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ENERGY FACILITY SITE
EVALUATION COUNCIL

November 3, 2003

Allen Fiksdal, Manager
Energy Facility Site Evaluation Council
P.O. Box 43172
Olympia, WA 98504-3172

Re: Comments to DEIS, DOE/EIS-0349.

Mr. Fiksdal:

Please accept this letter and the accompanying enclosure as Whatcom County's comments to the Draft Environmental Impact Statement (DEIS), DOE/EIS-0349, for the BP Cherry Point Cogeneration Project. The comments are organized by general topic.

Traffic

Whatcom County Public Works Engineering Division notes that according to the DEIS most of the impact on traffic from the project will be on State Route 548 (Grandview Road). During the two-year project construction period we will experience substantially more traffic (1200ADT) than when the plant is in operation (25ADT). While under existing conditions and projected road utilization the impact to most county roads will not be significant during the two-year construction period, a new land use development has been approved that will change the traffic flow at the intersection of Grandview Road and Vista Drive. Delta Line Road is to be closed at Grandview Road and realigned to Vista Drive. The traffic impacts at this intersection should be reevaluated with the new traffic volumes and flows. The new development is expected to add another 800 ADT to the intersection. Additionally, County Engineering notes the DEIS fails to adequately evaluate the need for mitigation to improve Brown Road when it is used in the course of the project. This too is an oversight which should be analyzed. 1

Geology

Douglas Goldthorp, L.G., L.E.G., L.H.G., Whatcom County Geologist, has reviewed the project DEIS and finds that it is inadequate with regard to its investigation and conclusions surrounding the geology of the site. He voices the following concerns: 2

1. There is no significant discussion or analysis of the referenced faulting projecting beneath or near the proposed site as hypothesized by Dr. Don Easterbrook, Professor Emeritus of Geology, Western Washington University. 2(1)

2. The DEIS does not include an analysis of existing invaluable depth-to-bedrock, bedrock, and seismic information that has been developed by petroleum explorations over the past several decades near the project site which is available in DNR Olympia files or within private corporate files. 2(2)

3. The DEIS, which was published September 5, 2003, does not reference, discuss, or analyze an existing geotechnical investigation of the site performed by URS Corporation entitled "BP Cherry Point Cogen Project, Report of Subsurface Investigation/Laboratory Testing, URS Corporation, July 3, 2003." The final EIS should incorporate, where possible and appropriate, the findings of this additional analysis. 2(3)

4. The DEIS does not adequately review the need for a Probabilistic Seismic Hazard Assessment (PSHA) that would define the level of construction design necessary for this specific site. 2(4)

5. The DEIS does not include any significant reference or analysis of the relevant geological findings and conclusions recently established for the nearby SE2 Cogeneration facility, Energy Facility Site Evaluation Council, Application No. 99-01 and Council Order No. 768. As the geology of the two sites may exhibit commonalities, those findings and conclusions may be relevant to the present project action and should have been considered. 2(5)

6. DEIS Section 3.1.6, Significant Unavoidable Adverse Impacts, states that, "No significant unavoidable adverse impacts on earth resources are identified. Project design as well as operation and maintenance planning would minimize potential risks from natural hazards such as seismic and volcanic events." This statement was made without the benefit of all the earth resource information mentioned above, without the detailed geotechnical analysis of July 3, 2003, without a PSHA for project construction design guidance, and without any specific project design proposal. 2(6)

7. The DEIS does not address the potential benefits which an ongoing post-construction seismic monitoring program could provide for the safety of the facility and its workers. 2(7)

Wildlife, Wildlife Habitat, and Wetlands

Please see the accompanying report of Dr. Kate Stenberg, Ph.D., entitled "Review of BP Cherry Point Cogeneration Project, Draft Environmental Impact Statement," copy enclosed. 3

Noise

At the County's request, Dr. Paul Wierzba, P.Eng., Ph.D., reviewed the DEIS as to its analysis of potential noise impacts who adds: 4

1. The DEIS does not adequately consider noise impacts on nearby residences and wildlife. It focuses primarily on meeting the regulatory requirements in regard to noise emissions instead of the potential that exists for realized adverse environmental impacts of the action. The applicable regulatory limits do not necessarily guarantee that all adverse noise impacts will be avoided should those regulatory thresholds be met. Situational characteristics and concerns vary from site to site and the potential for adverse noise impacts may likewise vary accordingly. 4(1)

2. The background sound levels were not properly identified in the initial Golder study. Single spot measurements of very short duration (15 min) along the roads were taken. The times that these measurements were taken were not specified. As a result, the measurements are inadequate for assessing the existing background levels. 4(2)

3. Subsequent background measurements by Hessler at four selected locations provided suitable A-weighted background levels, but not the C-weighted values. In order to more fully assess potential adverse environmental impacts, C-weighted levels should be further investigated and assessed. C-weighted sound levels in conjunction with the A-weighted levels provide a measure of the low frequency component of noise. 4(3)

4. Suitable noise design targets for the facility were not established, either in regard to the impact on nearby residents or the impact on the wild life, in terms of individual octave band levels, or overall A-weighted and C-weighted levels (i.e., addressing the overall loudness and the low frequency component). A proper impact assessment requires some reasonable knowledge or measure of the existing background levels. A suitable target for maximum noise emissions is typically related to or based on the measure of existing background levels. Given the circumstances of the present application, a suitable target for noise emissions from the facility where the adverse impact on the surrounding wildlife and residents is acceptable, would be an overall increase of 3 dB in A-weighted and 9 dB in C-weighted sound levels at critical receptor locations. 4(4)

