only two other plants would have the same emissions of NO_x and CO and the pollution controls for these pollutants, as does the Wanapa project. These emission levels (2.0 ppm NO_x and 2.0 ppm CO) would be incorporated into the air permit for Wanapa along with corresponding monitoring and reporting requirements.

Responses to Letter 6

6-3 Concern was expressed about displaced opportunities to use the Port's water right for other purposes including recharging the Critical Groundwater Area in the Lower Umatilla Basin Groundwater Management Area. Every future permitted use of water would displace opportunities for other uses of that same water. It is considered too speculative to try to analyze the socioeconomic impact of such lost opportunities without knowing specifically what opportunity is being lost. The project is located in an area that has seen limited growth despite intensive efforts by the County, Port of Umatilla and local municipalities to attract new businesses. Large portions of the Port's water rights allocated for the industrial use remain available for such use. In addition, under State law the water right involved is not available to be used to recharge the Critical Groundwater Areas in the Lower Umatilla Basin Groundwater Management Area because it is not an irrigation water right.

Water withdrawal is based on weather conditions. The average water withdrawal rate for the project is 12.4 cfs[1] (average flow rate annualized over 12 months), which is approximately 8 percent of the Port of Umatilla's 155 cfs water right. The maximum water withdrawal rate is 17.7 cfs[2]. At night and during cool months, the plant does not use as much cooling water as during the 110ºF hot summer hours (day). While the maximum flow is 12 percent of the Port's water right, on the yearly average basis, the plant's average water withdrawal is 8 percent of that water right. The total of existing withdrawals combined with the water for the Wanapa project would be approximately 41.1 cfs, which represents 26.5 percent of the Port of Umatilla's water right. Therefore, most of the Port's water right (73.5 percent) would still remain available for future uses. However, based on the existing water right, none of this water can be used to recharge the aquifer. See Section 2.3.3.3 for water supply volumes in various units.

[1] 5,550 gallons per minute, 8.02 MGD, 24.6 acre-feet/day, 8,979 acre-feet/year.

[2] 7,975 gallons per minute, 11.5 MGD, 35.2 acre-feet/day, 12,864 acre-feet/year.

Letter 6 Continued

Basin Groundwater Management Area).

6-4 POWER TRANSMISSION - Existing Capacity, Safety, Environmental Impact
We understand the Bonneville Power Administration electric power transmission system is currently at capacity and significant new transmission facilities would need to be constructed to wheel power from the proposed Wanapa plant to the west side of the state. This secondary impact, construction of a new transmission system between McNary and John Day Dam, is not addressed in the EIS. A new transmission system will likely be necessary in the near future in order to meet energy demands in the Pacific Northwest, particularly if power plants continue to be constructed away from the population centers. The Wanapa project would accelerate this transmission issue, whether it advances the need for construction, or forces an alternate location, this subject should be addressed in the EIS. The construction and presence of transmission lines have impacts to the communities, both positive and negative.

6-5 NATURAL GAS LINES - Community Impact and Safety
Natural gas is the primary fuel source for the proposed plant. Approximately 10 miles of new pipeline will need to be constructed to serve Wanapa. This is more than twice the length of natural gas pipeline constructed for the other gas fired plants in Umatilla County. Further, the proposed gas line will impact a number of private residences where the other gas lines avoided close proximity to residences. The safety concern should be paramount, but the environmental impact is also considerable. The EIS does not defend alternate routes and only concludes very generally that a gas line is necessary. A fair assessment may be to value the cost and risk to construct the line versus no construction.

6-6 SOCIOECONOMIC IMPACTS
We disagree with the conclusion that Wanapa will contribute additional employment and taxes to the local and regional economy. The employment will indeed increase during the construction period, but there is no formal position about using locals in construction, nor about training and employing current residents of West Umatilla County to work at the plant after it is operating. Construction of the facility may very likely preclude development of other industry, as we described above in connection with the impact to air and water resources. There is a finite amount of impact that air and water can tolerate and remain sustaining. Finally, Wanapa will not pay local property taxes or contribute directly to school districts, fire districts, county road maintenance or to promote other economic development in the region. These factors should be quantified and qualified as part of the EIS so that members of the community can accurately determine the value of the project.

Responses to Letter 6

6-4 BPA has completed its EIS for the McNary John Day Transmission Line and has received the required federal, state, and local permits to construct this additional transmission capacity. The construction of this transmission line would address the transmission requirements of the Wanapa Project, as well as other proposed power projects.

6-5 The gas pipeline is "more than twice the length of the natural gas pipeline constructed for the other gas fired plants in the Umatilla County" because the closest location for the tie-in to the interstate pipeline that would have the least environmental impact is approximately 10 miles from the project. The "assessment …to value the cost and risk to construct the line versus no construction" is not a useful analysis, as a gas line is necessary for operation of the facility. No construction of the gas line is equivalent to the No Action alternative already discussed in Section 2.2.

Based on county concerns regarding the community impacts of the proposed gas line, an alternate route has been developed. This route (tandem gas/plant discharge pipeline) is located within county ROWs, thus reducing impacts to agricultural lands and residences. It also has been routed down county roads with the least density of residences between the plant site and the gas interconnection (gas pipeline) and Cold Springs Reservoir (plant discharge pipeline). This alternative has been identified in the Final EIS as Alternative 5 and relevant impact analysis also has been added to the document.

6-6 The ability to employ locals would depend upon the necessary job skills and qualifications commensurate with the requirements of the positions available. The project would not preclude and would encourage local Umatilla County residents and local unions, as well as CTUIR members, to apply for positions related to the construction and operation of the facility.

The construction and operation of Wanapa would not prevent development of other industries. Wanapa would be located in a region that is in attainment for air quality and the construction and operation of the facility would not change that designation. Neither the water supply nor the air and water sheds have been so impacted by existing users that, under existing state and federal laws, the addition of one new user is likely to prevent the construction of new industries in the area. Furthermore, the BIA has as its mission a trust responsibility to assist Indian tribes to economically develop their lands to support tribal self-determination, working to eliminate tribal poverty, and create financial independence.

Responses to Letter 6

6-6 Cont'd

The project would pay local property taxes, contribute directly to school district, fire districts, county road maintenance and promote other economic development in the region. As discussed in Section 3.10.2.3, the ancillary pipelines and other facilities within State jurisdiction would be subject to county property taxes. The approximately three years of construction would increase County tax revenues due to personal property taxes on contractor equipment. In addition, the hundreds of construction jobs along with approximately 40 permanent jobs created that would result in hundreds of employees paying state income taxes. Because of the high wages involved, many of these employees are likely to become homeowners and pay (county) property taxes as well. Most importantly, the project would pay property taxes to the entity having jurisdiction, the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). This tax is used to provide police, fire and emergency response services that widely benefit resident of Umatilla County including the non-Indian residents of the Umatilla Indian Reservation. These services are provided tax-free to travelers on I-84, and the residents of the neighboring towns who receive Tribal police, fire and emergency response assistance through mutual aid agreements.

The project would sponsor the Wanapa Environmental Foundation with an initial investment of eight million dollars ($8,000,000 for Phase 1 and an additional $8,000,000 for Phase 2) where the proceeds from the interest would be used for the betterment of the environment in the local areas including Umatilla County.

The project contributes revenues for future economic development. The Port of Umatilla, the City of Hermiston and CTUIR have all reserved the right to use a portion of the electricity from the project to attract industry to their jurisdictions for future economic development of the region. The revenue received by the Port of Umatilla, the City of Hermiston and CTUIR would likely be used to provide services and infrastructure to attract future economic development to the region. The Port would directly benefit through the development of natural gas, road and water/sewer infrastructure for 320 acres of Port industrial lands.

Letter 6 Continued

6-7

OTHER NOTES RELATIVE TO TECHNICAL ANALYSIS
Table ES-1, Summary of Mitigation Measures, does not include a category for water and economic resources. Mitigation for these resources should be included. Table 1.3-1, "Federal Permits, approvals, and Reviews Required for Construction and Operation" should include the Federal Energy Regulatory Commission (FERC), which would have permitting authority over the natural gas pipelines if it is constructed by Pacific Gas and Electric or the Williams Company. (If the gas pipeline is constructed by Diamond Generating Corp, the gas line would be under the regulatory jurisdiction of the Energy Facility Siting Council (EFSC)).

6-8

Table 1.4-1 "State, Local and Tribal Permits, Approvals, and Reviews Required for Construction and Operation," incorrectly lists the Department of Land Conservation and Development as the agency to issue easements to cross state lands. The Division of State Lands is the correct agency. Oregon Department of Transportation should also be identified since the pipelines will cross a state highway. Land use permits are issued by the County Planning Department; the Board of Commissioners only if the permit is appealed. The Table should clarify that the Wanapa plant is exempt from land use permits; the county will be involved in permitting only the linear facilities supporting the plant. The applicant also has the option to file for land use permits directly with the EFSC. The county would participate and fully supports either option. The EFSC should also be listed as an agency where they may issue permits for the natural gas line and/or supporting facilities.

Thank you for consideration of our comments. We look forward to your response. We would very much welcome a meeting to discuss these issues and the project's impact to Umatilla County.

Sincerely,

UMATILLA COUNTY BOARD OF COMMISSIONERS

William S. Hansell
William S. Hansell, Chair

Dennis D. Doherty
Dennis D. Doherty, Commissioner

Emile M. Holeman
Emile M. Holeman, Commissioner

Responses to Letter 6

6-7 A clarification has been added to **Tables 1.3-1** and **1.4.1** that states that the Federal Energy Regulatory Commission could take jurisdiction over the pipeline if it was constructed and operated by the interstate gas shippers (PGT and/or Williams). Otherwise, it would be under the regulatory jurisdiction of the Oregon Energy Facility Siting Council (EFSC). Mitigation measures for water resources were added to the summary based on the need for measures as determined from the impact analysis. Additional measures have been added to the Final EIS as the result of agency and public comment. No specific mitigation measures have been added for economics as the project is expected to have a net economic benefit.

6-8 The requested clarifications of permits or processes needed have been included in **Table 1.4-1**.

Letter 7

Oregon
Theodore R. Kulongoski, Governor

Department of Environmental Quality
Eastern Region
700 SE Emigrant
Suite 330
Pendleton, OR 97801
(541) 276-4063 Voice/TTY
FAX (541) 278-0168

November 20, 2003

Phillip Sanchez
Superintendent, Umatilla Agency
Bureau of Indian Affairs
P.O. Box 520
Pendleton, OR 97801

Re: Comments to October 2003 Wanapa Energy Center Draft EIS

Dear Mr. Sanchez,

On November 17, 2003, the Oregon Department of Environmental Quality (Department) received the October 2003 Wanapa Energy Center Draft Environmental Impact Statement (EIS). After reviewing the above referenced document, the following comments are provided:

P. 1-11, Table 1.4-1

The table lists the agencies and their authority. The Department is listed as having authority over dust control permits. The table should also list the Department's authority regarding the following:

7-1
- Issuance of a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater located off tribal land. The EIS currently proposes such a discharge.
- The requirement of obtaining an NPDES 1200 general permit for construction activities occurring off tribal land that disturb one acre or more, such as installation of the wastewater and natural gas pipes, substation expansion, etc.

P 3.2-10, Table 3.2-2

7-2 This table lists the water quality of Cold Springs Reservoir. It would be beneficial to include total dissolved solids (TDS) in the table to evaluate the receiving water body's capacity to assimilate this discharge.

P. 3.2-14, Paragraph 4

7-3 This paragraph addresses the authority of the United States Environmental Protection Agency (USEPA) to permit the wastewater discharge. Because the proposed discharge is not on tribal land, the Department would have the authority to issue an NPDES permit.

Responses to Letter 7

7-1 **Tables 1.3.1** and **1.4.1** have been updated to reflect both the USEPA and Oregon DEQ's jurisdiction regarding plant discharge water and storm water discharge. The plant discharge water to Cold Springs Reservoir would be regulated and permitted under the State of Oregon's NPDES permit program. Storm water discharges would involve joint jurisdiction with the USEPA and ODEQ depending on land ownership. Storm water discharges from the plant site (tribal trust land) during construction and subsequent operation would be regulated and permitted under USEPA Region 10's General Permit 1200-C for Storm Water Discharge. Storm water discharges from construction of the linear facilities not located on tribal trust land would be regulated and permitted under the State of Oregon's NPDES 1200-C General Permit program.

7-2 Sampling data for Cold Springs Reservoir in August 2003 and May 2004 included analysis for Total Dissolved Solids (TDS). Concentrations for the eight locations sampled ranged from 96 to 138 mg/l (milligrams per liter) with an average concentration of 117 mg/l. This information is included in the revised **Table 3.3-2** as requested.

7-3 See response to Comment 7-1.

Letter 7 Continued

7-4 Due to the lack of information as to how the water quality standards will be met at the discharge point, the Department would need to evaluate the environmental risk and determine if an NPDES permit can be issued. It is also unclear at this point whether the mixing zone evaluation would occur in Feed Canal or in Cold Springs Reservoir. In addition, the effluent is high in TDS and possibly temperature and may require pretreatment prior to discharge.

If you have questions regarding these comments, please call me at (541) 278-4608.

Sincerely,

Heidi Williams

Heidi Williams
Water Quality Engineer
Eastern Region – Pendleton

cc: Mitch Wolgamott/WQ Source File
Roberta Young, DEQ, Portland
Sam Sadler, Oregon Office of Energy, 625 Marion St. NE, Ste. 1, Salem, OR 97301-3742

Responses to Letter 7

7-4 In preparation for submitting the NPDES permit application to ODEQ, required data and calculations would be reviewed with ODEQ to insure that all necessary information has been developed and presented. It is recognized that the project must demonstrate that its water discharge would not significantly impact water quality in Cold Springs Reservoir. Plant effluent would be treated, if necessary, to comply with water quality standards and permit requirements.

Letter 8

Oregon
Theodore R. Kulongoski, Governor

Water Resources Department
North Mall Office Building
725 Summer Street NE, Suite A
Salem, OR 97301-1271
503-986-0900
FAX 503-986-0904

December 29, 2003

TO: Philip Sanchez, Superintendent
Umatilla Agency
United States Bureau of Indian Affairs

FROM: Reed Marbut, Intergovernmental Coordinator
Oregon Water Resources Department

SUBJECT: Wanapa Energy Center, Draft Environmental Impact Statement (DEIS)

The Oregon Water Resources Department (OWRD) submits the following comments concerning the adequacy and accuracy of the Draft Environmental Impact Statement for the Wanapa Energy Center near Hermiston, Oregon.

BACKGROUND

The Wanapa Energy Center (Wanapa) is proposed as a 1200 megawatt (MW) natural gas powered, steam turbine generation facility Wanapa is to be developed under a joint venture between the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), Diamond Generating Corporation, The City of Hermiston, the Eugene Water and Electric Board and the Port of Umatilla. Wanapa proposes to use a maximum of 23 cfs of water under the Port of Umatilla's Permit No. 49497. (See DEIS page ES-3.)

The actual generating facility will be located on 47-acre parcel of land acquired by the CTUIR and held in trust by the United States. All other components of the development are on private land except the Cold Springs Reservoir which is owned by the US Bureau of Reclamation (USBR). These components include a water pipeline, a natural gas pipeline, wastewater pipeline from the generating facility to Cold Springs Reservoir and a 500-kilovolt electric transmission line to the BPA McNary substation.

The Wanapa Energy Center development proposes to secure its water from the Port of Umatilla under the Port's Permit No. 49497. Permit No. 49497 is a 1979 water right for the use of 155 cubic feet per second (cfs) of water from the Columbia River for municipal use. The point of diversion is just up-stream from the McNary Dam in the NE¼ of the SE¼, Sec. 10, T.5 N., R.28 E. WM. (See OWRD Declaratory Ruling issued March 2, 1994, recorded in Special Orders Vol. 48, at page 118.)

Letter 8 Continued

COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

Water Supply.

The DEIS identifies two water uses. First and foremost is the steam turbine operation; and second, hydrostatic testing of the various pipelines. The steam turbine water is be provided under the Port of Umatilla Permit No. 49497.

8-1 The source of water identified in the DEIS for the hydrostatic testing is "nearby surface waters or available municipal supplies." (See page 2-14.) The DEIS should identify the specific source of water for the pipeline hydrostatic testing, the timing of the withdrawal for testing, how much water will be required and the rights under which this water will be secured.

Approximately 23 cfs of Columbia River water will be used for Wanapa operation under the Port's Permit No. 49497. (See page ES-3.) The current maximum rate of withdrawal of water under Permit No. 49497 is 18.54 cfs. Wanapa's proposed use will represent an increase withdrawal from the Columbia River under Permit No. 49497 from the current 18.54 cfs to 41.54 cfs. It should be noted that the DEIS asserts that the "... committed uses (prior to this proposed project) represent a total of 23.4 cfs from a total water right of 155 cfs." (See page 3.2-4.). To accommodate this increase withdrawal, the Port's POD intake is to be modified by addition of a fourth pump to the current platform "and by making minor modifications to the pump manifold if necessary." "No new construction in the river intake area would be required for the modification." (See page 2-17.)

On March 14, 1994, the United States Corps of Engineers issued Permit 93-00941, issued under Section 404 of the Clean Water Act (CWA). We are advised that Permit 93-00941 includes a "reopener" clause. The original §404 permit covered withdrawal of up to 50 cfs, so in theory
8-2 Wanapa's withdrawal will not trigger the reopener clause. The increase withdrawal of water from the Columbia River for operation of the Wanapa project brings the Port's total withdrawal very close to the maximum allowed under the Port's §404 permit. In fact, the DEIS states: "Based upon existing and future demands, water demand at the Port of Umatilla could increase to 53 cfs...." (See page 6-3.).

Table 1.3-1 at page 1-9 of the DEIS lists both the CWA §404 and the Endangered Species Act (ESA) §7 as applicable to the construction and operation of the proposed Wanapa project. However, other than stating – "[W]ater withdrawal from the Columbia River would occur under an existing water right. This depletion would slightly reduce habitat for fish species (including listed salmon, steelhead and bull trout) in the Columbia River." – the DEIS does not indicate how these federal laws will apply to the project. (See page ES-5.) It is unclear whether the increase withdrawal of Columbia River water will require review under either the CWA or the ESA and if so how this review will be conducted. The DEIS should be specific on these matters.

8-3 The last paragraph on page 2-11 the developers discuss how wastewater would be discharged into Cold Springs Reservoir via the Feed Canal. By discharging additional water into the Feed Canal at this point the results of the OWRD's calculations will be skewed for delivery losses of Umatilla River water to the Cold Springs Reservoir. The OWRD figures delivery losses by comparing the

Responses to Letter 8

8-1 The gas pipeline would be tested, about 6 months prior to the first unit start up. The water source would be construction water, which would probably be supplied by the Port. Hydrostatic testing of the pipeline is a one-time test and it would consume no more than approximately 20,000 gallons. If the plant discharge water line is tested at the same time it would use approximately 4,000 gallons. The first 600 MW of the plant would use a total of approximately 70,000 gallons for hydrostatic testing as would the second phase.

Wherever possible, the water is used and re-used several times to minimize water consumption. For large volume testing, the most likely source of water would be purchased from the Regional Water System via Port of Umatilla or other local municipalities under their existing municipal water right. For small volume testing, the project may use potable water from the city (piped to the plant for domestic use) if it is more convenient to access than plant water. Hydrostatic testing would be conducted in the last several months of plant construction when most plant systems and tanks have been completely constructed.

Hydrostatic test water would be discharged to Cold Springs Reservoir under the water quality requirements of the NPDES permit. If permit conditions cannot be met for the hydrostatic test water, it would be trucked off-site by a licensed contractor.

8-2 As stated in the comment, the additional withdrawal by the Wanapa project does not trigger the re-opener clause in the original CWA 404 permit. It was not considered appropriate to solicit special review under the CWA.

A biological assessment is being prepared pursuant to §7 of the ESA. As to the CWA §404, the use of the Port of Umatilla's water right for withdrawal from the Columbia River would not require review under the Clean Water Act because it is an already permitted activity under an existing Section 404 Permit. (This is similar to the use of the same water rights by the already existing power plants, which began using the Port's water rights as late as mid-2002.)

8-3 The plant discharge water pipeline would not intersect with the Feed Canal until the final concrete spillway at the bank of the Reservoir. This spillway would be upgraded to allow for the plant discharge water to flow into the Reservoir. As such, it is correct that plant discharge would mix with Feed Canal water at the spillway (unless required otherwise by the ODEQ in the NPDES permit) and only when the Feed Canal is providing water to the reservoir. During summer and early fall (June – October), there is typically no flow in the Feed Canal. There also are other periods when no flow is diverted from the Umatilla River to the Feed Canal to maintain adequate target flows for fish in the river. At these times, only Wanapa project water would be discharged to the reservoir at the spillway.

Letter 8 Continued

gage station at the upper end of the Feed Canal to the gage station just prior to discharging water into the Reservoir. The wastewater is proposed to be discharged just upstream of the downstream gage station which will appear to reduce the delivery losses of Umatilla River Water. One option would be to require a measuring device to account for this additional wastewater discharging into the Reservoir. This is likely needed in any event so that OWRD can subtract the amount of wastewater discharged into the Reservoir so that it is not calculated into the total volume allowed under the existing water rights.

8-3

Again, in the third paragraph on page 3.2-13 there are statements that the plant effluent water will mix with water in the Feed Canal before entering the Cold Springs Reservoir. This would be true at the times the Feed Canal is running water. Because of the Umatilla Basin Project there are times when the target flows for fish are not being met (generally during the fall and spring) and no water is diverted into the Feed Canal from the Umatilla River. Additionally, in a typical year there would be no diversion into the Feed Canal from the Umatilla River from June through October.

Permit No. 49497 Extension Application.

On September 29, 2003, the Port of Umatilla filed an Application for Extension of Time to complete construction of its water diversion/appropriation works and to accomplish the beneficial use of water to the full extent under Permit No. 49497. This Application is currently pending before the Department.

OAR 690-315-0090(3) states "any water right extended under OAR 690-314-0070 to 690-315-0100 shall be conditioned to provide that diversion of water beyond the maximum rate diverted under the permit or previously extension(s) shall only be authorized upon issuance of a final order approving a Water Management and Conservation Plan...." The Port states in its Extension Application that it "... prepared a water management and conservation plan for our 1997 application, and will be updated in the near future." As noted above, the current maximum rate of diversion of under Permit No. 49497 is 18.54 cfs. In order for the Port to increase its withdrawal beyond the 18.54 cfs it will need to secure approval of a new water management and conservation plan or satisfactorily amend and/or update its 1997 Plan.

8-4

The DEIS should address this matter both as to timing of plan development and/or update and the substance of its plan.

Wastewater Discharge to Cold Springs Reservoir.

"The proposed facility [Wanapa] would generate wastewater that is primarily comprised of cooling tower blowdown. In addition, the plant will generate small quantities of process wastewater, sanitary sewage and storm water. (See page 3.2-12.) The DEIS states that "Columbia River water is considered good quality ..." with "...dissolved solid concentrations approximately 100 milligrams per liter." (See page 3.2-12.) The cooling system "...blowdown would be approximately six times the concentrations in the raw water." (See page 3.2-13.) The plant discharge rates would average 1.8 million gallons per day (2.8 cfs) with a maximum discharge of wastewater of 3.7 cfs.

8-5

Responses to Letter 8

Plant discharge water would be measured as it leaves the plant on a continuous basis and this information would be readily made available to the OWRD for calculation of delivery losses in the Feed Canal upon request. The discharge point is downstream of the existing gage station. The gage station is on the flow control gate on the Feed Canal a few hundred feet upstream of the actual canal discharge into Cold Springs Reservoir. With this discharge point, calculation of delivery losses in the canal should not be affected. However, if a measuring device were required by OWRD, it would be provided by the project.

8-4 The Port is anticipating contracting with a consultant in the near future, which would be tasked with completing the Port's Water Management and Conservation Plan. The Port would look for the plan to be completed some time in late 2004 or early 2005.

8-5 Sampling conducted of Cold Springs Reservoir in August 2003 determined that surface water temperatures at that time ranged from 70°F to 77°F. If plant discharge temperatures are 70°F to 75°F in the summer months, it is not anticipated there would be any effect on reservoir temperatures in the summer months. Winter temperatures in the reservoir and the plant discharge water are expected to be the same. However, the project's NPDES permit application would be required to demonstrate the potential effect of plant discharge temperature on reservoir temperature. Since the flow is from the river to the reservoir, no negative effect on temperature in the Umatilla River is anticipated.

Letter 8 Continued

8-5 The first paragraph on page 3.2-13 states that the temperature of the wastewater will be 70 to 75 degrees. This discharge could potentially impact the ongoing state/tribal/federal TMDL effort to improve temperature in the Umatilla River. On page 3.3-27 the DEIS states that no direct impact to the Umatilla River is anticipated.

8-6 Table 1.4-1 on page 1-11does not identify the OWRD requirement for a permit for the discharge of effluent water into Cold Springs and subsequent use for irrigation purposes. Two options could be cited. First, if the requirements specified in ORS 537.132 for use of reclaimed water are met, the developers could file a registration statement for use of reclaimed water for irrigation without needing to file a water right application. (For the record, a State NPDES permit is required for use of reclaimed water as an exemption.) The second option is to file a reservoir application to impound water and a secondary application to divert out of storage for irrigation.

8-7 It should be noted that the DEIS alleges that, "since the proposed plant is on tribal trust land," the US Environmental Protection Agency (USEPA) "would have primary authority for review and approval" of the NPDES permit." Wastewater from the Wanapa project will be conveyed to Cold Springs Reservoir via a nine-mile pipeline. Cold Springs Reservoir has a total active capacity of 44,600 acre-feet (af), a normal storage capacity of 38,000 af for irrigation. (See page 3.2-3.) Irrigation use of Cold Springs water is primarily in the Hermiston Irrigation District. Return flows are to the Umatilla River near Hermiston. (See page 3.2-3.) At the maximum 3.7 wastewater discharge, the contribution to Cold Springs represents 2678.8 af per year.

Notwithstanding this assertion, it would be in the State's interest to have a more comprehensive evaluation of the respective responsibilities with respect to discharge of wastewater to irrigated land in Oregon operating under an Oregon water right. In sum, the DEIS should more clearly describe the long-term water quality effects on all receiving entities, Cold Springs Reservoir, Hermiston Irrigation District and the Umatilla River.

8-8 The DEIS states that the USBR "...must decide whether to accept the [wastewater]." The DEIS should specify how the USBR will evaluate the proposed discharge. In addition, the DEIS should contain a more through analysis of the effect of the discharge to the Cold Springs Reservoir on the existing water rights associated with the Reservoir and irrigation use of the stored water.

Energy Facility Siting Council (FFSC) Review.

8-9 The DEIS contends that, since "... the proposed electrical generation facility (to be located on tribal land) [it] is exempt from EFSC regulations because of tribal status as a sovereign entity." However, "[A]ncillary facilities that cross public and private lands (natural gas supply/wastewater discharge pipelines) are subject to EFSC regulations, and would require a separate state-administered process." (See pages 1-11 and 12.)

The DEIS should be more specific as to how FESC regulations and approval apply and how the various state agencies will participate in the EFSC review.

Responses to Letter 8

8-6 The Wanapa project would comply with OWRD requirements for a permit to discharge into Cold Springs Reservoir and subsequent use of the water for irrigation purposes. The project would file an application to impound water and an application to divert water from storage for irrigation.

8-7 Oregon DEQ, as noted in response to Comment 5-8, would permit the discharge to Cold Springs Reservoir. The agency would conduct the primary review and approval of the NPDES permit application. The permit application would analyze the impacts of the plant discharge on the water quality of Cold Springs Reservoir and associated uses such as agricultural applications.

8-8 The Reclamation would evaluate the proposed discharge and all required and supplemental data for their evaluation would be provided.

8-9 See response to Comment 5-7.[1]

[1]Oregon EFSC procedures and processes are in accordance with requirements of the Oregon statutes which can be found in (www.energy.state.or.us/siting) under the heading "Energy Facility Siting (the sitting process, standards and laws)". For the application of EFSC regulation refer to ORS 469,300(11)(E)(ii) at the same web site.

Letter 9

Oregon
Theodore R. Kulongoski, Governor

Division of State Lands
Empire Corporate Park
20300 Empire Avenue, #B
Bend, OR 97701
(541) 388-6112
FAX (541) 388-6480
www.oregonstatelands.us.

State Land Board

Theodore R. Kulongoski
Governor

Bill Bradbury
Secretary of State

Randall Edwards
State Treasurer

November 19, 2003

Philip Sanchez, Superintendent
Umatilla Agency, Bureau of Indian Affairs
P.O Box 520, 46807 B Street
Pendleton, OR 97801

Subject: Wanapa Energy Center, Draft Environmental Impact Statement

Dear Mr. Sanchez:

9-1 Thank you for sending me a copy of the October 2003 Draft EIS for the Wanapa Energy Center. The Division does not oppose the referenced EIS or project. However, the Division of State Lands requires a permit if you plan to remove, fill or alter 50 cubic yards or more of material within the banks of most waters of the state (wetlands, streams, etc.). State designated Essential Salmon Habitat streams and State Scenic Waterways are exceptions in that any amount of removal, fill or alteration typically requires a permit.

After reviewing the Draft EIS it appears that portions of this project may involve fill or removal activities within jurisdictional waterways. These areas potentially include irrigation canals, artificially created wetlands (i.e. irrigation induced), and other wetlands or waterways. A removal-fill permit and/or wetland delineation will need to be submitted to the Division for further evaluation and jurisdictional determination.

If you have any questions about removal-fill permitting or need more information please feel free to call me at (541) 388-6345.

Sincerely,

Kevin Herkamp
Resource Coordinator
Field Operations – Eastern Region

Responses to Letter 9

9-1 Thank you for the clarification on permits and information needed to satisfy the requirements of the Division of State Lands. **Table 1.3-1** and **1.4-1** would be revised to include the recommended permit requirements.

Letter 10

WILLIAMS RESEARCH
John Paul Williams, Principal Investigator
INDUSTRIAL RESEARCH

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503-439-9028
FAX-503-533-4082
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john.williams3@comcast.net
December 29, 2003

Dear Sir/Ms:

Here are comments regarding the DEIS for the Wanapa Energy Center near Hermiston, Oregon, on behalf of:

Ivan Neads
32855 W Walls St.
Hermiston, OR 97838.

Please sent the FEIS to my address above. Please also notify me of any other public comment opportunities regarding this project.

Yours,

John Williams

Letter 10 Continued

EXECUTIVE SUMMARY

This DEIS failed to comply with NEPA because of errors which include, but are not limited to the following: The DEIS failed to provide an accurate purpose and need statement, it failed to study alternatives to reduce its water use. and the DEIS also failed to take the requisite "hard look" at its water use and discharge impacts, its ammonia use, and the cumulative air quality impacts.

PURPOSE AND NEED

It's very important how the DEIS defines the "purpose and need" of this project. The stated project purpose and need is to supply energy for base and peak electricity demands. But there is no specific evidence presented regarding any local or regional demand for base or peak supplies of 1300 megawatts of electricity. The only evidence presented is general data describing a 1-2% annual growth in national energy needs.

The WEEC study cited in the DEIS to support assertions of an energy need is already 3 years old. The DEIS failed to describe whether it is even accurate regarding its first three years of predictions. That study also said there is adequate generation to meet needs for 10 years.

The WECC's more current data shows that the Northwest's generating capacity is already predicted to increase by 3100 MW by 2003 to over 81,000 MW, compared to the needed reserves of only 65,600 MW, and that energy demand actually fell from 8-11% from 2000 to 2001. (WECC, 2002 Information Summary).

10-1 As for the NPPC, it now predicts that the needed 3100 MW will be added by December, 2002, in its Power Supply Outlook, May, 2001-April, 2002.

Over 2600 megawatts were recently added to the Northwest grid: Hermiston Power Partners, Chehalis, Rathdrum Generation, Klamath Falls Cogen, the Hanaford turbine, and Frederickson II, along with upgrades at Puget Sound Energy/Fredonia, and smaller turbines added at Willamette Industries and elsewhere.

There are also at least another 2000 megawatts under construction; Goldendale Energy, Miriant Mint Farm, Satsop I, and Coyote Springs II, along with another 6000 Mw that are virtually or actually fully permitted and/or are declining to start construction; Plymouth Energy, Garnet Energy, PGE/Tacoma, Tahoma Energy, Umatilla Generating, Wallula, Sumas II, The Cliffs, Summit/Westward Energy, Port Westward, and Everett I & II.

In other words, even if there was a 3000 Mw shortfall predicted three years ago, that gap has been more than filled by this addition of over 4600 Mw of constructed or permitted gas-fired power plants, in addition to another 1000-odd Mw of constructed wind power. In fact there is now a glut of natural gas fired energy. There is no evidence that the market can support another facility. The Mint Farm and Satsop I plants have had their construction recently terminated when the plants are more than half built, and Goldendale Energy has delayed completion of their plant for a year.

