BEFORE THE STATE OF WASHINGTON
ENERGY FACILITY SITE EVALUATION COUNCIL

IN RE APPLICATION NO. 99-1

SUMAS ENERGY 2 GENERATION FACILITY

EXHIBIT ____ (JW-T)

APPLICANT'S PREFILED DIRECT TESTIMONY

WITNESS # 9: JOHN WONG

Q. Please introduce yourself to the Council.

A. My name is John Wong.

Q. What is the subject of your testimony?

A. My testimony will address three topics:

First, my background and experience.

Second, the wetlands affected by the proposed project.

Third, the wetland mitigation plan.

Background

Q. What is your occupation and title?

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A. I am a Wetlands Consultant at Bexar Environmental Consulting Ltd., based in White Rock, British Columbia.

Q. Please describe your background.

A. I am a biologist with more than twenty-five years of experience in environmental and regulatory matters. My consulting practices has focuses on wetland issues, including performing wetland delineations, developing wetland mitigation plans, and obtaining federal, state and local permits regarding projects affecting wetlands. A copy of my resume is provided as Exhibit ___ (JW-1).

Q. What is your role in connection with the SE2 project?

A. Sumas Energy 2 (SE2) has retained Bexar Environmental to address wetland issues concerning the proposed generation facility project. I am the project manager for this matter at Bexar. In that capacity, I have conducted field evaluations at the proposed site since 1995, confirmed prior delineation work performed by David Evans & Associates, worked with SE2 and other consultants to develop the Wetland Mitigation Plan, and assisted in regulatory matters concerning permit applications with the U.S. Army Corps of Engineers.

Q. Have you done any previous work regarding wetland issues in the Sumas area?

A. Yes. I have worked on four other projects in the Sumas area. I conducted wetland-related work and coordinated with the Corps of Engineers on a 20-acre tract located immediately south of the proposed Sumas Energy 2 site. I recently secured environmental permits for a proposed industrial railroad reload facility on a 49-acre

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industrial tract located north of the proposed SE2 site. I was retained by the City of Sumas to conduct a wetland study and obtain Corps of Engineers authorization for the heavy haul road (Hesselgrave Way) located along the south border of the proposed SE2 site. I was also retained by the City of Sumas in 1998 to identify significant wetland areas in select areas for incorporation into its amended 1999 Shoreline Master Program.

Q. Are there other consultants that you worked with regarding the wetland issues concerning the SE2 project?

A. Yes. I have conferred with the wetland biologists at David Evans & Associates who were retained to perform wetland delineation work on the SE2 site in the mid-1990s. I have also consulted with Dave Every, Ph.D., a wetlands biologist at Dames & Moore. I have also consulted with hydrogeologists from Robinson & Noble (Burt Clothier and Jim Hay) regarding hydrological issues at the site.

Wetlands Affected by Project

Q. Can you generally describe the site for the proposed project?

A. SE2 proposed to construct its electrical generation facility on a 37-acre site located north of Highway 9, in the industrial area of the City of Sumas. A diagram of the site was provided as Exhibit ___ (KC-3) accompanying Katy Chaney's testimony. The site has been in agricultural use for many years, with corn being the dominant crop since at least 1974. The majority of the field is artificially drained with drain tiles and ditches. The northwest portion of the site contains a tree/shrub wetland area.

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Q. What efforts were made to identify and delineate wetlands on the site?

A. David Evans & Associates performed an initial study and delineation of wetlands at the site in 1995. (A copy of that delineation is provided as Exhibit __ (JW-2).) I conducted field visits to confirm that delineation during the winter of 1995/1996. The Natural Resource Conservation Service (NRCS) confirmed the delineation in 1996, and the U.S. Army Corps of Engineers reconfirmed the delineation in 1999.

The wetland delineation was performed according to the methodology described in the Corps of Engineers Wetland Delineation Manual. Wetland functions and categories were also assessed using the Washington Department of Ecology Draft Wetland Characterization Methodology and the Washington State Wetland Rating System, and evaluated according to a Snohomish County functional assessment methodology based on the Wetlands Evaluation Technique (Adamus), and other literature specific to the Pacific Northwest and wetland systems.