5. In assessing the impact on the residential receptors, the DEIS relied on the mean measured L90 background levels which were averaged over three consecutive 24-hour periods. This is not seen as appropriate. The proposed facility represents a stationary noise source which does not change substantially from day to night. The impact on the residents is the greatest during the nighttime periods. Therefore, only average nighttime background sound levels should be used in impact assessment. 4(5)

6. The DEIS failed to properly identify the most impacted residences. The most impacted residences (the dwellings with highest predicted plant noise levels) are located along the Blaine Road some 1450 to 1500 meters from the site. 4(6)

7. The statement in the DEIS that " Increases [in sound level] of less than 5 dBA are essentially inaudible" is not generally correct. In fact, an increase of 1 dBA can be quite audible if the low frequency component is considerably different. 4(7)

8. The DEIS made references to low frequency noise (LFN) and checked whether the levels were below vibration induction and loudness threshold, however, generally LFN was not considered in the impact assessment. Typically, in order to properly assess the noise impact, the predicted low frequency noise should be compared to the existing background levels, particularly in relatively quiet rural, urban, or suburban locations. 4(8)

9. The DEIS did not establish any criteria for assessing noise impact on the nearby wildlife areas. Wildlife expertise should be sought and utilized in establishing suitable criteria for such assessment. 4(9)

10. The DEIS did not consider the noise impact on the wild life in the area, particularly the heron colony and the respective staging and nesting areas. The staging area in the wetlands to the north of Grandview Road is the most impacted area. Further analysis is warranted. 4(10)

Compressor Station

Staff from the Washington Utility and Trade Commission (UTC), have recently contacted Whatcom County to discuss potential concerns regarding the proposed pressure upgrade for the natural gas line to service the BP cogeneration facility. The proposal being reviewed by the UTC includes the placement of a compressor station near the Sumas natural gas hub area. This proposal is not addressed in the current Draft EIS. 5

The siting of a compressor facility near the Sumas natural gas hub will affect agricultural lands, this is also not addressed in the Draft EIS Energy and Natural Resources Section. 6

During initial discussion with BP representatives, a compressor site was proposed for an undetermined site near the Sumas Natural Gas Hub. Whatcom County communicated with BP representatives that the establishment of a pump station in lands designated as agriculture by Whatcom County's Comprehensive Plan would require mitigation for conversion from agricultural use. The County's preference would be to put the pump station in Industrial zoned land. Subsequent discussions and published documents including the Draft and Final Potential Site Studies both issued in 2001 and the Draft EIS issued September 2003 all indicated that either there would be no new pump station (Draft Potential Site Study) or that a pump station would be located within the cogeneration site (Final Potential Site Study and Draft EIS). 7

Should BP alter its application for placement of the compressor facility to such alternative site, the Final EIS should include a full review of the compressor

station's environmental impacts and should include appropriate mitigation measures including mitigation for conversion of agricultural land. 7 cont.

Transmission Lines

At page 2-24, the DEIS outlines two options for interconnection of the Cogeneration Facility to Bonneville's transmission system. Option 1 would not require the construction of any additional transmission lines between Bonneville's Intalco (Alcoa) and Custer substations, but would instead rely on a Remedial Action Scheme. Option 2 (2a and 2b) involves the construction of a new transmission line between the Intalco and Custer substations. 8

The DEIS indicates that Option 1 is the Applicant's preferred option. Whatcom County likewise prefers Option 1. The Remedial Action Scheme would not require new transmission towers, foundation work or additional wires. It would avoid the potential environmental and aesthetic impacts of constructing new lines within the existing transmission corridor.

On behalf of Whatcom County I extend my appreciation for this opportunity to offer our thoughts and comments on this critical environmental document. It is hoped the Council finds the comments useful. They are offered in the spirit of fostering the best environmental review possible for the project.

Sincerely,

David M. Grant
Deputy Prosecuting Attorney

**Review of**

**BP Cherry Point**
**Cogeneration Project**

**Draft**
**Environmental Impact Statement**

**Prepared for**

**Whatcom County**

October 31, 2003

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**Overview and Summary**

On behalf of Whatcom County, I reviewed the Draft Environmental Impact Statement (DEIS) for the BP Cherry Point Cogeneration Project prepared by the Energy Facility Site Evaluation Council (EFSEC) and the Bonneville Power Administration (BPA), dated September 2003. I also conducted a visit to the BP Cherry Point facility and vicinity on October 12, 2003. My review raises several concerns about the conclusions in the DEIS and potential impacts of the proposed cogeneration facility. There are a number of subject areas where the DEIS does not supply adequate or accurate information which, in turn, prevents an analysis of impacts to be conducted. Both NEPA and SEPA require that impacts be disclosed in an environmental impact statement. The DEIS is inadequate when it does not provide sufficient information to either analyze potential impacts or explain why such impacts would not occur.

Likely adverse impacts include impacts to water quality and quantity; to sensitive fish and wildlife including the significant heron colony, threatened Puget Sound Chinook, and Essential Fish Habitat; critical wetland and riparian habitats; and impacts from changes in noise, light and glare. It is possible that some of these impacts will be adequately avoided, minimized or mitigated for in the project, however, the DEIS does not provide sufficient information to reach that conclusion. In addition, the wetland mitigation plan, a key component of this project, has not been available to the public for review at the projects' website where the rest of the DEIS may be found. Public involvement is a key requirement of NEPA, and this oversight compromises compliance with this element.

This review is focused on potential impacts to wildlife and habitats and does not address the adequacy of the wetland mitigation plan for functions other than wildlife habitat.