Responses to Letter 10

10-1 The current wholesale power market in the western U.S. and Canada encourages the development of efficient power generation facilities to satisfy increasing power demands and to discourage the development of inefficient and unnecessary facilities. In this market, project developers are expected to move forward with construction of projects only when convinced that a demand exists for the power that the facilities would produce. Project financing, likewise, depends on a demonstration of demand and economic benefit.

The recent "Northwest Regional Forecast of Loads and Resources for August 2004 through July 2009," compiled by PNUCC[1], and the similar report for the year 2003 and other forecasters, show a peak power deficit every year during the next five-year reporting period, and an energy deficit starting in 2008-2009, based on an average hydropower conditions.

Still, many economic factors would influence future demand for electrical power, and the current response of power developers to shut down or abandon power projects is mostly related to their current difficulties in meeting their financial obligations, balance sheet weaknesses and credit ratings. The Wanapa project is not a merchant plant as most of the projects noted in the comment and it intends to be a long-term provider of electrical power based on long-term contracts. The proposed project plans to be competitive in the marketplace, or it won't be built.

Finally, one of the primary aspects of the purpose and need of the project includes economic benefits to the CTUIR that represent objectives that the BIA must address as part of its trust responsibilities.

[1] Pacific Northwest Utility Conference Committee (www.pnucc.org).

Another dozen plants have recently withdrawn or delayed their proposals, such as Mercer Ranch, North Idaho Power, Kootenai Power, and Morrow Generating. Others (another 3000 Mw) also have applications pending; Turner, Coburg Energy, COB and BP.

10-1

In other words, the Purpose and Need Statement for the DEIS is outdated and inaccurate. The Agencies' decision to proceed with permitting of this plant runs the risk of committing and squandering public agency staff and the public's time, and natural resources, land uses, and investment capital, for a power plant that is not needed in the foreseeable future.

NEPA COMPLIANCE

The twin goals of NEPA, 42 U.S.C. 4331 et seq., are to guarantee that: 1) federal agencies take a "hard look" at the consequences of their actions before the actions, and that an EIS contain a discussion of the "alternatives to the proposed action." This discussion of alternatives is at "the heart" of the NEPA process.

(1) federal agencies take a "hard look" at the consequences of their actions before the actions occur by ensuring "that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts," Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 349 (1989); and (2) "the relevant information will be made available to the larger audience that may also play a role in both the decision making process and the implementation of that decision." Id. at 349. NEPA requires federal agencies to look before they leap.

A "hard look" requires the agency to engage in a "reasoned evaluation of the relevant factors" to ensure that its ultimate decision is truly informed. Greenpeace Action v. Franklin, 14 F.3d 1324, 1332 (9th Cir. 1992). The EIS analysis must be searching, detailed and comprehensive; "[g]eneral statements about 'possible' effects and 'some risk,' do not constitute a 'hard look' absent a justification for why more definitive information could not be provided." Neighbors of Cuddy Mountain v. United States Forest Service, 137 F.3d 1372, 1380 (9th Cir. 1998).

NEPA is designed to ensure a fully informed and well-reasoned decision. "In so doing, the EIS insures the integrity of the process of decision by giving assurance that stubborn problems or serious criticisms have not been 'swept under the rug'." Silva v. Lynn, 482 F.2d 1282, 1285 (1st Cir. 1978).

This DEIS does not comply with these and other NEPA requirements, by failing to study alternatives for water cooling and power line designs, and by failing to take a hard look and

Letter 10 Continued

provide information on air cooling, cumulative air impacts, global warming, risks of fire and explosion, and other topics as discussed in greater detail in the rest of these comments.

10-2

THE DEIS FAILED TO DISCUSS REASONABLE PROJECT ALTERNATIVES

NEPA requires that an EIS contain a discussion of the "alternatives to the proposed action." This discussion of alternatives is at "the heart" of the NEPA process. 40 C.F.R. 1502.14. The CEQ regulations require the agency to "[r]igorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. 1502.14(a). To do so, the agency must take a "hard look" at the environmental consequences of each of the alternatives. The failure to examine ANY viable project alternative will render the EIS inadequate.

Consideration of project alternatives is the heart of NEPA and this obligation is ignored at great legal peril. But this DEIS did not examine a single alternative other than "no project" and some minor tinkering with transmission line or pipeline routes.

10-3

ALTERNATIVE COOLING DESIGNS

The project's primary impact is its massive water use. But the DEIS lacked a comprehensive discussion of alternative designs for this project to mitigate this impact, including, but not limited, to air, hybrid, and grey water cooling methods. Indeed, the DEIS baldly claimed at 2.39 that "No ... option was identified that would reduce (water supply) environmental impacts."

Using air cooling, or a hybrid cooling system, are plainly viable alternatives that would all avoid or reduce the project's proposed surface water impacts. Indeed, this very developer (Diamond) proposed air cooling for its power plant in southern Nevada. Diamond's Ivanpah DEIS stated plainly that its air-cooled 500 Mw power plant "...reduces water use by 90% or more as compared to wet cooling with a conventional cooling tower ... dry cooling (for a 500 Mw plant) reduces water usage from 3000 acre-feet to more to 300 acre-feet." (P. 3-1) Diamond's Inanpah DEIS did not contain a single word about any disadvantages of air cooling. But now, in this DEIS, there is no mention or air cooling at all. Clearly, this DEIS failed to take a "hard look." as required by NEPA, at the plant's massive proposed water use and the alternative of air cooling.

ALTERNATIVE DESIGNS TO FURTHER REDUCE WATER USE AND DISCHARGE

The proposed plant will use water cooling. It will consume a peak of over fifteen million gallons gallons per day of water. This is a massive rate of water use for this size of power plant. Many power plants are designed to use far less water by any measurement.

For instance, the operating natural gas fired Chehalis power plant will use only about 1.3% as much water to generate about 50% as much power. The Chehalis plant will be a 550 MW air cooled plant, while Wanapa will be a 1200 MW water cooled plant. Chehalis will use 192,000 gallons of water per day, while Wanapa will use over 15,000,000 gallons per day, or almost 100 times as much water at peak use.

Responses to Letter 10

10-2 See response to Comment 5-6.

Alternative power generating projects, such as coal, oil-fired and nuclear plants in lieu of a gas fired gas turbine plant, were eliminated due to high cost and environmental impacts and regulatory barriers.

10-3 **Alternative Cooling Designs.** A dry cooling system at the Wanapa plant would add approximately $83,200,000 to the construction cost of the total facility or $41.62 millions to the cost of one block of 600 MW (nominal). Because this system of cooling is less efficient there would be a 4 to 5 percent power loss on the steam turbine generator, which must partly be made up by the combustion turbines and duct burners resulting in higher fuel use and emissions. This would put the Wanapa project at a competitive disadvantage to the other water-cooled plants in the Pacific Northwest.

Diamond's Ivanpah project is located in an arid region where there is no surface water available in the area. Diamond Ivanpah project serves a very fast growing market and remain competitive despite the cost of development. The air-cooled Doswell plant, located in Virginia, also was developed by Diamond.

The commenter references the Plymouth project for its hybrid design. The following information is available in the Plymouth EIS in the public domain.[1] In order to maintain efficiency, Plymouth would operate the air-cooled condenser during the cold weather periods (when water is abundant) and would operate the water-cooled condenser during the summer (when water is less available). While such an operation would conserve water, this conservation is not beneficial due to the season of use versus water availability. Installation and operation of two 100 percent condensers similar to the Plymouth project would add substantially more than the $83,200,000 to the cost of the project and it would make the project economically uncompetitive

The project evaluated use of gray water. However, due to the lack of sufficient quantities available from either Hermiston or Umatilla this option was eliminated.

[1] Plymouth Generation Facility Final EIS located at: www.bpa.gov

3-3 Cont'd

Water Flow Quantity. This response to the water flow comments must address the quantities noted in the comments. The statement, "it [the plant] would use a peak of over 15,000,000 gallons per day of water" is misleading. In this context, peak flow is defined as that flow which would occur at certain hours of the summer day where the ambient temperature is at the highest (109ºF). It is worth noting that this project would use substantially less water when ambient temperatures are low (morning, night, spring, fall, and winter). For the Wanapa project, the plant average water flow is less than one-half of the 15 million gallons per day. It varies from 8 MGD on a cold winter day to 11.5 MGD during the hottest summer day with an average yearly flow of 7.99 MGD. The figure of 5.4 billion gallons per year cited by the commenter can only be arrived at if the peak flow would take place 365 days per year, which is the equivalent of hot ambient temperatures (109ºF) occurring every hour and every day of the year (365 days).

Approximately 80 percent of the water is evaporated to get rid of the heat from the steam condenser. Therefore, comparison between of water-cooled plants and air-cooled plants would not produce an accurate water use per MW of generation. The referenced Chehalis plant is a 550-MW (nominal) air-cooled plant. A comparison of the water use between the 550-MW air-cooled Chehalis plant and the 1,200-MW (nominal) water-cooled Wanapa plant would technically be inaccurate and produce non-comparable results. Diamond's Ivanpah project, which also is a 550-MW (nominal) air-cooled plant, if compared to Chehalis, also would offer an accurate comparison. Diamond's Ivanpah project uses much less water than the Chehalis plant.

Greenhouse Gas Emissions. Steam/water vapor in the form of clouds in the atmosphere is a commonly occurring phenomenon. The proposed turbines would emit the primary and greenhouse gas (GHG) pollutants of CO_2, methane (CH_4), and nitrous oxide (N_2O). The water vapor from the cooling towers is not considered a major greenhouse gas. A GHG emissions inventory has been prepared for these pollutants from Wanapa. The emissions of each pollutant are multiplied by the respective Global Warming Potential (GWP) for a 100-year time horizon to convert the results into a single CO_2 equivalent emissions value. The results are shown in **Table ____** below.

Table ____
Greenhouse Gas Emissions from Wanapa Energy Center

Pollutant	Annual Emissions (1,000 tons)	Global Warming Potential (GWP) 100-year	Annual Emissions, CO_2 Equivalent (1,000 tons)
CO_2	4594.6	1	4594.6
Methane	0.28	21	5.8
N_2O	0.0055	310	1.7
Total			4602.2

Responses to Letter 10

For the mitigation of the GHG gases and other environmental impacts, the Wanapa project has established an environmental mitigation foundation where $8,000,000 or $16,000,000 would be deposited into the fund for an 600 MW (nominal) or 1,200 MW (nominal) plant respectively, at the close of project finance. The proceeds from the funds would be used for environmental mitigations in perpetuity in the region. This fund exceeds the State of Oregon requirements over the life of the plant. Wallula was required to deposit $5.35 million for the 1,300-MW (nominal plant) for greenhouse gas mitigation, which is less than a third of the 1,200-MW Wanapa Environmental Foundation funds.

Letter 10 Continued

AIR COOLING
The DEIS should have discussed alternative designs to mitigate the plant's water use, which would include air cooling, rather than water cooling for the facility.

Heated water vapor is also widely recognized as a contributor to the global warming problem. [1] A change to air cooling would also eliminate this discharge of water vapor, thus partly mitigating the facility's greenhouse gas emissions.

10-3 **HYBRID COOLING SYSTEMS**
These types of plant designs use a combination of both air and water cooling. The Wanapa plant DEIS should have discussed hybrid water/air cooling as mitigation of the proposed use of high quality groundwater for plant cooling purposes. The Plymouth Energy plant, recently permitted in eastern Washington, will use a version of hybrid cooling. It will use about one/fourth as much water per megawatt as will Wanapa. Plymouth Power will use 1 million gallons of water as a daily average, to generate 307 Mw. In other words, Plymouth will use 1/15th as much water to generate 1/4 as much power .

WATER QUANTITY IMPACTS
Instead of discussing reasonable water conservation alternatives that are in wide use, the DEIS attempts to trivialize the power plant's unnecessary consumption of almost 15 million gallons of water per day, which is far more than similar power plants already constructed or proposed for the Pacific Northwest and elsewhere

For instance, the DEIS at 2-39 describes the Columbia River as an abundant and reliable water supply This statement ignores the reality that the project is located in a desert with annual rainfall of less than 10 inches. The DEIS fails to acknowledge that water in this area is scare resource, with an extremely high priority for many competing uses. A high level of water conservation should be required, yet the DEIS claims no alternatives are available, even though the DEIS
10-4 admits at 2-45 that groundwater resources in the vicinity are extremely limited.

The DEIS inaccurately assumes that this 15 million gallons is "available" even during low flow periods on the Columbia River. In fact, current water rights on the Columbia River, if fully exercised, may actually oversubscribe the River's flows. While this plant will not require a new water right, it will, by itself, consume a large increment of the Port's water rights, thus rendering 5.4 billion gallons of water per year unavailable for other uses. This means that the Port will no longer have a large unused water right available for future uses; that is a significant adverse impact and alternatives that reduce its impact must be discussed in an DEIS.

During recent, past droughts, as recently as 2001, many large industrial users such as the Atochem plant, and several large agricultural water users in eastern Washington have been forced to shut

[1] California Energy Commission, 1991.

Responses to Letter 10

10-4 See responses to Comments 5-5 and 6-3.

10-4 down, threatened with shut-down, and/or forced to vastly reduce their water use because of lack of water. Plainly, one of the biggest adverse impacts from the Wanapa Project is on water availability. Its consumption of about 5.4 billion gallons per year of Columbia River water could draw down reduce riparian and aquatic habitat, degrade habitat for threatened and endangered aquatic species, including salmon, and endanger senior water rights. No mitigation is proposed.

PROPOSED WATER USE IS NEEDLESSLY WASTEFUL

The DEIS should have discussed the wasteful implications of Wanapa Power being a single use facility with no usable discharge, unlike cogeneration power plants, which discharge steam for reuse by industrial facilities. Nor does Wanapa reuse gray water like other power plants, including the new facility in Klamath Falls, or reuse agricultural processing water like other plants in the Hermiston/Umatilla area, Its use of cooling towers will needlessly create salt drift and particulate fallout from the massive discharges from its cooling towers and smokestacks in the project vicinity, which will degrade soils, and surface and ground waters from its fallout.

For instance, the Wanapa Projectcould reduce water usage by 90% with air-cooling technology. Instead it proposes to squander precious surface water, in a desert, with an inappropriate technology of water-cooling only. The proposed 5 billion gallons of annual usage is a plainly wasteful, single end use with very limited economic benefit, and with troubling environmental consequences. As the California Water Resources Resolution #75-58 and the current California
10-5 Attorney General have stated:

> "The loss of inland waters through evaporation in power plant cooling facilities may be considered an unreasonable use of inland waters…When clean, high-quality water is consumed by a disfavored source, such as cooling towers, **this is nothing but reckless waste."**

The California Attorney General noted that proposed and/or operating California power plants, including the Sutter, Delta Energy, and Los Medanos, Otay Mesa, Metcalf, Moss Landing, and Nueva Azalea power plants, all are either air cooled, or use recycled waste water. While California policy has no legal implications for the Wanapa plant, it does state that use of high quality water for power plant cooling is a reckless waste, with the authority of a Water Resources Agency in a large neighboring state. This powerful opinion that the Wanapa plant is committing a reckless waste of surface waters, should prompt the preparation of a supplemental DEIS that discusses the alternative of air cooling as a project design.

SUPPLEMENTAL DEIS TO STUDY AIR COOLING

Indeed, when the BPA was conducting its NEPA review of the Chehalis facility, after public
10-6 comments called for air cooling at that facility, BPA did prepare a supplemental DEIS to discuss air cooling of that plant. That was a fortunate decision. Years later, when air cooling was chosen for that plant, no additional NEPA review was then necessary.

Furthermore, the President of the United States convened a group of experts who produced a

10-5 See response to Comment 10-3.

10-6 See response to Comment 10-3.

National Energy Policy document. This Policy presented a comprehensive approach to a range of Energy issues, including construction and operation of new power plants. This Policy stated:

> "Federal and state regulators are working with businesses and communities to mitigate ... adverse impacts (from energy generation) by ... fostering the use of technologies that both protect environmental goals and meet energy production goals.
>
> For example, as a result of an analysis under the National Environmental Policy Act of the impacts of a new power plant in California, the company building the plant agreed to change the design to use a dry cooling method. This change reduced ground-water consumption by 95% and eliminated both cooling tower "blowdown" water and particulate emissions, while still achieving the desired energy production." (National Energy Policy p. 3-7)

In other words, Energy Policy proposals from the highest office in the land recently made a specific point that a NEPA analysis has already found that air cooling of power plants is an acceptable and desirable compromise between environmental impact and energy production. We urge the BIA/BPA to follow those recommendations, and study air cooling of the Wanapa proposal as an environmentally preferable alternative.

10-6

Wanapa will be a year-round user with higher usage rate during the warmer months when appropriated water demand is highest. The plant could be redesigned to a "hybrid" air and water-cooling system, in which full water cooling would be used only during the hottest weeks, and air cooling would be used at all other times. This hybrid cooling technology is proposed for use at the Sumas II plant in Northwest Washington and is in use elsewhere.

The best project alternative is avoiding the impact of the massive water withdrawals. The best method of mitigation for the Wanapa project is to reduce their water usage by 90% with air-cooling. That would minimize the depletion of stream flow and would preserve the Port's water rights for future demands.

Many existing and proposed power plants are solely air cooled, including the two operating Neil Simpson plants and the Wyodak plant in Wyoming, the operating Rosebud power plant in Montana, the operating Crockett plant in California, the operating Chehalis Power facility in the State of Washington, the operating Doswell facility in Virginia, the operating Matimba, Kendal, and Eskom powerhouses in South Africa, the operating Linden and Sayreville plants in New Jersey, Taiyuan #2 in China, Trakya in Turkey, Uran III in India, Tousa in Iran, and the Camarillo facility in Ventura County, California.

The California Attorney General noted that the proposed/operating power plants in California, including the Sutter, Delta Energy, and Los Medanos, Otay Mesa, Metcalf, Moss Landing, and Nueva Azalea power plants, all are either air cooled, or use recycled waste water.

Other proposed air-cooled plants are the Colorado Springs Utility plant near Fountain, Garnet near Boise, Idaho, PPL/Starbuck, Reliant Energy's Choctaw County and Hunterstown, Pennsylvania plants, the Mercer Ranch proposal near Tri-Cities, Washington, and the proposed Duke and Mirant plants within the jurisdiction of the Las Vegas Water District.

10-6 In fact, published accounts state that the project developer for the Wanapa plant, Diamond Generating, proposed air cooling for its 500 Mw Ivanpah Energy Center, near Goodsprings, Nevada. Published accounts quote Diamond Generating as said their Ivanpah 500 Mw plant would use only 30-50 acre-feet of grey water annually. This is an amazingly small amount compared with the shocking 12,286 af proposed for Wanapa.[2] Even though Wanapa is 2.5 times larger than Diamond Energy's Inanpah proposal, it is using 245 times as much water.

10-7 **HYBRID COOLING SYSTEM**
This is a plant design that uses a combination of both air and water-cooling, and are in use at the West Cogeneration plant in Germany, and the Exeter Energy plant in Conn., USA, and is proposed for the Sumas II facility, and the Plymouth Power in eastern Washington. Water use is cut approximately in half. The NEPA analysis have should considered and discussed the hybrid cooling system as a viable alternative in the DEIS.

10-8 **GREY WATER**
The recently permitted Klamath Falls power plant is the only latest of many plants in the United States that uses gray water (reused water), rather than high quality surface water for power plant cooling. Diamond's Ivanpah plant also proposed use of grey water.

MITIGATION BY AVOIDANCE OF THE WATER USE IMPACT-CONCLUSION
In summary, almost 40 plants that are proposed or are operating with either air cooling, recycled waste water, or hybrid cooling systems. We are sure there are more. This list demonstrates that there are readily available alternative methods of cooling which avoid the wasteful water use proposed by Wanapa, that are available and in common use.

10-9 Wanapa's wasteful use of an inappropriate cooling technology threatens other beneficial uses, both now and in the future, specifically the appropriations of senior water rights, particularly in drought years. Again, the NEPA analysis should study whether the project could choose to use air-cooling or hybrid cooling methods, which would reduce this waste and reduce the damage to the water resources of the state.

The Wanapa plant does not integrate or coordinate with other water usages. The plant will consume over 5 billion gallons of pure water yearly for a single use, and would provide a mere handful of jobs.

Wanapa is not a cogeneration plant, like the new Klamath Falls facility, where the plant's steam is

[2] 17 cfs times 1.98 times 365 days.

10-7 See response to Comment 10-3.

10-8 See response to Comment 10-3.

10-9 See response to Comment 10-3.

Letter 10 Continued

shared with another industrial facility. Instead, the proposed plant is on an isolated, inappropriately zoned area, which will serve no other businesses. It does not reuse gray water for cooling like the Klamath Falls facility. The resulting waste water is unfit for irrigation because of its high TDS levels and will serve only a single purpose.

Furthermore, the current power plant market is extremely speculative, and is in a boom/bust cycle of over-building of power plants in hopes of raising rates and increasing profits. Calpine, one of the nation's largest power plant builders, recently announced the suspension of over 30 proposed power plants. Cogentrix itself has announced the delay of proposed plants in Washington and West Virginia. This competitive exploitation is to be discouraged when it involves public waters.

The project will not serve balanced multiple uses. Instead, it will concentrate the one of the largest water appropriations in the Basin into the hands of a single user, who will not reuse gray water, will not provide steam, and will produce only a small water return flow containing concentrated levels of metals and high TDS concentrations.

10-9 We suggest that the FEIS should adopt mitigation requirements that closely follow the State of California rules regarding water sources for power plant cooling waters. In sum, actually and potentially potable water should not be squandered as a power plant cooling source, unless and until all other alternatives have been discussed, examined, and exhausted.

Completely or partially air cooled plants, with vastly reduced water demands, currently run reliably, and profitably. This very same developer Diamond Energy, proposed an air cooling for its Ivanpah plant in southern Nevada, as discussed. The California Energy Commission has conducted many reviews, and issued approvals of air cooled plants. The proceedings of these reviews contain copious evidence that air cooling of power plants is fully economically feasible. In one case, for instance, an expert witness testified that air cooling of a power plant would cost only .03% percent of the internal rate of return of the facility.[3]

Simply put, the most important water mitigation measure that should be required, is water conservation through partial or complete air cooling, as is proposed, or done, at scores of similar power plants across the country and world. But the DEIS was utterly silent on this vital topic. This violates the important twin principals of NEPA; there was no hard look taken at the plant's water use, and there was no alternative design discussed.

WASTEWATER DISCHARGES

10-10 The plant will run its cooling water through 6 cycles before its discharge to a reservoir. This will concentrate metals and other trace contaminants in the Columbia River by 600%. Table 3.2-3 in the DEIS shows the resulting concentration of metals and other contaminants in the effluent. Metals in the effluent will be six times the concentration present in the influent. The DEIS at

[3]Testimony of Dr. Fox. Elk Hills Case Proceedings. Page 111.

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10-10 The raw water from the Columbia River would be treated by coagulation and filtration prior to use in the plant. Some constituents in the water, such as mercury, are partially removed by these processes or evaporated in the cooling tower. As a result, the concentration of some constituents in the effluent would be significantly less than six times the incoming raw water concentration.

The relative impact of metals' concentrations in the effluent is evaluated after it is mixed with water in the Cold Springs Reservoir. The ODEQ's mixing zone calculation would be applied in determining the metals' concentrations at the edge of the mixing zone and its potential toxicity to aquatic organisms. If it is determined that the concentration of a metal at the edge of the mixing zone is above state water quality standards, the plant would treat the water to reduce the concentration of that metal in the effluent before discharge.

The plant discharge water is treated for temperature in the cooling tower. The project intends to use an efficient cooling tower where the water temperature would be much lower than the ambient air dry-bulb temperature. For example, when the air dry-bulb temperature is 93°F, the cold water temperature from the cooling tower may be lower than 75°F. When the air temperature is below 20°F (site minimum average temperature), the water discharge from the cooling tower would be approximately 40°F (to prevent icing) and the plant discharge temperature (due to the cooling effects of the holding pond) would be approximately the same temperature as the surface water of Cold Springs Reservoir.

The toxicity of some metals increases as temperature increases. The average temperature of the effluent, would be approximately 70°F to 75°F in the summer where the effect on metals toxicity would be negligible.

Letter 10 Continued

3.2.14 claims that metals levels in the effluent will not approach water quality criteria.

The mercury concentration in the influent is shown as 2.3 ug/l. This would produce 13.8 ug/l in the effluent, but the table claims that resulting mercury concentrations will only be 1.6 ug/l. The DEIS should have explained how the power plant will take water containing mercury at 2.3 ug/l, concentrate it 6 times, and end up with lower concentrations of mercury than before. It is more likely that mercury in the effluent will be at levels of 13.8 ug/l, which vastly exceeds the chronic fresh water criteria of .012.

Table 3.2-3 predicted levels of copper at 6 ug/l in the effluent. But Table 3.2-1 shows that Spring, 2003 analytes revealed total recoverable copper at 1.6 ug/l, meaning that the effluent will contain
10-10 peak concentrations of total copper at levels of about 9.6 ug/l. Copper at this concentration is known to cause adverse impacts in fish, especially with the bioaccumulative nature of copper. The EPA Gold Book states, for instance, that the chronic threshold for brook trout exposure to copper is only 3.873 ug/l. Several studies also indicated that elevated water temperatures also increased the toxic effects of copper on trout.

Since the effluent will be discharged at temperatures as high as 96 degrees Fahrenheit, there will be a cumulative adverse impact on affected aquatic species from the combination of both copper and heat. In addition, sub lethal discharges of zine, in combination with heat and copper, have also been linked to increased adverse impacts on trout and related species. Wanapa will be also be discharging zinc. An EPA study noted that when sub lethal zinc concentrations are simultaneously present, concentrations of copper as low as 10 ug/l ca n suppress gill functioning.[1]

10-11 Table 3.2.3 shows TDS will be at 1600 mg/l in the waste water, which exceeds groundwater quality criteria in Oregon. Reuse of that concentration of TDS for irrigation water could cause significant adverse impacts on groundwater, even after dilution by reservoir water.

10-12 The DEIS at 3.2. 12 falsely claims that maximum reuse of water takes place at Wanapa. The proposed 6 cycles is only half as many cycles of cooling water as are proposed at many power plants. Maximum re-use would involve far more than six cycles.

IMPACTS FROM WATER DISCHARGES

The DEIS should have provided information on the toxicity of inhibitors or algicides that would be discharged in the waste water, including but not limited to chlorine compounds, such as sodium hydrochlorite, which were listed at 2-9.

10-13 The DEIS claims that chlorine levels are non-toxic but proposed amounts of chlorine compounds to be used, and the resulting concentrations, are not presented at 3.2-13, either. The DEIS reference to a potential chlorine compound feed rate of 1-20 ppm would be a highly toxic level and could exceed the chronic and acute water quality standards for chlorine.

3.2-18 admits that the hydrostatic water is contaminated but fails to present likely concentrations

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10-11 The water quality data collected from the Cold Springs Reservoir indicates that the TDS loading from the effluent would not significantly increase the TDS concentration in the reservoir such that irrigation uses would be affected. The average monthly flow to Cold Springs Reservoir would be less than 0.4 percent of the reservoir capacity.

10-12 The PSD permit issued by the USEPA would require a limitation on TDS in the cooling water - higher cycles of concentration would result in higher TDS and PM_{10} which would cause violation of air permit limits. While it is economical for Wanapa to operate at higher cycles of concentration, the PSD permit's TDS (and PM_{10}) limitation requires operation at lower cycles of concentration. In addition, higher cycles of concentration may affect the NPDES permit. Cycles of concentration are determined by the quality of the raw water. The upper limit of cycles of concentration is determined based on the concentrations of constituents in the raw water together with consideration of equipment efficiency, and environmental impacts on the air and discharge water. The raw water analytical data was used to calculate the maximum concentrations that could be tolerated without jeopardizing plant efficiency. There are a number of constituents such as calcium, magnesium, silica, sulfate and carbonate that become insoluble above a specific concentration and begin to deposit out on operating surfaces in the plant. These deposits eventually interfere with heat transfer, affect plant efficiency and significantly increase operating and maintenance costs.

10-13 The corrosion inhibitors that would be used are primarily phosphate-based and organic polymer based compounds with very low or negligible toxicity. The primary biocide used in the cooling system would be sodium hypochlorite, which would generate chlorine compounds in the cooling water. However, chlorine compounds are rapidly reacted in this type of system and the sodium hypochlorite feed rate would be controlled to provide a small excess over system consumption. In addition, the NPDES permit for discharge of the effluent would have very strict limits for discharge of chlorine from the facility.

If the discharge water is not within the limits of the NPDES permit for chlorine, the facility would be equipped with a de-chlorinator to treat the water to bring it to within permit requirements.

Normally the hydrostatic test water is reused for subsequent tests and finally collected and trucked off site by a qualified contractor to a licensed facility. Hydrostatic test water may have low concentrations of oil and suspended solids. If it were necessary to discharge hydrostatic test water to Cold Springs Reservoir, such discharge would be conducted under the NPDES discharge permit and would meet permit limits and state water quality standards. If the test water were determined not to conform to regulations and permit limits, it would be collected and trucked off site by a qualified contractor to a licensed facility.

Letter 10 Continued

of pollutants. Hydrostatic water will be contaminated with oil and grease and other pollutants and will be unacceptable for discharges to surface waters, as proposed in the DEIS.

10-13

The DEIS contains no detailed discussion of whether this location is an appropriate siting for a septic system for or more 30 people, although that is proposed.

CUMULATIVE AIR QUALITY IMPACTS

While EPA will issue the air permit to this proposed power plant, there are many air quality impacts that are not regulated by EPA and were not adequately discussed in the DEIS. We believe that these air quality impacts should have been discussed in the DEIS and the BIA and BPA should seek appropriate mitigation for these impacts. This includes the cumulative air impacts, ammonia emissions, including secondary emissions, and some of the types of emissions affecting sensitive lands and Class I areas.

10-14

The DEIS should have provided a detailed discussion of the cumulative air quality impacts from the proposed project, in combination with the many proposed, and recently constructed power plants, and other air pollution sources, within a 200 radius of the project, and along with other regional NOx sources. The Plymouth Power EIS, for instance, furnished a much more comprehensive presentation of air emissions and impacts data from that facility, which was only 1/4th the size of Wanapa.

DEIS FAILED TO MODEL WANAPA'S IMPACTS, IN SHARP CONTRAST TO MANY OTHER RECENT POWER PLANT NEPA REVIEWS

Rather than present an actual analysis of Wanapa's impacts, the DEIS simply offers an inaccurate 1-page summary of Wanapa's purported air quality cumulative impacts, referring to a past BPA air quality study. But all other recent DEISes on Northwest power plants, including Plymouth, and Wallula have stated in so many words that BPA was going to examine potential cumulative regional haze impacts from power plants, on a case-by-case basis. That pledge has been violated by the failure of this DEIS, for which BPA is a cooperating agency, to provide a specific modeling analysis of the Wanapa project.

The DEIS did not acknowledge this significant cumulative impact from the new generation of

10-15

power plants in eastern Oregon and Washington, and did not cite previous certifications from the Federal Land Managers that air quality in this vicinity was already significantly degraded.

For instance the Forest Service's 2/7/02 letter certified that visibility impairment in Northwest Class I areas has already been degraded more than 10%. Because of this certification, new large sources of air pollution must not add more than .4% degradation of the visibility at times when total impacts on visibility exceed 10%, based on FLAG2 criteria. Wanapa will cause a larger degradation to visibility than this .4% threshold. The DEIS should have discuss this potential breach of air quality guidelines. Instead, the DEIS made only a passing reference at 3.4-20 to Wanapa's alleged compliance with a different FLAG2 threshold, that an individual plant not cause more than a 5% extinction by itself. The DEIS presented no supporting data for this abrupt

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The preferred method of sanitary waste disposal would be through a connection to the City of Umatilla's sanitary wastewater system. However, if this option cannot be implemented, the plant site has been thoroughly evaluated for all geotechnical characteristics including the siting of an on-site septic system. If a septic system would be installed, then the waste from the septic system would be trucked offsite by a licensed contractor for disposal to an approved site.

10-14 See response to Comment 2-1 for cumulative effects analysis for Class I areas and response to Comment 5-3 for cumulative effects analysis for Class II areas.

10-15 See response to Comment 2-1 for cumulative effects analysis for Class I areas and response to Comment 5-3 for cumulative effects analysis for Class II areas.

conclusion, unlike the several other EISes performed on Northwest power plants, which presented, in several cases, entire appendixes to the NEPA document which described the project's individual and cumulative air quality impacts. The DEIS' claimed that Wanapa's individual maximum contribution to haze at any Class I area was a 2.37% increase. This is doubtful, because Plymouth would cause a 2.20% increase in haze at Mt. Hood, and Wanapa is even closer to Mt Hood, and will emit 5 times as much pollution as Plymouth. Therefore it is likely that Wanapa will have more than a 2.37% impact on Mt. Hood

The DEIS ignored later air quality studies that described the cumulative air quality from these power plants, in subsequent EISes and a DNS. For instance, a review of the Plymouth EIS modeling shows that the Wanapa DEIS' claims are inaccurate about the lack of a cumulative air quality impact. The Wanapa DEIS alleges that there would be either none or 2 exceedances of the
10-15 10% threshold, and 2 exceedances of the 5% threshold of impact on visibility, for a total of 4 days of impacts, as a cumulative result of Wanapa and other proposed and actual power plants.

