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HEARINGS OFFICE

POLLUTION CONTROL HEARINGS BOARD
FOR THE STATE OF WASHINGTON

AIRPORT COMMUNITIES COALITION,)	
)	PCHB No. 01-160
Appellant,)	
v.)	PREHEARING BRIEF OF APPELLANT
)	ACC AND PREHEARING BRIEF OF
STATE OF WASHINGTON,)	INTERVENOR-APPELLANT CITIZENS
DEPARTMENT OF ECOLOGY; and)	AGAINST SEA-TAC EXPANSION
THE PORT OF SEATTLE,)	
)	
Respondents.)	
_____)	

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4 **I. INTRODUCTION/FACTS¹**

5 The Third Runway is, according to the Department of Ecology, "one of the largest
6 public-works projects ever attempted in the State of Washington. The potential effects on water
7 quality and the natural environment are enormous . . ." ²

8
9 As the Board itself has acknowledged, "To provide the site for the third runway, the Port
10 proposes to fill a canyon on the airport's west side with twenty (20) million cubic yards of fill."
11 According to Ecology, this is equivalent to "40 football fields, each stacked 300 feet high with
12 material."³ Underneath the 20 million cubic yards of fill, the Port proposes to construct an
13 enormous rock drainfield to "capture" groundwater and transport it downslope in the hope of
14 supporting the streams and wetlands below which would otherwise be starved of water as a result
15 of the massive fill and construction.

16 The Port proposes several retaining walls to support portions of the fill embankments.
17 The largest of these is a monolithic, mechanically stabilized earth (MSE) wall over 150 feet high
18 and approaching one-third of a mile in length. Dubbed the "Great Wall of SeaTac," the Port
19 proposes to construct the MSE wall on soils subject to liquefaction during earthquakes.
20

21 The proposed Project's potential impact on water quality and resources cannot be
22 overstated. It would impact over 700 acres, create over 300 acres of new impervious surfaces
23 with associated stormwater runoff, fill all or portions of 50 wetlands and permanently impact an
24 additional twelve. If approved, it would obliterate 980 linear feet of fish-bearing stream, Miller
25 Creek, relocating it in a fabric-lined ditch, and fill hundreds of feet of drainage channels in the
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27 ¹ This entire brief goes to Issue 4.

² Notice of Appeal (by ACC of Ecology's August 10, 2001, 401 Certification), at p. 4 (Ex. 595).

³ DOE Press Release, August 10, 2001 (Ex. 770).

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4 Miller Creek and Des Moines Creek basins. In sum, the Third Runway Project, if built, would
5 literally re-plumb the Miller, Des Moines and associated Walker Creek watersheds.

6 The Port's proposal is opposed by the Airport Communities Coalition -- comprising the
7 Cities of Burien, Des Moines, Federal Way, Normandy Park, and Tukwila, and the Highline
8 School District -- and by CASE, a local citizens group. The residents of the ACC cities,
9 including the students of the Highline School District, regularly use for recreational and aesthetic
10 purposes the waters targeted by the Port.⁴ The effect of the Third Runway Project on the
11 quantity and quality of water in the streams, headwaters and wetlands is a matter of great
12 concern to them. *Id.*

13
14 Pursuant to the federal Clean Water Act ("Act"), projects involving alterations to water
15 bodies (including wetlands) such as those proposed by the Port must not only obtain a federal
16 permit, but must also obtain certification by the State under section 401 of the Act. The state
17 may only issue the certification if there is "reasonable assurance" that the project will comply
18 with water quality laws and, in particular, state water quality standards.

19
20 In the case of the Port's Third Runway project, those standards are high because area
21 streams are classified as Class AA waters, and the applicable water quality standards include an
22 explicit injunction against degradation. For example, in Class AA waters, such as Des Moines,
23 Miller and Walker Creeks, state water quality standards require that "[w]ater quality of this class
24 shall markedly and uniformly exceed the requirements for all or substantially all uses."

25 WAC 173-201A-030(1)(a). The standards provide that "[t]oxic substances *shall not be*
26 *introduced above natural background levels* in waters of the state which have the potential either

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28 ⁴ Nelson Prefiled, *passim*.

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4 singularly or cumulatively to adversely affect characteristic water uses, cause acute or chronic
5 toxicity to the most sensitive biota dependant upon those waters, or adversely affect public
6 health, as determined by the department.”⁵
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8 Washington’s overarching water quality anti-degradation mandate also applies:

9 “[e]xisting beneficial uses shall be maintained and protected and no further degradation which
10 would interfere with or become injurious to existing beneficial uses shall be allowed.”