**Qualifications:**
I have been involved with monitoring herons in Puget Sound, primarily in King County, for over a decade and have been a member of the International Heron Working Group since its inception in 2000. I am a nationally recognized expert in the field of urban wildlife biology and am currently the chair of the national Urban Wildlife Working Group of the Wildlife Society. I have expertise in wetlands and land use planning as well. I have also consulted colleagues with expertise in noise impacts and wetland habitats in compiling the following information.

**Great Blue Herons**

Status

The great blue heron colony at Cherry Point is the third largest colony in the Puget Sound area of Washington. In 2002, the colony supported about 260 nests (Eissinger 2002). The herons at Cherry Point are significant because they are members of a distinct subspecies of great blue heron (*Ardea herodias fannini*). This coastal subspecies is found along the west coast of British Columbia and Washington and perhaps into Oregon. The main populations are found in the greater Puget Sound or Salish Sea area. Researchers throughout western Washington and British Columbia have noticed a downward trend in the numbers of these herons and are growing alarmed at the declines. Canadian scientists have already taken the steps needed to list the coastal subspecies of the great blue heron as "sensitive" under the Canadian version of an endangered species act and are currently collecting the data that would be required to upgrade the species to "threatened." EFSEC and BPA should ensure that their actions do not endanger the significant Cherry Point colony and lead to a listing of this species in the U.S.

Great blue herons are colony nesters, which increases their vulnerability to disturbances. As the Puget Sound region becomes increasingly developed, alternative nesting sites suitable for large colonies of herons are increasingly rare. In addition, any disturbance that disrupts the use of a heron colony, even for a few breeding seasons, can have significant impacts on the population due to the large concentration of reproductive effort in one location. 3(1)

Despite being the third largest heron colony in the Puget Sound region, the Cherry Point heron colony has experienced severe declines in recent years. Prior to 1999, the colony supported over 400 nests. It failed completely in 1999 and has only slowly recovered to its current size of about 260 nests. Any significant reduction in the surrounding habitats that support the colony could severely impact the colony.

Critical Heron Habitats

There are several critical heron habitats located within the project area and vicinity. The limiting habitats with which the Birch Bay great blue heron colony has a primary association include: the nesting colony and it's associated buffer; "staging" areas in fallow fields, riparian habitats and wetlands to the east of the colony; and critical foraging areas within a four mile radius of the nesting colony which include, wetlands, wetland buffers, fallow fields, riparian habitats, and protected marine shorelines. The heron use and importance of each of these critical areas is described in more detail below.

The project will impact each of these critical areas in the following ways. Development of the project will directly and permanently impact over 33 acres of wetland and wetland buffer within this critical foraging area. The wetland mitigation plan will affect 110 acres of the critical habitat. In the long-term, the mitigation plan may improve the overall quality of the foraging habitat, but it may adversely impact it in the short-term. The mitigation plan would appear to result in a decrease in available habitat for at least two to five years and this may be enough of a temporal loss to result in colony abandonment. The operation of the proposed cogeneration facility and associated noise impacts may also affect the herons' ability to utilize their critical foraging habitats. Finally, operation of the proposed facility may change the wastewater discharge parameters, which may affect populations of forage fish, resulting in impacts to the herons' ability to find sufficient food resources in critical marine environments.

Heron colonies are generally located in relatively undisturbed forest stands. Herons seem to require a buffer between human activities and their nest trees to be successful. Within the colony, multiple nests are located in each tree. Large colonies encompass many trees and they may "move" from year to year around a core area as the colony contracts and expands. Colonies are frequently found in stands of deciduous trees, in or adjacent to wetland and riparian areas. The Cherry Point colony is located in a stand dominated by western paper birch (*Betula papyrifera*). It is set back from the nearest street and is located adjacent to the riparian habitats of Terrell Creek. The herons nest from about March through July.

The Cherry Point colony relies heavily on the marine resources found in the shallow intertidal habitats of Birch Bay and likely also Drayton Harbor and Lummi Bay for food. Herons will fly up to twelve miles from a nesting colony to forage. However, during the nesting season, the breeding females rely on food sources closer to the colony to support themselves and their brood. The most critical areas during the nesting season would be those foraging areas within four miles of the nesting colony. **3(1) cont.**

Juveniles take several weeks to learn how to forage for themselves after fledging. This critical learning period also occurs close to the nesting colony. For the Cherry Point colony, this critical foraging habitat includes the wetlands, fallow field and stream habitats of the Terrell Creek watershed. Both breeding females and juveniles rely heavily on amphibians and small mammals, as well as fish, for food. Colonies that lose these critical components of their food resources do not survive.

In addition, studies have shown that the breeding females and juveniles during these critical periods will forage in wetland buffers up to 150 feet from the edge of a wetland. Again, they are foraging for amphibians and small mammals in these upland areas. Actions that compromise the ability of these critical wetland, upland, riparian and marine environments to provide adequate food resources could have significant adverse impacts to the nesting colony. Similarly, activities that impair the herons' ability to forage in these locations would also have significant impacts to the nesting colony.

A final component of colony success is an appropriate "staging" area. This is an area near the nesting colony where herons congregate at the start of the breeding season. The function of this behavior and the requirements of an adequate staging area are poorly understood, however, all successful colonies observed include a place where this activity occurs. At the Cherry Point

colony, the wetlands and fallow fields north of Grandview Road and between Jackson and Blaine Roads provide this critical function for the colony.

Given the significance of the Cherry Point heron colony and its associated critical habitats within the project area, it is highly unusual that the DEIS does not mention the presence of the herons, even in lists of species that may occur in the area. By omitting any mention of the great blue heron colony or heron use of the project area (including the proposed mitigation area), the DEIS is clearly incomplete and inadequate. 3(1) cont.