But the Plymouth DEIS analysis, which included modeling of Wanapa's air emissions, showed a total of 31 days, not 2 days, with more than a 5% change to background extinction because of the operation of Wanapa and other power plants, and 2 days when impacts would exceed 10%.

The Plymouth cumulative air impacts analysis, which studied the effects of the operations of Plymouth, Wanapa, and 13 other power plants totaling 7214 Mw, did show plainly adverse impacts, namely 31 days with greater than 5% change to background extinction. Furthermore, the Plymouth plant was shown to contribute more than .4%, which is a "significant change to extinction" on 17 days, and on two days when the total change exceeded 10%. (Table A-6-1, FEIS, p. III-9)

WANAPA WILL DEGRADE VISIBILITY MORE THAN PLYMOUTH

It is overwhelmingly likely that Wanapa will have an even greater contribution to background extinction, since its air pollution will be roughly 500% more than the Plymouth facility, and it is about the same distance from Mt Hood and the Colombia Gorge, which are the areas showing the more frequent extinction of visibility.

10-16 But this DEIS does not contain an analysis of cumulative air impacts, similar to what was performed for the Plymouth EIS, the Wallula EIS, the Starbuck Initial Study, and even the Goldendale Energy DNS. In other words, this DEIS has failed to include the same type of information that is routinely offered in other power plant EISes, and even provided less information that a recent Declaration of Non-Significance prepared on a power plant. This failing violates NEPA for the following reasons.[4]

FAILURE TO MODEL CUMULATIVE AIR QUALITY IMPACTS VIOLATES NEPA

10-16 See response to Comment 2-1 for cumulative effects analysis for Class I areas and response to Comment 5-3 for cumulative effects analysis for Class II areas.

Letter 10 Continued

10-17 An agency's failure to include and analyze information that is important, significant, or essential renders an EIS inadequate - for, without such detailed information, there is no way for the public or the agency to adequately assess the impacts of a proposed action. See California v. Bergland, 483, 46. Supp. 465, 495 (E.D. Cal. 1980), aff'd sub nom, California v. Block, 690 46.2d 753 (9th Cir. 1982) (by failing to disclose key data in a draft EIS, "the Forest Service effectively undercut the twin goals of environmental statements: informed decision making, and full disclosure").

CUMULATIVE IMPACTS ARE SIGNIFICANT AND WANAPA MAY DEGRADE VISIBILITY MORE THAN WALLULA

These cumulative air quality impacts are clearly significant because the impacts exceed 10% on occasion. It is likely that not only will the Wanapa cumulative impacts be substantially greater than the Plymouth cumulative impacts, but the Wanapa impacts will also be greater that the Wallula Power Project impacts. The Wallula facility is about the same size as Wanapa, but it is more distant from Mt. Hood and The Gorge, and Mt Adams.

As part of the EIS process, a document titled "Newport Wallula Power Project–Contribution to Regional Haze" was prepared. This modeling analysis, which studied the impacts from 13 power plants totaling 5242 Mw, concluded in Table 4 that Wallula would cause a 3.68% increase over background extinction at Mt Hood, a 3.16% increase at the Gorge, 2.13% increase at Mt. Adams, a 2.21% increase at Eagle Cap Wilderness, and smaller increases ranging from .57% to 1.72% at other Class I areas. Wanapa's impact will certainly be more significant.

10-18 The Wallula haze study was performed because BPA "...based on the results of the Regional Air Quality Modeling Study ... now examine(s) potential cumulative regional haze impacts on a case-by-case basis," according to the Haze Study. The Baseline Source Group for the Wallula study included 13 power plants, but did not include Plymouth and Wanapa. That study showed that Wallula contributed more than .4% to extinction on 3 days when the cumulative impact was over 5% in the Gorge, and more than .4% to extinction on 3 days when extinction was over 5% at Mt. Hood, and on one day when extinction was over 10% at Mt. Hood. Since Wanapa is about 30 miles closer to the Gorge and Mt. Hood, it is very likely that Wanapa will have an even more significant adverse impact on these areas than would Wallula.[5]

The DEIS at page 6-4 misrepresented and ignored the results of these recent visibility studies conducted as part of the NEPA reviews of the Wallula and Plymouth power plants, alternately claiming there were either "no" predicted exceedances or "only two" exceedances of the 10% threshold, and only 2 exceedances of the 5% threshold, when in fact these additional studies predicted dozens of exceedances of the 5% threshold. Nor did the DEIS explain the significance of these findings, especially the importance of the 10% exceedances, which is the significance threshold which mandates a additional review and studies of potential mitigation under NEPA.

BPA and EFSEC. Wallula Power Project and Wallula-McNary Transmission Line Project. Final Environmental Impact Statement, August, 2002. (DOE/EIS-0330), especially Table 3.2-12

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10-17 See response to Comment 2-1 for cumulative effects analysis for Class I areas and response to Comment 5-3 for cumulative effects analysis for Class II areas.

10-18 See response to Comment 2-1 for cumulative effects analysis, including visibility, for Class I areas.

Letter 10 Continued

10-18 All of the data presented in this section of these comments is based on firing of natural gas only by the power plants that were studied. If oil is fired is some of them, as is permitted, the impacts on haze will be magnified.

PRIOR CUMULATIVE IMPACTS MODELING MAY BE UNDERSTATED

The DEIS-referenced BPA study, and the Plymouth and Wallula EIS discussions of cumulative impacts, all underestimate the existing and impending cumulative impacts. Those modeling exercises did not even list all likely significant projects, neglecting to even list the Umatilla Depot incinerator, the Pacific Rim Ethanol plant at Moses Lake, the Hanford Nuclear Reservation's Waste Treatment Plant and the recently completed expansion of the Boise/Wallula pulp and paper mill, among other developments. These projects will add another 1000 TPY of NOx, and other pollutants to the regional air shed and will certainly contribute to this already-documented cumulative impact on Class I areas, to which Wanapa will undoubtedly also contribute.

10-19 There are thousands of tons of proposed and existing NOx and other pollutant emissions that will increase haze in the vicinity of the project, including the Boardman, Oregon power plant's emissions of 17,762 TPY. A comprehensive emissions inventory should be included in the DEIS.

There is a total of another 6000 TPY of proposed and existing NOX emissions in the vicinity of Wanapa. Few existing Washington sources are counted in this inventory, so this figure is drastically understated. An EIS should be prepared that would include a comprehensive NOX area inventory, and which would model the cumulative air quality impacts on Class I areas, from sources including the sources listed in the endnotes, and additional Washington sources.[2]

ADDITIONAL CUMULATIVE IMPACTS FROM VOC AND CO EMISSIONS ON VISIBILITY WERE NOT MODELED

The additional impacts on visibility from VOC emissions were apparently not modeled in either the earlier BPA studies, including the studies referenced in the Wanapa DEIS. VOCs contribute directly to the secondary formation of visibility-reducing organic aerosols, and CO acts as a weak form of VOCs (10 tons of CO have about the same effect as 1 ton of VOC). For this reason, the BPA's and other studies on the cumulative air impacts from power plants, has underestimated the potential impacts on haze from power plants. The DEIS should have included an additional study that took into account the impacts from these two pollutants.

10-20 The Forest Service criticized the Plymouth DEIS air quality section for failing to study the impacts of VOCs in haze in the Gorge. In response, the preparers factored in the VOC impacts, and those result demonstrated that the Plymouth Plant would affect visibility by more than the .4% FLAG criterion on 17 days, rather than the 14 days previously predicted without taking VOCs into account.

OZONE

Ozone monitoring at Wishram, which is at the east end of the Gorge, has detected near-exceedances of the Ozone standard in the last few years. The DEIS should have modeled the

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10-19 See response to Comment 2-1 for cumulative effects analysis for Class I areas and response to Comment 5-3 for cumulative effects analysis for Class II areas.

10-20 See response to Comment 2-1 for cumulative effects analysis, including visibility, for Class I areas and response to Comment 2-2 for Ozone impact assessment.

The guidance documents provided by Federal Land Managers and the available assessment tools do not include an evaluation of VOC and CO impacts on visibility modeling. The impacts of VOC are addressed, however, in an ozone impact assessment prepared for the project (see response to Comment 2-2). Additionally, a dispersion modeling analysis of the CO impacts from Wanapa on the area surrounding the facility was conducted and the results were shown to be below modeling significance levels.

Letter 10 Continued

10-20 potential maximum cumulative impact on the ozone levels, from these new power plants' emissions of ozone precursors, including Wanapa and Plymouth and others, along with the new emissions from the Boise Wallula expansion, the Hanford waste treatment project Pacific Rim ethanol, and other nearby new emissions sources.

DEIS IGNORED SECONDARY EMISSIONS IMPACTS

The DEIS did not study the contributions to air quality impacts from the ammonia emissions from Wanapa. Ammonia (and other nitrogen compounds) catalyze in the air to form "secondary particulate" which harms human health and severely degrades visibility. This is a well-recognized transaction that was discussed at length, for instance, in the recent DEIS on the BP Cogen.

The DEIS should have studied how much ammonia (and other nitrogen compounds) are already in the air in the plant vicinity, because how much ammonia is already there, determines how much damage the new ammonia will cause.

The DEIS should have described the reactions between SO3, NH3, and NO2, which form salts, some of which are emitted to the atmosphere and some of which deposit within the HRSG. Equations can be used to estimate a portion of the secondary PM_{10} that is formed from ammonia slip. Secondary PM_{10} can be formed by reaction of ammonia with SO_3 and NO_2 emitted by the gas turbines and present in the stack gases and plume as well as additional SO_3 and NO_2 that are present downwind in the atmosphere.

10-21 Additional ammonium nitrate could form from the reaction of NO_2 in the atmosphere with any emitted ammonia. This additional PM_{10} may not have been included in the Project's emissions estimates and its impacts. Apparently the formation of secondary PM10, including ammonia nitrate, from the proposed project, was not considered in the EPA air permit application, so the combined PM10 emissions will be more than estimated by the applicant.

The DEIS should have required disclosure of the secondary particulate emissions from this facility, because secondary emissions are not regulated by EPA and are not limited in the EPA air permit. Since this matter is a potentially significant impact, but outside of the later EPA purview, we ask that BIA/BPA require the calculation of these secondary emissions and disclose these impacts and offer mitigation. The other Wallula and Plymouth Haze studies also neglected to consider these ammonia impacts. For instance, the Wallula haze study said that it reviewed the formation of secondary aerosols from conversion of NOx and SO2. But the study never plainly stated that it added in the conversion of ammonia into its projected impacts.

NEPA requires a complete, comprehensive air quality impact study, including monitoring of existing air quality for a variety of pollutants, including ammonia, at Class I areas and the Gorge Scenic Areas.

Much of the nitrogen oxides from the smokestacks will fall to the earth and onto water bodies nearby as nitric acids and related compounds which damage plant life. NEPA requires a study

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10-21 The project would emit ammonia from the turbine generator stacks at a maximum concentration of 5 ppm, per the draft air quality permit from the USEPA. This emission rate would result in a maximum annual ambient impact (at the receptor with the highest concentration of ammonia) of 1.99 parts per billion (ppb). Ammonia impacts from Wanapa at other locations are much lower than this amount. This maximum impact can be compared with typical background concentrations of ammonia in grassland areas of 10 ppb.

The primary mechanism for the formation of secondary particulate is the interaction of ammonia with nitrogen and sulfur compounds in the turbine exhaust. Since the secondary particulate by definition is not emitted directly and forms over a period of time based on chemical reactions between constituents in the atmosphere, it is most appropriately included only in far-field analyses such as the Class I area modeling studies. For the project, secondary particulate formation has been addressed in the CALPUFF dispersion modeling conducted for the evaluation of air quality and visibility impacts in the Class I areas and the Columbia River Gorge.

Letter 10 Continued

10-21 about the impacts on vegetation and water quality from this air pollution.

ALTERNATIVE POLLUTION CONTROL–ELIMINATE AMMONIA EMISSIONS AND THREAT OF AMMONIA RELEASE

The power plant will store, and emit ammonia for use in their SCR air pollution scrubbing system. This presents dangers to public health and to air quality. SCONOx is an alternative pollution scrubbing system that does not use ammonia. SCONOx should have been comprehensively discussed in the DEIS as an alternative to the proposed project. Study of Alternatives is the heart of NEPA.

Because use of SCONOx would reduce the transport, storage and use of ammonia at the plant site, and would reduce secondary air pollution, discussion of SCONOx as mitigation for the project's impacts should have been part of the DEIS.

BENEFITS OF SCONOx NEED TO BE CONSIDERED

10-22 The SCR system proposed for use by the Applicants results in a number of environmental problems that are reduced or eliminated with the use of SCONOx. These problems include: (1) hazards from accidental releases of the ammonia used in the SCR system during its transportation and handling; (2) the formation of particulate matter from the oxidation of SO_2 in the SCR catalyst; (3) the formation of particulate matter from reactions between ammonia and SO_2; (4) generation and disposal of the hazardous SCR catalyst at the end of its useful life; (5) inability to control NOx and CO emissions during startups and shutdowns; (6) increase in NO_2 from the use of dry low NOx combustors, and (7) secondary particulate formed from ammonia emissions

SCONOx would produce greater control of NOx and other pollutants, and eliminate ammonia emissions, and the threat of releases from storage and transport of ammonia. The EPA has recently ruled that SCONOx is considered technically "Available" for NOx control on natural gas fired turbine power plants. The DEIS should have described SCONOx as a method of mitigating the project's potential nuisance impacts from storage, transport and use of ammonia.

AMMONIA RELATED PM_{10} FORMATION ENDANGERS BIOTA

10-23 The majority of the ammonia emissions (slip) from the Wanapa plant will react with NOx to form ammonium nitrate, which is "secondary" PM10. This PM10 can be deposited on surrounding hills, located immediately adjacent to the site, and at more distant areas also. This is an especially significant impact, because the Federal Land Manager's IMPROVE air monitoring project in the Columbia Gorge show than almost 40% of fine particulate in the Gorge vicinity is made up of ammonia compounds; ammonium sulfate and ammonium nitrate. These same ammonia compounds total 50-80% of the visibility-reducing air pollutants in the Gorge vicinity. [5]

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[5] Van Harem, Frank. WDOE Visibility Coordinator. "Visibility Monitoring Data Analysis for the CRGNSA, 9/96-8/97." Handout distributed at Columbia River Gorge Commission Meeting, April 13, 1999.

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10-22 Non-ammonia selective catalytic reduction (referred to as $SCONO_X$) is a recently developed technology that uses a potassium carbonate (K_2CO_3) catalyst to reduce NO_2 emissions. As noted by the commenter, there is no ammonia injection required for use of the $SCONO_x$ technology. This technology has been demonstrated on small turbines (up to 50 MW), but has not yet been successfully applied in the field to larger gas turbines. $SCONO_x$ has not been used to date with large (F-class) gas turbines.

As evidenced in the literature, one company, Alstrom, conducted tests with medium-sized gas turbines and concluded that $SCONO_x$ can be *scaled up* for use in large gas turbines without actually performing such test and evaluation of results with large size gas turbines. This manufacturer discontinued its manufacturing of large gas turbines due the failure of their performance $SCONO_x$ has not been used to date with large (F-class) gas turbines and a scale up of the equipment without any test and the manufacturer guarantee of its performance would lead to failure and make the project unfinanceable.

Wanapa must use the best available technology for pollution controls. During the PSD permit application process, $SCONO_x$ was analyzed and evaluated carefully to determine its application as the best available technologies for the NO_x control. In addition to the lack of a successful large turbine application of $SCONO_x$, it did not meet the economics criterion established for the application of the best available technology. The results of that evaluation demonstrated that $SCONO_x$ does not provide cost-effective control of NO_x and that $SCONO_x$ would introduce a high risk for lack of proper performance in removing this pollutant (NO_x). $SCONO_x$ cannot be guaranteed to perform effectively with the state of the art gas turbine technologies including the F-technology gas turbines used in large size plants such as Wanapa. The Selective Catalytic Reduction (SCR) technology proposed for the new turbines will reduce NO_x emissions as well or better than $SCONO_x$.

10-23 See responses to Comments 10-21 and 2-1.

Letter 10 Continued

10-23

Impacts to soils is an additional concern. Although the Applicant modeled the impact of the Project on these soils and concluded that the increase in nitrogen would be small, the Applicant's analysis apparently failed to include the contribution of ammonia emissions to secondary PM10, most of which is ammonium nitrate. This additional PM-10 of nitrogen compounds from conversion of ammonia would increase the Project's reported contribution to soil nitrogen. The impact of this additional ammonium nitrate has not been evaluated and must be to fully evaluate the environmental impacts of the project.

Ammonia emissions are discussed further in the following comments. These types of reactions, are a potentially significant impact that should be discussed in the DEIS.

PM_{10} FORMATION CAUSES VISIBILITY REDUCTION

10-24

The fact that ammonia/PM reactions actually occur and cause visibility impacts is well documented in the technical literature. A noted atmospheric textbook, for example, contains this vivid description of the problem (Pitts and Pitts, 1999,[7] p. 284):

> "The formation of ammonium nitrate has some interesting implications for visibility reduction. In the Los Angeles air basin, for example, the major NOx sources are at the western, upwind end of the air basin. Approximately 40 miles east in the vicinity of the city of Chino, there is a large agricultural area that has significant emissions of ammonia...under typical meteorological conditions, air is carried inland during the day, with NOx being oxidized to HNO3 as the air mass moves downwind. When it reaches the agricultural area, the HNO3 reacts with gaseous NH3 to form ammonium nitrate..the particles formed by such gas-to-particle conversion processes are in the size range where they scatter light efficiently, giving the appearance of a very hazy or smoggy atmosphere even though other manifestations of smog such as ozone levels may not be highly elevated."

AMMONIA

The proposed power plant will use, handle, store and transport large amounts of ammonia. Ammonia is listed on the EPA's list of extremely hazardous chemicals. The State of Louisiana has recently tightened regulations governing handling of ammonia.

10-25

The use and storage of hazardous chemicals such as ammonia should be minimized. Nonetheless, the Wanapa plant proposes to transport, use and store large quantities of ammonia on site.

The DEIS should have described and addressed the possible consequences of transporting, piping, storing and emitting hundreds of thousands of pounds of ammonia at this facility every year.

[7] Barbara J. Finlayson-Pitts and James N. Pitts, Jr., Chemistry of the Upper and Lower Atmosphere. Theory, Experiments, and DEISs, Academic Press, San Diego, 1999.

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10-24 See responses to Comments 10-21 and 2-1.

10-25 Transport, storage and use of all chemicals, including ammonia, would be in accordance with all applicable laws, regulations and ordinances. These chemicals are currently used in all generating plants operating in the region. The risks associated with the proposed use of aqueous ammonia (19 percent solution of ammonia in water) are much lower than those associated with anhydrous ammonia. Aqueous ammonia is not on the USEPA's list of extremely hazardous chemicals.

A detailed analysis of the incidents of "Hypothetical Ammonia Releases," which is the most likely chemical release accident to occur at the facility with the potential for off-site impacts was included in the Environmental Impact Statement for the proposed Wallula Power Plant Project. Due to the proximity of the Wallula plant to the project area, and the similarity of their environments, the results of that analysis is applicable to the Wanapa project.[1]

[1] Web address for Wallala Final EIS.

Letter 10 Continued

10-25 There are two issues regarding ammonia. The first issue is the constant release of ammonia from this facility under normal operating conditions. The second issue is the risk of ammonia releases from the storage and transportation of this hazardous chemical.

AMMONIA EMISSIONS UNDER NORMAL OPERATING CONDITIONS

10-26 Ammonia may be emitted from the project at 5 parts per million (ppm). Other ammonia sources in this area which could contribute to an ambient ammonia level, including other power plants, fertilizer production and use, and animal feed lot and processing facilities. The DEIS should have discussed controls for ammonia, and additional modeling that accounts for potential ambient levels of ammonia that would cumulatively join with the proposed facility's emissions.

RISKS OF AMMONIA RELEASES

The plant will store hundreds of thousand of pounds of ammonia on site, and millions of pounds of ammonia will be transported to this site every year. But the DEIS does not describe the likelihood of a transportation accident, the numbers of truck trips bearing ammonia, the possible size of any ammonia releases from a truck accident, the neighborhoods and businesses that would be threatened by a release, or the risk and effects of a release from the ammonia tanks at the power plant, including the risk and effect of a tank failure.

The DEIS should discuss this troubling subject, of large scale ammonia releases from transport and storage of large amounts of ammonia on the site. Ammonia releases are fairly common. A study submitted to the Congress revealed there have been over 1000 ammonia releases over one nine year period, which caused 801 injuries, 9 deaths, and 61 evacuations of over 22,000 people. [8] For this reason we urge the DEIS to discuss ammonia hazards from storage and transport, and any requirements to comply with the CAA amendments governing storage reporting, and transport of

10-27 ammonia and other hazardous materials.

For instance, there was a release of ammonia in August, 2001 from the Pratt & Whitney power plant in East Hartford, Conn., that caused the shutdown of nearby streets for five hours and led to the evacuation of 20 people. For this reason the commentors urge that the DEIS should have discuss ammonia hazards, and the ability to respond, from storage and transport releases, and any requirements to comply with the CAA amendments governing storage and transport of ammonia and other hazardous materials.

The Project may be subject to the Title III requirements regarding storage of hazardous materials, but those requirements, including a hazard assessment and risk management program, have not yet been developed and reviewed by the public and the relevant agencies. These requirements should have been fulfilled in time for these proceedings, so that the public can evaluate this project's risks in a single round of reviews and meetings.

Report to Congress Section 112(r) (10) Clean Air Act as Amended. EPA 550-r-93-002. December, 1993.

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10-26 See the responses to Comments 10-21 and 2-1.

10-27 The risks associated with the proposed use of aqueous ammonia (19 percent solution of ammonia in water) are much lower than those associated with anhydrous ammonia. Aqueous ammonia is not on the USEPA's list of extremely hazardous chemicals. As the commenter accurately points out, most of the hazards and consequences listed by the commenter are associated with use of *anhydrous* ammonia and not aqueous Ammonia. A spill of aqueous ammonia would behave as any liquid spill and the emergency team would immediately responded to minimize potential impacts to environmental resources or the local population. The transportation, storage, and handling of the aqueous Ammonia would be in accordance with the applicable and governing laws, regulations, codes and standards. The use of SCONO$_x$ is discussed in response to Comment 10-22 above.

The facility would be subject to the USEPA's Accidental Release Prevention Program (ARPP) regulations for ammonia (40 CFR Part 68). The ARPP would require the facility to implement the following procedures to minimize the potential for accidental releases.

- Develop a quality control program to ensure that all equipment used in the ammonia system is designed according to industry standards.
- Develop standard operating procedures for operation, inspection, and maintenance of the ammonia system.
- Conduct annual worker training for the ammonia system.
- Conduct a Process Hazard Analysis for the ammonia system to identify equipment or operations with a potential for accidental release, then mitigate those identified problems.
- Develop an Emergency Response Plan for the ammonia system, describing alarms and procedures to repair leaking equipment.
- Submit a Risk Management Plan to the USEPA, predicting the downwind impacts caused by hypothetical accidental releases of ammonia.
- Conduct periodic audits of the accidental release prevention program.

Letter 10 Continued

The DEIS evaluation should have studied alternatives on the types of ammonia to be stored and used, for instance the use of urea instead of ammonia, and alternative transport methods for ammonia. While the DEIS suggests that aqueous rather than anhydrous ammonia may be used, urea would be even safer.

The DEIS' evaluation should also study the potential impacts of large scale ammonia releases from different site locations, and the release impacts from different types of transport accidents. The alternative of siting the plant farther from populated areas and from the State Highway, to reduce the public's exposure from ammonia releases, should have been discussed.

SOME RECENT RELEASES OF AMMONIA (not a complete list)

evacuations	injuries	location	gallons released
36	1300	Minot, ND	about 140,000
280	4	Washington, IND	Not provided
1000	65	Quebec	" "
1500	0	Morro Bay, CA	300
100-300	n/a	Wauwatosa, Wi	n/a
10-27 100	n/a	Columbus, IA	na

The Project may be subject to the Title III requirements regarding storage of hazardous materials, but those requirements, including a hazard assessment and risk management program, have not yet been developed and reviewed by the public and the relevant agencies. These requirements should have been fulfilled in time for these proceedings, so that the public can evaluate this project's risks in a single round of reviews and meetings.

The US Chemical Safety and Hazard Investigation Board web site contains examples of recent releases, of ammonia, and the often tragic consequences. Many of those incidents described releases of anhydrous ammonia. But aqueous ammonia, which may be used at the plant, still presents a risk of release.

Discussion of use of alternative forms of ammonia, or no ammonia at all through use of a SNONOx pollution reduction system, should have been required as part of a complete DEIS. This proposed development should have described in the DEIS how it will mitigate its potential ammonia-related impacts to the maximum extent possible. Wanapa has not demonstrated that it has mitigated the potential impacts of its use of ammonia to the maximum extent possible, for instance by use of alternative forms of ammonia, namely urea pellets.

PM-10 AIR EMISSIONS

10-28 The subject of the health and environmental effects of PM-10 should be presented in depth in the DEIS. While EPA regulates PM-10 emissions, EPA will ignore PM-10 emissions that do not exceed the legal standards. But many recent studies identify adverse impacts from concentrations of PM-10 that are below legal limits. Since PM-10 concentration at those levels are not part of

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10-28 See response to Comment 6-2.

The project would have an impact on ambient concentrations of PM_{10}. Based on dispersion modeling of the facility, it has been determined that the project's impacts would be below modeling significance thresholds at most locations in the vicinity. These significance thresholds are set at levels representing 2 percent of the annual National Ambient Air Quality Standard (NAAQS) for PM_{10}, and 3.3 percent of the 24-hour NAAQS for PM_{10}. The locations where an impact is modeled at levels higher than the modeling significance thresholds are shown in the figures provided with the response to Comment 6-2 for the two different averaging periods. The maximum impact from Wanapa at any location and time is 8.73 $\mu g/m^3$ on an annual average (17 percent of the annual NAAQS), and 28.52 $\mu g/m^3$ on a 24-hour average (19 percent of the 24-hour NAAQS).

The USEPA, as required by the Clean Air Act, sets the relevant NAAQS at levels that protect public health with an adequate margin of safety. The standards are scientifically based and undergo review at least every ten years, and include a public involvement process and review by the Clean Air Scientific Advisory Committee. Pollutants in the ambient air at levels below the NAAQS may still result in some health impacts in certain portions of the population.

A refined, or more detailed analysis has been conducted at locations where Wanapa shows a significant impact in the significance modeling analysis. This refined analysis, provided in the PSD application to the USEPA, demonstrates that the impacts from Wanapa, when added to the impacts from other nearby sources and background PM_{10} concentrations, would remain below the NAAQS and PSD Increments even at the locations with the highest localized impact.

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EPA's regulatory authority, the DEIS should have reviewed this issue.

Many recently published studies demonstrate that PM-10 and TSP are far more harmful that previously considered. It appears from these studies that any increase in PM-10 and TSP levels will cause an adverse health impact.

In one study of the Seattle area, days of high particulate concentrations in the air were correlated with increased hospital visits for asthma. In another series of similar studies, days of high particulate concentrations were correlated with days of high death rates in Santa Clara, California, Steubenville, Ohio, Birmingham, Alabama, and Philadelphia, Pennsylvania, among seven separate studies on this topic. Particulate have been recently, convincingly implicated in harm to pulmonary function.

PM-10 will be emitted by the power plant smokestacks. Construction will also create about 1 ton of TSP per acre of disturbance per month, and over 100 acres will be disturbed. Construction equipment, truck and car traffic related to this project, both in the construction and operation stage, will be an additional PM-10 and TSP source.

10-28 But the DEIS, in its discussion of this topic at 3.4-15, did not even attempt to quantify these potentially significant PM-10 emissions, even though the plant's PM-10 emissions are already exceeding the significance thresholds. surface disturbance activity by itself, can create about 1 ton per acre of PM emissions per month, and the tailpipe PM emissions from the dozens of pieces of heavy equipment during this two year construction job will add to this already significant tonnage.

Some important conclusions from these studies is that harmful health effects occur even when particulate concentrations are below the legal limits, there is no apparent particulate threshold for adverse health effects, and that harmful health effects are apparently caused by very minor increase in particulate concentrations. This means that even though the Project will not cause violations of the PM legal limits it could still cause significant health impacts.

Again, this means that increases in PM-10 concentrations will not be limited by EPA, because the legal limits will not be violated. However, these many recent studies suggest there are adverse impacts from PM-10 increases that are below the legal limits. Since EPA will not regulate these increases, we ask Forest Service to require the applicant to address mitigation for its PM-10 increases, perhaps by assisting in reductions of PM-10 emissions from other sources, such as road dust. There are important environmental impacts from PM-10 emissions, also.

ADDITIONAL AGENCIES SHOULD HAVE BEEN INCLUDED AS COOPERATING AGENCIES

10-29 NEPA urges federal agencies to seek a cooperative posture with state agencies, in its section titled Elimination of duplication with State and local authorities (40 CFR 1506.2 (b):

" (Federal) Agencies will cooperate with State and local agencies to the fullest extent

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10-29 The scope of the project is unique in that a portion of the project is exempt from EFSC (the plant site) because of the location of the project on tribal land. The BIA's obligation under NEPA is to address the entire project so that impacts of the components are disclosed. However, consistent with many other projects, authorizations must also be obtained from other federal as well as state and local agencies for the project to proceed. The BIA, the BPA, and the Reclamation Records of Decision would document that these other approvals must be obtained prior to the beginning of construction. The project, although not directly under EFSC jurisdiction, would still comply and exceed EFSC environmental trust fund requirements over the life of the facility.

As NEPA requires, all federal, state and tribal agencies and interested and affected publics have been kept informed of the process. Direct solicitation for comments from the agencies involved including the State has been made.

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possible to avoid duplication between NEPA and State and local requirements."

A joint NEPA document, with local agencies as cooperating agencies, could better study the individual and cumulative impacts, and appropriate mitigation measures, in a single comprehensive document. This type of review would provide a more useful analysis of these impacts and meaningful mitigation measures.

EPA will issue air and water permits. EFSC will issue a Site Certificate. The Department of Reclamation has oversight over the reservoir. The Army Corps will issue wetlands fill permits.
10-29 All of these permitting agencies should cooperate and conduct an efficient environmental review. Having BIA and BPA go it alone with a separate EIS will not allow for a comprehensive scrutiny of the project that would protect the environment and allow for adequate mitigation.

In contrast, the Washington State permitting agencies acted as cooperating agencies with the BPA in the NEPA project review for several power plants, including the Wallula, Plymouth, Starbuck, and Mercer Ranch projects. Specifically, the DEIS' failure to involve the state water resources agencies in this process, may have been a factor in the DEIS' neglect of the true impact of a large water withdrawal from the Columbia River. These State agencies have been grappling for years with this very issue and the acknowledgment that the River may be oversubscribed.

PIPELINE IMPACTS NOT COMPLETELY DISCUSSED

The proposed power plant and its support facilities include a ten mile natural gas pipeline There are many other natural gas pipelines around the country, and in the Northwest, that were constructed according to federal standards. But in the Northwest alone, natural gas pipelines have blown up five times within the last five years. The DEIS should describe these potential impacts and additional mitigation measures to make sure this problem does not reoccur.

For instance, A gas pipeline near Bonneville Dam, recently exploded and burned on February 27, 1999. The roar from the explosion was heard for two miles. The 300 foot high fireball was so huge it was visible in Madras, even though the explosion was miles away. Route 14 in Washington was closed to protect the public. Press accounts state that earth movement from
10-30 recent heavy rains may have been responsible for the pipeline break. The fire destroyed a resort hotel that was under construction and a nearby dwelling.

Near Kalama, Washington, a natural gas pipeline broke in February, 1997. Again, a 300 foot high fireball blazed into the sky. And just one day earlier, the same pipeline exploded and burned near Bellingham, Washington.

In March of 1995, that same pipeline had ruptured and blew up near Castle Rock, Washington. After that 1995 explosion, the company removed soil from 300 feet of the pipeline, to relieve any stress. But less than two years later, it blew up again. Again, soil movement was the cause of the pipeline breakage, according to published accounts.

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10-25 Natural gas pipeline accidents can result in evacuation of local population, property damage, and personal injury. The potential for pipeline accidents is determined by a number of events, including human activity near the pipeline, corrosion rates, incident history, operational regime, adequacy of maintenance, inspection and surveillance programs, and length of pipe. The impacts of an incident also are governed by a number of factors, especially the diameter of the pipe, operating pressure, and proximity of humans to the pipeline.

Most of the northwest and national incidents described in the comment occurred on main natural gas transmission lines that are usually 24 to 36 inches in diameter, transport large volumes of gas at high pressure (typically 2,500 psi) and have long distance routes, often through highly populated areas. As a consequence, the potential for a more severe incident is greater than for smaller pipelines located in less developed areas. The proposed gas pipeline for the Wanapa project would be approximately ten miles long, 24 inches in diameter, and would operate at a maximum pressure of 600 to 800 psi. The pipeline route would be partially co-located with existing utilities (other pipelines, roads) throughout its length. New right-of-way sections would be mostly located across farmland and rangeland. Agricultural land that would be crossed would remain in agricultural use. In combination, these factors reduce the likelihood of a severe incident along the Wanapa pipeline.