Q. Please describe the wetlands are located on the site?

A. The easiest way to describe the wetland areas on the site is to look at Exhibit ___ (KC-3). This diagram shows the forested wetland area in the northwest portion of the site. It is currently approximately 9.4 acres in size. This is a palustrine shrub wetland with forested areas, and a palustrine emergent fringe on the south and east margins. There is a farmed wetland area, approximately 0.9 acres in size, in the middle of the northern half of the property that is typically occupied with corn. There is also a wetland ditch, approximately 1.0 acre in size, that runs from the middle of the eastern half of the site to the southwestern portion of the site. The ditch currently contains

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reed canary grass and barnyard grass. A May 1995 aerial photograph is provided as Exhibit ___ (JW-3). It shows the agricultural character of the land, the wetland ditch, and a farmed wetland area that was left fallow during that season. The proposed plant site will occupy the east half of the site, while the west half of the site will contain the preserved shrub and forested area, the proposed wetland mitigation creation and enhancement area, and the area of preferred stormwater detention and additional wetland mitigation.

Q. What functions do the wetlands on the site serve?

A. Leaving aside the forested wetland area on the northwest portion of the site, the other wetlands on the site are relatively low value wetlands with minimal functionality. As I mentioned earlier, the function and value of wetlands at the site have been assessed according to the Washington Department of Ecology's (WDOE's) Draft Characterization Inventory Analysis, and a Snohomish County functional assessment methodology based on the Wetlands Evaluation Technique, and other literature specific to the Pacific Northwest and wetland systems. The Wetland Mitigation Report found in Appendix C of the Application provides considerable information about the value and function of wetlands on the site.

WDOE categorizes wetlands with respect to twelve factors, each of which is discussed in turn with respect to the proposed facility site:

(1) Wetland Condition. The overall wetland condition of the farmed wetland area and the wetland ditch is rated as low because exotic species are present, the natural hydrology has been altered by ditching and drainage tiles, agricultural activities have

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been extensive, and there is an assumed evidence of sedimentation and pollutants (fertilizers/manure and pesticides).

(2) Buffer. The wetland ditch has low value for buffer because it is adjacent to crop fields. The farmed wetland area has a medium buffer value because it is adjacent to the forested wetland area, but its value as a buffer is diminished by routine disturbance from by agricultural activities.

(3) Wildlife Habitat. The farmed wetland and the wetland ditch have low value for wildlife habitat because, among other things, there is not significant open water and the quality of the wetland is low.

(4) Fisheries Habitat. The wetlands provide no fisheries habitat.

(5) Nutrient/Sediment Entrapment. The farmed wetland area serves little entrapment function when it is plowed and farmed. The wetland ditch provides high value for trapping nutrients and sediments because of its vegetative cover. This function is more important given the site's current agricultural use. The runoff of sediments, nutrients (fertilizers) and possibly herbicides as a result of agricultural activities may be trapped to some extent in the dense reed canary growth of the ditch, thereby reducing the amount of these pollutants that are transported to Johnson Creek.

(6) Flood/Storm Retention. They provide little flood and storm water detention because the storage capacity is small and they are located at a low position in the watershed.

(7) Groundwater Discharge and (8) Groundwater Recharge. The wetlands are unlikely to provide substantial groundwater discharge or recharge because of the confining layer of the soils beneath the wetlands.

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(9) Stream Support. The wetland ditch and farmed wetlands indirectly provide some support to base flows in Johnson Creek. Accordingly to the hydrogeologists at Robinson & Noble, these wetlands provide only minor base flow support, and that support is limited to wet weather seasons when area streams already have high water flows.

(10) Shoreline Stabilization. The wetlands provide no shoreline stabilization function.

(11) Cultural Values and (12) Heritage Values. The wetlands have low cultural and heritage value due to their poor condition, private ownership, and low habitat value among other things.

Q. How will construction of the SE2 facility affect wetlands at the site?

A. The facility will be constructed on the eastern half of the property. The 0.9 acre farmed wetland and approximately 1.0 acres of the wetland ditch will be filled. The 660 linear feet of drainage ditch will be essentially re-routed as an approximately 880 linear foot channel that will allow drainage at the site. The new channel is expected to perform the same hydrological functions as the existing ditch.

At the request of the Environmental Protection Agency (EPA), we have also redesigned the stormwater detention pond to provide additional wetland features. A multi-cell pond has been designed and will now result in the total wetland fill of 3.65 acres, but will also increase wetland mitigation by 1.94 acres.

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Q. What functions do the wetlands that will be affected by the project currently serve?

A. The wetlands that will be affected by construction of the facility are low quality wetlands with little functionality. As explained above, the only notable functions of the wetlands on the site are stream flow base support, nutrient/sediment entrapment and buffer.