**Potential Impacts to Wildlife**

Noise

Noise impacts that need to be analyzed in the DEIS fall into two main categories, impacts to breeding wildlife and impacts to foraging wildlife. Due to the significance of the Cherry Point heron colony, potential impacts to breeding great blue herons are of primary concern. However, noise may affect the reproductive success of other species as well. Noise may simply deter individuals from occupying available habitats, thereby reducing the overall population of species and reducing the wildlife diversity of an affected area. Noise may also mask intra- and inter-specific calls that may then reduce the reproductive success of individuals. Noise may also mask warning sounds of approaching predators, thereby making individuals and their broods more vulnerable to predation. Noise similarly affects foraging individuals, reducing foraging success by interfering with the ability to detect prey and avoid predators, and by reducing the total area available to forage in.

In order for a species to occur and survive in a particular location, individuals must be able to meet all of their requirements for survival. This is the definition of "habitat." If individuals find that they are unable to find sufficient prey, avoid predators, or communicate with other individuals of their species to find mates or maintain territories, then that location can no longer be considered habitat for that species. When noise levels cause individuals to avoid an area, then the habitat area for that species has been reduced. 3(2)

Researchers agree that noise can affect an animal's physiology and behavior, and if it becomes a chronic stress, noise can be injurious to an animal's energy budget, reproductive success and long-term survival (e.g. Trimper, et al., 1998, Gese, et al., 1989, Reijnen, et al., 1996). If reproductive success and long-term survival are affected, even if individuals are still present in an area, the suitability of the habitat to support the species has been reduced. The DEIS does not address any of these potential impacts to wildlife nor does it provide adequate information to evaluate these potential impacts.

Furthermore, the studies of Brattstrom and Bondello, 1983, remind us of the very obvious point that human ears and the ears of many wildlife species, particularly herpetofauna are structured very differently and thus react to the same sounds very differently. For example, they found that while OSHA recommends that humans not be exposed to sounds of 95 dBA for more than 4 hours, lizards experienced hearing loss after only 8 minutes. 3(3)

In addition, studies with wildlife indicate that a change of even 1 dBA is perceptible to animals and the ability to discern a sound 1 dBA over the ambient noise levels may mean the difference between survival and becoming a predator's lunch (Brattstrom and Bondello 1983.) Regulatory

standards for humans should not be applied to wildlife, without serious consideration of the types of wildlife and habitats present and the type of noise being evaluated. Wildlife should be evaluated as sensitive receptors. 3(3) cont.

The DEIS is very unclear about the nature of the noise that would be generated by the proposed cogeneration plant. For example, it is not clear whether the noise would be a constant continuous presence or whether the plant would cycle generators on and off creating variability in the noise. Variable noise sources sometimes appear to have a greater impact on wildlife than constant, even noise sources of the same magnitude over time. If the noise would be variable then there is a greater likelihood of significant impacts to wildlife use of both the compensatory mitigation areas (CMAs 1 and 2) and receptor sites further away, such as the heron colony. The DEIS is inadequate in its description of the noise that would be generated and the potential impacts from that noise. 3(4)

It is also important to evaluate wildlife sensitivity to noise disturbances that might be related to time of day or season. Great blue herons, for example, appear to be very sensitive to many disturbances during the "staging" and early nesting seasons. During these periods they may react to disturbances that they appear to ignore later in the breeding season and in the winter. Herons react to disturbances by flushing or flying up into the air. This extra activity may disrupt an individual's energy budget causing it to spend more time foraging and less time focused on nesting activities. Flushing during the early nesting season also exposes eggs to predation when adults fly off of nests in alarm. It is important to consider these seasonal sensitivities regardless of whether the noise is variable or constant. The DEIS inadequately evaluates potential impacts to wildlife from the noise that would be produced by the proposed plant. 3(5)

Foraging activities occur around the clock. Some species are diurnal and primarily forage during daylight hours while others are nocturnal, foraging at night. Some species, including great blue herons, forage both during the day and at night. Herons may have evolved this behavior in response to their dependence on marine food resources and the fact that one of the two low tides is likely to occur after nightfall. However, they also forage in wetlands and other non-marine habitats at night. Changes in nighttime noise measures generated by the proposed project may become critical limiting factors in the suitability of available habitats and wildlife's ability to utilize them.

Some wildlife species, such as many amphibians, utilize different habitat types during different parts of the year. For example, many native amphibian species utilize wetlands for only a short time for breeding and rearing but then they rely on forested habitats for much of the rest of the year. Noise impacts should be evaluated for the various cover types utilized by different species. 3(6)

The noise analysis in the DEIS does not reflect the greater sensitivities of wildlife receptors in wetland habitats north of Grandview Road, nor does it address the needs of the heron colony or its seasonal sensitivities. There currently is very little topography or vegetation that could attenuate sounds produced by the proposed project between the project source and the colony. Currently the primary attenuating factor appears to be simple distance. Although the modeling in the DEIS indicates a greater increase in perceived noise at some points that are at greater distances than other points. This apparent anomaly is unexplained. 3(7)

Dr. Wierzba has indicated that the modeling reported in the DEIS is based on several questionable assumptions (Wierzba, pers. comm.). The distance from the proposed project location to the heron colony is significant and it may be likely that there would be a low probability of a significant impact at the colony location. However, it is impossible to make this determination without accurate information and the DEIS should be corrected to reflect the actual conditions in the area. 3(8)

General foraging activities, on the other hand, could occur fairly close to the proposed cogeneration plant. Therefore, it is also important to have accurate information about the potential changes in the noise environment within the critical "staging" and foraging areas north of Grandview Road. If noise impacts would prevent herons from utilizing the wetland/upland complex north of the project location, then it is possible that food resources could become a critical limiting factor in the continued success of the colony. 3(9)