Based on historical data, the potential for an accidental release along any particular portion of the pipeline is statistically extremely low. The statistics presented in **Table 3.11-2** were derived from the U.S. Department of Transportation's (USDOT) incident database, a database that summarizes pipeline incident data throughout the U.S. and is continually updated. As mentioned above, the potential for a release is further reduced by the fact that the pipeline would be located in sparsely populated areas and in existing rights-of-way. The recent enactment of the Pipeline Integrity Management Rule for natural gas pipelines also should result in the further reduction in pipeline incidents, due to increased pipeline inspections and mandatory repair criteria.

The pipeline would be constructed in accordance with federal USDOT regulations, which mandates safety standards for pipeline design and construction. These standards are designed to minimize the potential for pipeline failure and accidental release. Construction of the pipeline is in accordance with these standards, the location of the pipeline route, and the lower operating pressure combine to minimize the potential for an accidental release that could impact environmental resources or the local population.

Natural gas pipelines in the U.S. are the safest mode for transporting natural gas. Statistics from 1989 to 2000 indicate that on average, almost 3, 24, and 200 times more people die each year in barge accidents, railroad accidents, and truck accidents, respectively, than die in all pipeline related incidents (natural gas and petroleum products). On a comparative basis, the entire natural gas infrastructure in the region of the facility is much safer than other forms of transportation to which residents of the area are exposed.[1]

[1]Peter F. Guerrero, Director, Physical Infrastructure Issues, United States General Accounting Office, Testimony Before the Subcommittee on Energy and Air Quality, Committee on Energy and Commerce, House of Representatives, *Pipeline Safety Status of Improving Oversight of the Pipeline Industry*, Tuesday, March 19, 2002, GAO-02-517T.

10-30 Cont'd

The commenter states, "…in the Northwest alone natural gas pipelines have blown up five times within the last five years." and the number of incidents: "…February 1999, two incidents in February 1997, March 1995, and two 2003 episodes."

Construction of what is today the interstate natural gas system began in the early 1900s. The federal standards concerning this system have evolved with the industry. The failures cited in the Northwest are associated with one type of pipeline installed almost 50 years ago. The project pipeline would comply with all applicable regulations and modern safety standards for new pipeline construction.

A reliable analysis shows that the newer and recently constructed pipelines which were installed under the stringent safety standards, are operating trouble free. For example, it is worthy of notice that all natural gas pipelines episodes in the Northwest, (except the 1999 incident) occurred on the same 46-year-old 26-inch mainline owned by Northwest Pipeline.[1] Further, the same aging issue also caused the 1999 failure.[2] In contrast, the slightly newer Gas Transmission Northwest (formerly PGT) pipeline system has had no significant pipeline accidents in its 40 years of operation.[3]

Comparison of the safety of a new 10-mile pipeline built with the latest in technology and under the most stringent modern standards of safety to anomalies in a system with relatively few failures across its 180,000 miles4 of aging interstate pipeline may yield inaccurate results. The developers of the project would require the construction of the project pipeline to be in accordance with the most recent applicable regulations, laws, codes and standards developed to insure safety and avoid the incidents that happened to the old pipelines which were built without such laws regulations, codes and standards and safeguards in place.

[1] Pipeline Safety Section History, Washington Utilities and Transportation Commission Pipeline Safety Section Natural Gas Leak History, *http://www.wutc. wa.gov*

[2] *Seattle Times,* December 20, 2003.

[3] www.gtn.negt.com/safety/our_role.htm

[4] www.ingaa.org

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Mitigating Differences in the Wanapa Pipeline. The project's gas pipeline is only 10 miles in length compared to over 1,500 miles for Northwest or 612 miles for NGT. The project pipeline runs through fairly level open terrain, unlike its interstate counterparts that run through remote areas and rugged terrain with little or no access. Therefore, unlike the enormous, interstate pipelines, the project pipeline's entire length would be inspected. This results in the ability of the project pipeline to internally inspected 100 percent of its 10-mile system as compared to Northwest's 17 percent[5] and NGT 12 percent[6] and to hydrotest a much higher percentage of its 10-mile system, as compared to Northwest's 11 percent[7] and NGT's 1 percent.

From the start of construction, the project's 10-mile gas pipeline would use the latest technologies in metal, coating, corrosion protection, welding methodology and other construction techniques. The improvements in technology since construction of the pipelines cited as dangers in the Northwest (e.g., modern fusion bond epoxy coatings versus coal tar coating or modern strong carbon steel engineered to meet standards set by the American Petroleum Institute versus cast iron)[9] should greatly mitigate the dangers presented in the EIS comments.

[5] **Washington State Pipeline Inspection and Integrity Review Summary of Preliminary Finding (Table: System Integrity Test),** www.ops.dot.gov/ bellingham1 /WAstatefinalsummary.htm

[6] Id.

[7] Id.

[8] Id.

[9] www.naturalgas.org

From the perspective of the impacts on public health and the response needs of surrounding communities, the addition of 10 miles of new natural gas pipeline to the hundreds of miles of older pipelines already existing around these communities, would have no noticeable incremental impact on public health or to the region's preparedness requirements.

The commenter cites one example of a construction backhoe that caused a leak in a Northwest Natural Gas pipeline requiring the evacuation of seventy-five people. Once again, the addition of 10 miles to the hundreds of miles of pipeline the region would have no noticeable incremental impact. Further, the Northwest Natural Gas system is a distribution system, and as such, normally would be a much greater risk of construction damage than the Wanapa system. Northwest Natural must mark and monitor 12,000 miles1 of gas distribution systems, while Wanapa must mark and monitor only 10 miles. New procedures introduced under the Pipeline Safety Improvement Act of 2002 should help mitigate the risks of third-party damage.

[1] www.nng.com.

Letter 10 Continued

The Northwest Pipeline through western Washington had two large scale explosions and fires caused by pipeline failure during 2003, mostly recently within the last few months.

There have been a total of 12 large natural gas pipeline explosions, since 1978 in the Northwest, including other ruptures in Stevenson, Washington, La Grande, Oregon, and Montpelier, Idaho.

A few years ago, a construction backhoe caused a leak in a Northwest Natural Gas pipeline recently in Rainier. Seventy five people were evacuated. There is other evidence regarding the potential impact on public health and safety from natural gas pipelines.

During 2000, at least six people were killed in a natural gas pipeline explosion near Carlsbad, New Mexico, and another six were injured. Landslides in Ventura county, California ruptured several natural gas pipelines in February, 1998, again after heavy rain. Between 1965 and 1986, there have been 250 pipeline failures in the United States as a result of stress corrosion cracking, caused by a combination of water, soil types, and gas temperature within the pipelines.

At least twenty-one people were killed since 1995 from natural gas pipeline accidents.[9] A Transwestern Pipeline natural gas pipeline exploded on August 20, 1994 in New Mexico, near the Rio Grande River, damaging a bridge. An October, 1994 explosion of a pipeline in Torrance, California, injured 30. A December, 1989 pipeline rupture caused by a farmer's plow, triggered the evacuation of 600 people in Butler, Illinois.

10-30

In March, 1994, a natural gas pipeline exploded in New Jersey, killing and injuring scores of people and creating a 30 foot deep crater and a fire that destroyed eight buildings and severely damaged six more buildings. A Chemical Safety and Hazard Investigation Board data base search revealed 18 major gas pipeline explosions since June, 1998 in the United States

All of these pipelines were constructed to federal standards, and monitored by federal agencies. The DEIS should have explained, how with all the current federally required mitigation measures and careful engineering, pipelines can still blow up, and how the proposed pipeline lateral can be made safer.

The DEIS did claim in Table 3.10-2 there would likely be only .08 accidents over 30 years of service on the project's 10 mile pipeline, based on "historical statistics." There was not a single reference provided in the DEIS to buttress this assertion and there was no source presented for these statistics. The Northwest Pipeline through western Washington and Oregon has suffered from almost 30 significant releases of gas, including large explosions and fires, since 1994, according to published accounts. At that incident rate, (1 incident per year per 100 miles of pipeline) it would be probable that the Wanapa lateral will suffer at least three large gas releases during thirty years of operation.

New York Times, 4/9/97, p. 1.

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Beginning in 2000, the federal government began enlisting the states in cooperative effort to improve pipeline safety by allowing more states to oversee a broader range of interstate pipeline safety activities. State pipeline safety inspectors are an invaluable resource for the Office of Pipeline Safety (OPS) because they are familiar with pipeline safety issues unique to their states.[1]

[1]Guerrero, *Id*.

On December 17, 2002, the Pipeline Safety Improvement Act of 2002[1] was signed into law. Congress crafted this legislation as an amendment to the 1994 Pipeline Safety Law, largely in response to pipeline ruptures in Carlsbad, New Mexico and Bellingham, Washington. The act applies to, among other facilities, interstate and intrastate natural pipelines and local distribution companies.

[1]Pipeline Safety Improvement Act of 2002, 49 U.S.C.A. § 60101 et. seq.

This Act:

- Institutes mandatory inspections with periodic re-inspections of all U.S. oil;
- Permits the USDOT to order corrective action of a pipeline facility, including physical inspection, testing, repair, or replacement;
- Requires implementation of integrity management programs by the end of this year;
- Bolsters enforcement provisions by allowing for civil penalties for safety violations in an amount between $25,000 and $100,000 for each violation, and in an amount between $500,000 and $1,000,000 for a related series of violations;
- Directs USDOT to encourage operators to adopt and implement certain best practices for notification of leaks and ruptures ("one-call" systems);
- Directs the National Institute of Standards and Technology and the Departments of Transportation and Energy to work with an advisory committee to develop a plan that addresses critical research and development needs to ensure pipeline safety, thus ensuring continued progress in pipeline safety technology and knowledge; and
- Established public education programs to advise municipalities, schools and other entities on the use of the one-call notification system, possible hazards from unintended releases from a pipeline facility, what to do in the event of a release, and so forth. Considering the quantity of natural gas and other pipelines already existing in the area, the project would cooperatively merge its procedures into those already established.

[1] Armgardt , *President Bush Signs Pipeline Safety Improvement Act of 2002 Into Law,* www.articles.corporate.findlaw.com

Letter 10 Continued

10-30 These events could cause loss of life and property. Pipeline explosions are significant impacts. Additional protective measures, and the types of emergency responses, such as fire protection and health care emergency treatment, that must be provided to these explosions and fires and their victims, should be discussed and implemented. The problems that can cause this type of explosion should have been carefully explained at length in the DEIS.

ABILITY OF EMERGENCY SERVICES TO RESPOND TO PIPELINE RELEASE WAS NOT DISCUSSED

Even if the possibility of a pipeline release is slight, the ability of local agencies to respond to a remote natural gas pipeline explosion should also have been discussed, especially since the Wanapa plant and its associated pipeline lateral are in isolated areas and it will take time for emergency services to respond.

10-31 The DEIS should have described the likely scenario of service incidents on the pipeline serving the power plant, perhaps by describing several of the recent explosions on this pipeline and at similar pipelines. The types of agency responses that would be required, and the adequacy of the local agencies to respond, should also be discussed.

Descriptions of a range of several recent incidents should be provided, so that readers and persons submitting comments can be appraised of the possible impacts of service incidents. This is appropriate because service incidents can be expected over the life span for the pipeline lateral.

POWER PLANT ACCIDENTS

The DEIS failed to discuss the potential for accidents and explosions at this proposed facility. On occasion, similar power plants have experienced fires and explosions that have damaged property and killed people.

Just five days ago, on October 8th, 2002, a massive explosion at the Florida Power & Light natural gas fired Palm Beach plant rocked two counties, followed by a hydrogen-fed fire. The explosion shook houses and rattled windows, and was as loud as a sonic boom. In January, 2002, there was a hydrogen explosion and fire at the natural gas fired BC Hydro plant in Port Moody, BC.

10-32 Less than two weeks ago, on October 1, 2002, there was a nine-alarm fire at the Sithe power plant in Boston, that began in a hydrogen generator. The fire and explosion caused $10 million in property damage.

Hydrogen will be used and stored at Wanapa Power. But this potential impact from explosives and fires from caused or fed by hydrogen, and the ability of local emergency services to respond, was not adequately discussed in the DEIS.

At the Sithe blaze, 180 firefighters had to respond. The natural gas fired turbine at the Doswell power plant in Virginia recently suffered an catastrophic fire and explosion. It took 75 fire fighters to quell the resulting fire The DEIS should have discussed what will happen if hundreds

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10-31 The facility and the pipeline are within ten miles of the towns of Umatilla and Hermiston. The project would make the necessary arrangement with both of these cities' fire and emergency response teams to make fire and emergency services available for response to an incident. The pipeline route does not have any sections that have poor accessibility (e.g., "remotely" located) – the entire length (10 miles) could be readily accessed by emergency equipment from nearby roads and along the rights-of-way in the event of a release or incident.

Transportation of flammable gas would be done in a safe, efficient and effective manner. As with any responsible operator, a proper emergency response plan developed in coordination with local communities would be in place. Given the presence of other laterals to power generation facilities almost identical to the project and the hundreds of miles existing pipeline running through the area, no significant changes should be required. The project would integrate itself into the existing emergency response system.

10-32 Power plants are considered safer than most major industrial facilities. While fire and explosion accidents occasionally have occurred at power plants, these plants are designed and operated according to strict building, engineering, and operating codes and standards to minimize the potential for serious incidents. The plant would hire the most skillful operators and would conduct safety trainings to minimize human error in causing accidents. Staff of the Wanapa Energy Center would include a risk management and compliance officer.

Risk of Fire and Explosion. The proposed project would use natural gas and distillate fuel oil for equipment combustion firing, lubricating oil for equipment operation, and mineral oil for transformer operation. The natural gas fuel would be used for powering the four combustion gas turbines, duct firing in the four HRSGs, and building space heating

Natural gas would pose a fire and/or explosion risk because of its flammability. Although natural gas would be used in significant quantities, it would not be stored onsite. Risk of fire and/or explosion would be reduced through adherence to applicable laws, ordinances, regulations and standards, and the implementation of effective safety management practices in all areas of the generation plant. Fire prevention and suppression measures that would be included within key areas are listed in the paragraphs that follow.

10-32 Cont'd
The generation plant fire protection system would include:

- A dedicated firewater storage supply in the service water storage tank, sized in accordance with National Fire Protection Association (NFPA) 850 to provide 2 hours of protection from the on-site, worst-case single fire (NFPA 850, Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations);
- An electric jockey pump and electric motor-driven main fire pump to increase the water pressure in the power plant fire mains to the level required to serve all water fire fighting systems;
- A diesel engine-driven fire pump to pressurize the fire loop, if the power supply to the main fire pump fails;
- A dedicated underground firewater loop piping system with fire hydrants and the fixed suppression systems supplied from the firewater loop;
- Fixed fire suppression systems installed at determined fire risk areas such as transformers, turbine lubrication oil equipment, and the cooling towers;
- Sprinkler systems installed in the fire pump building as required by NFPA; and
- Hand held fire extinguishers of the appropriate size and rating located in accordance with NFPA 850 throughout the facility.

The combustion gas turbine-generator units would be equipped with

- Gas detectors that alarm when combustible gas in the combustion gas turbine unit enclosures reaches approximately 25 percent of the lower explosive limit;
- Automatic shutdown controllers for the natural gas supply trip valves if the combustion gas turbine concentration reaches 60 percent of the lower explosive limit;
- Vent fans in the combustion gas turbine enclosures to ventilate any collected gas; and
- Thermal fire detectors and smoke detectors located throughout the combustion gas turbine generator enclosures; actuating one sensor would provide a high temperature alarm on the combustion gas turbine control panel; actuating a second sensor would trip the combustion gas turbine, turn off ventilation, close the ventilation openings, and automatically release gaseous carbon dioxide to quench the fire.

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The steam turbine-generator units would be supplied with

- Bearing preaction water spray systems that would provide fire spray water to the steam turbine-generator bearings in case of a fire; and
- Fire detectors and an automatic water-deluge water spray system for the steam turbine-generator lube oil areas.
- Each major transformer would be supplied with
- A deluge spray system in case of a fire;
- Concrete foundations with crushed rock and curbs to contain a fire; and Block walls as fire breaks between transformers.

The cooling towers would be supplied with a dry-pipe water spray system in case of a fire.

To control overpressure of the natural gas piping systems downstream of the valve station, relief valves would be installed with discharge to a safe location. The released natural gas should rapidly dissipate into the air. A system alarm would sound in the control room. No natural gas would be released to the atmosphere from upstream of the control valve station.

A comprehensive communication plan would be developed to coordinate responses to fire and explosion emergencies at the project site. This comprehensive plan would be part of the fire prevention plan during operation. At least 90 days before the start of operation, a meeting would be held that would include the plant operations and maintenance contractor, the developer, and Fire District to coordinate all operational response requirements and communication details.

In addition to the safety systems, risk to the public and private property would be further reduced by the Wanapa project's location within a sparsely populated area. No residential or other occupied structures are located immediately adjacent to the project facility. The closest residential structure, which is the Two Rivers Correctional Facility, is approximately 1 mile from the plant. Given the sparse population in the vicinity of the plant, the requirements for plant design, its operation under applicable safety codes, and the presence of safety systems on site, the potential risk to environmental resources or the local population is low.

Hazardous materials that would be used during the operation of the proposed project are listed in Section 2.3.1.3. Hazardous materials such as paints and lubricants would be stored in the fenced area to be located in a safe area. Any hazardous waste materials generated during construction or operation would be periodically removed by and transferred to a licensed hazardous waste disposal area by a waste disposal contractor.

Letter 10 Continued

of fire fighters are needed to respond to a problem at the isolated, rural Wanapa location. There was no discussion of whether nearby fire departments even possess the types of modern, sophisticated equipment, such as foam applicators that can administer foam from above the fire, that will be needed to fight a fire that is fed by large quantities of natural gas, diesel, lube oil, hydrogen, ammonia and other toxic materials.

There were other explosions and fires at power plants recently. An explosion and fire rocked the Black Hills Power and Light power plant in Wyoming, in June, 2002. A back-up generator blew up and caused a "major" fire at the Allegheny Energy plant in Pennsylvania, in July, 2002. Firefighters from at least five communities had to respond to the blaze. A pressure relief valve activation at the Mirant plan in Zeeland, Michigan in August, 2002 caused diversion of traffic, to avoid released gasses.. Three workers were killed at a fire in the O'Brien Newark, New Jersey Cogeneration power plant fire recently. At least 20 other fires have been recorded over the last 10 years at power plants, causing another death and $417 million in property damage. The most severe fires often involved the release of lube oil, which ignited. Lube oil will likely be stored at Wanapa, although it was not discussed in the DEIS.[10]

10-32

Power plants typically store and use many materials that present a danger of fire and explosion, such as hydrogen and lube oil. The dangers from use and storage of these materials was not discussed in the DEIS. These kinds of serious accidents, and the ability of local emergency response units to respond, are significant impacts that should have been discussed in the DEIS.

There were 272 to 557 equipment failures and accidents per year at power boilers and pressure vessels since 1992, causing almost 200 injuries and 29 deaths, and another 145 to 387 failures, and another 270 injuries and 54 deaths, from unfired pressure vessels, according to Power Magazine, Jan-Feb., 2001, p 53.

Because Power plants typically store and use many materials that present a danger of fire and explosion, such as hydrogen and lube oil, some of these hundreds of annual accidents at power plants cause injuries, and losses of life and property beyond the power plant boundaries, and require a large response of emergency personnel, as previously described. The dangers from the use and storage of these materials, and the ability of local fire departments to respond, was not discussed in the DEIS. These kinds of serious accidents are significant impacts that should be discussed in an EIS.

CUMULATIVE EFFECTS OF INCREASED USAGE OF NATURAL GAS

10-33

The EIS did not discuss the adverse impacts from the increased exploration and processing of gas in Canada, in part sparked by the development of these this project. Discussions of Canadian impacts is mandated by Presidential findings during the Carter Administration regarding the scope of NEPA-covered projects. A description of Cross-border impacts are also appropriate,

[10]Most of these narratives are from the Chemical Safety Board's web site.

Responses to Letter 10

10-33 Although the commenter cites no authority for the assertion of a Presidential mandate, research indicates that the reference is likely Executive Order 12114 passed by President Carter on January 4, 1979. This Executive Order only sets forth a requirement for federal agencies to establish procedures to address impacts of certain actions. Section 3.1 explicitly limits the Order to establishing these federal agency procedures and states that the Order does not create any cause of action. The use of the Order to expand its intent to include the Wanapa project is incorrect.

However, even if the Order were applicable, Wanapa would not be required to address impacts of increased production. Of the actions requiring agency procedures set forth in the Order, the only provision potentially applicable in this situation would be Section 2-3 (b) "major Federal actions significantly affecting the environment of a foreign nation *not participating with the United States and not otherwise involved in the action* [emphasis added];"

The Wanapa project utilizes existing gas transportation capacity; as such, no environmental decisions are required to be discussed for pipelines in Canada. The commenter implies that the project's presence in an existing, fully developed, export-import market fully approved by both the Canadian and U.S. governments of 9.5 billion cubic feet of gas per day (9,500,000 decatherms (Dth)/ day) would create significant environmental issues. Even if this implication was true, the Executive Order applies only when the foreign nation is not involved. Canadian natural gas exploration and production is heavily regulated at both the federal and provincial levels. Exports and import to and from the U.S. are governmentally approved and an integral part of the energy system of both countries. The Canadian government is fully engaged in all aspects of this market from exploration through export. Therefore, even if the increased market for natural gas had significant environmental impacts, this Executive Order would not apply because the Canadian government fully participates in the action and would have addressed any environmental concerns presented in Canada.

Finally, Section 2-5 (i) explicitly exempts "actions not having a significant effect on the environment outside the United States as determined by the agency." The Wanapa Energy Center would be an extremely minute participant in the U.S.-Canadian gas market. Even assuming all the natural gas consumed by the project was imported from Canada, the project's maximum consumption of 250,000 Dth/day represents less than 1 percent of Canada's 17,400,000 Dth/day production.[1] Nonetheless, as stated earlier, Canada has a well developed scheme to protect the environment from potential issues created by increased production. The project does not create any significant environmental impacts outside the U.S., and therefore, falls within the exclusion of Section 2-5 of the Order.

[1] http://www.capp.ca/default.asp?V_DOC_ID=690
(2002 production numbers from the Canadian Association of Petroleum Producers).

Letter 10 Continued

10-33 considering that the Canada Energy Board requires assessments of impacts in the United States, when evaluating proposals for Canadian pipelines.

COOLING TOWER DRIFT

The cooling towers are PM-10 and TSP sources, to the degree which the cooling water contain solids, which are emitted from the cooling tower exhaust as particulate. A large power plant using water high in solids content can emit tons per year of PM-10 and TSP. Cooling tower emissions contain salts, metals, water treatment chemicals, and other contaminants, which could degrade the quality of soils, and affect human health, wherever the cooling tower drift is deposited.

10-34 An air quality expert examined the cooling tower emissions from Goldendale Energy, a 250 MW plant, and provided calculations to determine the amount of "drift" that will be produced. When those calculations are scaled to the Wanapa plant, then a potential 100 ton/year of particulate, including salts would be emitted. The DEIS calculates far lower figures, but does not provide the basis for their calculations. The DEIS should have provided those calculations for double-checking, and should examine the potential for higher emissions than what is predicted in its own best case modeling.

Even with the lower predicted figures, measurable adverse impacts are predicted from cooling tower drift and salts deposition. Switching to full air cooling would also reduce PM and TSP emissions, since a cooling tower will no longer be needed.

The DEIS should have provided data, such as the TDS of the circulating water, the percentage of cooling tower drift, the circulating rate of the water, and the numbers of cycles of circulation, so their figures on the cooling tower drift can be verified. The DEIS should have calculated the emissions of metals, water treatment chemicals, and other contaminants that are present in the cooling water, which could degrade the quality of soils, and affect human health, wherever the cooling tower drift is deposited.

LEGIONNAIRES DISEASE

10-35 The DEIS did not provide a table of materials stored on site that listed biocides known to be effective against Legionnaires Disease. This disease breeds in moist, warm climates, including cooling towers such as those to be used by the plant. It has been spread through the discharge of steam from cooling towers. In March, 2001, for instance, two Ford employees died in Ohio after exposure to Legionnaires' Disease, spread by the facility's industrial cooling towers. Legionnaires Disease organisms have also been found in the CEGB power plant's cooling tower water, near Stafford, England. Since it is not apparent that Wanapa plans to use appropriate chemical treatment of its cooling tower system to stifle development of the relevant bacteria, there is a threat of Legionnaires Disease from this facility. This should be discussed in a revised DEIS.

POWER LINE BURIAL ALTERNATIVE AND ELECTROMAGNETIC FIELDS (EMF)

10-36 The alternative of burying power lines associated with this project should be discussed in the DEIS. Power line burial has been used at many projects, and would reduce the visual impact of

Responses to Letter 10

10-34 The cooling tower would be equipped with drift eliminators with highest commercially available drift elimination efficiency (0.0005 percent of circulating water flow). In addition, to reduce the PM_{10} contribution of the drift, the air permit would include TDS limits in the cooling tower (see response to Comment 10-12). This TDS limit, to reduce PM_{10} would make it necessary to operate the tower at lower cycles of concentration. The PM_{10} emission from the cooling tower would be within the limits of the air permit. The USEPA checks the PM_{10} calculations in order to establish limits. Air-cooled plant considerations are discussed in response to Comment 10-3.

10-35 The microbes that cause Legionnaire's disease may occur in heating, ventilating and air conditioning (HVAC) systems that incorporate moist or water-cooled sections and components. These HVAC systems can have cooling towers associated with them; however, the towers are usually utilized for non-contact cooling, where the cooling tower water is not in direct contact with the HVAC components that move air (the cooling water does not directly contact the air). The projects' cooling towers would be treated with sodium hypochlorite, which is a highly effective microbiocide. Uncontrolled microbiological growth in a cooling system can cause serious interference with heat exchange and associated operating equipment so it must be controlled. The project's cooling system would be operated to meet all applicable laws and regulations and the cooling water could not be utilized for HVAC systems.

10-36 The project would transmit its power across the 500-kV lines. Burial of the 500-kV lines are not feasible. Reasonable circumstances for constructing transmission lines under ground would be marine crossings or dense urban areas. The additional equipment required, such as insulating fluids, high-pressure pumps, and temperature-monitoring equipment, would significantly increase costs of construction. In addition, the relative difficulty of maintaining and repairing underground transmission facilities make an underground line less reliable.

The commenter suggests that the new line would create an avian collision hazard. However, studies have found that such problems occur only in very specific, localized situations where birds in flight must frequently cross a power line within their daily use area. (Edison Electric Institute, 1994. Mitigating Bird Collisions With Power Lines: The State of the Art in 1994. Washington, D.C.)

The commenter also suggests the line would cause significant visual impact and increase human exposure to electromagnetic fields; however, the line would be located on mostly unpopulated land. Finally, underground construction would cause substantially more ground disturbance than overhead construction. Underground construction is not a reasonable alternative for a 500-kV line because it offers no environmental advantages to overhead construction in this situation, would be significantly more expensive, and would be less reliable with potential for harm and loss of life.

these projects, and may reduce EMF exposure, and the impacts to avian species which collide with above ground power lines.. Bird Mortality from the new power lines and EMF exposure are other potentially significant impacts that should be discussed in the DEIS, and power line burial should be discussed as a mitigating factor, and a method of avoiding impacts on the nearby sensitive areas.

POWER LINE BURIAL ALTERNATIVE AND ELECTROMAGNETIC FIELDS (EMF)

The alternative of burying power lines associated with this project should have been discussed in the DEIS. Power line burial has been used at many projects, and would reduce the visual impact of this project, and may reduce EMF exposure, and would reduce the impacts to avian species which collide with above ground power lines.. Bird mortality from the new power lines is a significant impact that should have been discussed in the DEIS, and power line burial should have been discussed as a mitigating factor, and a method of avoiding impacts on the nearby sensitive areas, including the 2.5 acres of potentially impacted wetlands.

10-36

While the DEIS at 3.3-23 does recommend avoidance of partitioning foraging and resting habitat, the proposed new lines' Alternative 1 borders the nearby Wanaket Wildlife area. Other alternative routes pass over 4 wetlands (p. 3.3-23). The DEIS states at 3.3-10 that "Waterfowl also represent an important biological component of the Wanaket Wildlife Area," and that bird counts have totaled as many as 162,610 during 1986-7. Even if habitats are not partitioned, the proximity of new transmission lines to areas, including open waters, that are heavily used by many birds, is a significant adverse impact that may constitute a taking of habitat.

While Transmission Line avoidance of habitat is important, in all cases the transmission lines will be relatively near the Wildlife Area. But the DEIS did not discuss burial of the transmission lines as an alternative project design. In one study of 2,000,000 examples of non hunting related waterfowl mortality, about half 3000 non-hunting deaths were due to striking wires. The study's author recommended that wires in areas of high waterfowl use be buried.[11]

Another study of high voltage lines crossing a slag pit near the Kincaid Power Plant, found that 200 of 400 waterfowl were killed by colliding with these lines. Mallards and Coots constituted 62% of the killed fowl.[12]

A third study concluded that the increased construction of power plants and associated

[11]Cornwell, CW. 1986 Needless Duck Deaths. Conservation Catalyst 2(4):15-18.

[12]Sanderson, GC and Anderson, WL. 1981. Waterfowl Studies at Lake Sangchris, 1973-77. Illinois Natural History Survey Bulletin 32 (article 4): 656-689.

Letter 10 Continued

transmission lines may pose a significant hazard to birds in the plants' vicinity.[13]

There are many examples of burial of high voltage power lines of considerable length. Some example of actual and proposed burials of large pipeline include the 345 kV line that would be buried for 1700 feet to go under the Namekagon River near Trego, Wisconsin.

Sierra Pacific is burying a 14,000 volt line for about 2000 feet near downtown (Lake) Tahoe City, according to the company's June 9, 1999 press release.

Sierra Pacific is also burying a 120,000 volt (120kV) line for about 1700 feet near Carson City, Nevada, according to the company's April 19, 1999 press release.

Sierra Pacific's longest underground line is 2.6 miles, according to their Media Relations department.

10-36 The California Public Utility Commission's consultants, Aspen Environmental, prepared a study of an all-underground route for a 230 kV line near Pleasanton, California (Pleasanton Weekly. "Objectors, Proponents speak out on PG&E Power Line Plan." 2/16/01)

The Sumas II Power Plant has proposed a buried 230 kV line for 1.4 miles, in Abbotsford, Canada, as part of its trans-border proposal. (Canada Newswire. "NSB Receives a Revised DEIS from Sumas Energy II to Construct an International Power Line." October 2000)

The Sargent & Lundy engineering firm's website lists several underground transmission lines for which they provided engineering, including a 115/138-kV line, a 230 kV line in Washington Dc, a 1800 foot 115-kV line in Baltimore, five 230-kV lines in China, two 69 kV lines in Iowa, a 1300 foot 138-kV line in Tennessee, and a one-mile, 138-kV line in Salt Lake City.

This litany of buried transmission lines indicates that this is a practicable, feasible and economic alternative design for this portion of the project. It would reduce the impact on avian species, and would reduce the visual and land use impact of the project. For this reason a burial alternative, should have been presented in the DEIS.

SOLID WASTES

10-37 Water treatment for a large power plant can generate as much as 15 tons per month of wastes, called filter cake. There are other waste streams, including spent catalyst, which is a hazardous waste. Catalyst wastes could be avoided by used of the SCONOx scrubber system. These impacts

[13]Krapu, GL, 1974. Avian Mortality from collisions with overhead wires in North Dakota. Prairie Naturalist 6(1): 1-6. Abstracts of these three, and additional studies were found at http://www.energy.ca.gov/reports/avian_bibliography.html

Responses to Letter 10

10-37 The primary source of solid waste from a natural gas-fired power plant with SCR air emission control systems are spent catalyst from the SCR and sludge generated by the water treatment system. Other wastes are generated in small quantities and include office waste from plant personnel and solvents, paint and used oils from plant maintenance.

The largest volume of waste would be from the water treatment system. The raw water treatment system at the project would be a vendor-supplied system that would generate sludge from the treatment of water. These wastes are not considered hazardous waste and would be transported and disposed of off-site by a licensed contractor. Maintenance wastes, some of which are hazardous, would be removed and disposed of off-site by a licensed contractor. Spent catalyst from the SCR, which is removed periodically, also is a hazardous waste and would be handled by a licensed contractor. Since none of these wastes would be disposed of on-site and licensed contractors would handle all of these wastes, there would be minimal risk of these wastes being released at the facility.

See response to Comment 10-22 related to the issue of $SCONO_x$.

Letter 10 Continued

10-37 were never described adequately in the DEIS. The materials contained in this wastes, its destiny, and its impacts on landfill capacity should all have been discussed.

