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ENVIRONMENTAL
HEARINGS OFFICE

POLLUTION CONTROL HEARINGS BOARD
FOR THE STATE OF WASHINGTON

AIRPORT COMMUNITIES)
COALITION,)
Appellant,)
v.)
STATE OF WASHINGTON,)
DEPARTMENT OF ECOLOGY; and)
THE PORT OF SEATTLE,)
Respondents.)

No. 01-133

DECLARATION OF DYANNE
SHELDON IN SUPPORT OF ACC'S
SUR-REPLY ON MOTION FOR STAY

(Section 401 Certification No.
1996-4-02325 and CZMA
concurrency statement, issued August
10, 2001, Reissued September 21,
2001, under No. 1996-4-02325
(Amended-1))

Dyanne Sheldon declares as follows:

1. I am over the age of 18, am competent to testify, and have personal
knowledge of the facts stated herein.

2. Per the responses in the second declarations of Ecology staff (Stockdale)
and Port consultants (Kelley), it is claimed that the need for pre-construction
groundwater monitoring is being met and will provide sufficient detail to assure
protection of water quality. Their conclusions are based on the Performance
Standards contained within the NRMP and the conditions of the 401 Certification
(Stockdale ¶ 3,4; Kelley ¶13,6,7,8). However, the Performance Standards of the NRMP,

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DECLARATION OF DYANNE SHELDON IN
SUPPORT OF ACC'S SUR-REPLY - 1

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1 as summarized by Kelley (¶10) provide virtually no quantifiable standard by which to
2 measure whether groundwater parameters have been met. The Performance standard
3 states, “Wetland areas with organic soils...*will have soils saturated in the upper part*
4 (emphasis added) to mid-June in years of *normal* (emphasis added, see ¶ 3, below)
5 rainfall.” For the wetlands that have mineral soils, the Performance standard is
6 stated as, “...soils saturated *in the upper part* to mid-April in years of *normal*
7 rainfall.” Who determines if the soil is *saturated in the upper part* five years, ten
8 years, or fifteen years after this permit is granted? Certainly not the well-intentioned
9 staff who created these “standards”. This is a prime example of the impreciseness of
10 the 401 conditions: they are written in such a manner that it will be impossible to
11 determine if success or failure is an outcome in the future conditions.
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14 3. As to ‘normal’ rainfall, Kelley (¶ 13, second declaration) claims that,
15 “there is no normal rainfall year that would serve as a baseline...”, yet the Port’s
16 proposed hydrologic Performance Standards rely upon determining groundwater
17 presence in a year of ‘normal rainfall’.
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19 4. Relying upon a statistical analysis of the WIS (wetland indicator status)
20 of the plants present in wetlands, as a means to determine impacts, imparts a
21 mathematical certainty and validity to the WIS ratings that is not justified. The WIS
22 rating of plants is a qualitative judgment of the relative percentage of time one
23 would assume to find a particular species in a wetland or an upland habitat. The
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1 WIS ratings for the wetland plants of the Pacific Northwest was based on the
2 collective best guesses of small cadre of botanists and persons working on wetland
3 related issues in the mid-1980's. I am consciously not using the label "wetland
4 ecologists" here, as in the mid-1980's, there were no self-identified "wetland
5 ecologists" in the Pacific Northwest. As one of the professionals who participated in
6 that original exercise (to assign a wetland indicator status rating to plants) I can tell
7 you that none of us, at that time, had ever 'rated' plants as to their expected presence
8 in wetland or upland habitats. The point that I'm trying to illuminate is that one can
9 have a dominance of plants that have a WIS rating of facultative in an area that
10 would be classified as wetland (using the 1987 Corps of Engineers Delineation
11 Manual). Facultative plants have an assumed range of 33-67% chance of being
12 found in a wetland. If the Performance Standard for the success of wetland post-
13 construction is based on a 'statistically valid analysis' of the WIS rating of the
14 vegetation, one is relying upon a statistically (quantified) analysis of extremely
15 simplistic *qualitative* parameter in order to determine success or failure. That is not
16 good science.
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20 5. In my professional career I have the experience, for the last three years,
21 of reviewing and analyzing such a quantitative ('statistically valid') WIS-based
22 performance standard conducted for a 500+ acre long-term monitoring program on
23 a site with a range of wetland types in the Puget Sound lowlands. What such a
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1 statistical analysis of WIS values results in is a vast simplification and
2 homogenization of the results: in three years of such analysis not one shift in
3 wetland vegetation composition has been determined to be *statistically significant*.
4 Even in a bog community, where three obligate key-indicator wetland plants
5 diminished in physical presence by a significant percentage, the statistically valid
6 WIS indicator based analysis found nothing measurable: the consequences were
7 masked in the statistics. No impact was identified. Note that the Performance
8 Standard imposed by the 401 Certification does not propose what is an appropriate
9 shift in WIS rating (if any): who will determine if a shift of any magnitude is
10 success or failure? The Performance Standards also don't require the Port to
11 identify and monitor a "control" wetland (one with similar physical characteristics
12 and landscape setting, but out of any impact zone) to provide a reference for
13 expected (or unexpected) natural successional changes and/or weather/climate
14 induced changes in WIS ratings or hydroperiod. How will Ecology or the Port
15 determine if future changes are related to the Port's project or to natural variations?
16 Ecology will not be able to determine success/failure and convince the Port to
17 employ contingency actions.