Construction noise is more problematic as it is variable, loud, and unpredictable. It is common for conditions to be imposed on projects to control construction noise impacts to wildlife. For example, seasonal construction limits to prevent impacts from occurring at the most sensitive times of year for particular wildlife species may be imposed. The DEIS incorrectly dismisses potential construction noise impacts by stating that they are exempt from noise standards. 3(10)

Noise impacts in the DEIS have been inaccurately and inadequately represented. The short statement in the DEIS that wildlife have adapted to the existing refinery noise simply highlights the lack of analysis on the magnitude of change in noise levels and on the impacts to all of the surrounding critical habitat areas. The lack of information about impacts to the critical "staging" and foraging areas for the Cherry Point heron colony and the likelihood of significant adverse noise impacts in these areas is a critical oversight. 3(11)

Light and Glare

Lights on facilities can have serious impacts to a variety of wildlife. Lights can disorient migrating birds, insects, and amphibians. The Cherry Point area is a significant area for neotropical migrants during the spring and fall migrations. Lights can also disrupt the foraging activities of nocturnal species. 3(12)

The DEIS is unclear as to the proposed heights and lighting requirements of the various parts of the proposal. The DEIS should be clarified.

It appears that the exhaust stacks for the proposed cogeneration plant will not exceed 150 feet and will not need any navigation warning lights. It should be added as a condition of the project that no stacks, towers or power poles will be lighted. This should be listed as a measure to avoid potential impacts. 3(13)

In addition, to avoid impacts to nocturnal wildlife, all outdoor lighting of the proposed cogeneration plant should be shielded to prevent any light or glare from escaping to the north of Grandview Road or up into the sky. This type of shielded lighting is commercially available and generally costs about the same as other types of outdoor lighting. 3(14)

These simple measures should allow the proposed plant to avoid most impacts of light and glare on surrounding wildlife habitats. These measures should be specifically committed to in the DEIS. 3(14) cont.

Wastewater Discharge

The Washington Department of Fish and Wildlife and The Nature Conservancy have identified the Cherry Point nearshore habitat as a priority conservation area for biodiversity (WDFW 2003.) This means that in a regional evaluation of available habitats, the Cherry Point area was identified as being very significant. Potential impacts to these habitats must be carefully documented and evaluated. The DEIS is inadequate in both its documentation and evaluation of potential impacts to the Cherry Point nearshore habitats from wastewater discharges. 3(15)

The DEIS is unclear about potential impacts from the discharge of wastewater generated by the proposed cogeneration plant. Table 3.4-5 shows a projected 1% increase in the temperature of the water being discharged. However, the DEIS does not indicate what the existing discharge temperature is, nor what the projected temperature will be. It is also not clear whether this increase occurs at the treatment plant or at the discharge point. 3(16)

In addition, the DEIS is very unclear about the status of the BP Cherry Point Refinery's current NPDES permit. In section 1.6.1 the DEIS states that the Refinery's existing NPDES permit will require revision to address water quality issues such as impacts of increased salinity and temperature on the herring population, the age and condition of the existing diffuser, and potential cumulative impacts on water quality. The DEIS does not indicate the status of the current permit, the parameters which are currently permitted, nor how the addition of the proposed cogeneration plant wastewater will affect the allowable limits of the current permit. The DEIS appears to assume that the additional wastewater will not be a significant addition to what is currently permitted, however, it does not provide adequate documentation to show that this assumption is correct. 3(17)

The proposed cogeneration plant has recently received an Industrial Wastewater permit from the Washington Department of Ecology. It is my understanding (based on discussions with Ecology staff) that this permit primarily analyzed the addition of the wastewater to the BP Cherry Point Refinery's treatment plant and only incidentally to the discharge into marine waters. A more thorough analysis of impacts to the marine environment would occur in 2004 when the Refinery's NPDES discharge permit will need to be renewed. 3(18)

NPDES permits for industrial discharges are renewed every five years. The BP Cherry Point Refinery's permit was last authorized in October 1999. This was about the same time as the listing of several salmonids under the Endangered Species Act and prior to the passage of the Magnuson- Stevenson Fisheries Conservation and Management Act, which protects forage fish, such as herring and surf smelt. In the intervening four years, there has been a tremendous change in our understanding of the impacts of human activities, such as industrial discharges, on salmonids and forage fish. 3(19)

The DEIS appears to simply assume that since there is a valid permit currently in place there will be no impacts to these species. However, given the changes that have occurred in listings and scientific knowledge of impacts, this assumption, without additional documentation, is inadequate. The DEIS must address potential impacts to salmonids and forage fish species.

If there are impacts to the forage fish species that spawn on eelgrass beds around Cherry Point and on the beaches, then that increases the potential for adverse impacts to a wide range of species including threatened salmonids and herons. These forage fish come in close to shore to spawn just as the heron colony is at a peak need for food to support chicks in nests. Herons eat both adults and subadults. The fish habitats of Cherry Point support fish populations that are then available in the intertidal areas of Birch Bay and other protected shorelines. Changes in the quality of the wastewater discharge may affect eggs or larvae of these fish species, which may then affect the populations of those fish species. Any reduction in available food resources could significantly impact the heron colony's long-term viability. 3(20)

The potential impacts to the fisheries resources from changes in temperature and other water quality parameters must be evaluated in the DEIS. These potential impacts do not appear to have been adequately documented or evaluated in the Industrial Wastewater permit for the proposed cogeneration plant. The potential for impacts must be evaluated and documented in the DEIS. 3(21)