STORM WATER RUNOFF AND SPILLS

The project will include the creation of several acres of impervious surfaces. This will cause the generation of millions of gallons of storm water runoff. This water will be tainted with oil, grease, and other contaminants present on the site and its parking lot and roof. The DEIS should have describe adequately the quality of this runoff, its destiny, and its potential impacts on ground and surface waters. The DEIS should have described to what degree it will treat the storm water before it is allowed to infiltrate into the ground water.

10-38 While an oil/water separator will be present, the DEIS should have identified the degree to which storm water will be channelized through the separator. The DEIS should describe the fate of wastes that are separated from the storm water. The DEIS should describe the project's compliance with typical State Storm Water Management rules. For instance, use of oil/water separators is actually criticized as having limited application, in Washington's storm water guidance manuals. The DEIS should describe why a separator was appropriate for this location, or why alternative methods of storm water pollution were not studied.

A list of all miscellaneous cleaners, lubricants and gases with quantities should have been available in the DEIS. Some glaring items missing are Acetylene, Argon, Radioactive materials for X-ray equipment, Gasoline, Carbon Tetrachloride, Hydrogen, Propane, Ethylene, Dynamite, Halon, etc. A list of all materials used on previous construction and procedures to handle them must be submitted.

GLOBAL WARMING

The DEIS did not inform its reviewers that the plant will emit millions of tons of carbon dioxide, a known and potent greenhouse gas. This failure to provide this basic information is a NEPA violation. Instead the DEIS provides a misleading discussion suggesting that the project was "efficient." The DEIS also inferred that the project would possibly meet State of Oregon standards for CO2 emissions, without informing reviewers that even if it met Oregon standards, Wanapa would still be required to pay tens of millions of dollar in CO2 mitigation fees. **The**

10-39 DEIS then bluntly terminates its one-paragraph discussion of this important topic by stating "No mitigation measures are proposed."

This in not a legally adequate discussion. The DEIS is obligated to discuss the magnitude of Wanapa's CO2 emissions, and the types of mitigation payments that would be legally required by Oregon if this plant were subject to State regulations. If no mitigation is forthcoming, at least reviewers would be aware that the Wanapa plant is going to escape millions of dollars in CO2 mitigation payments, that all other thermal power plants in Oregon, and future plants in Washington will have to pay.

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10-38 Accumulated storm water from the site would be routed to a detention pond. The primary contaminant would be suspended solids with minor amounts of oils and other materials. The storm water pond would be lined so the potential for contamination of groundwater would be negligible.

The risk of oil contamination of storm water is greatest in the power block area where the transformers and turbine lube oil tanks are located. All storm water from these and other such areas would be routed through an oil/water separator to remove and collect any oil. Water from the oil/water separator would flow to the retention pond. The oil/water separator would be regularly inspected for proper operation and a licensed contractor would remove the collected oil on a periodic basis.

The project would obtain a Storm Water Discharge Permit from the USEPA Region X and would develop and implement a Storm Water Pollution Prevention Plan. This plan and implemented Best Management Practices (BMPs) would meet all requirements of the permit.

Miscellaneous solvents, cleaners and lubricants that would be used for maintenance activities at the plant would usually be stored and used in small consumer quantities such as those purchased in hardware stores. Large quantities of these materials would not be used at the project facility.

10-39 See response to Comment 10-3.

Emissions of carbon dioxide (CO_2), methane, and nitrous oxide from the project have been estimated at the rates shown in **Table ____** below when operating at maximum firing rates.

Table ____
Greenhouse Gas Emissions from Wanapa Energy Center

Pollutant	Annual Emissions (1,000 tons)	Global Warming Potential (GWP) 100-year	Annual Emissions, CO_2 Equivalent (1,000 tons)
CO_2	4,594.6	1	4,594.6
Methane	0.28	21	5.8
N_2O	0.0055	310	1.7
Total			4,602.2

No mitigation measures for CO_2 are required under NEPA. However, the project intends to mitigate for CO_2 emissions through the Wanapa Environmental Foundation.

Letter 10 Continued

SOCIO-ECONOMIC IMPACTS DURING CONSTRUCTION

10-40

The developer has not made any commitment to maximize local hire of its construction work force. This means that potentially one-half or more of the construction workers, or as many as 500 workers, given the experience in the Calpine/Hermiston job, could be imported into the area at the job's peak. Many studies show that on a lengthy job of this nature, more than half of the married workers will bring their families. This means that hundreds of children could be added to local schools for up to a year or more. There will be impacts on housing, jails, libraries, health care, and other social services.

The DEIS should describe the potential socio-economic impacts during the construction phase of a power plant or large industrial project, as revealed in public and private studies of the power plant in Boron, California, and the USS-Posco steel mill in Pittsburg, California. The Wyoming Industrial Siting Council considers that if only 60% of imported construction workers bring their families, that is a low "moving in" rate. The DEIS says at 3.9-14 that only 30% of the construction workers will be hired locally. If 60% of the construction workers bring their families, there will be hundreds of additional children in local schools for the two year life of the project.. This and other socio-economic impacts, and meaningful mitigation measures, should have been described in the DEIS.

The DEIS at 6.3.5 admits that there will be traffic impacts; but these estimated nature of these impacts, including the potential of over 100s of Cars every day during peak construction periods was never discussed, nor were any mitigation measures presented.

While the DEIS at 6.3.6 states that state noise standards will be met at the property line, there are additional standards to be met at the nearest receptor. The DEIS does not describe the noise impacts at the nearest residences or noise receptors.

The DEIS claims that the project will contribute taxes to the local and regional economy. The project will not be obligated to pay any property taxes, and testimony presented at prior public meetings described situations under which the burdens on local services caused by the power plant, especially during construction, will not be mitigated by future government revenues.

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10-40 See Response to Comment 6-6

Construction traffic would be coordinated with local authorities so that traffic congestion would be avoided. Due to the plant's proposed location in a remote site, there would likely be no traffic impacts in and around the project facility.

Based on the information from the nearby Coyote Springs project constructor, which was built by the Washington Group in 1996 and 1997, the following information is available regarding labor figures. On the Coyote Springs project, over 60 to 65 percent of the labor work force commuted daily either locally or from the Tri Cities area (which is considered local). The remaining 35 to 40 percent stayed in motels or RV parks. The average stay for a worker was less than 1 year. Washington Group indicates that very few of the craft or construction personnel brought their families with them, resulting in no impact to the local schools. These families did, however, contribute to local businesses by frequenting local restaurants, convenience stores, hotels, motels, trailer and RV parks.

The project would comply with the State noise standards. In addition to meeting state noise standards, the plant would not impact existing ambient noise levels locally. The nearest noise receptors are more than 1 mile away at the Two Rivers Correctional Facility and a residence over 2.5 miles away; these receptors are not expected to be susceptible to any plant noise.

Regarding the property tax issue, see response to Comment 11-2.

ENDNOTES

1.Sources for Copper Discussion

April, 2002. Parametrix. Biological Review. Tri-County Model 4(d) Rule. Response Proposal. Prepared for Tri-county Salmon Conservation Coalition.

Stratus Consulting. Lipton, J. Hansan, JA. Welsh, PG. Cacela, D. Critical Body Residues for Metals: Evaluation of Relationship between Copper Accumulation and Effects in Rainbow and Bull Trout. Boulder, Colorado.

Materna, Elizabeth. Temperature Interaction. EPA Region X Water Quality Criteria Guidance Development Project.

EPA. Gold Book; Water Quality Criteria, 1986.

Baldigo, Barry and Baudanza, Thomas. Copper Avoidance and Mortality of Juvenile Trout in Tests with Copper Sulfate Treated Water. USGS. Report 99-4237.

Golding, S. Ecology publication 95-305. Metro Renton Wastewater Treatment Plant Class II.

Dietrich, Andrea. Evaluation of Pollutants in Source and Process Waters used in Shellfish Aquaculture. Virginia Tech.

2.**SOME NEARBY NOX SOURCES**

BOARDMAN POWER PLANT
17762 TPY (Tons per year) of NOX.
This is a coal fired power plant near Boardman, Oregon.

COYOTE SPRINGS POWER PLANT
This plant, near Hermiston, Oregon, has one turbine emitting 287 TPY of NOX. It was permitted in 1995. Another turbine was permitted in 1995, which is under construction. It will emit another 287 TPY.

HERMISTON POWER PARTNERS
This plant was permitted for 270 TPY of NOX in 1995. Later permit amendments bumped them to 314 TPY. It is now operating.

US GENERATING
This 500 MW power plant, shows 270 TPY of NOX emissions. It was permitted about five years ago.

PIPELINE COMPRESSOR STATIONS
The Northwest Pipeline, and the Pacific Gas Transmission natural gas pipelines, both run through the Columbia River area Both pipelines utilize several compressors/pumps that are large NOX sources, including the Roosevelt compressor station in Klickitat County.

PGET
NOX EMISSIONS COMPRESSOR INVENTORY

Ione:	621 TPY.

Kent	261 TPY
Starbuck	177 TPY
Wallula	85 TPY

NORTHWEST PIPELINE
Their pipeline runs along the Columbia from Clark County, Washington (Washougal) to Hermiston, and branches northeast towards Spokane, and southeast towards Boise. Oregon Department of Environmental Quality (DEQ) files states this pipeline has compressor stations every 50 miles. An Oregon DEQ emissions inventory did list the following nearby compressor stations:

Stanfield	15.2 TPY of NOX.
Meacham	585 TPY, according to their permit renewal in 1996 .
Rosalia	Recent 85 TPY increase

There are other compressor stations along the pipeline route in Washington on the Northwest Pipeline, with large NOX emissions, including the Washougal and Klickitat/Roosevelt stations.

The NW pipeline compressor in Baker County, Oregon, increased its NOX emissions in 1997 from 131 to 257 TPY.

Compressor station known total: 2100 TPY of NOX, not counting Baker City, Plymouth, or Roosevelt. These compressor stations were not apparently included in the cumulative air impacts analysis.

OTHER EXISTING NOX SOURCES IN NORTHEAST OREGON AND SOUTHEAST WASHINGTON

NAME	NOX IN TPY	
UW/Pullman	250	
Boise/Wallula	recent 658 tpy increase–1700 ton total	
Kinzua	153	
Boise	>385	La Grande
Boise	>250	Elgin
Co-Gen II	187	Prairie BPA and Benton County
	900-odd total	

Both of the smaller Boise facilities were significant NOX sources, that conducted several expansions and increased their NOX emissions, since 1984 to the present. Their actual NOX emissions are not known, since they did not get the required permits from DEQ prior to these expansions. The EPA has a Notice of Violation pending against both facilities. These two facilities did not submit to the PSD process–yet.

UNDER 100 TPY-NOX

Joseph Lumber	36	Joseph
Dee Forest	53	Hood River
Grant Western	38	John Day
Simplot	97	Hermiston
Lamb-Weston	70	Hermiston
	300-odd total	

PROPOSED NEW POWER PLANTS AND NOX SOURCES
WALLULA
This 1300 MW project will emit about 434 ton/year of NOX and 1400 ton/year of total criteria air pollutants, and another 380 ton/year of ammonia, which could contribute to another 1600 ton/year of secondary particulate formation.

Letter 10 Continued

GOLDENDALE SMELTER CLIFFS PROJECT
The BPA recently issued a ROD for a new turbine at this facility, which will emit about 100 TPY of NOx. This facility, and the Boise/Wallula Mill expansion was left off of the cumulative impact-air quality list.

GOLDENDALE ENERGY
This 249 MW power plant will come on line in 2004, producing about 77 TPY of NOx.

AVISTA/LONGVIEW
This 300 MW plant will be across the street from the Weyerhaeuser mill. It will emit about 100 ton/year of NOX, and another 200 ton/year of other pollutants. Its construction was recently halted but it is about 70% complete.

UMATILLA AND MORROW GENERATING
These proposed plants by PG&E National Energy will generate about 1000 MW and produce about 500 TPY of NOx. The Umatilla plant is fully permitted.

PACIFIC RIM ETHANOL
This proposed alcohol refinery near Moses Lake will emit about 100 TPY of NOx and about 350 TPY of total criteria pollutants. It was not cited in the cumulative air impact analysis.

Letter 10 Exhibits

EXHIBITS

ARTICLE ABOUT DIAMOND'S OTHER AIR COOLED POWER PLANT
"MITSUBISHI SUBSIDIARY SEEKS TO BUILD NEVADA PLANT"

ARTICLES ABOUT OVERDRAFTS ON THE COLUMBIA RIVER
"Columbia River Vision"
"Locke Announces Statewide Drought Emergency"
"Is Columbia Tapped Out?"
"Group Seeks Columbia Water-rights Limits"
"Washington Farmers Lease Water Rights to Help Fish"

ARTICLE ABOUT RECENT PIPELINE EXPLOSIONS
"NATURAL GAS PIPELINE SHUT DOWN"

DOCUMENTATION OF NEW/EXPANDED NEARBY POLLUTION/NOX SOURCES
Hanford Waste Treatment Plant
Rosalia Compressor
Boise Cascade/Wallula

DOCUMENTATION OF OZONE READINGS NEAR VIOLATION LEVELS
1-hr. readings of .079, .078, and 8-hr. readings of .062, .076, compared to new 8-hr. standard of .085.

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Mitsubishi Subsidiary Seeks to Build Nevada Plant

LCG, Mar. 4, 2002--Diamond Generating, a subsidiary of Mitsubishi, the Japanese conglomerate, hopes to build a gas-fired generating plant near Goodsprings, Nevada, starting in early 2003.

While many US-based power developers have scaled back the number of projects they are actively pursuing due to a drop in power prices and lender concerns over some power producers' high levels of debt, Bill Davis, director of development of Diamond Generating, said, "there is still an increase in electric load requirements (in the western United States)." The plant would be named Ivanpah Energy Center, and would have a capacity of 500 megawatts.

The plant, which would be dry-cooled, would utilize 30 to 50 acre feet of water for cooling annually, from partially treated gray water generated by the Southern Desert Correctional Center in Jean. A typical dry-cooled plant requires 250 to 300 acre feet. The land on which Ivanpah would be built would be leased from the Bureau of Land Management.

A series of public meetings are scheduled concerning the plant. If the plant receives all required approvals, Diamond hopes to start operations by March 2005.

News Headlines

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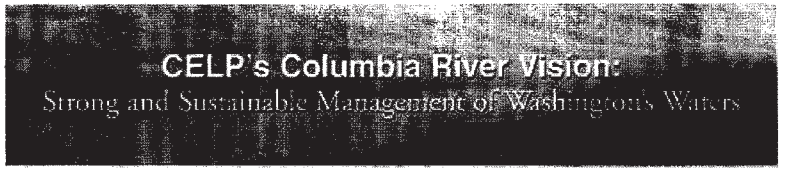
The Center for Environmental Law & Policy's

Columbia River Vision

Strong and Sustainable Management of Washington's Waters

November 2000



The Water Withdrawal & Diversion Dilemma

The Washington State Department of Ecology (Ecology) just came perilously close to permitting a large water diversion that would have allowed the Cities of Kennewick, Pasco, Richland, and West Richland (the "Quad Cities") the right to take 178 cubic feet per second (cfs), or 115 million gallons of water per day (mgd), out of the mainstem of the Columbia River. The river is already over-appropriated for consumptive water use, and not enough water remains instream to meet fish-critical needs. While federal agencies, the State of Idaho, and individual family farmers and water users have been working to augment flows, the State of Washington sits ready to permit further water use—another 100+ applications for new water from the Columbia are pending before Ecology right now.

With commitments made to salmon restoration in this state, Washington needs to reconsider its position on allowing further consumptive diversions and withdrawals from the Columbia River, and close the Columbia to further appropriation. The State should be working collaboratively with other entities in assessing the flow needs of listed salmon species, and in trying to augment flows to ensure that these needs are met. This state can ensure water for both people and fish if it works more creatively around commitments to restore and preserve the resources under its stewardship.

CELP's Concern[1]

Many of Washington's streams, rivers, and aquifers are currently over-appropriated and lack sufficient flows to meet the needs of fish. The Columbia River represents just one of these over-appropriated river systems. The Center for Environmental Law & Policy (CELP) became concerned with the potential for decreased Columbia River flows in 1997, when the Washington State legislature lifted a permitting moratorium and paved the way for the State to permit further water use from the Columbia.

CELP is particularly concerned with the precedent the State will be setting by proceeding with water permitting on the Columbia. At a time when the federal government, tribes, scientists,

[1]CELP questioned Ecology's authority to permit additional withdrawals from the Columbia in relation to the Quad Cities application. Along with pointing out concerns over the cumulative effects of water withdrawals and diversions, CELP also pointed out that the application itself was technically invalid. Ecology had actually cancelled the application years earlier when the Quad Cities failed to live up to the terms of their preliminary permit. Despite the fact that numerous substantive reasons existed for Ecology to deny this application, the agency hung its hat on this

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environmentalists and others agree that salmon recovery must include increased flows for fish, the State of Washington sits ready to unilaterally spawn a significant snag in coordinated Columbia River salmon recovery efforts. In doing so, the State will be ignoring it's responsibilities as a steward of a public resource, as well as a governmental entity that must ensure its actions do not further the decline of threatened and endangered species.

CELP believes the State can be a "better actor" by halting any further Columbia diversions and withdrawals, and implementing more creative solutions to find water for both people and fish. CELP's Columbia River Vision: Strong and Sustainable Management of Washington's Waters, including an overview of the state of the Columbia River and the State's water permitting role, follows:

The Columbia River's Decline

> ***All Columbia River Basin salmon stocks are in a state of perilous decline, especially Upper Columbia spring chinook and steelhead throughout its range. Without substantial intervention, there is a greater than 50:50 chance that most of these stocks will be extinct by the next century.***[2]

The Flow Dilemma

The development and operation of the numerous dams on the Columbia and Snake Rivers historically has greatly impacted salmon survival:

> *Storage dams have eliminated spawning and rearing habitat and have altered the natural hydrograph of the Snake and Columbia rivers, decreasing spring and summer flows and increasing fall and winter flows. Power operations cause fluctuation in flow levels and river elevations, affecting fish movement through reservoirs and riparian ecology and stranding fish in shallow areas. The eight dams in the migration corridor of the Snake and Columbia rivers alter smolt and adult migrations. Smolts experience a high level of mortality passing through the dams. The dams also have converted the once-swift river into a series of slow-moving reservoirs, slowing the smolt's journey to the ocean and creating habitat for predators. Water velocities throughout the migration corridor are now far more dependent on volume runoff than before the development of the mainstem reservoirs.*[3]

technicality and announced formally in June of this year it lacked authority to act on it. The Quad Cities subsequently filed suit against Ecology over this decision. At nearly the same time, the Columbia-Snake Irrigators' Association, a consortium of agri-business interests, sent Ecology a Notice of Intent to Sue, insisting that Ecology begin processing water permit applications on the John Day and McNary pools within 60 days. Certainly, this issue is a hotbed of competing political views. This White Paper advocates for sound management and legal principles to win out over such political pressures, to ensure strong and sustainable management of the State's waters.

[2]Conservation of Columbia Basin Fish: Draft Basin-Wide Salmon Recovery Strategy, vol. 1 at pg. 15 (Federal Caucus, 2000) (hereinafter "Federal Conservation Strategy").

[3]Draft Biological Opinion on Operation of the Federal Columbia River Power System at § 5.3.1 (NMFS, 2000) (hereinafter "2000 BiOP").

It seems the federal government is unwilling to commit to dam removal at this time, opting instead for improvements in dam operations with the aim of achieving a more normative river flow. Whether the dams are ultimately removed or remain in place, successful salmon recovery depends upon a sufficient quantity of water being available to flow down the Columbia and Snake Rivers. Water quantity problems affect water temperatures, smolt travel time, and sedimentation rates—key parameters that greatly impact salmon survival and recovery.[4]

As the agency responsible for salmon recovery in the Columbia and Snake Basins, the National Marine Fisheries Service (NMFS) released a Biological Opinion in 1995 on operation of the federal hydropower system.[5] In its '95 BiOP, NMFS concluded that proposed operation of the federal hydropower system was likely to jeopardize the continued existence of listed salmon, and identified immediate, intermediate, and long-term actions to avoid jeopardy.[6] The first immediate action involved increasing flows in the Columbia and Snake Rivers, with the goal of meeting target flows that NMFS developed.[7] The target flows that apply for the Snake and Columbia Rivers are as follows:[8]

	Lower Granite Dam (Snake River)	**McNary Dam** (Columbia River)
SPRING	85,000-100,000 cfs	220,000-260,000 cfs
SUMMER	50,000-55,000 cfs	200,000 cfs

Flow augmentation is already occurring—the U.S. Bureau of Reclamation (BOR) in conjunction with the State of Idaho and individual water users in Idaho have augmented flows by 427,000 acre-feet per year every year since 1993.[9] However, despite efforts to meet targeted levels, the above salmon flow objectives have not been met over significant periods of time. In fact, under current river operating conditions "sufficient flows cannot generally be maintained to protect migrating juvenile salmon."[10] Even in record-breaking water years, flows have continued to fall far short of targeted levels: Despite record high snowfall and resulting runoff volumes in 1997, for example, weekly flow objectives were not achieved in either the Snake or Columbia Rivers during most or all of August.[11]

[4]Id. at § 5.3.2.

[5]Biological Opinion on Operation of the Federal Columbia River Hydropower System and Juvenile Transportation System in 1995 and Future Years (NMFS, 1995) (hereinafter "'95 BiOP").

[6]Id.

[7]Id. at 95-104.

[8]Id. at 104.

[9]2000 BiOP at § 3.2.2.6.

[10]See Letter from Howard Shaller, Project Leader, U.S. Fish and Wildlife Service, to David McDonald, City Planner, City of Pasco, Feb. 1, 2000.

[11]See 1997 Fish Passage Center Annual Report at x.

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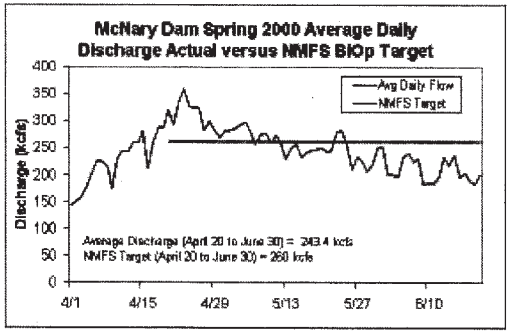
Measured flows failed to meet summer flow objectives at Lower Granite Dam:[12]
- Over 2/3rds of the time in 1999
- Nearly 1/2 of the time in 1998
- Over 1/3rd of the time in 1997
- Over 2/3rds of the time in 1996

At McNary Dam, measured summer flows fell short of target levels:
- Nearly 1/4th of the time in 1999
- Over 3/4ths of the time in 1998
- Over 1/4th of the time in 1997
- 2/5ths of the time in 1996

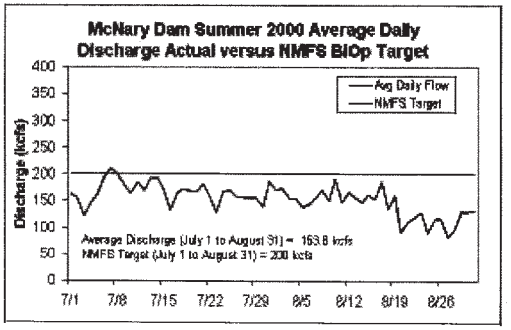
Target flows were not met on average at either McNary or Lower Granite Dams for both the spring and summer seasons of this year as well, as shown below.

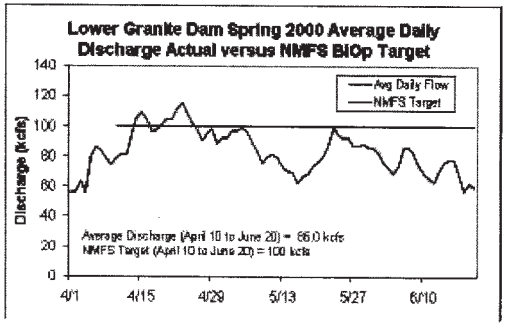
Graphs below reflect low flow conditions in the Columbia and Snake Rivers for the Year 2000. As is evident, target flows were not met on average for both spring and summer.[13]



[12]See Memorandum in Support of Plaintiff's Motion for a Preliminary Injunction, or in the Alternative for Summary Judgment and a Permanent Injunction at 7 (May 18, 2000), Trout Unlimited et al. v. NMFS et al., U.S. District Court (Or.), Civ. No. 00-262 MA.

[13]Graphs are courtesy of the Fish Passage Center, see infra note 16.





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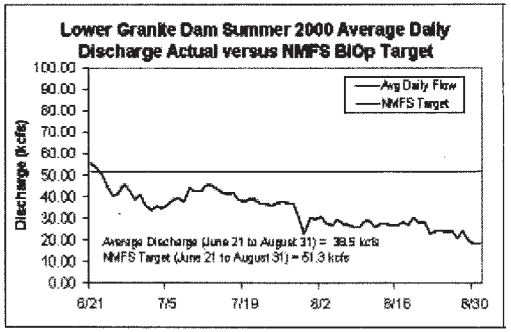

The federal government's Year 2000 update to its plan for recovering salmon in the Columbia and Snake Rivers continues to place great importance on augmenting river flows to meet target levels.[14] Under NMFS' directive, state, federal, and private players have already spent millions of dollars in efforts to augment flows. Yet these efforts are still falling far short from achieving salmon flow objectives. The federal government states that, in order to achieve a more normative river, "significant amounts of additional water targeted to enhance flows during fish migration are needed."[15] As well, the Fish Passage Center[16] estimates that additional augmentation flows beyond quantities currently provided are necessary to meet spring and summer target flows—on the order of another 1 to 1.5 million acre-feet per year.[17]

Current Water Rights: "That's a Lot of Water...."

As things stand today, state-permitted water use significantly reduces flows in the Columbia, affecting fish habitat and reducing fish production. A staggering amount of water is currently tied up in water right certificates and claims—mostly for irrigation which depletes river flows in months when water levels are already at their lowest. Alarmingly, the river's current flows also do not present an accurate baseline—a number of water permits have been granted by the State and flows will continue to decrease as permittees gradually use the full amount of their water rights. Granting any further withdrawals will just serve to exacerbate an already precarious situation.

[14]See 2000 BiOP.
[15]Federal Conservation Strategy, vol. 1 at pg. 79.
[16]The Fish Passage Center (FPC) is an entity created to provide fish passage management recommendations regarding spill, flow and fish facilities operations to the federal Fish and Wildlife Managers. See the FPC web site at www.fpc.org/Index.htm.
[17]See Memo from Dusica Jevremovic, Fish Passage Center, to Michelle DeHart (Jan. 18, 2000).

As mentioned previously, water quantity problems greatly affect water quality—by affecting water temperatures, pollutant concentrations, and sedimentation rates.[18] While much of the water used for irrigation is eventually returned to the river, still: (1) crops consume a large proportion of water used; (2) diversions and withdrawals remove water from the river and streams from May to September, and return flow is not only delayed but difficult to measure, and (3) return water carries with it pesticides and higher nutrient levels.[19]

The Bureau of Reclamation recently calculated the total amount of irrigation water rights[20] claimed or granted by the State to date.[21] The figures are surprising to say the least: Over 200,000 cfs (or nearly 8 million acre-feet per year during the season from April to October) for both surface and groundwater irrigation rights have been granted above McNary Dam; and over 110,000 cfs (or roughly 4 million acre-feet per year during the season from April to October) for both surface and groundwater irrigation rights have been granted above Lower Granite Dam.[22]

These water extractions collectively account for nearly 40% of the average natural Columbia River flow in low flow years at McNary Dam during the irrigation season.[23] Consequently, a staggering portion of the river is already being used under these certificated and claimed water rights. Perhaps most alarming—Ecology has also permitted roughly 150 water rights that are not reflected in these figures and remain partially "inchoate"—meaning that Ecology granted a water user the right to take a specified amount of water, but the user has yet to fully use or "perfect" the full amount of water granted. Some of these permits date back to the 1960's and a few of the permittees have failed to even begin the construction allowing them to appropriate their requested diversions. These permits collectively authorize extraction of over 1600 cfs from the Columbia, or roughly another 330,000 acre-feet per year on top of the amount already being used under the water rights discussed above.[24]

The existence of these inchoate rights mean that the current flows in the Columbia, which are already below established flow targets for much of the fish-critical season, are a false baseline:

- **Current flows in the Columbia River fail to reflect the large portion of water already permitted, but not fully put to use; and**
- **Columbia River flows will continue to decrease—even without the State permitting further water use.**

[18]2000 BiOp at § 5.3.2.
[19]Id.
[20]Claims and certificates.
[21]See Cumulative Hydrologic Impacts of Water Resource Development in the Columbia River Basin, Final Report Prepared by U.S. Bureau of Reclamation Pacific Northwest Region for National Marine Fisheries Service at Appendix B ("Summation of Water Rights and Withdrawals Above Lower Granite and Above McNary Dam") (June 1999) (hereinafter referred to as "the BOR Cumulative Effects Report"). The BOR used 1994 data on state water rights to do these calculations. The calculations represent the amounts granted on certificates, and the amounts stated on water right claims.
[22]Id.
[23]See Biological Opinion on Inland Land, Inc. at ii (NMFS, 1997) (hereinafter "NMFS Inland Land Opinion"), summarizing findings from the BOR Cumulative Effects Report.
[24]See Appendix A. This figure includes consumptive uses only. Permits under which a permittee has already filed a proof of appropriation were excluded. Consequently, this figure represents the total amount of water that has been permitted for consumptive use, but not yet fully perfected.

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Moreover, the total amount of water requested in applications currently pending before Ecology represents another 900 cfs.[25] Many of these applications were filed during the permitting moratorium: Were Ecology to begin approving applications for new water, many more applications would very likely be filed. Each individual diversion request may seem like a drop in the bucket when compared to the great flow of the Columbia. Yet considering the unbelievably large portion of the river that has already been appropriated one diversion at a time, coupled with the inability of the river to meet flows necessary for fish—it becomes painstakingly obvious that the river is already over-appropriated.

Too much of the natural flow of the Snake and Columbia Rivers is already tied up in state-certificated water rights, permits and claims. Allowing subsequent diversions will only hinder the State's ability to meet flow objectives in the future. As discussed below, the State is governed by an obligation to ensure that management of public waters serves to protect river, stream, and aquifers at levels necessary for the health of fish and wildlife: Ecology should be working to meet flow objectives, not hinder others' efforts along these lines while simultaneously increasing the difficulty of meeting flow objectives in the future.

Common Sense and The Law

Ecology's position in planning to permit further Columbia withdrawals is inconsistent with the State's commitment to help restore salmon, and thwarts the numerous and ongoing efforts underway to augment flows. The State has both responsibilities under the Water Code and under commitments made to the public and other jurisdictions to promote salmon recovery.

Common Sense

Ecology really must work collaboratively with other state and federal entities to protect Washington's waters. The Snake and Columbia Rivers traverse both state and international boundaries, and provide habitat for numerous ESA-listed species.[26] Collaborative efforts do not entail federal supremacy or an abdication of state authority, but instead a recognition that the waters of the state must be sustainably managed, coupled with a commitment to do so.

Unfortunately, permitting further water use from the Columbia River will counter numerous ongoing salmon recovery efforts. Specifically, permitting further diversions and withdrawals in Washington will directly counter the following salmon recovery efforts:[27]

Federal, State, Tribal and Individual Water Users' Efforts to Augment Flows:

- The BOR has been providing, and proposes to continue providing, 427,000 acre-feet of water per year from the Upper Snake River Basin to benefit flow conditions during the salmon migration season from April through August (termed "flow augmentation").[28]

- "To provide this water, the BOR has reacquired some 60,000 acre-feet of reservoir storage space in its Upper Snake River basin reservoirs and has assigned about 100,000 acre-feet of previously unassigned space to flow augmentation. The BOR has also leased 38,000 acre-feet of storage space in Palisades Reservoir as part of a 5-year agreement with the Shoshone Bannock Tribes of the Fort Hall Indian Reservation and has acquired 17,650 acre-feet of natural flow rights in Oregon for flow augmentation. The BOR proposes to acquire any remaining water needed to meet the 427 kaf goal from willing lessors in Idaho's water banks. Using this strategy, the BOR has successfully provided about 427 kaf annually from upper Snake River basin reservoirs and natural flow rights since 1993."[29]

- The State of Idaho enacted legislation specifically designed to grant the BOR access to Idaho's water banks.[30] This means that Idaho irrigators—individual family farmers, ranchers and water users—are choosing to sell or lease their rights to improve flow conditions downstream.

- The Idaho State Department of Water Resources instituted a moratorium against further consumptive withdrawals from the Snake River Basin.[31]

- The BOR is also purchasing water rights from individual farmers, ranchers, and water users in the Yakima Basin in order to enhance flows for fish in the Yakima River—a major tributary to the Columbia.