21 6. The Performance Standard of regular re-delineation of the wetlands, in
22 future conditions, is not a failsafe to determine if wetland functions have been lost or
23 adversely effected. Delineation is based on parameters dictated by the Corps 1987
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1 Manual: soils, hydrology, and vegetation. Wetland soils will not lose their hydric
2 'signatures' in 10-15 years: organic soils will still be organic, mineral soil colors will
3 not shift to non-wetland conditions in that time frame. Woody and many herbaceous
4 species found in urban/suburban wetlands are generalists, they are adapted to a
5 broad range of wet to dry conditions: it is unlikely that there will be a rapid shift (5-
6 10+ years) in the extent and distribution of such species. Shifts that might be
7 anticipated due to successional maturation of plant communities have not been
8 identified within the Performance Standards as appropriate. The 401 Performance
9 standards are not "strict", regardless of the intention of the authors of those
10 standards: they are ambiguous and misleading in their cloak of 'valid science'. The
11 Performance Standards are written in such a manner as to preclude Ecology staff, in
12 the future, from accurately concluding adverse effect (failure to meet the Performance
13 Standards), and therefore they are inadequate for the purpose of assuring permanent
14 protection of water quality and public aquatic resources.

17 7. Lastly is the issue of adequate groundwater monitoring data and the use
18 of such data to determine success or failure in future conditions. As noted above, the
19 existing 401 conditions side-step the issue of quantified groundwater data even being
20 an option for determining success/failure because no quantified standard for
21 groundwater is included in the Performance Standards. Why this is of concern is
22 quite simple: it is the presence and duration of water within a wetland that drives all
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1 the physical, biological and chemical processes of a wetland: the wetland functions.
2 Years of research and analysis have identified a wetland's hydroperiod as the 'driver'
3 of wetland functions.^{1,2,3} Constructing the Third Runway, placing fill on the slopes in
4 the upper watersheds of three stream basins, and creating a huge engineered wall
5 will affect how, when, and how much water will enter wetlands downslope of the
6 project. Changes in the volume of water entering a wetland, the timing of the water
7 into the wetland and the duration of the water in the wetland will all effect the
8 functions that a wetland does and can provide. The analysis for this project has
9 identified that water infiltrated through the proposed fill plain may reach the
10 downslope wetlands 1 or more *months* later than existing condition. What no will be
11 able to document is whether or not the same amount of water is present in the
12 wetlands for the same length of time (extent of duration of saturation or inundation)
13 post-construction, because, if this stay is not granted, insufficient 'pre-construction'
14 data will be collected to confirm or deny the success of post-construction
15 hydroperiods. The change in the 401 requirement to eliminate the need for collection
16 of 'pre-construction' groundwater monitoring data is very significant, and will
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21 ¹ Brinson, M.M. A hydrogeomorphic classification for wetlands. Technical Report WRP-DE-4 U.S. Army Engineers
22 Waterways Experiment Station.

23 ² Brinson, M.M. 1995. Assessing wetland functions using HGM. National Wetlands Newsletter. January-February,
1995.

24 ³ Hrubry, T., T.Granger, K. Brunner, S. Cooke, K. Dublanica, R.Gersib, L.Reinelt, K. Richter, D. Sheldon, A. Wald, F.
25 Weinmann. Methods for Assessing Wetland Functions. 1998. Ecology publication: 98-106.

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AR 006452

1 effect Ecology's ability to determine accurately, success or failure in
2 post-construction conditions. If no 'pre-construction' groundwater data
3 exists, who can argue that post-construction hydrologic conditions are
4 appropriate? Adverse effects on wetland function and potential adverse
5 effects on water quality may result with no recourse available to assure
6 implementation of contingency actions.
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8 I declare under penalty of perjury under the laws of the State of Washington
9 that the foregoing is true and correct.

10 DATED this 10 day of October, 2001, at Seattle, Washington.

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12 Dyanne Sheldon

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