Stormwater Management

It appears that stormwater runoff from the proposed cogeneration plant site will simply be directed north of Grandview Road and dispersed across the landscape into the CMAs. The mitigation plan implies that the wetland mitigation area will provide water quality treatment for stormwater. It is not appropriate to use a mitigation site for stormwater treatment. 3(22)

The DEIS is unclear about which stormwater management standards will be implemented. At a minimum the proposed project should follow the 2001 Washington State Department of Ecology stormwater manual. This minimum standard should be clearly specified in the DEIS and included in the evaluation of impacts. 3(23)

The DEIS is also unclear about the amount of impervious surface that will be created, the volume of stormwater runoff expected, how water fluctuations will be managed, and treatment levels proposed. The DEIS does state that the stormwater ponds "have been designed," therefore, this information should be readily available for review and analysis. 3(24)

The dead storage portions of the proposed stormwater ponds have the potential to become both bullfrog habitat and amphibian mortality sinks. These ponds should be managed to prevent both occurrences. To prevent stormwater ponds from becoming mortality sinks for many species of native amphibians, a low curb or tight mesh fence around the perimeter of the pond will prevent adults from getting into the pond during the breeding season. 3(25)

Habitat Loss

The DEIS reaches the incorrect conclusion that because habitats that will be directly impacted are of low quality with non-native vegetation dominating, their conversion to industrial uses will somehow be of a net benefit. This conclusion is erroneous because even non-native vegetation provides some environmental benefits, including sediment retention, and infiltration. Conversion will irrevocably prevent the opportunity to restore these areas. Permanent loss of habitat is not a net benefit under any calculation. Each wildlife species needs a certain amount of space to survive within a particular area. When the available space is reduced, a species may no longer be able to use the area, even if other habitat features, such as food and shelter are present. 3(26)

In concluding that a loss of low quality habitats will somehow be a net benefit, the DEIS is incorrect and inadequate. 3(26) cont.

**Wetland Mitigation Plan – Wildlife habitat Issues**

The wetland mitigation plan was developed to propose compensatory mitigation for the loss of over 30 acres of wetland habitat at the proposed cogeneration plant site. This plan essentially proposes to restore the hydrology to, and control non-native plant species within, a 110 acre "compensatory mitigation area" (CMA 1 and 2). Approximately ¾ of this site is currently classified as wetland and the plan proposes to improve the hydrological functions of these wetland areas. It is also expected, though not included in the compensatory calculations, that by filling existing drainage ditches and restoring sheet flow runoff across the site, the wetland acreage will increase. The plan does not appear to propose extensive site grading or the creation of ponds. 3(27)

A more heavily engineered plan that included site recontouring would be of greater concern since there would be greater temporal impacts to the wildlife that currently use this critical area. Any design creates ponds with permanent water would also be of concern as ponds tend to attract and support non-native bull frogs that out compete the native amphibians, as well as impacting other fish and bird species. However, there are still several areas of concern for wildlife in the plan as proposed.

The wetland mitigation plan does not acknowledge the great blue heron colony's presence nor does it account for the critical role the CMAs play in the life cycle and long-term viability of the heron colony. A portion of the area north of Grandview Road in this critical heron habitat is the subject of a previous wetland mitigation conducted by the BP Cherry Point Refinery. This previous mitigation was also designed to primarily restore hydrology and control non-native plant species, but somehow has resulted in permanent, open water ponds. The implementation of the proposed wetland mitigation plan will need to be carefully monitored by an independent third party to ensure that previous implementation issues are not repeated with this project. In addition, the DEIS must include documentation on how the hydrology in the mitigation site will be managed to prevent water from permanently ponding. 3(28)

An additional hydrological concern is that of water level fluctuations. It appears that some of the waterfowl ponds that were created north of Grandview Road in the past have experienced significant water level fluctuations. It is reported that the edges of these ponds have become eroded and steeply sloped. Significant water level fluctuations can prevent native amphibians from successfully reproducing in engineered wetlands. Activities that impact the populations of native amphibians, in turn, will impact the long-term viability of the heron colony by impacting critical food resources. There is no information in the mitigation plan to demonstrate how water level fluctuations will be managed. This is of particular concern since it appears that the water for the wetland enhancement will be stormwater directed off of the proposed site and the DEIS inadequately describes the proposed stormwater management methodology. The DEIS must include additional documentation on how the hydrology in the mitigation site will be managed to prevent water level fluctuations from impacting wildlife resources. 3(29)

The wetland mitigation plan appears to be an incomplete conceptual plan, as it does not include information on timing of implementation. Wildlife habitat issues include both temporal loss of 3(30)

habitat function and seasonal impacts from the proposed work. The mitigation plan describes a program of tilling and disking for two years to control non-native plant species. This would remove large sections of this critical habitat area from the heron colony's available foraging area for at least two seasons. There would also be a time lag between the time of planting and the time that the newly planted areas begin to provide adequate food resources for herons and other wildlife in the area. Disturbances that disrupt a heron colony's ability to successfully nest, which could include a loss of food resources, appear to cause colony abandonment, if the disturbance continues for two or more years (pers. obs.). That the wetland mitigation plan does not even acknowledge the potential for these impacts is of serious concern. 3(30) cont.