The wetland ditch and farmed wetlands currently provide some support for stream base flow in Johnson Creek. The support of stream base flow by the farmed wetlands and wetland ditch proposed for fill is considered minimal. The poor permeability of the soils allow for limited storage, and the soils release water during wet seasons, when streams are typically already full. By the time that streams need additional water, the farmed wetlands can no longer contribute because they are no longer saturated. This is why the wetland soils are saturated during the winter, but must be irrigated for agricultural purposes in the summer. Although the project will fill some wetlands, the hydrological functions of the area will remain largely unchanged. The wetland ditch will be re-routed, and the storm water detention pond will provide much the same hydrological recharge function as the existing agricultural field.

The wetland ditch currently provides some nutrient and sediment entrapment due to the reed canary grass cover in the ditch. Although the ditch will be re-routed, it will continue to serve this function. Moreover, because the agricultural activities that generate nutrient and sediment runoff from the site will cease, there will be less need for the ditch to trap nutrients and sediments at the site.

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Finally, the farmed wetland currently provides some buffer function for the forested wetland in the northwest portion of the site. SE2 will retain much of this value by maintaining a 25-foot buffer around the forested wetland.

Q. In its statement of issues, the Washington Department of Ecology mentioned prior converted crop land or "PCC" wetlands at the site. Can you explain the issue regarding prior converted crop land wetlands?

A. The term "prior converted cropland" is used by the Natural Resources Conservation Service (NRCS), the federal agency charged with designating so-called "jurisdictional wetlands" that are subject to the federal Clean Water Act. The term PCC wetlands describes wetlands that have been drained, or hydrologically manipulated to allow for the production of an agricultural commodity. An area is considered Prior Converted Cropland when it no longer floods or ponds for 15 consecutive days during the growing season because of the manipulation. The NRCS and the Army Corps of Engineers has confirmed that the site is prior converted cropland, which means that the hydrologic wetland functions have been manipulated to grow corn on an ongoing basis.

We have recently been told by some staff members that WDOE does not always follow the Corps' policy with respect to prior converted croplands. Instead, WDOE uses a "three parameter" approach to identifying wetlands, ignoring whether a particular area has been converted to crop lands. Under this approach, WDOE considers vegetation, soils and hydrology. WDOE apparently believes, that using

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these parameters, the agricultural areas to be filled by the proposed project may contain additional wetland areas that require mitigation. At this point, WDOE has not yet visited the site and our discussions with the agency are fairly preliminary. Based on my conversations with WDOE staff, however, I understand that WDOE's concern about this area focuses upon the hydrological value of any wetlands on the site. In particular, the agency appears to be concerned solely with the support of stream base flow that they areas might provide. Based on an evaluation of the hydrologic values of this area, I am convinced that the hydrologic value of these areas is minimal and can be fully mitigated through onsite mitigation. As I explained above, they provide little surface flow support and what support they provide occurs in wet seasons when surface water flow is adequate.

At the most basic level, it is important to bear in mind that we are not talking about a high quality, pristine wetland environment. This is a corn field that now sits in an industrial area. It has been drained, irrigated and farmed intensively for years.

Q. In your experience, is mitigation typically required for filling prior converted croplands?

A. In my experience with projects requiring Corps of Engineer permits to fill wetlands in Whatcom County, I am not aware of mitigation being required for the filling of prior converted croplands.

Q. Are there wetlands along the pipeline route?

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A. David Evans & Associates studied wetlands along the pipeline route in 1991 and 1992, when the SE1 pipeline was installed. The Corps of Engineers subsequently confirmed that delineation. The wetland areas in the vicinity of the pipeline route are identified in section 3.4.2.1 of the Application. There are approximately 0.6 acres of palustrine emergent wetlands that would be disturbed by installation of the natural gas pipeline. Most of the disturbance will be in agricultural areas maintained as hayed pasture or corn fields. These wetlands would be restored to their pre-project condition so that all existing wetland functions can be reestablished.

Q. Are there wetlands along the transmission line route to the U.S.-Canadian border?

A. In 1998, Bexar delineated wetland areas in the vicinity of the transmission line. The transmission line from the facility to the border is approximately 0.5 miles long, and will include 11 transmission poles. The poles will be placed at locations to avoid direct impacts on any wetlands along the route.

Wetland Mitigation

Q. Has SE2 applied for a U.S. Army Corps of Engineers permit to authorize the filling of wetlands necessary to construct the facility?