International Agreement(s) to Augment Flows:

- Under the Columbia River Treaty and Non Treaty Storage Agreements, Canada (B.C. Hydro) stores and releases 1 million acre-feet of water per year to improve the likelihood of achieving salmon flow objectives in the mainstem Columbia.[32]

The State's Own Salmon Recovery Initiatives:

- The Washington State Legislature set up the Governor's Salmon Recovery Office in 1998, to support Governor Locke's Joint Natural Resources Cabinet in shaping a statewide strategy to recover salmon.[33]

[25] See Appendix B. This figure represents all consumptive uses that would impact flows.
[26] Endangered Species Act, 16 U.S.C. § 1531 et seq.
[27] These actions are examples of major initiatives that will be counteracted by further Washington State permitting activities on the Columbia and Snake Rivers. The lists are not exhaustive.

[28] See 2000 BiOP at § 3.2.2.6.
[29] Id.
[30] See Idaho Code § 42-1763B
[31] This moratorium basically applies to the Snake River Basin from the Eastern boundary of the Snake River to the King Hill gauging station, and from the King Hill station to the Western border. Information gained from Pam Scaggs, Idaho Department of Water Resources, Oct. 20, 2000.
[32] See 2000 BiOP at § 3.2.2.7.
[33] See The Salmon Recovery Home Page at www.governor.wa.gov/esa/index.htm.

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• The Joint Natural Resources Cabinet subsequently released a Statewide Strategy to Recover Salmon in 1999.[34] This Statewide Strategy recognizes that:

> *Lack of stream flow to sustain healthy production levels is a key factor contributing to the poor status of wild fish stocks. Streams and rivers in several basins used by salmon are over-appropriated, meaning more water is being withdrawn for uses such as irrigation, when flows are naturally low and when fish need water.*[35]

To address these flow problems, the State plans to focus on restoring flows and putting water back instream for fish. The State plans to do this by:

> • Halting the issuance of any new water rights until instream flows can be set for priority watersheds;
> • Making flow restoration the primary objective in watersheds where existing uses diminish flows for fish; and
> • Aggressively pursuing opportunities to use public funds to lease or purchase senior water rights to put water back instream for fish.[36]

Permitting further withdrawals will also run directly counter to the State's obligations under the State Water Code, Chapter 90.03 RCW, and other applicable law:

State Water Law

Ecology is governed by many different directives in managing water use in the state. It is the stated policy of the State, for example, to promote use of water while at the same time ensuring that enough water is retained instream to protect natural rights and values.[37] Under a separate legislatively-declared fundamental, Ecology must protect the quality of the natural environment and work to enhance it, by ensuring adequate stream flows for fish, wildlife and other environmental values, and by ensuring high water quality.[38] Further mandates require Ecology to consider public interest concerns more specifically: Ecology must, for example, reject a water right if it proves detrimental to the public interest.[39] This "public interest" language obligates Ecology to protect the natural environment, and to consider the needs of threatened and endangered species.

[34]Extinction Is Not An Option: Statewide Strategy to Recover Salmon, Washington State Joint Natural Resources Cabinet (1999) (The State's stated objective is to"[r]estore salmon, steelhead, and trout populations to healthy and harvestable levels and improve the habitats on which fish rely." The Strategy was designed as a long-term vision or guide for salmon recovery in Washington.)
[35]Id.
[36]Id.
[37]RCW 90.03.005.
[38]RCW 90.54.020 ("Perennial rivers and streams of the state shall be retained with base flows necessary to provide for preservation of wildlife, fish.....and other environmental values"; "Waters of the state shall be of high quality.").
[39]RCW 90.03.290.

Consequently, in granting any water rights request, Ecology must ensure that (1) the requested use of water is for a beneficial purpose; (2) there is water available to satisfy the request; (3) the available water will not impair existing rights; and (4) granting the permit will not be detrimental to the public interest.[40]

Ecology cannot meet these mandates if it permits further water use from the Columbia River, however. Flows are already insufficient to ensure salmon survival and recovery. Considering the fact that federal, state, and private entities are working to augment flows to meet flow objectives, the obvious conclusion is:

> **Water is simply not available for further appropriation. Allowing further extractions based on the concept that each by itself has an immeasurable effect is also against the public interest. Ecology lacks the vital information on water use and the cumulative impact of current and future diversions and withdrawals to permit any further water extraction from the Columbia River.**

Lack of Vital Information on Water Use and Cumulative Effects

Ecology is required under a 1993 law to meter all water use from rivers with depressed salmon stocks.[41] This includes both new and previously existing water rights and claims.[42] Drafted as part of a larger salmon recovery package, the statute logically recognizes that the first step in water management is to know how much water is being used and by whom.

Without this basic information, it is difficult or even impossible to assess the cumulative impacts of water use on river flows, and to gauge whether further extractions would exacerbate flow problems. Ecology must consider cumulative impacts in light of all planned or reasonably foreseeable future actions, prior to granting any new water rights.[43] Consequently, Ecology must understand and consider not only the cumulative effects of current water use, but the likely cumulative effects of future water demand on the quality and quantity of flows in the Columbia and Snake Rivers as well.

[40]Id.
[41]RCW 90.03.360.
[42]Id.
[43]Okanogan Highlands Alliance et al. v. Department of Ecology, PCHB Nos. 97-146, 97-182, 97-183, 97-186, 99-019, Finding of Fact #24, 2000 WL 46743 (Jan. 19, 2000). See also Fleming et al. v. Department of Ecology, PCHB Nos. 93-320, 94-7, 94-11, 1994 WL 905610 at *5 (1994) ("The public interest includes an examination of the net benefits from diversionary uses and retention of waters within streams. In this regard consideration should be given to the cumulative impact of similar requests that might be made in the future.")

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Ecology failed to implement required metering under this 1993 law, however, and currently does not meaningfully monitor (meter) water use under existing water rights in the Columbia Basin.[44] Ecology also has not completed any studies to assess the cumulative impacts from either current water extraction or foreseeable future water extraction in the Columbia and Snake Basins. Consequently, Ecology does not know the extent of actual water use impacting the Columbia and Snake Rivers, and cannot sufficiently assess the cumulative impacts of state-permitted water diversions and withdrawals on river flows.

While the Quad Cities pointed out that the impact of their diversion would only reduce the river by less than one inch over a 30 year period, and decrease smolt survival by only .0002 to .003 percent[45]—this application was just one of more than 100 applications pending before Ecology for Columbia River water. Were Ecology to justify approving any of the 100+ requests based on an assertion that each water extraction in itself will have only a small effect on river flow, water use could be permitted right to the point where the river runs dry. As Ecology staff outlined in an internal e-mail, "[t]he concept of 'measurable' effects is a red herring…because under the shield of that argument we could permit an infinite number of 'unmeasurable' depletions to dry up the river, having never had a 'measurable' effect on the (consequently extinct) fish."[46] Also, NMFS points out that "[a]s the interior Columbia Basin grows and develops it is foreseeable that demand for water will continue to grow as well….to allow additional future withdrawals to proceed, on the logic that each one by itself has a small impact, would undermine one of the major improvements in habitat conditions and further degrade the environmental baseline."[47]

State law provides that the waters of the state are owned by the people of the state, and managed for the people by the state.[48] As mentioned above, Ecology, as the agency entrusted with managing the state's water resources, must protect the quality of the natural environment and, where possible, work to enhance it by ensuring adequate stream flows and water quality for fish and wildlife.[49] With little-to-no information gathered as to the extent of state-permitted

[44]Indeed – state-wide. Ecology's failure to implement this statute was recently challenged by CELP and other groups: Thurston County Superior Court Judge Richard Hicks, in a February ruling of this year, stated that metering "is a necessary step to bring us out of the dark and into the light" as the state deals with managing "this most precious resource." Judge Hicks denied a motion by the Department of Ecology to dismiss claims by CELP and other groups that Ecology failed to properly implement the metering statute, and found that Ecology violated the statute by failing to require the metering of new and existing surface water rights. Judge Hicks also granted partial summary judgment in favor of the environmental groups ruling that existing groundwater rights must be metered where salmon are at risk, and scheduled a fact finding hearing to determine whether Ecology must give priority to water metering work. American Rivers et al. v. Department of Ecology, Thurston County Superior Court No. 99-2-00480-6.
[45]See Supplemental Final Environmental Impact Statement, Diversion of Water from the Columbia River by the Cities of Kennewick, Pasco, Richland, and West Richland (June 2000).
[46]See E-mail from Ken Slattery, Department of Ecology, to Keith Phillips, Water Resources Program Manager, Department of Ecology, Sept. 8, 1999.
[47]NMFS Inland Land BiOP at 13.
[48]RCW 90.03.010.
[49]RCW 90.03.005; RCW 90.54.020.

water use, and consequently no meaningful understanding of the cumulative impacts of water use on river flows, Ecology possesses insufficient information to continue to permit further water extraction from the Columbia River—a river with poor flows that harbors numerous ESA-listed species.

As well, permitting further water use would be inconsistent with Ecology's own internal policies and legislative funding directives:

Ecology's Inconsistent Positioning

Ecology recently presented a "Vision" outlining the agency's plans for future management of the state's waters.[50] As one integral part of this Vision, Ecology intends to assess the needs of the natural resource base, including flows necessary for fish and wildlife, and ensure that these needs are satisfied. Notwithstanding this common sense approach, Ecology is about to quash its own Vision by permitting more water use from a river system unable to meet flows necessary to protect fish and wildlife.

Ecology's internal policies illustrate the agency's management inconsistencies: Under one particular policy, Ecology is funded for and initiating a pilot program to buy "Water for Fish."[51] The legislature provided Ecology with $1 million in the 1999 legislative session to fund a program to purchase or lease water rights—specifically so that Ecology could preserve and enhance flows in areas where not enough water exists to satisfy the needs of fish.[52] Ecology instituted a policy the year before this, however, detailing a plan to assist people applying for a water right *in finding water*.[53] Ecology is also developing a plan *right now*, specific to the Columbia Basin, in which Ecology plans to aid applicants seeking Columbia River water in finding marketable and senior water rights that can be transferred for mitigation purposes ancillary to extracting more water from the river.[54]

Since the Columbia is currently not meeting target flows at critical times of the year, the resource base is certainly not being "satisfied." Also, this lack of satisfaction is expounded by the fact that a portion of the current flow of the river will continue to decrease as permit holders perfect their water rights. The Columbia River, consequently, is already over-appropriated. To achieve it's vision of "satisfying the natural resource base" and responsibly managing the river, Ecology should be trying to obtain water rights for transfer to instream use, with the goal of meeting flows for fish. Conceivably, however, an applicant seeking water from the Columbia could actively pursue, and with Ecology's aid, find marketable water rights

[50]This vision statement was presented to CELP by Keith Phillips, Water Resources Program Manager, Department of Ecology, in 1999. See also Ecology's website at www.ecy.wa.gov/programs/wr/plan/vis-stat.html.
[51]See Focus: Buying Water for Fish – Pilot Program, on Ecology's website at www.ecy.wa.gov/biblio/0011003.html
[52]Id.
[53]See Department of Ecology Water Resources Program Policy 1010 (POL-1010) (1998).
[54]Information gained from a meeting with Tom Fitzsimmons, Director, Department of Ecology, August 28, 2000.

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for use as mitigation that would allow the applicant to pull more water from the river. Ecology's aid would be as facilitator—funneling senior, valid water rights *towards* applicants seeking new water, and *away from* opportunities to increase flows to achieve target levels. The following bullet points clearly and succinctly lay out Ecology's management inconsistencies:

- Ecology plans to start processing applications for new water from the Columbia. The agency plans to allow applicants to take more water out of the mainstem even when the river is running too low to meet target flows set for fish.[55]

- Ecology plans to help applicant's find marketable water rights to buy and use as mitigation water to offset impacts from new diversions.[56] While we applaud efforts to mitigate such impacts, Ecology should be ensuring flows are met prior to becoming a water broker for private interests.

- Ecology is actually funded by the Legislature ($1 million) to find salable water rights in fish critical basins and put the water back instream. Yet, as noted above, they are now planning on funnelling these same rights to water users to allow for more water extraction.

So this all begs the question:

Is Ecology, and indeed the State of Washington, committed to its stated Vision of satisfying flows for fish? Will Ecology responsibly manage the State's waters so that permitted use of rivers is sensible and sustainable? Or will Ecology help promote further water use at a time when information is lacking and flows are already too low to even sustain current salmon populations, let alone healthy populations?

WHAT NEEDS TO BE DONE:

Closing the Columbia to further diversions and withdrawals is a necessary first step toward ensuring the State does not further exacerbate an already-precarious situation.

The Columbia River is already over-appropriated. The State needs to stop, assess the situation and the needs of the resource, and then figure out sustainable and innovative ways to find water for people while saving enough water for fish.

[55] Id.
[56] Id.

How to Find More Water for People and Still Save Enough Water for Fish

Roughly 3 million people live in the Columbia Basin, and by the year 2040 this figure is projected to double to 6 million.[57] This burgeoning population growth clearly presents a daunting challenge to municipalities and others that must plan ahead to ensure adequate supplies of potable water and resources will be available for twice as many people as exist today. We understand the concerns of those planning for such immense growth in their jurisdictions. But we also feel that the traditional approaches of planning for growth have not been good enough to find water for people while simultaneously saving enough water for fish. Growth cannot continue to occur unchecked, and we need to carefully plan our communities and the impacts from those communities well into the future, keeping an open mind to new solutions that can preserve the resources we depend upon. Changes in fundamental concepts relating to water use and water supply can provide innovative solutions to finding water for both people and fish.

Stepping Outside of the Box:

The cost of water will began to reflect its scarcity. Once we decide what limits exist to increasing water extraction from the Columbia Basin, we may not only realize we are unable to find more water to divert and withdraw—but that we need to backpedal in order to protect the Basin's water budget at levels which protect the resource overall. Water use in the state has been a free enterprise up until recently: The only fee involved for gaining a water right has been a filing fee paid to the Department of Ecology. As we are realizing the natural limitations of water basins to provide water for people while simultaneously maintaining functionality for fish and other wildlife, we are starting to see rising costs associated with increased water use. Applicants for new water in water-limited basins must now spend money seeking out and paying for existing water rights—to fulfill their needs either by transferring the rights to cover their intended uses, or to serve as mitigation water for proposals to appropriate new water from a given source. These salable rights are becoming, or are soon to become, a hot commodity—and the price of such senior, valid water rights will begin to increase with scarcity. What will be the price of the last salable right, after all other salable rights that fit demand/supply conditions are sold? How much will it be worth to find new water fifty years from now, when people have paid increasingly large sums of money to find salable rights right up until the point where the price of the next salable right is not worth the contemplated exchange for a new use?

While promoting the sale and transfer of existing rights over the granting of new water rights presents one solution, this solution cannot solve all water supply problems and thus cannot exist in a vacuum. We need to create innovative efforts in water conservation and water management that can directionally change our concepts of water use into this next millenium.

[57] Big River News at 3 (Natural Resources Law Institute, Fall 2000).

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The Conservation Potential

Great potential for water conservation and innovative water management exists in the Columbia and Snake Basins—indeed, statewide. This potential exists across the board, for all major water users including irrigators, municipalities, and industry alike. By assessing and implementing current cost-effective conservation, and by shifting to technologically feasible and innovative conservation in the future, we can create new sources of supply and avoid placing further reliance on our over-appropriated streams, rivers and aquifers.

To provide just a few examples of cost-effective conservation techniques: (1) irrigators could use best irrigation practices to realize greater irrigation efficiencies—switching to drip irrigation, for example; (2) industries could start reusing water; and (3) municipalities could find greater efficiencies by updating their systems to reduce lost-or-unaccounted-for water. To begin the process of shifting towards conservation, for example, municipalities would need to complete comprehensive conservation potential assessments, with the goal of using conserved water as a new source of supply.

The City of Seattle completed a Conservation Potential Assessment in 1998, noting that, historically, "water supply planning and development has followed a predictable path of tapping a single large water source every 30-50 years to meet growth in regional water demand. Today reliance on any single option to meet future demand is an increasingly high-risk gamble due to environmental, political, and demographic uncertainties."[58] The results of Seattle's conservation assessment were encouraging: cost-effective conservation can realize savings of "up to 31 million gallons per day (mgd) or 16% of water use in the peak season…over the next 20 years with no reduction in customer's ability to use water nor in their satisfaction with water services."[59] Implementing technologically feasible conservation nets an additional savings of 12 mgd——for a total of 43 mgd saved over the next 20 years.[60]

Into the Future

This leap away from further water extraction and towards fundamental changes in supply and demand management advances a vital idealistic shift in managing water use overall. Current water law and management in Washington is witness to the continued allocation of water to people, without preservation of a resource base for fish and wildlife. If we ensure satisfaction of the natural resource base *first*, we can then implement more innovative ways of managing and using water, allowing for a high quality of life while simultaneously preserving the natural environment fundamental to our identity.

Nature envelops mankind, and even stating that water must be reserved for "people and fish" separates one entity into incomprehensible parts. CELP believes that by satisfying the needs of nature, we satisfy our own needs. A balance exists to everything in this world, and we have been given both the intelligence and the ability to preserve this balance.

Let's do just that.

[58]Water Conservation Potential Assessment: Final Report (Seattle Public Utilities, 1998).
[59]Id. at 1, 4.
[60]Id.

APPENDIX A

The following list includes all permits listed as "Columbia River permits" in Ecology's water rights tracking system. Permits with proofs of appropriation filed were not included. Consequently, the permits included in the list below are those for which the permittee has yet to fully perfect their water right.

It is important to note that some of the permittees listed below have yet to even begun or complete the construction necessary to fully perfect. As is evident, some of these rights were also granted nearly 40 years ago and many are well beyond their expected completion date.

Columbia River Permits[61]

CONTROL #	APPLICANT	CFS	AFY	priority	expected
21138(F)	Cox	12.80	3264	1973	1999
21138(H)	Wyatt	0.48	121	1973	2001
21138(J)	Smith	1.01	255	1973	1999
21138(N)	Northwest Farm Credit	0.66	170	1973	1999
21138(T)	Perkins	0.42	106.3	1973	1994
21138(U)	Smith	0.25	63.8	1973	1999
21138(Z)	Orozco	0.08	21.3	1973	1999
21138(ZA)	West	0.25	63.8	1973	1999
21139(A)	Johns Farm Ltd.	12.01	3098.3	1973	1996
21139(B)	Gopher Broke Orchard	0.57	144.5	1973	1996
21139(G)	Wells	3.03	773.5	1973	1993
21139(L)	Fugachee Orchards	0.83	212.5	1973	1999
21139(N)	Orozco	0.73	187	1973	1999
13134	WA DNR & K 2 H Farms	27.00	4540	1962	1995
14583	Stimson Lane Ltd	66.80	13200	1966	2000
15042(A)	Stimson Lane Ltd	85.90	17180	1967	2000
15855	WA DNR & K 2 H Farms	3.00	1010	1968	1995
16312(A)	WA DNR & K 2 H Farms	242.00	46475	1970	1995
16571(A)	WA DNR & K 2 H Farms	587.76	112052.8	1971	1995
16571(D)	Watts	20.88	3982	1971	1994
16638(A)	WA DNR & K 2 H Farms	12.81	2743.3	1966	1995
25639(A)	WA DNR Laukers	112.58	27110.5	1977	1996
25639(B)	Watts Brothers Farm	19.05	4589	1977	1999
25639(C)	Winemakers LLC	7.89	1899	1977	1998
25639(D)	Watts	32.86	7912	1977	1999
25639(E)	Watts	32.86	7912	1977	1999
25639(F)	Winemakers LLC	9.15	2204	1977	1998

[61]Permit information gained from Ecology.

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25639(G)	Nichols	27.87	6709.1	1977	1997
25639(H)	Beightol	9.36	2254.9	1977	1998
25639(I)	Mercer	30.89	7437.3	1977	2001
25639(N)	Columbia Ridge Orchard	7.89	1899	1977	1998
25639(P)	Mercer	18.41	4432	1977	1998
25639(S)	Mercer Ranches Inc	7.89	1899	1977	1996
25639(Z)	Mt. Adams Orchard	1.96	474.7	1977	2001
27335	Poirier	2.67	48	1981	1994
27518	Kennewick Port	10.00	3600	1981	1999
27890(A)	Chapman	0.53	96	1982	1995
27890(B)	R I F Dev. Co.	1.25	224	1982	1995
28168	Giles	1.30	260	1983	2000
28169	Giles	1.30	260	1983	2000
28500(A)	Gebbers Farms Inc	0.86	152	1984	1994
28683(A)	Homeland Fruit Co.	0.02	10	1985	1994
28881(B)	USARMY COE/Maryhill	0.44	24	1980	1995
28998(A)	John Hancock Mutual	3.50	942.4	1986	2003
28998(B)	Desert Hills Fruits	3.20	868	1986	2003
29870	Gebbers Farms Inc	3.78	800	1988	1999
29876	W N Orchards Nickell	7.80	1621.9	1988	1998
29942	Drinkwater	2.00	356	1989	1999
29971	Orozco	0.20	44	1989	1996
30053(A)	Mercer Ranches Inc	27.59	4943.4	1989	2000
30053(B)	McBride Hereford Ranch	1.96	320	1989	1996
30053(G)	Rocha	0.12	29.4	1989	1999
30053(I)	McBride	0.25	40	1989	1999
30053(J)	Meek	0.12	20	1989	1999
30053(N)	Mercer	0.25	58.9	1989	1999
30053(O)	Columbia Ridge Orchard	0.91	217.9	1989	1999
30053(P)	John Hancock Mutual	8.70	1424.8	1989	2000
30070	WA PARKS Chief Joseph	2.58	576	1989	1998
30124	Canoe Ridge Vineyard	2.20	742.5	1989	1996
30151	Wick	4.53	1200	1990	1998
30199	Stemilt Irrigation Dist.	6.70	1250	1990	1996
30205	Pariseau	11.10	2088	1990	2000
30217	Curry	0.23	40	1990	1997
30289	Stimson Lane Ltd	5.00	1540	1980	2003
30322	P & G Orchards	0.60	112.8	1990	1997
30388	Gebbers Farms Inc	5.70	1245.2	1990	1994
30389	Wick	5.70	1245.2	1990	1995
30391	Wick	3.40	900	1990	1996
30486	Zimmerman	0.09	14.8	1990	1996
30487	Zimmerman	0.17	25.4	1990	1997
30488	Zimmerman	0.09	14.3	1990	1996
30489	Zimmerman	0.23	39.2	1990	1996

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30490	Zimmerman	0.07	10.2	1990	1996
30491	Zimmerman	0.11	18.7	1990	1996
30492	Zimmerman	0.12	21.4	1990	1996
30493	Zimmerman	0.06	9.1	1990	1996
30494	Zimmerman	0.13	21.2	1990	1996
30589	Hansen	1.82	361	1991	1994
30634	Sandpiper Farms Inc.	34.00	4500	1991	1996
30728	Badger Mountain Irr.	25.00	5160	1991	2002
30738	Richerson	0.15	26.6	1991	1995
30791	Kopak Jr.	0.02	1	1991	1995
30834	Berg	13.37	2850	1991	1997
30847	Gebbers Farms Inc	1.99	495.8	1991	1997
30952	Pariseau	15.28	2617	1991	1997
30983	Gebbers Farms Inc	0.71	161	1991	1997
30997	Naumes Inc. Hunter	11.14	1385	1991	2000
30998	WA DNR & P & G Orchard	0.86	172	1991	1997

TOTAL: 1630 cubic feet per second (cfs)
331,601 acre-feet per year (afy)

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APPENDIX B

The following list includes surface water applications from the Columbia River and ground water applications determined to be in significant hydraulic continuity with the river. This list does not include the Snake River. Also, the list may not be complete. The Columbia River moratorium was lifted in 1997 and recent applications may not have been designated in the same fashion after the moratorium was lifted. Even when the moratorium was in place, it is possible that not all groundwater applications in significant hydraulic continuity with the river were identified as such and designated in the proper database – a gap exists in priority dates of groundwater applications from 1995 to 1999, for example.

Pending Columbia River Applications[62]

SURFACE APP # (S4-#)	APPLICANT	AMOUNT REQUESTED (CFS)
26814	Chelan Cty PUD	16
29956	Lower Stemilt Irrig.	2.45
30052	Mercer Ranches Inc.	0.02
30185	Richland City Myers	12.6
30465	Kennewick Irrig.	82
30584	Kennewick Public Hospital	49.5
30976	Quad Cities	178
31083	Lower Stemilt Irrig.	4.66
31106	Scheib	1.78
31110	Roper	0.07
31117	Metropolitan Life Ins.	1
31133	Douglas County PUD 1	0.07
31134	Douglas County PUD 1	0.33
31137	McBride Hereford Ranch	17.11
31148	Mercer Ranches Inc.	0.45
31174	Cooper	0.1
31175	Cooper	0.12
31197	Rains	0.16
31249	Shaw	0.06
31262	Moody	0.11
31263	Kessenich	0.11
31291	Ford	0.02
31319	Creveling	19.2
31365	Schlunegar Brothers	53.57
31366	Schlunegar Brothers	17.86
31424	Sinclair	0.16

[62]Application information gained from Ecology. Please note that these lists may not be complete due to Ecology's tracking methods. Figures thus represent the minimum of water requested.

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31460	Pariseau	15.6
31462	Magnussen	0.02
31481	Kennewick Irrig.	18
31536	Pariseau	2.67
31623	Kopak Jr.	0.5
31711	WA DNR & Clyde Bybee	8.89
31712	WA DNR Laukers	2.33
31714	Crane	3.56
31789	Crane	3.56
31806	Munn	2.33
31815	R I F Dev. Co.	0.41
31848	McBride Hereford Ranch	14.67
31867	Apple Mngt Co.	0.5
31870	West	11.5
31905	Harris Farms Inc.	12.3
31936	Nelson	0.28
32074	Reeves Brothers Orchard	1.5
32190	Miller	2.23
32336	Douglas County PUD 1	0.11
32367	Wenatchee Heights Re.	11.5
32392	Crane	4.46
32393	Crane	3.56
32394	Crane	4.45
32398	Crane	4.46
32399	Crane	2.67
32400	Crane	4.01
32401	Crane	3.56
32420	Douglas County PUD 1	0.11
32421	Douglas County PUD 1	0.09
32548	Crane	0.44
32577	WA DNR Laukers	3.9
32622	WA DNR Buchholtz	10.7
32678	Mercer	24.5
32682	McLean	3.79
32744	Newman	0.08
32774	Munn	131
32803	Columbia Gas Storage	0.89
32804	Mercer Ranches Inc.	1.5
32838	Priest Co. Inc. Priest	29.6
32900	Gebbers Farms, Inc.	7.13
32917	Columbia Gas Storage	8.9
32927	Bybee	8.35
32928	Hartley	4.9

TOTAL AMOUNT OF SURFACE WATER REQUESTED = 833.02 cfs or 373,884 gpm

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GROUND APP # (G4-#)	APPLICANT	AMOUNT (GPM)
31089	Gunkel	600
31098	Shore Properties Inc.	5650
31138	McBride Hereford Ranch	7680
31186	Auvil Fruit Co. Inc.	3000
31210	Hale	89
31247	Chelan County PUD	600
31269	Boesel Construction	30
31374	Troutman Ranches	2000
31375	Troutman Ranches	800
31399	Nickell Orchards	200
31412	Davis	600
31516	Stansfield	150
31517	Sinclair	20
31518	Sinclair	25
31524	Orondo Orchards Inc.	690
31526	Benson	175
31574	Ross	290
31583	Malaga Water Dist.	1500
31621	Goodman	171
31690	Kain	80
31715	Davis	200
31721	Davis	250
31725	Brewster City	650
31742	Sundale Orchards Inc.	750
31753	Madden	100
31763	WA Parks Maryhill St.	900
31764	WA Parks Maryhill St.	100
31776	K B Alloys Inc.	75
31793	Auvil Fruit Co. Inc.	3850
31813	H P Montgomery Trust	2000
31832	Pateros City Parks	500
31858	Tiedeman	10
31859	Miller	315
31871	West	3500
31882	Knowles	30
32097	R I F Dev. Co.	920
32098	R I F Dev. Co.	20
32099	R I F Dev. Co.	50
32100	R I F Dev. Co.	330
32391	Crane & Crane Inc.	25
32839	Priest Co. Inc. Priest	455
32841	Priest Co. Inc. Priest	3653

TOTAL AMOUNT OF GROUNDWATER REQUESTED = 95.89 cfs or 43,033 gpm

TOTAL AMOUNT OF WATER REQUESTED (surface and ground) = 928.9 cfs or 416,917 gpm

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State of Washington — Governor Gary Locke

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Office of Governor Gary Locke
FOR IMMEDIATE RELEASE - March 14, 2001
Contact: Governor's Communications Office, 360-902-4136
Alt Contact: Mary Getchell, Department of Ecology, 360-407-6157

Locke announces statewide drought emergency

ALDER LAKE - The state of Washington can survive its worst drought in at least a quarter-century if neighbors help their neighbors, Gov. Gary Locke said today as he authorized the Department of Ecology to declare a statewide drought emergency.

He added swift passage of his proposed legislation to bring Washington's archaic water laws into the 21st century also would provide important new tools to fight the drought.

Locke noted that the state's snow pack is at just 50 to 60 percent of average for this time of year, which will sharply reduce the amount of runoff into streams this summer. In fact, the flow in the Columbia River for April through September is expected to be less than 57 percent of average.

Just yesterday, more than 30 rivers in Washington experienced record low flows - all but one of which is in Western Washington. For example, the daily flow in the Columbia River at The Dalles was 42 percent of average; the Cowlitz River, 37 percent of average; the Skagit River at Mt. Vernon, 44 percent; and the Wenatchee River, 35 percent.

"This already is the worst drought in our state since 1977, and it's only March," said Locke. "We'll probably beat that record soon."

To illustrate how low water levels already are, Locke and other state officials announced the drought emergency from the shores of Alder Lake in eastern Pierce County - a shoreline that is widening as the water level falls rapidly.

"For anyone who thinks a major drought cannot happen in the Evergreen State, this drought is real and the effects are going to be real," said Locke. "We are facing an extraordinary situation that demands the full attention and cooperation of all citizens."

"We will need neighbors to share with their neighbors. If a city or a farmer has water that they can do without, then please consider loaning or leasing it to a city or farmer who doesn't have enough," said Locke. "Working together, we can keep our fish swimming, our farmers in business, and our citizens from going thirsty."

The emergency declaration immediately activates several tools the Department of Ecology can use to ease the effects of the drought: emergency water permits, temporary transfers of water rights and financial assistance.

Ecology Director Tom Fitzsimmons said his agency probably will grant few, if any, emergency water permits because there simply is no additional water to allocate in many parts of the state. Rather, he expects that temporary transfers of water rights will be the most-commonly used tool this year.

Ecology is using money from a special drought account to add staff to quickly process requests for water-right transfers. The transfers could be used to keep water in streams for fish, to provide water to communities that don't have enough water for their businesses and residences, or to help keep farm crops from dying.

To help determine where transfers are most needed, the Department of Fish and Wildlife is identifying where fish will be at greatest risk from the drought.

Also, the Department of Agriculture and the Conservation Commission will help match up farmers who have excess water with those who need water to save their crops. This "match-making" will be especially important for people who have interruptible water rights that may be cut off this summer because of low flows in the streams from which they draw their water.

The drought account currently contains $5.1 million, which Locke said will be spent to purchase or lease water rights to keep rivers and streams from drying up; to make agricultural irrigation systems use water more efficiently; and to help cities and towns keep water flowing to businesses and homes.

The Governor's Office is working with the state's congressional delegation and the National Marine Fisheries Service to obtain federal money to expand this program.

Other state agencies also are taking immediate steps to address the drought.

The Department of Health is surveying local water utilities to determine whether they anticipate water shortages this summer
The Department of Natural Resources is advising forest residents about how to protect their property from forest fires
The Office of Community Development is examining its many grant programs to determine whether additional money is available to ease the effects of the drought on businesses and communities
The Department of Ecology will step up its efforts to prevent illegal water use.

"These actions and this money will not take away all the pain or restore our normal water supply - the problem is too severe for that," Locke said. "We will minimize the pain as much as possible, but everyone needs to help by using water wisely and efficiently."

Related Links:

- Drought Declared in Washington
- Forest Fire Prevention
- Northwest River Forecast Center
- Water Supply Forecasts
- Natural Resources Conservation Daily Snow-Precipitation Update
- Washington Current Streamflow Conditions

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River watch: Is Columbia tapped out?

By Mike Stark
Thursday, November 16, 2000

In a move to help imperiled salmon runs, a Seattle-based environmental group says Washington state should stop allowing water to be diverted from the Columbia River.

The Center for Environmental Law and Policy and other conservation groups on Wednesday petitioned the state's Department of Ecology, asking the agency to put a moratorium on new water withdrawals from the river.

If the state denies the request, a lawsuit is a possibility, according to Kristie Carevich, an attorney with the group.

The issue of flow and water rights continues to be a contentious one in the Pacific Northwest. For the past four years, flow rates have dipped below federal targets in the Columbia and Snake rivers, where more than a dozen salmon and steelhead species are listed on the federal Endangered Species Act.

Those targets are meant to estimate how much water is needed to push salmon toward the ocean. Slower water means temperatures in the river can rise, water quality suffers and young salmon have a tougher time migrating, Carevich said.

Meanwhile, Washington is under increasing pressure to allow more water to be diverted from the Columbia. There are about 400 applications pending for water appropriations, including many for eastern Washington farmers looking to irrigate their crops, according to the department.