The mitigation plan also does not include any information on the seasonality of the proposed work. Tilling and disking activities could seriously impact a wide variety of ground nesting birds that likely currently use the CMA, if it is done during the nesting season. The plan does not provide information on the proposed frequency or timing of this work, or on the species that might be impacted in these areas. This impact must be further evaluated in the DEIS. 3(31)

The wetland mitigation plan should also include a proposal for the development of alternative colony locations. This might include the creation of increased deciduous forest cover. The most appropriate location would likely be adjacent to the forested Terrell Creek corridor. The wetland mitigation plan will be impacting some of the most critical habitat for the heron colony, but it does not include consideration of the potential impacts to the colony nor does it propose measures to improve this critical area for the herons. 3(32)

The wetland mitigation plan includes a proposal for increasing large woody debris in the CMA. However, the source of these logs will be trees that are removed from the proposed cogeneration plant site, primarily poplar and Douglas fir. These trees are described as ranging from 7 to 10 inches in diameter, at the large end of the log. Logs of these sizes will only persist in the environment for a few years at best and are unlikely to provide benefits much beyond the required monitoring period. While large woody debris, both standing (snags) and horizontal logs, can be of great benefit to wildlife, the woody debris as proposed is inadequate. 3(33)

The plan proposes to set some of these logs up as snags, only two of which will be greater than 12 inches in diameter. Snags of this diameter will not persist in the environment for any significant length of time and, due to the small diameters, their value to wildlife is quite limited. The mitigation plan further proposes to add 10-foot long crossbeams to some of these snags, which are no more than 30 feet tall. It is very unclear why the crossbeams are designed to be so long. The DEIS also states that these crossbeams are intended to provide perches for great blue herons which would use them to hunt mice and voles. Unfortunately, herons do not hunt from elevated perches. The DEIS incorrectly evaluates the impacts and benefits of the proposed mitigation plan. 3(34)

The mitigation plan goes on to propose the placement of small woody twigs in wetland areas to provide amphibian egg deposition sites. This proposal is disturbing for several reasons. First, it assumes that the site will be engineered so that a determination of where water will pond in the spring can be made. Secondly, since the small twigs would need to be anchored to prevent them from rising and falling with water level fluctuations, it assumes a level of ground disturbance that may not be justified. Finally, small twigs in a seasonally inundated wetland environment will not persist much beyond one season. The plan's reliance on an "engineered" approach to an 3(35)

issue that is much better addressed through adequate vegetation and hydrology management is of great concern. 3(35) cont.

The mitigation plan also proposes to construct a few "brush shelters" for additional wildlife cover. However, as with the other constructed woody features, the sizes of the materials are too small to presume that they will persist in the environment for much more than the required monitoring period. These brush shelters are also designed to support the same herbivores that may jeopardize plantings that the snag/hunting perch poles are designed to protect. These inconsistencies in goals and management approaches need to be addressed before the proposal is finalized. 3(36)

The mitigation plan also claims credit for providing thermal cover benefits to wildlife. However, the plant species lists provided show more deciduous species to be used than coniferous species. There is no information provided about the ratio of evergreen to deciduous plants. Deciduous plants provide little thermal cover in the winter when thermal cover is most limiting in this area. Claims of thermal benefits for wildlife are unsupported in the DEIS. 3(37)

Finally, the mitigation plan contained in the DEIS, calculates that the plan will result in greater functionality of both the restoration areas and the CMA for wildlife. This result is based largely on an anticipated increase in plant diversity. However, that calculation probably overstates the potential benefits because it does not account for the potential noise and light impacts that could prevent wildlife from using these areas. It also does not account for the temporal loss of functions. It is important to include both diurnal and nocturnal wildlife use of the mitigation area and to recognize that some species, such as herons, use the area over the entire 24-hour cycle. The DEIS should include additional documentation on the impact of the wetland mitigation plan on wildlife. 3(38)

**Other Species of Local Importance**

The DEIS includes lists of species observed and expected within the proposed project site and the mitigation areas, including CMAs 1 and 2. While these lists are correctly identified as not being exhaustive lists of every species that might occur in the project area, they are represented as listing the most common species likely to be found there. However, these lists are curiously incomplete in some rather startling ways. The DEIS analysis based on these lists omits consideration of significant wildlife species, and, therefore, the DEIS is inadequate in its documentation and evaluation of impacts. 3(39)

A number of well-documented species occurrences are omitted. For example, while the great blue heron nesting colony is noted in passing, the critical foraging and staging habitats present within the project area are not mentioned. At a minimum, existing sources of information on wildlife use, such as the current Terrell Creek Wildlife and Habitat Baseline Report prepared for the Whatcom County Council of Governments, dated November 2002, should have been referenced for useful information. 3(40)

As authorized by the Washington State Growth Management Act, Whatcom County has identified Species of Local Importance (WCC 16.16.720 and Appendix C). Significant species that occur within the project area and which appear to be omitted from the DEIS analysis include: bald eagle (threatened); pileated woodpecker (candidate); peregrine falcon (protected); 3(41)

and great blue heron (monitor). In addition, the area is used extensively by neotropical migrants, a group of passerine species that are indicators of environmental health in both temperate and tropical habitats. While not all of these species nest within the project area, they do nest within the area that is shown as being impacted by noise and they all forage within the project area. Changes to the habitats within the project area, including the CMAs, may directly affect these species. Overall effects might be positive, assuming that noise impacts are minimized, but the impacts must be evaluated in the DEIS. At a minimum the DEIS needs to evaluate potential impacts to Species of Local Importance as identified by Whatcom County. 3(41) cont.