11 WAC 173-201A-070(1).⁶

12 In this case, the Port’s project requires a permit from the United States Army Corps of
13 Engineers (“Corps”) under section 404 of the CWA (33 U.S.C. § 1344), which in turn requires
14 section 401 certification by the State that water quality standards including the anti-degradation
15 mandate will be met. 33 U.S.C. § 1341 (d); 33 CFR § 320.4 (d). Ecology, under pressure from
16 the Governor and the Port,⁷ granted such a certification on August 10, 2001, despite significant
17 gaps in analysis needed to determine whether there actually was reasonable assurance. Although
18 it was based heavily on pages of Port “IOUs” for reports and analyses needed to justify the
19 outcome, Ecology publicly praised the 401 it issued in August⁸ -- until the Port itself appealed to
20 the PCHB, challenging requirements which Ecology had just touted as “scientifically sound,
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22 ⁵ WAC 173-201A-040(1) (emphasis added); see also WAC 173-201A-030(1)(c)(vii).

23 ⁶ The regulatory effect of this anti-degradation mandate in Washington’s water quality standards was reaffirmed
several years ago by the United States Supreme Court. *PUD No. 1, et al. v. Washington Department of Ecology, et*
al., 511 U.S. 700, 719 (1994); see *Ecology v. PUD No. 1 of Jefferson County*, 121 Wn.2d 179, 192 (1993).

24 ⁷ See Kenny Dep. at 34-35 (met with Port in Governor’s office: very unusual; under “intense pressure”); Hellwig
25 Dep. at 22 (“meetings we had with the Governor’s chief of staff where Mic Dinsmore and Gina Marie Lindsay
would have been present from the Port”); at 78 (401 issued “in response to substantial pressure from the Port”); at
26 82-84 (Hellwig memo concerning Governor’s re-election campaign meeting with Port in state office where Port to
raise third runway); at 109 (acknowledging unprecedented and repeated attendance by Governor’s chief of staff at
Ecology meetings with Port).

27 ⁸ Department of Ecology News Release dated August 10, 2001 (<http://www.ecy.wa.gov/news/2001news/2001-137.html>). Significantly, the respondents have very much insisted on not leaving defense of either the August or
28 September 401 to what was before Ecology when it made its decision.

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4 technically feasible, and legally defensible.” Ecology responded, after repeated intervention by
5 the Governor,⁹ by entering into closed-door negotiations and then a settlement with the Port,
6 withdrawing the old 401, and issuing a new one dated September 21, 2001.
7

8 II. ARGUMENT

9 A. Ecology's Issuance of the September 401 After Pressure from the Governor's 10 Office and Closed-Door Negotiations with the Port Violated Applicable 401 11 Regulations and Requirements for CZMA Certification (Issue 1, Issue 2)

12 Ecology's cart-before-the-horse approach to approval, documentation and notice were
13 compounded in this case by its withdrawal of the August 401 and issuance of the September
14 version. The terms of the new, September 401 were negotiated in private between the Port and
15 Ecology, with regular interference from the Governor's Office. No public notice was provided
16 of the rescinding of the August decision and Ecology's replacement of it "in its entirety"¹⁰ with
17 the September version. No approval was obtained for the modifications from the Environmental
18 Protection Agency's Regional Administrator.¹¹

19 Ray Hellwig -- Director of Ecology's Northwest Regional Office, Ann Kenny's
20 supervisor, and a key official in the Port 401 process -- testified at deposition that the original
21 plan was for the August 401 to be modified through a settlement without rescinding it, but that in
22 the end Ecology had to rescind the August 401 and, consequently, "there would have been a brief
23 period where there was not a certification." Hellwig Dep. at 245. He further acknowledged that
24 the Port did not submit a new application, even though, when the prior Port 401 application had
25

26 ⁹ Fitzsimmons Dep. at 109 (contacted seven times by Governor's Office between August 10 and September 21); see
27 *id.* at 14-16, 17, 28, 31, 39, 111-12.

¹⁰ See Ex. 1 (September 401) at 1.

¹¹ Such approval is required pursuant to 40 C.F.R. 121.2(5)(b).

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4 failed, the Port had been required to submit a new one, a new public notice had been
5 published, and a new comment period was run. Hellwig Dep. at 244-46. Further, Mr. Hellwig
6 acknowledged that, due to changes in the September 401, there were parts of what had been
7 included in the notice of application for the August 401 which were excluded from coverage
8 under the September 401. *Id.* at 247-250. Ecology in effect accepted a new application,
9 provided no notice for it, and issued a 401 decision based on private discussions with the Port
10 without giving the public (not to mention ACC) an opportunity to comment or even considering
11 a new public hearing, all in violation of WAC 173-225-030 (“public notice and hearings”).¹²

13 **B. The 401’s Temporal, Operational and Geographic Limitations Violate the**
14 **Requirements of the Clean Water Act and Applicable State Water Quality Law**
15 **(Issue 3).**

16 A significant change occurred between the August and September 401 Certifications. The
17 August Certification applied on its face to “construction of a third runway and related projects.” Ex.