Adding to the mix are lawsuits filed in late October by cities and irrigators in eastern Washington to speed up the processing of water rights applications.

The Department of Ecology closed the Columbia and the Snake to new water withdrawals in 1992 to study whether the river could support new water uses. The department hasn't completed its studies, but the state legislature in 1997 told state officials to start processing water requests again.

Carevich said it's a mistake to allow more water to be taken from the Columbia, especially at a time when British Columbia, Idaho and the federal Bureau of Reclamation are making efforts to return water to give endangered salmon a boost.

"It just doesn't make any sense," she said, adding that Washington is also funding measures to improve stream flows. "Yet it's about to go against that."

In a letter to Tom Fitzsimmons, the ecology department's director, the group said that further water appropriations would have the state "pushing these species closer to extinction and ignoring its responsibilities as a steward of Washington's water resources."

They say that the federal Fish Passage Center, created by the Northwest Power Planning Council to monitor fish counts and water flows on the Columbia and Snake, has documented a direct correlation between higher flows and salmon survival.

But Mary Getchell, a spokeswoman for the ecology department, said there are uncertainties in linking salmon survival with river flows.

"We absolutely believe that water that's cool and clean is necessary for the survival of

salmon," she said. "But as far as in-stream flow, the science is unsettled on the Columbia River ... Those are very scientific policy issues that the Department of Ecology is wrestling with."

Carevich countered that the claim of uncertainty a delay tactic. "That dispute was created by a lot of people that want to hold off a decision." Getchell said the department will review the petition and then decide, with consultation from the legislature, whether to start a rule-making process to implement a moratorium. If so, it could take one or two years to come up with a final decision, she said.

The conservation groups, though, are calling for an immediate halt to water appropriations on the Columbia. A new report from the Center for Environmental Law and Policy, entitled "Columbia River Vision," says there simply isn't enough water in the Columbia and its tributaries to meet "fish-critical needs."

"This petition should be a wake-up call to those claiming that the Columbia Basin salmon can be recovered without significant change," said Rob Masonis of American Rivers, one of the groups that filed Wednesday's petition. "We should focus on identifying solutions to the challenges we face, such as improving water use efficiency and finding alternative means of providing the economic benefits of the lower Snake River dams."

Other groups filing the petition were Friends of the Earth and WaterWatch of Oregon.

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SALMON INFORMATION CENTER
1-877-SALMON-9 WWW.SALMONINFO.ORG
TRI-COUNTY ENDANGERED SPECIES ACT RESPONSE

Group seeks Columbia water-rights limits

The Washington Ecology Department is considering requests from four cities for more access

By Nicholas K. Geranios of The Associated Press
11/13/00

A Seattle-based environmental group is demanding that the state Department of Ecology allow no more water to be removed from the Columbia River system.

The great river of the West does not contain enough water to sustain endangered salmon runs, and demands for additional water rights should be rejected, according to the Center for Environmental Law & Policy.

The center will file a petition with the department this week asking that the agency fight lawsuits that demand more water.

"We're telling them that under the law, they cannot permit more water use," said Kristie E. Carevich, an attorney for the center.

A lawsuit was filed last month against the department by the city of Pasco and the Columbia-Snake River Irrigators Association. They want the state to accelerate the granting of new water rights.

The department has not seen the environmental group's petition and cannot comment, spokeswoman Mary Getchell said.

Getchell said the department would have to consult with the Legislature before enacting another moratorium on Columbia water.

In 1997, the Legislature told the department to start processing Columbia River water requests, which had been on hold since the early 1990s to help federally protected Snake River salmon.

The agency has not issued new water right decisions in central Washington.

This summer, the department appeared ready to approve a request by the cities of Kennewick, Pasco, Richland and West Richland for enough water to satisfy 50 years of growth.

The Center for Environmental Law & Policy challenged that request, and the state moved the case to the back of a long line. That was criticized as a way for the state to avoid making a precedent-setting decision.

The four cities contend their request would have lowered the water level of the Columbia by just 1 inch.

"Were the Ecology Department to justify approving any of the 100-plus requests based on an assertion that each water extraction in itself will have only a small effect on river flow, water use could be permitted right to the point where the river runs dry," The Center for Environmental Law & Policy said in a report released this month.

The report contends the department does not have a good estimate on how much Columbia River water is actually used by rights holders and cannot accurately measure the effect of future diversions.

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It is known that substantially more water could be removed from the river under existing permits that aren't being fully utilized, the group said.

The possible removal of four Snake River dams to help salmon will not do enough for fish, the report said.

"Whether the dams are ultimately removed or remain in place, successful salmon recovery depends upon a sufficient quantity of water being available to flow down the Columbia and Snake rivers," it said.

Irrigation water removed from the river often is eventually returned loaded with farm chemicals, silt and other hazards to wildlife, the report said.

"Water quantity problems affect water temperatures, smolt travel time, and sedimentation rates -- key parameters that greatly impact salmon survival and recovery," it said.

Letter 10 Exhibits

Washington farmers lease water rights to help fish

Tuesday, July 17, 2001
By Environmental News Network

Mike and Kelly Moeur of Ellensburg, Washington and Robert and Shirley Stewart, who own property in Ellensburg, are leasing their water rights to the Washington State Department of Ecology to keep the water in streams for fish.

Photo by Brian Prechtel
Courtesy U.S. Dept. of Agriculture
Aerial view of apple and pear orchards near Yakima, Washington.

Much of the state experienced the driest winter in 71 years, prompting Govenor Gary Locke to declare a drought emergency on March 14 that is still in effect.

Water flows are less than half of the average for this time of year in three of the state's major rivers including the Yakima River which runs through Ellensburg in central Washington. This year, the Yakima River will have only 44 percent of its average flow, officials predict. The rest of the state's largest rivers will have between 50 and 70 percent of their average flows.

For the past 30 years, the Moeurs grew timothy hay on their farm. This year, they have chosen not to withdraw water. Instead, they signed a temporary lease to keep approximately 408 acre-feet, or 13.2 million gallons, of water in Spring Creek and the Yakima River. The state Department of Ecology is leasing the water from the Moeurs for $52,500.

For the past 25 years, the Stewarts also grew hay and pasture and raised cattle. Ecology will pay the Stewarts $30,000 to keep approximately 232 acre- feet, or 7.6 million gallons, of water in the Yakima River this year.

Their water leases to the state were made possible by the first water law revisions in 30 years. The state has made water rights processing more flexible so water is available where it is needed most.

Two lines for water-right applications have been created -- one for new rights and one for changing or transferring existing water rights. This allows faster action on change or transfer requests that have been long stuck in line behind requests for new water rights.

Family farms in rural areas are allowed to temporarily transfer their rights to other uses, helping others during the drought.

A tax incentive to conserve and re- use water was created. In addition, the taxes

paid by utilities that conserve or reuse water go into the special fund to lease and buy water rights for endangered fish.

"We should celebrate our collective success in securing long -needed water policy changes for people, farms and fish," Locke said. "It also should mark our collaborative, bipartisan commitment to move forward."

As a result, the Department of Ecology has $3.5 million in state funds and authority to spend up to $6 million in federal funds to purchase or lease water rights. People or businesses interested in donating, selling or leasing their water rights should contact Ecology's drought hotline at 800- 468-0261.

"We are so pleased that the Moeurs and Stewarts joined our efforts to help fish survive this year," said Ecology Director Tom Fitzsimmons. "Thanks to them and other people who are coming forward to offer their assistance, our fish populations have a better chance of making it through this incredibly difficult drought year."

Both fish and farmers are having a tough time this year. Farmers, who rely on about 75 percent of the water used in the state, are facing crop losses due to lack of water. Several runs of salmon and steelhead, already having a hard time surviving, are at even greater risk with low stream flows.

Governor Locke has made requests of U.S. Agriculture Secretary Ann Veneman to designate 13 Washington counties agricultural disaster areas due to devastating crop damage from June storms, and to declare six counties agriculture disasters as a result of drought. These designations would provide emergency low-interest Farm Service Agency loans to farmers and ranchers.

The July forecast by the National Weather Service indicates that the amount of water in several major Washington rivers will be significantly less than predicted in June.

The agency predicted that, from April through September, the amount of water in those rivers would be at least 40,000 acre-feet, or 13 billion gallons, less than the amount forecasted in June.

For the Columbia River, the region's largest, the estimated amount of water is down by one million acre-feet between the June and July forecasts.

"If the forecasts prove accurate, this is significantly less water than we were hoping would be in the rivers," said Doug McChesney, who coordinates the drought response for the Department of Ecology. "This forecast indicates that we may have serious low flow problems during the driest months, when water is needed both to irrigate crops and help fish migrate."

State officials are asking Washington residents to water their lawns every other day or let them go brown. Make sure water goes onto the intended plants and grasses, not sidewalks or driveways, officials advise.

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SEATTLE POST-INTELLIGENCER
http://seattlepi.nwsource.com/local/153387_pipeline20.html

Natural gas pipeline shut down

Second rupture in eight months was too much for regulators

Saturday, December 20, 2003

By ROBERT MCCLURE
SEATTLE POST-INTELLIGENCER REPORTER

Safety regulators yesterday ordered the shutdown of a major high-pressure natural-gas pipeline serving Western Washington after it ruptured twice in eight months.

Williams Northwest Pipeline Corp. must inspect and replace portions of the half-century-old pipe, which runs from the Columbia River to Canada, roughly paralleling Interstate 5. The inspections and repairs must be finished within three years in the most-populated areas, including Seattle and Bellingham, and be completed all along the 268-mile route within a decade.

Inspectors were taken aback that the most recent rupture occurred even though they had ordered a 20 percent pressure reduction following the first incident.

"It's pretty significant," said Kim West, senior pipeline engineer for the state Utilities and Transportation Commission. "Never has there been a pipeline have another incident after the pressure has been reduced."

The initial break occurred May 1 near Lake Tapps in Pierce County, causing the evacuation of about 30 homes, a grocery story and an elementary school.

Tests later showed that the metal had corroded under the stress of gas pressure.

Tests are not yet complete on the section of pipe that ruptured last Saturday in southern Lewis County between Longview and Chehalis. But a dark stain there "is indicative of corrosion," said the shutdown order by the U.S. Office of Pipeline Safety.

At least twice during the 1990s, leaks along the pipeline's route in Washington were attributed to corrosion. The pipeline in Oregon experienced 22 failures near Oregon City in 1994 under similar circumstances, the shutdown order said.

The shutdown is highly unlikely to affect delivery of natural gas because of other pipelines in the state, according to Williams, a natural-gas transportation and production company that transports 80 percent of Washington's natural gas.

Williams also must inspect its other two major transmission lines, one running alongside the pipeline in question and the other a large spur that runs to Goldendale in Klickitat County.

"With two incidents in succession on the same section of pipe, needless to say, we're concerned and that's why we're going to do an inspection," said Williams spokeswoman Bev Chipman.

The break in the line near Lake Tapps caused a booming sound and the one last week caused a loud hiss, but in neither case did the escaping gas explode. That has happened in the past because of land movement and construction accidents, causing huge fireballs.

Chipman said that since the rupture at Lake Tapps in May, "We've been inspecting it pretty aggressively" and that the company had voluntarily idled the line by the time the shutdown order was made yesterday.

Damon Hill, a spokesman for the Office of Pipeline Safety, said the expensive replacement of pipeline won't be required in sections where the company can demonstrate through integrity tests that it isn't needed.

"We're not asking them to replace every inch of the pipeline," he said.

The shutdown takes on more gravity considering that Williams is the same company behind a proposed pipeline from Cherry Point near Bellingham to Vancouver Island, said activist Fred Felleman, whose environmental group Fuel Safe Washington is pursuing a legal challenge to the project.

The gas line would start near important herring-spawning beds at Cherry Point and traverse waters frequented by orcas and other marine mammals near the San Juan Islands.

"This is a corporate-mentality indication of their approach to safety -- fix it when it breaks," Felleman said. "It's not the kind of corporate mentality we want putting a line through the heart of the killer whale habitat."

"To me, their promises that they'll do good in their next project don't hold water," Felleman said.

Chipman responded: "We have done numerous environmental impact statements on both the Canadian side the United States side. They all show it would have no impact on the environment. ... We spend millions of dollars on integrity management. It's our number one priority."

The worst pipeline disaster in Washington occurred in 1999 in Bellingham. It involved a pipeline carrying liquid gasoline, not natural gas. Some 237,000 gallons leaked into Whatcom Creek and exploded, killing two boys and a young man.

P-I reporter Robert McClure can be reached at 206-448-8092 or robertmcclure@seattlepi.com

Letter 10 Exhibits

7. The United States Department of Energy has elected to take a federally enforceable limit on the number of hours 5 steam generating boilers, 4 hot water boilers, a diesel fire pump and 6 emergency diesel generators will operate each year.

8. The project will result in a potential to emit up to 156.9 tons of NO_X per year.

9. A caustic scrubber has been determined to be Best Available Control Technology (BACT) for the control of NO_X emissions from the pre treatment facilities.

10. Selective Catalytic Reduction (SCR) has been determined to be BACT for the control of NO_X emissions from the LAW vitrification plant.

11. SCR has been determined to be BACT for the control of NO_X emissions from the HLW vitrification plant.

12. Low NO_X burners plus flue gas recirculation has been determined to be BACT for the control of NO_X emissions from the steam and hot water plant.

13. Reduced operation and an on-road diesel fuel with a maximum sulfur content of 0.05% has been determined to be BACT for the control of NO_X emissions from the emergency generators.

14. Reduced operation and an on-road diesel fuel with a maximum sulfur content of 0.05% has been determined to be BACT for the control of NO_X emissions from the diesel fire pump.

15. The project is located in an area that has been designated Class II for the purposes of PSD evaluation. The nearest Class I Areas are identified in Table 1 below:

Class I Area	Distance
Alpine Lakes Wilderness Area	85 mi. (137 km)
Goat Rocks Wilderness Area	88 mi (142 km)
Mt. Adams Wilderness Area	95 mi (153 km)
Mt. Rainier National Park	95 mi (153 km)
Eagle Cap Wilderness Area	115 mi (185 km)

Table 1

16. The project is located in an area that is currently designated in attainment for all national air quality standards and all state air quality standards.

17. The ambient impacts of the proposed increase in emissions were determined with the EPA's Industrial Source Complex Short-Term Model Version 3 (ISCST3).

3. The proposed modifications to the RF3 and HFB are subject to the following New Source Performance Standards (NSPS) in Title 40 of CFR, Part 60 (40 CFR 60):

   (a) The RF3 is subject to Subpart BB of 40 CFR 60 for Total Reduced Sulfur (TRS).

   (b) The HFB is subject to Subpart Db of 40 CFR 60 for Oxides of Nitrogen (NO_X) and is subject to Subpart D for Sulfur Dioxide (SO_2).

4. Boise plans to replace the slaker with a new and more effective unit, resulting in an emissions reduction; the evaporators will have no direct emissions to the environment. Since neither the slaker nor the evaporators will cause any emissions increases, the changes do not trigger New Source Review (NSR) requirements or additional NSPS applicability. The slaker emissions reduction has not been relied upon in the issuance of the permit.

5. Boise submitted a PSD application to Ecology for the proposed project on August 29, 2001. After receipt of additional materials in 2001 dated September 28; October 5; November 5, 16, 21, 26, 27, and 30; December 12; and in 2002 on January 23 and February 1, 5, and 6, the application was determined to be complete on February 12, 2002.

6. Changes in emissions resulting from the proposed modifications and estimated emissions from the modified and affected units at the mill, upon completion of the proposed modifications, are presented in Table A below. The proposed modifications are expected to result in increased emissions of Carbon Monoxide (CO), NO_X, Volatile Organic Compounds (VOCs), TRS, and PM_{10} in quantities greater than the significant emission rates (SER) specified in 40 CFR 52.21(b)(23)(i) and WAC 173-400-113(1)(d) for Prevention of Significant Deterioration (PSD) and WAC 173-400-112(1)(d) for nonattainment NSR. Consequently, with the exception of PM_{10}, the project must undergo review pursuant to 40 CFR 52.21 and WAC 173-400-110 for each of the above criteria pollutants. PM_{10} emissions are addressed under a separate state regulatory order, to be issued concurrently with this order.

Table A
Emissions Increases[1]

Pollutant	Past Actual Emissions (Most recent two years actual emissions -- 1999-2000) (tons per year)	Future Potential Emissions (tons per year)	Net Change in Emissions for PSD Applicability (tons per year)
NO_x (nitrogen oxides)	1059	1717	658
CO (carbon monoxide)	604	2847	2244

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PSD Permit
Boise Cascade Wallula
7/16/02
page 3

Table A Emissions Increases[1]			
Pollutant	**Past Actual Emissions (Most recent two years actual emissions – 1999-2000) (tons per year)**	**Future Potential Emissions (tons per year)**	**Net Change in Emissions for PSD Applicability (tons per year)**
SO_2 (sulfur dioxide)	1869	1869	0
VOC (volatile organic compounds)	**990**	**1261**	**272**
TRS (total reduced sulfur)	**14.4**	**32**	**17.4**

[1] Emissions increases presented in Table A are from those emission units that have been modified or affected as a result of this project.

7. The VOC emissions increases are contributed by the associated emission units in the pulping and washing operation. The modified units do not contribute to any VOC emissions increases.
8. Best available control technology (BACT) is required for any individual emissions unit that contributes to the emissions increase subject to PSD permitting and that will be modified as part of the proposed project. BACT will be used to control NO_x, CO, and TRS from the RF3; and NO_x, CO, and SO_2 from the HFB. The BACT limit for SO_2 emissions from the HFB is found in the accompanying state regulatory order; BACT limits for NO_x, CO, and TRS are contained in this order.
9. The proposed pollutant increases resulting from the project will not significantly impact air quality attainment under state or NAAQS:
   (a) The proposed modification will not cause or contribute to pollutant levels in excess of state or NAAQS.
   (b) The proposed modification will not cause or contribute to air quality pollutant levels above PSD increment thresholds in 40 CFR 52.21(c).
10. Dispersion models used for evaluating the ambient air quality impacts were AERMOD and ISC-PRIME for nearby ambient air quality impacts and the CalPUFF/CalMET system for distant, Class 1 area impacts. None of these models are EPA guideline models, but have been determined to provide superior performance to the equivalent models approved for use by EPA in 40 CFR 51, Appendix W.

Central Area (concluded)

Ozone

1-Hour Ozone for 1998 (ppm)

		1-Hour Maximums					
		1st High		2nd High		2nd Day High *	
Station	Location	Date	Conc.	Date	Conc.	Date	Conc.
2000001A	Wishram, Columbia River Gorge	8/4	.079	8/4	.078	7/27	.077

* 2nd Day High – Second day with the highest 1-hour average.

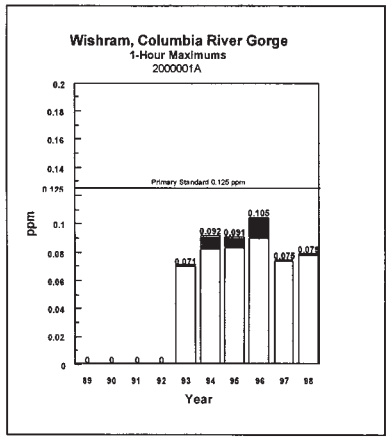
8-Hour Ozone for 1998 (ppm)

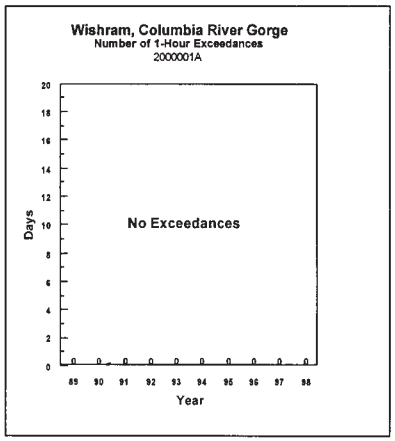
		8-Hour Maximums			
		1st High		4th High	
Station	Location	Conc.	Date	Conc.	Date
2000001A	Wishram, Columbia River Gorge	.076	8/3	.063	7/26

~~Ozone~~ for ~~1998~~

		Period of			% Valid
Station	Location	Record	# Hours	# Days	Data
2000001A	Wishram, Columbia River Gorge	Apr-Oct	4516	188	88

Ozone





Letter 10 Exhibits

Central Area

Ozone

Ozone (ppm) for 1997 (8-Hour)

		8-Hour Maximums			
		1st High		4th High	
Station	Location	Conc	Date	Conc	Date
2000001A	Wishram, Columbia River Gorge	0.062	5/12	0.058	8/12

Ozone (ppm) for 1997 (1-Hour)

		1-Hour Maximums							
		1st High		2nd High		2nd Day High*			
Station	Location	Conc	Date	Conc	Date	Conc	Date	# Hrs >.124	Exceedance Days
2000001A	Wishram, Columbia River Gorge	.075	5/19	.074	8/14	.074	8/14	0	0

*2nd Day High - Second day with the highest 1-hour average.

Ozone for 1997

Station	Location	Period of Record	# Hours	# Days	% Valid Data
2000001A	Wishram, Columbia River Gorge	Apr-Oct	5,090	214	99

Letter 11

Ken Thompson
81157 McRae Road
Helix, Oregon 97835
December 9, 2003

Mr. Philip Sanchez
Bureau of Indian Affairs
46807 B Street
Pendleton, Oregon 97801

Subj: Opposition to the siting of the Wanapa Energy Center

My observation is that neither American's elected or appointed officials adhere to or support the statements in the documents upon which our Country was conceived and founded. It appears that Benjamin Franklin was correct when he speculated during his final speech at the Constitutional Convention that; "*there is no Form of Government but what may be a Blessing to the People if well administered; and I believe farther that this is likely to be well administered for a Course of Years, and can only end in Despotism as other Forms have done before it, when the People shall become so corrupted as to need Despotic Government, being incapable of any other.*" I have numerous examples of what Benjamin Franklin so thoughtfully predicted as governmental corruption in the siting process of the Wanapa Energy Center.

I was required as a Umatilla County taxpayer by the BPA to purchase the Conforth Ranch. The BPA then through the slide of hand transferred the property to The Trust for Public Land, a nonprofit California public benefit corporation. That organization's "public benefit" definition is certainly much narrower than mine is. How, I do not know, The Trust for Public Land then conveyed this real property to the Confederated Tribes of the Umatilla Indian Reservation. On that date, 28 June 1993, the former Conforth Ranch was no longer a part of Oregon or Umatilla County, but property of another Nation. Land I was required to be a party in purchasing without any local taxpayer input which was then bestowed devoid of cost or restriction to another Nation. This particular process is not corrupt as elected or appointed officials I am sure define corruption. To take the corrupt practices a step further there are four covenants attached to the Conforth Ranch deed. The first of these covenants discusses future industrial development on that portion of the property previously zoned by Oregon and Umatilla County for industrial development. The covenant clearly states that, "*the operation of such industries does not violate local, state or federal statutes, rules or ordinances.*" Governor Kitzhaber's Indian Affairs director informed me that the State would not participate in the Wanapa Energy Center siting processes because the land was not part of Oregon. I am not aware of any Umatilla County position, but I can only assume the public position is the same as Oregon's government. If such covenants existed on lands owned by any other Umatilla County citizen there would be no doubt how such covenants would be upheld and administered. Not only does the selective adherence to the covenants further document the governmental corruption of the siting process, but also illustrates how our once great nation no longer treats every citizen equally. Such selectivity group practices violate The Declaration of Independence's statement of *"We hold these truths to self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness."* My family and I are downwind of the proposed facility. Our crops and our personal health have no protection from the air pollution poisons to be emitted because neither Umatilla County nor the

11-1

Responses to Letter 11

11-1 This account of the Conforth Ranch property transfer stated in this comment letter is inaccurate. The Trust for Public Land (TPL) purchased the property known as "Conforth Ranch" from a private party. Later, in June 1993, BPA purchased from TPL the portion of the Ranch now known as "Wanaket" for wildlife conservation pursuant to the Pacific Northwest Power Planning and Conservation Act (16 U.S.C. 839). BPA's source of funding for the purchase of Wanaket was the Bonneville Fund (i.e., from the sale of BPA power and transmission services); no BPA expenses, including fish and wildlife mitigation, are recovered from taxes. BPA currently still owns the Wanaket property and has a contract with the CTUIR to manage the land for wildlife conservation. However, BPA is considering transferring the Wanaket property to the BIA, to be held in trust into perpetuity for continued wildlife conservation management. BPA has never owned the land proposed as the site of Wanapa.

The monitoring, recording, and reporting of emissions from the Wanapa project would be in accordance with the permit requirements and this would be the same for all projects regardless of there location.

See response to Comment 10-4 regarding water use.

Letter 11 Continued

State of Oregon will be at the siting table to protect our crops or our health with local or state statutes, rules or ordinances. Our individual rights to Life, Liberty and pursuit of Happiness have been obfuscated without due regard for those individual rights by any State or local governmental body.

I have another example of how American individual rights are being explicitly taken. This example comes for the latest Oregon DEQ's, 1999, Oregon Air Quality Data Summaries Appendix 1L. One of the notes attached to the table is that no annual air emissions from permitted sources on tribal lands will be recorded. Even though those Tribal permitted emissions will negatively affect the Umatilla County airshed there will be no accounting of those sources by the ODEQ and I assume the EPA. However, if you are a farmer within those Tribal boundaries your non-road diesel vehicle and all agricultural field burning will be documented, regulated, and if possible banned by ODEQ and/or EPA. This is yet another example of the selectivity application of laws, regulations, and ordinances for the benefit of a special group of individuals at a significant cost to the majority of American citizens.

11-1

I will not address my issues with the airshed impact within this document. I will submit my comments at the time the EPA permit process unfolds.

The proposed water purchase by the Wanapa Energy Center from the Port of Umatilla's Columbia River water rights is appalling considering that the Umatilla County citizens in the critical groundwater areas paid for that water right and the subsequent Regional Water System. I am stunned that those same individuals who so strongly opposed Umatilla County's attempt to deal directly with the future use of ground water in the Umatilla County critical groundwater areas are not pounding down the Port's doors in opposition to the sale of their water to another Nation. It is even more nauseating considering that the Nation purchasing the water for use other than salmon opposes any use of the Columbia River water for anything but salmon. Such a position makes the Port's action even viler. It is as if the Columbia River has no propose to benefit any run of the mill Americans. This is yet another example the corrupt use of government to benefit a select group of individuals at an exorbitant cost to the majority of Umatilla County taxpayers.

The draft ESI conveniently left out many unstated costs to the Umatilla County citizenship. One of the most significant is the loss of property taxes that would have been paid if the project was a normal American industrial development. In addition there is the lost Oregon CO2 offset fees that will not be paid. This is one of the examples of a covenant Oregon administrative rule that applies to all other private carbon based power production facilities constructed since 2000 except by some selective application of law for the Wanapa Energy Center.

11-2

Responses to Letter 11

11-2 All developments on tribal land pay taxes. Only CTUIR has taxation authority over the project site. As a result, the project pays property taxes to the CTUIR. However, the County has jurisdiction over the ancillary facilities (e.g., the natural gas and water/sewer pipelines) which would pay property taxes to the County. In addition, new employees of the project would likely buy homes and pay property taxes to the County. Therefore, Umatilla County would not lose property taxes; instead it would gain property taxes which it would not have had if it would not be for the project.

While the project is not under state jurisdiction but for purposes of carbon dioxide mitigation, the project would pay offset fees that exceed state requirements for carbon dioxide mitigation. One possible mitigation technique under the state requirements would be to contract with the Oregon Climate Trust, the entity currently used by other power plants in Oregon, and to pay them fees for the carbon dioxide, which the Trust would then invest in various mitigation efforts. As discussed earlier, the project would fund the Wanapa Environmental Foundation with $8 million. The goals of the Foundation include focusing on mitigation that are based locally to mitigate for the direct impacts in the region and to help with the local economy. The state CO_2 offset fees paid to the Oregon Climate Trust may be spent outside of Oregon.

The project cannot remain viable if it would be subject to double taxation by the Tribes and by the County.

What Wanapa Will Not Pay in CO2 Offset Monetary Funds

- Will not pay $ 9,576,585.20 in CO2 offset funds for CO2 emissions into the County & State airshed.
- (Est. 11,266,570.83 Tons of CO2 emissions over 30 years. 375,552.36 Tons per year.)
- Will not pay $ 477,905.37 in selection and contracting funds for administrative fees.

11-2 Appendix 2 is a MS PowerPoint presentation on the Wanapa Energy Center tax issues with additional details about the Oregon CO2 Offset tax. The lost Umatilla County property taxes are:

Annual Levied Property Tax Wanapa Will Not Pay

General County	$ 2,192,267
Umatilla Co. Bond	$ 214,907
Educ Serv Dist	$ 433,741
BMCC Ed Dist	$ 509,047
Port of Umatilla	$ 118,503
School Dist #8	$ 3,763,529
School Dist #8 Bond	$ 2,782,010
Fire Dist #7-405	$ 655,347
Fire Dist #7-405 Bond	$ 303,380
Cemetery Dist #8	$ 71,071
Umatilla Hosp Dist #1	$ 371,140
WU Vector Control	$ 155,617
Umatilla Sp Lib Dis	$ 283,514
BMCC Bond	$ 268,345
Total Tax Forfeited Annually	**$12,122,418**

Letter 11 Continued

11-2 It appears that the Wanapa Energy Center socioeconomic study opportunely avoided this significant Umatilla County community cost. What a great business technique to avoid all local, County, and State ordinances, laws, administrative rules, and regulations, as well as taxes. Buy a piece of property then donate that property to a "public benefit" organization which in turn transfers the deed to another Nation thus escaping all community responsibilities related to ordinances, laws, administrative rules, regulations, and taxes. Similar to Enron, isn't it? Once again, the everyday Umatilla County citizen is required to assume the unstated community costs of industrial development and in this particular case all the cost of a significant industrial development in another Nation.

11-3 In the past year, the Umatilla County Commissioners rejected a land use application proposal by Lewis-Clark College for a rural residential home development on a tract of Umatilla County non-resource lands East of Hat Rock. The Commissioners rejected the proposal because of testimony from adjacent farmers that such a development would dramatically impinge upon their normal farming practices. I wonder if those same farmers understand the even more harsh impact the Wanapa Energy Center will not only have upon their crop and animal production, but also their families as well as their health. However, as it has been proven typical of all the permit applications for carbon-based thermo power plants in the region, none of them ever addresses the quantitative impact of the air pollution upon crops, animals, or human health. The applicants' clearly state that their projects do not exceed the NAAQS. Such claims are adequate for the applicant, ODEQ, and EPA. The other direct impact is upon the agricultural production in Umatilla County. Building the Wanapa Energy Center and similar natural gas fueled carbon-based thermo power plants is resulting in the unprecedented escalating price of natural gas, an essential feedstock to manufacture nitrogen fertilizer. The crisis is exacting a heavy toll on America's nitrogen fertilizer producers and the farmer customers they supply. Oregon and Umatilla County appear to be placing a greater importance on electrical power production than the well-being of one of three natural resource industries that made Oregon the once great State it was. Instead, Umatilla County is an energy sump pump for Western Oregon and California. The new State, County, and local policy is too heck with the local agricultural producers and their input costs, crop and animal health, as well as their personal health.

11-4 As stated in Appendix 3 I do not understand why the City of Hermiston and Port of Umatilla did not collaborate with the Umatilla Generating Project if they are so bent upon participating in the development of an energy facility. As least, that project would have adhered to all State and Local regulations as well as paid local property taxes, State carbon taxes, and still purchased Port of Umatilla water, all to the direct benefit of Umatilla County citizens. The Port of Umatilla would not only have sold the project water, but also collected additional property taxes. My question to both elected bodies, why Wanapa and not Umatilla?

11-5 Of course I cherished the question Mr. Roger Hamilton, Governor Kitzhaber's Energy Advisor, asked Mr. Ken Beeson, Energy Resource Project Manager for Eugene Water and Electric Board at a Port of Umatilla Wanapa symposium; "*Why is the power plant not being built in Lane County next to the population base that will use the power?*" Mr. Ken Beeson would not answer the question. I believe the answer is that the Lane County citizens do **NOT** want such facilities and the negative impact that power production development bring to a community. Once again, the East side and particularly Morrow and Umatilla Counties are the cut plain for power production and transmission for Western Oregon. Roger Hamilton stated that the State Energy Policy should promote renewable energy sources for electrical production as well as production and distribution closer to the population where the load requirement exists. I can see that such a proposal has been completely ignored and died with Mr. Hamilton's replacement.

Responses to Letter 11

11-3 A dispersion modeling analysis has been conducted for Wanapa to estimate the quantitative air quality impacts from the proposed facility and other nearby sources and background concentration. Ambient concentrations from the modeling analysis were demonstrated to remain within the appropriate National Ambient Air Quality Standards (NAAQS). The primary NAAQS are required to be set by the USEPA at levels protective of human health. The secondary NAAQS are set at levels protective of public welfare, which includes impacts on soils, vegetation, and animals. The impacts from Wanapa itself (excluding impacts from other nearby sources and background concentrations) in the significance analysis were shown to be less than 20 percent of the appropriate NAAQS at the point of greatest impact.