There are also a number of significant fish species known to use the Terrell Creek corridor including the listed Puget Sound chinook, and candidate sea run cutthroat trout and Puget Sound coho. Both the cutthroat trout and coho occur in reaches of Terrell Creek between Kickerville and Jackson Roads (Eissinger 2002). As there have been unexplained fish kills in the Terrell Creek system in the past (Eissinger 2002), it would be prudent for the DEIS to include these species in the evaluation of impacts. In addition, coho are among the species that comprise Essential Fish Habitat under the Magnuson-Stevenson Fishery Conservation and Management Act. The DEIS must evaluate the projects' compliance with Federal laws. 3(42)

**Cumulative Impacts**

The area between Kickerville and Jackson Roads has already been the subject of at least two mitigation actions in recent years. Additional mitigation for other projects is currently proposed for this area north of Grandview Road. While it is to be hoped that each of these mitigation actions will complement the other, efforts to coordinate these activities are unclear since the DEIS does not adequately describe these actions in the cumulative impacts section. As additional critical habitats are included in various mitigation proposals, the potential cumulative impacts to herons and other wildlife, particularly temporal impacts resulting from changes in vegetation and prey species, must be documented and evaluated. The cumulative impacts section of the DEIS is inadequate in that it does not include documentation and evaluation of these cumulative habitat alterations proposed in the project area. 3(43)

**Conclusions**

There are a number of subject areas where the DEIS does not supply sufficient or accurate information, which prevents an adequate analysis of impacts. Likely adverse impacts include impacts to water quality and quantity; to sensitive fish and wildlife including the significant heron colony, threatened Puget Sound Chinook, and Essential Fish Habitat; critical wetland and riparian habitats; and impacts from changes in noise, and light. In addition the project are is defined too narrowly. The impact area analyzed must include the mitigation areas as well as the full area where impacts such as noise are likely to occur. By the same token, the outfall pipe that carries wastewater generated by the project to the marine environment must extend the analysis to these areas as well. The DEIS is inadequate in that it does not provide sufficient information to either analyze potential impacts or document why such impacts would not occur. 3(44)

SEPA and NEPA further require that mitigation for impacts follow a specific sequence starting with avoidance of the impact, then minimization, and finally, if there are no other alternatives, compensatory mitigation. Many impacts have not been correctly identified in the DEIS so

proper mitigation sequencing is not possible. For other impacts, the mitigation sequencing has not been properly documented.

Some of the identified potential impacts would be relatively easy to mitigate for and mitigation should be included in the design. A few of these mitigation measures that should be included in the DEIS are as follows:

- All outdoor lighting should be shielded to prevent any light from extending north of Grandview Road or up into the sky.
- All stacks, cooling towers, and transmission line towers should be kept to minimum heights and must not include lights.
- Transmission towers must not include any guy wires.
- Noise production must be modeled accurately and managed more aggressively to meet the standards suggested by Dr. Wierzba (potential increases limited to 3 dB in A-weighted levels and 9 dB in C-weighted levels at sensitive receptor sites – e.g. heron foraging, staging and nesting areas.)
- Plant "start-up" should be scheduled for September or October to allow wildlife the maximum amount of time to adjust to changes in noise levels prior to the start of sensitive activity periods (e.g. breeding season staging in February and March for great blue herons.)
- If noise levels are likely to fluctuate during plant operation or maintenance, minimize such starts and stops during sensitive activity periods for wildlife.
- At a minimum, manage stormwater to meet the Washington State Department of Ecology 2001 stormwater manual.
- Install curbs or low, tight-mesh fencing around stormwater ponds to prevent amphibian reproductive mortality. **3(44) cont.**
- Plant vegetative buffers (conifers) to help attenuate noise impacts and provide habitat and water quality benefits (note: there may still be significant temporal impacts.)
- All landscaping and buffer plantings between the facility and Grandview Road should consist entirely of native plant species.
- Woody debris and snags installed in the wetland restoration and mitigation areas should include materials of a size and composition that is likely to persist in the environment and provide habitat benefits for many years.

There are many areas of the DEIS that provide insufficient information to evaluate impacts. If impacts would occur, then additional mitigation measures would be necessary.

While monitoring is not mitigation, it may be part of a contingency plan to ensure performance of the mitigation plan. The mitigation plan should include contingency measures to deal with unforeseen issues or mitigation failures.

"Build it and they will come" doesn't always work with wildlife. There are many pieces to the habitat puzzle that we do not fully understand and when we try to create habitats (or restore areas), they often remain unoccupied. While the habitats in the project area are currently degraded by non-native invasive plant species and past alterations, they are still currently serving critical habitat functions. It is in the best interests of the public and the applicant to be conservative in evaluating potential impacts to the long-term viability of these habitat areas.

**References**

Brattstrom, B.H. and M. C. Bondello. 1983. Effects of off-road vehicle noise on desert vertebrates. In Webb, R. H. and H. G. Wilshire. Environmental Effects of Off-Road Vehicles. Springer-Verlag, New York, NY.

Eissinger, A. 2002. Terrell Creek Wildlife and Habitat Baseline Report. Whatcom Council of Governments Grant No. G200287. Prepared by Nahkeeta Northwest Wildlife Services, Bow, WA.

Gese, E., O. Rongstad, and W. Mytton. 1989. Changes in coyote movements due to military activity. Journal of Wildlife Management. 53(2):334-339.

Reijnen, R., R. Foppen, C. Ter Braak, and J. Thissen. 1995. The effects of car traffic on breeding bird populations in woodlands. III. Reduction in density in relation to the proximity of main roads. Journal of Applied Ecology. 32:187-202.

Reijnen, R., R. Foppen, & H. Meeuwsen. 1996. The effects of traffic on the density of breeding birds in Dutch agricultural grasslands. Biological Conservation. 75:255-260

Trimper, P., N. Standen, L. Lye, D. Lemons, T. Chubbs, and G. Humphries. 1998. Effects of low-level jet aircraft noise on the behaviour of nesting osprey. Journal of Applied Ecology. 35:122-130.

WDFW. 2003. Draft Willamette Valley – Puget Trough – Georgia Basin Ecoregional Conservation Assessment. Washington Dept. of Fish & Wildlife, Olympia, WA.