A. Yes.

Q. What is the status of that permit?

A. In September 1998, SE2 filed applications for coverage under Nationwide General Permits 12 and 26, which authorize. On March 10, 1999, the Corps of Engineers

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issued an authorization under the Nationwide Permits conditioned upon SE2 obtaining the Corps' approval of a Mitigation Plan, and SE2 obtaining a Section 401 certification from the State of Washington. I have been assisting SE2 as it has worked through the process of obtaining approval of the Wetland Mitigation Plan. SE2 filed its mitigation plan with the Corps of Engineers on May 12, 1999. Revisions filed in October and November 1999 addressed project changes and Corps of Engineer recommendations. This month the Corps indicated that the revised mitigation report of November 2, 1999 was acceptable subject to the preparation and formal approval of the revised multi-cell stormwater detention pond that I mentioned earlier. The Corps and EPA have since approved the revised pond design.

Q. Please describe the wetland mitigation plan SE2 has developed?

A. SE2 has proposed to preserve, create and enhance a total of 11.87 acres of wetlands in mitigation for the project's impacts to wetlands. A detailed description is provided in the Wetland Mitigation Plan found in Appendix C to the Application for Site Certification.

SE2 will create approximately 1.5 acres of new forested, shrub and emergent wetlands by lowering the existing ground elevation of an area south of the existing wetland, and planting the area with native shrubs and trees.

SE2 will also enhance approximately 0.56 acres of currently farmed wetland pasture by planting it with native shrubs and trees. This is considered wetland enhancement because forested and shrub wetlands are more valuable for habitat and hydrologic

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functions than farmed wetlands, which are routinely disturbed during farming activities.

SE2 will preserve the 9.44 acres of existing palustrine shrub and forested wetlands located in the northwest portion of the site as well as a 0.37 acre buffer area on the south boundary of the mitigation area. SE2 will preserve the entire wetland mitigation area either through a conservation easement, or by dedicating the property to the City of Sumas as permanent open space.

Q. Have there been any changes to the Wetland Mitigation Plan since the October 1999 Wetland Mitigation Report that SE2 included with its revised Application?

A. Yes. As I mentioned earlier, we have redesigned the facility's stormwater detention pond to incorporate wetland features, in response to comments that the Corps of Engineers received from EPA. Wilson Engineering is the project engineer for the site drainage system and I have worked with them to revise the plan for the drainage system. The drainage pond will now have two cells. The smaller first cell will remove sediments. The second cell will have several habitat features, including a small island and native shrub and emergent planting on the berm and inside the pond. Water for the second cell will be discharged into the farmed wetland, which will add hydrology to the wetland. A diagram of the revised configuration is provided as Exhibit ___ (JW-4).

The proposed mitigation will provide additional storm and floodwater abatement functions with added capacity and proposed planted vegetation. The planted

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vegetation intercepts rainfall and slows runoff. The proposed mitigation will also compensate for lost support of stream base flow, however as already mentioned, this hydrological function is minimal.

Q. What is the mitigation ratio for SE2's wetland mitigation proposal?

A. The ratio for the original mitigation plan had a better than 1.08 to 1 ratio of created/enhanced wetlands to filled wetlands. As part of the original plan, SE2 also proposed to preserve more than 9 acres of forested wetland and buffer area. This is important because it increases the overall wetland size and diversity when joined with the proposed creation and enhancement area, and wetland functions increase accordingly. The proposal to modify the storm water detention pond to include wetland features will also create additional hydrologic and wildlife wetland functions. The proposed mitigation ratio is considered appropriate given the disturbed condition of the wetland proposed for fill. Although state and federal guidance sometimes recommend mitigation ratios higher than 1:1, those higher ratios are justified to compensate for the time lost between when the wetland is filled, and the wetland mitigation area is functioning; and to compensate for potential failure or deficiencies in the proposed mitigation area. Regarding this project, a 1:1 ratio is appropriate for this project because the wetland mitigation area can be built the same season the wetland is filled, and it will immediately provide functions similar to the existing wetlands, that is assimilate flood and stormwater, and release overflow to a ditch connected to Johnson Creek at a rate similar to what currently exists. Because the wetland proposed to be filled are not forested or with shrubs, but only partially covered with grass, the proposed mitigation area will be seeded and provide more

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areal grass cover than exist within the same season. The proposed mitigation can be designed by professional engineers and/or hydrogeologists to produce the same hydrologic benefits (capacity, storage and release). It has been reported that flood storage and conveyance can be quantitatively evaluated and can be reproduced by proper grading.[1]

END OF TESTIMONY

I declare under penalty of perjury that the above testimony is true and correct to the best of my knowledge.

DATED: May _____, 2000.

By _____
John Wong

[1] Kusler, J.A. 1987. Scientific Issues Relating to the Restoration and Creation of Wetlands. Draft Background Paper. National Wetlands Policy Forum. Excerpt from Washington Department of Ecology Publication #92-8, *Wetlands Mitigation Replacement Ratios: Defining Equivalency*.

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