See response to Comment 6-1 regarding the issue of pricing of natural gas.

11-4 The Umatilla Generating Project (UGP), through an affiliated company, owns an allocation of water from the regional water supply system, and may wish to develop an energy facility when in its judgment market and/or other conditions are appropriate. UGP has not elected to do so at this time. The Wanapa Project is the most feasible, present opportunity that is before the Port.

The Port of Umatilla provides water to Hermiston Generating Company as an initial water user of the regional water system. The Port also provides water to Calpine as a subsequent water user through the same system. The Port is prepared to serve Umatilla Generating Company if they decide to build their proposed facility and has entered into a water supply agreement with the legal entity that hold the interests of Umatilla Generating Company. The Port would consider providing water to any other prospective independent power producers that might choose to locate within the port district at a place where the producer could be reasonably served. The Port of Umatilla and the CTUIR have an agreement that the land upon which Wanapa is to be constructed would be used for industrial purposes. This agreement is a result of negotiations over the disposition of the Conforth Ranch. The Port was approached by the Wanapa partnership as a subsequent water user of the regional water system.

11-5 The purpose of the Wanapa project is to provide electric generation for use in the region and in the local area in northeast Oregon. The primary purpose of the project is not to provide power for people in Lane County. The Eugene Water & Electric Board (EWEB) is considering purchasing 25 MW from the project, an amount that is approximately 2 percent of the total project capacity of 1,200 MW. The implication that power production is confined to the east is not accurate. Several thermal generation projects are currently proposed in western Oregon and Washington "closer to the population where the load requirement exists." There also are several wind projects proposed in Oregon and Washington.

Letter 11 Continued

Why is the Wanapa Energy Center not being built upon Tribal ground near Mission? There is a natural gas pipeline and their water present. In addition, that Nation's local population could then consume the power without demanding power line right-of-ways across Umatilla County citizens' property.

Here is the only way I would support the present Wanapa Energy Center facility. No air emission shall escape the property boundaries. The source of cooling water shall come from nowhere outside the present property boundaries. All wastewater shall stay on the property, both from the facility and human activity to manage the plant. There shall not be a requirement for a natural gas pipeline right-of-way across any Umatilla County citizen property, public or private. There shall not be a requirement for a power line right away across any Umatilla County citizen property, public or private. In essence, there shall be a wall around the facility that prevents **ZERO** impact in anyway upon Umatilla County citizens. That also includes there shall be **NO** use of any public Umatilla County funds or bonding practices to construct the Wanapa Energy Center.

Appendix:

1. Wanapa Energy Center Project Public Input by Ken Thompson
2. Energy Generation Facility Taxes by Ken Thompson
3. Port of Umatilla Letter by Ken Thompson

Responses to Letter 11

Letter 11 Continued

Wanapa Energy Center Project
Public Input
Prepared by Ken Thompson
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Letter 11 Continued

INTRODUCTION

I am taking this opportunity to submit public comments on the Wanapa Energy Center Project near Hermiston, Oregon. I just returned home from the open house held at Tamastslikt and knew that I needed to make written input in order to have my concerns addressed by the permitting process.

I would like to first give a short resume of information about myself. I have served on the Umatilla County Planning Commission since 1994. During that time the Commission has sited two energy projects, the Co-Gen at Simplot and the Vansycle Wind Project. This past summer I requested contested party status during the Oregon Energy Facility Siting Council's permit process for the Stateline Wind Project. Florida Light and Power came to a number of agreements with me so I would drop my contested party status request in order for the project to proceed without further hearings and associated delays. Over the years of watching the development of the commercial merchandizing energy industry within our County during which time I have learned and developed a very deep concern about the siting of the various energy production facilities. Those concerns came

Letter 11 Continued

to a head with the Stateline Wind Project and are experiencing a rebirth with the Wanapa Energy Center Project proposal.

ISSUES OF CONCERN

COUNTY PROPERTY TAXES

11-6

I am aware there will be some debate about whether this particular property should be exempt from Umatilla County property taxes. The property was purchased at a substantial time after the Umatilla Reservation became Indian Deeded Ground. The property was on the county tax roles at one time and is miles from the present Umatilla Reservation. There is no other development on the property at this time. I would contest that a $700-$800 million dollar energy production facility not paying county property taxes is not only unfair, but also unethical. To say that the facility will not have any impact upon our county infrastructures is ridiculous and down right unconscionable.

What amazes me is that the county Planning Commission did the tribe a great favor at a meeting about a year ago by zoning the previous unzoned property heavy industrial. There were no general public members or tribal members present at the time. So thanks to the foresight of the County Planning Commission there are no County Zone permits required for siting the energy facility because such a use is recognized as an outright permitted use.

SOCIOECONOMIC STUDY GUIDELINES

11-7

One of the issues that whacked me in the side of the head during the Stateline and Vansycle Wind Projects is the incompleteness of the socioeconomic studies compared to the environmental studies required and completed to site energy projects. The following is from my public testimony regarding the Stateline Wind Project siting concerning socioeconomic studies and their incompleteness.

Amazing, FPL Energy is proud of their conclusion that there was "no impact" or "insignificant impact" upon the County's employment, population, and transportation system as a result from the establishment of the Stateline Wind Project. Most industrial development projects within Umatilla County tout their potential socioeconomic impacts, not gloat over "no or insignificant impacts". The sections of the FPL application that concern the socioeconomics of our community appear to have been produced without any interaction with any citizens within a 30-mile radius of the project. The application also lacks sensible statistics to support the report's conclusions concerning socioeconomic impacts. Why are applications for major community projects required to invest more money and time in studying plants, fish, birds, and animals vice the needs of the citizens residing within the community? Here are some of the examples to support my position concerning the lack of proper socioeconomic study or review:

Responses to Letter 11

11-6 The project is being proposed for construction on tribal trust land that is technically considered part of the Umatilla Indian Reservation, although it is not contiguous with the current formal Reservation boundary. The land also is within the tribes 6.4 million acre ceded territory.

As discussed in Section 2.5.2, locating the proposed project on lands within the Reservation boundary was considered but eliminated due to the lack of conjunction of water, gas, and electric transmission necessary for constructing and operating an economically viable facility.

See response to Comment 11-2 on comments related to tax payments.

11-7 See responses to Comments 11-2 and 6-6. The project would pay taxes to CTUIR, the entity with taxing authority, as described in response to Comment 11-2.

Letter 11 Continued

(1) Not one County socioeconomic document of study is quoted for review. However, the proposed draft order lists 3 Botanical documents reviewed and 12 wildlife documents reviewed.

(2) In the list of 94 Conditions Required by Council Rules there are only two socioeconomic conditions and they concern county roads. However, there are 19 conditions concerning plants and wildlife as well as two separate attachments: Oregon Wildlife Monitoring Plan and Revegetation Plan.

11-7 *These dichotomies of people issues versus plants and wildlife are excellent examples of the success of the environmental activists' influence and the community citizens' loss of local control for the beneficial concerns of their own community. The dichotomy of the impact studies also supports my belief that our community is being mined for a profitable resource without significant contributions to support the well being of our community's intrinsic values and vitality that impact citizens. One or two ground squirrel sites, whether inhabited or not, will have more impact upon this body's decision than one hundred citizens like me objecting to the Stateline Wind Project or even one citizen's voice of dissention. Those who can speak will have less influence upon Oregon Energy Facility Siting Council's decision than those Oregon Fish and Wildlife Department impact studies that ODE requires.*

NUMBER OF FULL-TIME EMPLOYEES VERSUS FACILITIES VALUE

From the minute amount of information available pertaining to Wanapa Energy Center I have concluded that the facility is another extremely high valued industry that adds little to our County's employee population base, which adds insignificant value to our community of citizens. A $700-$800 million dollar facility with only 30 full-time employees is not impressive in population starved Eastern Oregon. I would also bet that at least 1/2 of those employees would live choose to live in the Tri-Cities.

Again I would like to share some of the information I used in my public testimony at the Stateline Wind Project public hearing. There is a brief discussion about what I consider a "exceptional" community business.

11-8 *A viable community thrives and grows with a web of interconnecting businesses. An excellent example is Pendleton's Lippert Components Mfg. Inc. The company produces RV chassis's. Those chassis's are sold to Pendleton's Fleetwood Travel Trailers of Oregon and Keystone RV Co. Because of the co-location of the three manufacturing facilities, both Fleetwood and Keystone have a significant advantage in the highly competitive RV market. Also in Umatilla County there are a number of food processors as well as two flourmills and woolen mill that all add value to the agriculture products produced within the County and region. What will FPL Energy do with the product it extracts? Export the electricity to PGE in Portland, Oregon. West side companies mining East side resources without adding value to our communities, as do those exceptional community partners listed in Table 2. I am sure other*

Responses to Letter 11

11-8 The purpose of an EIS is to analyze and disclose impacts of a proposed project on the human and natural environment. This document presents that information, as required by BIA regulations. The EFSC process is somewhat different in its requirements and the areas of interest to the Oregon Energy Facility Siting Council will be addressed at the time the project proceeds with that process.

community members and leaders could add even more exceptional business partners to this list

Table 2. Umatilla County For-Profit Companies

Company	Value	Asset Value	2000 Property Taxes	Number of Employees
Vansycle Ridge Project	$38,000,000	$24,800,000	$241,584.59	4-5
Pendleton Wal-Mart Superstore	$5,337,730	$4,003,050	$80,370.84	300
Pendleton Flour Mill	$7,833,980	$7,792,420	$99,385.32	81
Fleetwood	$6,097,630	$5,959,760	$113,699.86	380
Keystone RV Co.	Enterprise Zone Exemption			250
Lippert Components Mfg.	$1,469,950	$1,362,270	$3,860.45 Enterprise Zone Exemption	43
Continental Mills	$5,677,160	$5,677,160	$106,284.95	62
Rocky Mt. Colby Pipe	$2,511,530	$2,507,950	$47,056.43	21
P.G.G.	$20,750,640	$18,885,120	$305,885.13	155
Hermiston Wal-Mart Superstore	$6,773,190	$4,528,470	$66,249.47	356
Wal-Mart Distribution Center	$35,383,690	$30,587,760	$35,365.53 Enterprise Zone Exemption	1000
J.R. Simplot	$63,064,790	$58,544,250	$852,758.76	800
Lamb Weston	$53,078,840	$53,011,850	$757,433.72	500
Union Pacific, Hinkle	Enterprise Zone Exemption			435
Sykes Enterprises	$6,658,780	$4,569,540	$82,558.60	400

I was not surprised, as Table 2 reveals, at the significant difference in employment numbers when comparing the high valued Vansycle Project with other business within Umatilla County. However, Table 2 did bring into focus the fact that the Vansycle Wind Project and the new Stateline Wind Project are the only extremely high-valued heavy industries that lie within a Umatilla County Exclusive Farm Use (EFU) zone. The EFU conditional use permit allows FPL to escape the Umatilla County cities' property taxes that most of the County's heavy industrial businesses are assessed because they are sited within city limits.

11-9 The issue of construction and operational employment of the facility was discussed in the Draft EIS in Section 3.10.2.

Letter 11 Continued

PREPARED BY KEN THOMPSON 11/18/03

WATER USAGE VOLUME

11-10 David Fife told me this evening that the Wanapa Energy Center would use about 5,000 GPM of water from the Port of Umatilla and Hermiston water project. I would not be surprised if that amount of water would put the water project at or very near its' capacity. That leaves no water for a non-polluting industry of the future or even any expansion of the present agriculture industry.

AIR QUALITY IMPACT

11-11 This is a major concern. Here in the county the political bodies have taken a great interest in our air shed. Agricultural burning has a permit and control process, which was created and implemented through County Commissioners' initiative. The city of Pendleton has an Air Quality Committee, which has dramatically improved the city's air quality. Now here comes an energy plant that would produce the same amount C02 as 300,000 automobiles as well as toxic heavy metals, nitrous oxide, and sulfur dioxide emissions. I would conclude that all our hard work to significantly improve our County's air quality was just shot in the head when Wanapa Energy Center comes online. The opportunity to add new industries that would add greater community value will be radically reduced because of the reduction in the air shed quality by siting the Wanapa Energy Center.

BPA LINE AND SUB-STATION CAPACITY

11-12 What impact will the facility have on the present and future use of the BPA system for further wind energy production within Umatilla County? A critical component of the wind energy industry within the region is the under utilization of the present and near future BPA system. Does the siting of this facility in any way undermine that significant wind energy component?

POWER USAGE

11-13 Where will the energy be utilized, within Umatilla County or exported? If utilized within the county, what is the amount and at what cost?

ANNUAL REPORTING

11-14 Is an annual report required? If so, what are the components required and will it be made available to the public?

FINANCIAL ASSURANCE

11-15 What are the bonding requirements to restore the site to a useful, non-hazardous condition if the partners either begin but do not complete construction of the facility or permanently close the facility before establishing the financial mechanism or instrument for decommissioning?

DECOMMISSIONING BONDS

11-16 What are the funding requirements for decommissioning?

Responses to Letter 11

11-10 See response to Comment 6-3.

11-11 See response to Comment 10-28.

11-12 From an interconnection standpoint (transmission from Wanapa to McNary), the project presents no impact on present and future Wind development in the Umatilla area. The upgrades in the McNary substation are considered a system upgrade. From a transmission standpoint (proposed new John Day-McNary substation), the McNary area is already constrained, and Wanapa would require new transmission to move forward. As such, this may benefit Wind and other generation in the area as the project could be a major participant in funding of this transmission.

11-13 Unlike the other power plants in the region, which export all of their energy, the public partners in the Wanapa Energy Center Project (i.e., City of Hermiston, the Port of Umatilla, and the Tribes) intend to use electricity from the energy center to promote and attract economic development to the area. The current plan is for the three local participants to reserve up to approximately 12 percent of the electricity for local usage for either direct service industries or to the local utilities.

11-14 The Wanapa Energy Center would be a private entity, and as such, no annual financial report would be expected to be issued to the public.

11-15 The land lease agreement would include provisions between the tribe the project owners for adequate bonds and financial guarantees to ensure the proper decommissioning and land restoration. This land lease agreement would be subject to the BIA approval and acceptance.

11-16 See response to Comment 11-15.

Letter 11 Continued

PREPARED BY KEN THOMPSON 11/18/03

TRIBES CONTINUED SUPPORT OF SNAKE AND COLUMBIA RIVER DAM REMOVAL

11-17 I personally find substaintial dichotomy in this project on Umatilla Tribal property. How can the Tribe speak out against the Snake and Columbia Rivers' dams and the use of water from both rivers for agricultural irrigation, but be very willing to use 5,000 GPM of the same river water at a energy production facility that will have a dramatically negative impact upon the regions air shed without significant community contributions in either citizens or property taxes?

SUMMARY

I am very interested in being added to any notification list for further public hearings, as well as receiving any public documents produced concerning the project's siting. From what I have written it is obvious that I have some very opinionated concerns about the siting of the Wanapa Energy Center. I feel from what little detailed information I could glean at the information meeting tonight that there are a number of very negative issues associated with the project's siting at this time. I would hope during your EIS that a number of those concerns can be mitigated or resolved to benefit all Umatilla County community members, not just the project partners.

Responses to Letter 11

11-17 The project is expected to help meet growing needs for electricity in the region and not replace existing hydropower. Hydropower supplies in the region are not adequate to meet all demands. In addition, hydropower's lower cost insures that wholesale electricity users purchase hydropower before purchasing from other sources. Also, the development of other sources of electricity diversifies the region's sources and reduces the risks inherent in relying on hydropower alone for the region's growing economy.

CTUIR's support of the project and opposition to dams is a consistent policy. The Wanapa project as well as other similar gas fired plants would reduce dependency on the additional hydropower, which would have a positive effect on the Fall Chinook, Spring Chinook and Steelhead. The impact of the dams on Fall Chinook, Spring Chinook and Steelhead is well documented. The proposed water withdrawal for the project would have an immeasurable impact on fish compared to the hydropower system.

CTUIR is opposed to new permits from the Columbia River that does not involve water mitigation measures. In the case of Wanapa, the Port of Umatilla already retains the water right and the project would be one of several customers of the Regional Water System using water for industrial purposes. State of Oregon specifically authorizes municipalities to reserve sufficient water under a permit that the municipality would need for future development. As such, to argue that CTUIR should not rely on water from the Regional Water System would seem to suggest that others who are using water under the same existing permits, including other power plants in the area and irrigation interests, also should not be allowed to do so.

ENERGY GENERATION FACILITY TAXES

Ken Thompson

How is property tax determined on Energy Generation Facilities?

- Oregon Department of Revenue (Mary Seaton 503-945-8254).
- Assessment of "Centrally Assessed Property" is based upon:
  - Cost
  - Income
  - Sales
- OAR 150-308.205 (B-C) & 150.308.505-665

Hermiston Generating Project

- Owners Hermiston Generating Co. (50%) and Pacific Power (50%).
- 2002 Property taxes:
  - Assessed Value $231,515,300.00
  - Taxes levied $3,265,916.87
  - Taxes paid $3,167,939.36 (3% discount)
- Enterprise zone property from 1996 to 2001.

Hermiston Power Project

- Owner Calpine.
- 2002 Property taxes (partial construct.):
  - Assessed Value $23,698,000.00
  - Taxes levied $334,300.58
  - Taxes paid $324,271.56 (3% discount)
- Enterprise zone status 2004 to 2009.
  - The Project's land will still be taxed.
- Cost $270 million to construct.

Umatilla Property Tax Rate HGP & HPP Code Area (08-03)

General County	$2.8471/$1000
Umatilla Co. Bond	$0.2791
Educ Serv Dist	$0.5663
BMCC Ed Dist	$0.6611
Port of Umatilla	$0.1539
School Dist #8	$4.8877
School Dist #8 Bond	$3.6130
Fire Dist #7-404	$1.2025
Cemetery Dist #8	$0.0923
WU Vector Control	$0.2021
Umatilla Sp Lib Dis	$0.3682
BMCC Bond	$0.3485
Total Tax Rate	**$15.2188**

Natural Gas Transmission Tax

- Natural gas transmission pipe lines are "Centrally Assessed Property".
- Assessed value based upon the transmission pipe's dimensions.
- The property tax rate is determined by the County code area the pipe line transverses.
- The County tax rates in the 36 tax code areas ranges from $10 to $20/$1,000.

Wanapa Forfeited Pro Taxes on $770 Million Value

General County	$ 2,192,267
Umatilla Co. Bond	$ 214,907
Educ Serv Dist	$ 433,741
BMCC Ed Dist	$ 509,047
Port of Umatilla	$ 118,503
School Dist #8	$ 3,763,529
School Dist #8 Bond	$ 2,782,010
Fire Dist #7-405	$ 655,347
Fire Dist #7-405 Bond	$ 303,380
Cemetery Dist #8	$ 71,071
Umatilla Hosp Dist #1	$ 371,140
WU Vector Control	$ 155,617
Umatilla Sp Lib Dis	$ 283,514
BMCC Bond	$ 268,345
Total Tax Forfeited	**$12,122,418**

Oregon Corporate Excise Taxes

- The tax rate is 6.6% on Oregon Net Income.
- Outside entity on Tribal Reservation or BIA Trust property has "no exception" from the Oregon Corporate Excise Tax.
- The tax collected is deposited in the Oregon General Fund.

CO2 Offsets

- The State's CO2 performance standard cannot be met through technology alone.
- The net emissions rate is 0.675 lb CO2/kWh
- Paths to meet the standard
  - High-efficiency technology
  - Co-generation that offsets fossil fuel use
  - Offset projects that the developer manages
  - Monetary path

CO2 Offset Monetary Path

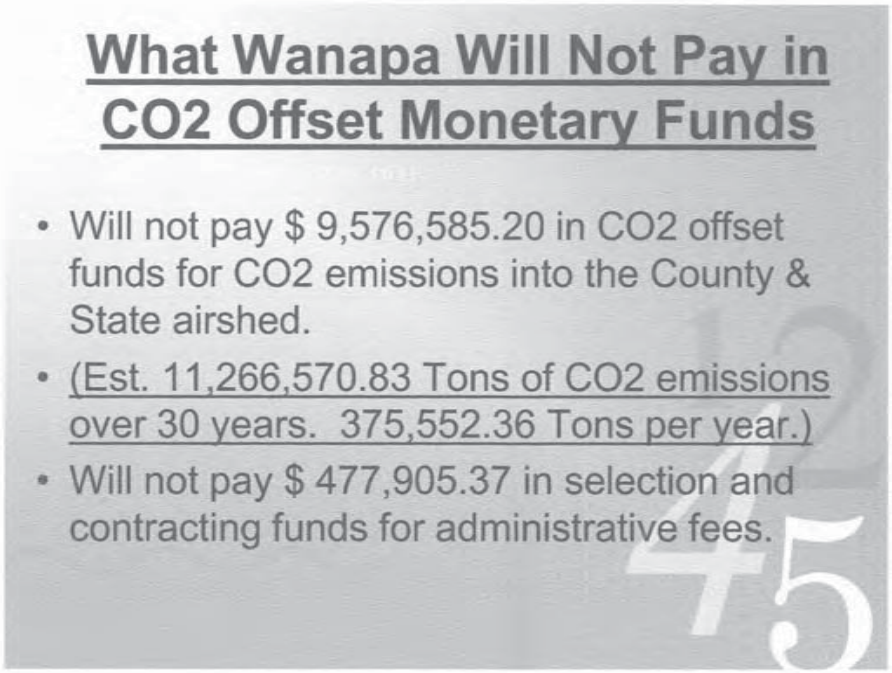
- Current offset rate is $0.85 per short ton of CO2.
- There is a specific formula for calculating the selection & contracting funds for the administrative costs associated with the CO2 offset funds.
- Paid to an independent qualified organization, as defined in Oregon statute.
- Only qualified organization is The Climate Trust in Portland, Oregon.

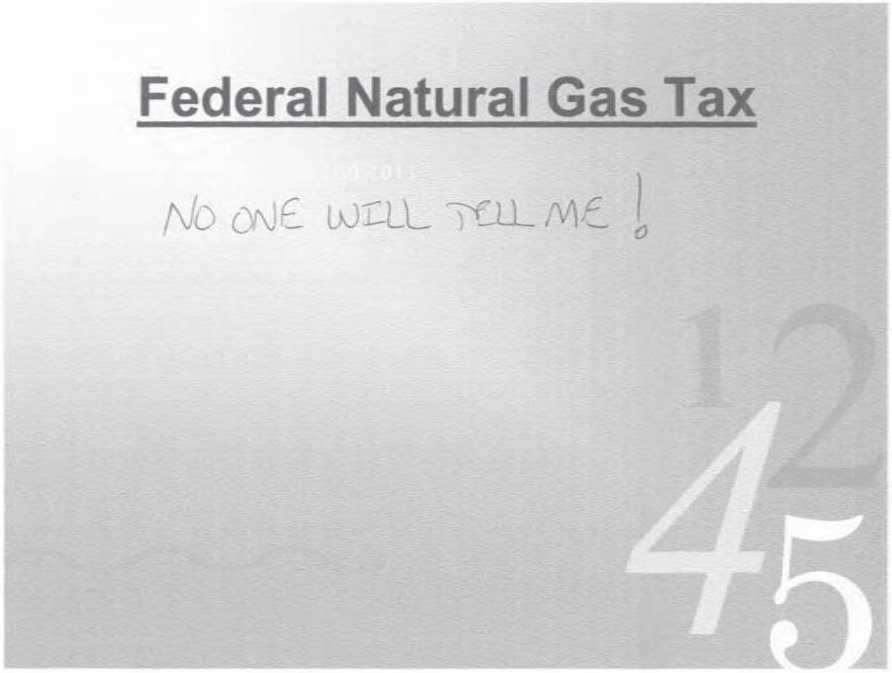
Developer Managed CO2 Offset Projects

- No Oregon EFSC project has selected this particular option.
- If a project were to select this option the general criteria for evaluating an offset project is delineated in OAR 345-024-0620 (3).
- EFSC's staff has begun to develop more specific rules for evaluating developer managed CO2 offset projects.

HPP CO2 Offset

- Selected monetary option to comply with Oregon CO2 standards.
- Paid The Climate Trust $4,218,760.00 in CO2 offset funds.
- (Est. 4,963,247.06 Tons of CO2 emissions over 30 years. 165,441.57 Tons per year.)
- Paid The Climate Trust $210,531.00 in selection and contracting funds.


What Wanapa Will Not Pay in CO2 Offset Monetary Funds
• Will not pay $ 9,576,585.20 in CO2 offset funds for CO2 emissions into the County & State airshed.
• (Est. 11,266,570.83 Tons of CO2 emissions over 30 years. 375,552.36 Tons per year.)
• Will not pay $ 477,905.37 in selection and contracting funds for administrative fees.


Federal Natural Gas Tax
NO ONE WILL TELL ME !

Letter 12

Ken Thompson
81157 McRae Road
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541-457-2414
captken@helixtel.com

McRae Ranch

November 18, 2003

Dear Commissioners:

I know that this letter will quickly move to the round file in the corner of your office building because my family and I are shadow community members with absolutely no clout to influence the decisions of the "rich and powerful" community members or the politically elite, such as all of you. But in the future when we are breathing from the polluted downwind airshed I will have a little bit of satisfaction that I did write to file a complaint about the Port's decision to partnership in the Wanapa project.

I do have a number of reasons why I strongly object to the Wanapa project and the Port's partnership in the project.

First, that our confiscated property tax dollars will be used to promote the direct benefit of members of another nation without any adherence to all State or Local regulations that similarly sited projects are required to obey. The purchase of the property with our tax dollars, which certainly appears very sleazing after reading all the property transfer deeds, and now local dollars used again for the benefit of the Tribe are just unconsciousable to me.

Second, if the Port wanted to partnership in a carbon based electrical project why did it not do so with the Umatilla Power Project? At least that project would have adhered to all State and Local regulations as well as paid local property taxes and State carbon taxes and still purchased your water, all to the direct benefit of County citizens. The Port would not only have sold the project water, but collected additional property taxes.

Third, as for the water, I cannot believe that there is not an uproar over the proposal that the water goes to another Nation that advocates all dams' removed and complains constantly about any other water use but for salmon. In the past 12 years West Umatilla County has gone from one critical ground water area to 4 such areas. A couple of State regulatory agencies want all development in those 4 areas ceased. In another 12 years the potential is there will be 8 such areas with many more Umatilla County citizens locked out of using their properties as they have dreamed. Why cannot the Port develop a regional water system so those who paid for that water system actually benefit from those taxes they are required to pay the Port instead of a non-tax paying Nation benefiting from the water?

Fourth, my Dad died in October at an early death due to respiratory failure. He had left Umatilla County in the late 1980's because he could no longer breathe the County's air. After examining the Oregon DEQ's latest Air Quality report and then adding the air pollution numbers from the West County carbon based electrical plants to those figures, my wife and I quickly concluded as soon as farming retirement occurred we need to follow our 4 children out of the County to the West to remove ourselves from our downwind home and farm for our own safety. The Port and partners in concert with other agencies have blinders on when it comes to the airshed quality. For me it is ridiculous that no agency supports an area cumulative air quality study. More agencies' head in the sand approach to projects that have been predetermined a go!

Fifth, property taxes not paid by the project. Of course none of you even took the time to attend your own sponsored Wanapa forum where the tax issue was presented. Your absences spoke volumes to me about your lack of concern regarding the project's local impact. The absence also indicated to me that the project was a go for the Port no matter how actual County citizens reacted to the project. The non-participation was another display of the political elitism that appears to be rampant throughout all layers of government.

A shadow resident,

Responses to Letter 12

Letter 12 Continued

COMMENTS RELATED TO DRAFT EIS OF WANAPA PROPOSAL
Directed to Philip Sanchez, Supt. Umatilla Agency BIA POB 520 Pendleton, OR 97801
Submitted by John Spomer,745 W. Quince, Hermiston, OR

Comments related to information in draft EIS or deletion from same. December 27, 2003.

Briefly noted:

12-1 1. Comparison to an existing coal fired plant hardly seems valid, as it is not likely this plant would be permitted at this time. Furthermore, the existence of a coal-fired plant with considerable emissions into the area air shed argues against other large albeit cleaner generating plants. It would seem prudent to incorporate a plan to phase out the coal-fired plant as a condition before building additional generating plants in this area. To do less, consigns the area to being the high stack electrical generating grounds for the whole of the Northwest.

12-2 2. Little is mentioned in the EIS as to the potential impact on area weather related to numerous steam plumes in a concentrated area.

12-3 3. The absolutely negative impact on the visual image of the Columbia River area is minimized in the EIS. In this area no high profile structure are noted other than a water tower. This plant would be a marked change in the profile of an area that has considerable value related to esthetic and scenic considerations. Not only do you have 4 stacks reaching over 200 feet into the area, but also you add a steam plume reaching several thousand feet high. Also at night you have a light profile that is currently non-existent. This is a dramatic and significant change that is lightly addressed in the DEIS

12-4 4. Nighttime light profile is given very little mention in the DEIS. What type of lighting is to be used? I assume it would be the flashy strobe style lights that have considerable penetration. This impact should be explored fully in the EIS related to impact on both people and wildlife.

12-5 5. The DEIS also seems to a best minimize impact on wildlife in the area. In fact, it almost appears to assume wildlife impact is a most a trivial matter. If I may editorialize, how sad that is as this area was touted by the CTUIR as a major factor when they acquired this property. In fact, I believe one could almost interpret the CTUIR as implying at that time they were saving this unique area for wildlife and its natural beauty. I believe while it is not required in all DEIS documents, in this case it is necessary if not imperative that esthetic and natural value of this land, the rim of the Columbia River, be given considerable weight in determining the value to be derived from this plant versus the negative impact the facility will cause.

12-6 6. The conclusions draw related to the tax issues are very weak in their logic and only seem to reveal an attempt to use the DEIS for propaganda. The BIA would be better served by a more forthright approach. Honesty is still the best policy.

In summary, I think the DEIS is in many ways developed and constructed to lead one to the conclusion that this facility would be of great value with little impact on the area. I urge the BIA to strive to develop a more balance EIS as it moves ahead with this process. In the long run, the BIA and all concerned will be better served if this is done. If the project gets final approval by the BIA and related agencies, it will stand a better chance of acceptance by the area, and at the same time minimize the chance of legal challenges in the future.

Responses to Letter 12

12-1 See response to Comment 6-2(c).

12-2 This project is 5 miles from other nearby plants. Plumes do not have a radiating boundary that would travel for long distances. Therefore, it would not be expected that there would not be a cumulative effect on weather with the addition of Wanapa in the area.

12-3 The Final EIS acknowledges that the new power plant would be a large and visible new feature in the landscape. State of the art and improved lighting towers would be used to minimize the nightly light profile.

12-4 The power plant would use shielded lighting, and would be located near the existing prison, which is already well lit at night. Since the stacks would be taller than 200 feet, there would be specific FAA requirements for blinking/strobe lights that would be strictly implemented.

12-5 The land acquired by CTUIR was designated for both conservation and industrial uses. The proposed plant site was designated for the proposed industrial use, while the Wanaket Wildlife Management Area would remain under its current uses and management. Certain impacts to the wildlife values and uses were identified in Section 3.4.2.3 (waterfowl collision risk) were identified.

12-6 See responses to Comments 6-6, 11-2, and Section 3.10.2.3.

Letter 13

December 20, 2003

Concerning: Wanapa Energy Center Draft Environmental Impact Statement
Bureau of Indian Affairs
Umatilla Agency
Post Office Box 520
Pendleton, Oregon 97801

To whom it may concern:

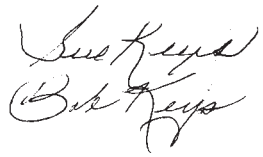
As a resident of Umatilla County living just east of the Conforth property and approximately one-half mile from the tribal wildlife area where the proposed power plant is to be constructed, I urge you to reconsider this development for the following reasons:

13-1 — (a) the pristine beauty of the Columbia River will be compromised
13-2 — (b) the site was intended for wildlife habitat
13-3 [(c) the emissions from the existing and proposed power plants in the Hermiston area, when located in such close proximity, create a synergistic effect, thus polluting in an exponential fashion
13-4 [(d) the lifespan of these plants is not very long, and we fear we'll be left with an artifact that will remain standing after it is no longer in use

Please locate this project somewhere else, not on the river, and not in a wildlife area.

Sincerely,

Bob and Sue Keys



Responses to Letter 13

13-1 The project would have a visual impact on the Columbia river shores, but it would be offset (set back from the bluff) to the maximum extent possible to minimize this impact. From the perspective of land use, the plant would be located next to other industrial facilities that surround the Port of Umatilla. As a consequence, the plant site represents an extension of an existing landscape modified by large buildings and human activities.

13-2 See response to Comment 12-5.

13-3 See the response to Comment 5-3.

The air emission impact has been discussed in different sections within this response to comments document. Cumulative effects of air emissions in the region are being considered in the project's PSD applications for the air permit that is required by the USEPA for this facility.

13-4 The land lease by BIA would include provisions for bonds and payment to ensure that the facilities would be properly decommissioned, all above and underground structures and foundations removed and the land brought back to its pre-construction condition.