18 1. The September 401 includes new limitations on the scope of protection afforded by the decision,
19 keyed to the phraseology “Port 404 projects.” In a key example, the restrictions on contaminated
20 fill are limited to “Port 404 projects,” rather than to fill placed at the site in connection with the
21 “construction of a third runway and related projects.”¹³

22 Ecology staff responsible for the 401 decision cannot explain, even after its issuance, what
23 this limitation on the scope of its protections meant. Ray Hellwig, as noted above, confirmed in his
24 deposition that the September 401’s change in wording was intended to -- and did -- exempt Port

25
26 ¹² Ecology’s actions here also violated CZMA requirements. CZMA § 307(c)(3)(A), 16 U.S.C. § 1456(c)(3)(A)
27 (emphasis added). *See* 15 C.F.R. § 930.61(a) (*following* receipt of the necessary data and information, the State
28 agency shall ensure timely public notice); 15 C.F.R. § 930.61(a) (public notice must provide a summary of the
proposed activity, announce the availability for inspection of the consistency certification and accompanying public
information and data, and advise that comments should be submitted to the State agency); *see also*, CZMP at 118.

¹³ *See, e.g.*, Ex. 1 at 18, §E.1, E.1(a), E.1(b).

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4 projects previously covered under the JARPA from the fill criteria.¹⁴ It substituted an approach in
5 which Ecology will someday make an “internal” decision with the Port -- “after PCHB review” has
6 concluded in this case -- as to what Port projects are subject to the fill criteria.¹⁵

7 Ann Kenny similarly acknowledges that, at the Port’s request, the September 401 cuts back
8 on the time in which protective conditions will apply, for example, to eight years from the life of the
9 project as 401s typically require.¹⁶

10 In earlier briefing (on the Stay), Ecology agreed that, per the U.S. Supreme Court decision
11 in *PUD No. 1 v. Ecology*, 511 U.S. 700 (1994), a 401 certification addresses an activity as a whole,
12 once the existence of a discharge is satisfied. The September 401 receded from this, at the Port’s
13 demand, converting the 401 from a certification that an entire activity will not, in perpetuity, violate
14 water quality standards into something less.¹⁷

15
16 **C. There Must Be Reasonable Assurance at the Time of Certification (Issue 5), and a**
17 **Certification Cannot Rely on Data, Reports, and Plans which Were Not in Being at**
18 **the Time of Issuance -- Many of Which Are Still Not Finalized Six Months Later**
19 **(Issue 6).**

20 The very essence of a 401 Certification is that at the time of issuance “the state has
21 reasonable assurance that there will be compliance with water quality laws.” *OHA, supra*,
22 Conclusion 63 (emphasis added) *citing Friends of the Earth v. Ecology*, PCHB No. 97-64
(1988).¹⁸ An exhaustive search reveals no case that holds a 401 Certification means that the

23
24 ¹⁴ Hellwig Dep. at 248-50.

25 ¹⁵ *Id.* at 251; Kenny Dep. at 144 (deletion and modification of prior requirement that condition apply to “long-term
operation” of project); at 148-49 (lesser standard substituted).

26 ¹⁶ Kenny Dep. at 144 (deletion and modification of prior requirement that conditions apply to “long-term operation”
of project); at 148-49 (lesser standard substituted).

27 ¹⁷ See Luster Reply Decl., ¶¶16-19 (Ex. 210 and Attachment B to Luster Prefiled Testimony).

28 ¹⁸ See Order Granting Stay at 4; 40 CFR §121.2(a)(3); *PUD No. 1 v. Washington Dept. of Ecology*, 511 U.S. 700,
712 (1994); See 33 U.S.C. §1341(a)(1), (d); *Okanogan Highlands Alliance et al. v Department of Ecology and*

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4 state “will have” or “hopes to have” reasonable assurance in the future based upon studies or
5 reports not yet completed. Federal regulations governing 401 certifications make clear that the
6 certification must contain an affirmative “statement that there is reasonable assurance that the
7 activity will be conducted in a manner which will not violate applicable water quality standards”
8 40 CFR § 121.2(a)(3) (emphasis added). In order to overturn the certification, appellants need
9 only show “by a preponderance of the evidence that Ecology did not have ‘reasonable assurance’
10 that the applicable provisions would be complied with.” *Friends of the Earth v. Ecology*, PCHB
11 No. 97-64 (1988), Conclusion IV (emphasis added). The soundness of a proposal should be
12 determined before approval of the permit, not afterwards.¹⁹ Such is the case with the Third
13 Runway 401 Certification. As a matter of law, respondents cannot prevail by establishing that
14 Ecology “will have” reasonable assurance in the future.²⁰

15
16 In a bow to intense pressures imposed by Ecology senior management and the
17 Governor’s Office and in recognition that the Port had yet to produce the necessary information
18 to support reasonable assurance, Ecology staff loaded the 401 with “IOU” conditions for the Port
19 to submit additional data, plans and reports, such as: a mitigation plan for permanent impacts to
20 Wetland 17A complex (Condition D.4); a plan to prevent interception of contaminated
21 groundwater and to monitor potential contaminant transport via subsurface utilities (Condition
22 F.1); a revised Natural Resources Mitigation Plan (“NRMP”) (Condition D.1); a Surface Water
23

24
25 *Battle Mountain Gold Company*, PCHB Nos. 97-146, 97-182, 97-183, 97-186, and 99-019, Final Findings of Fact,
Conclusions of Law and Order (January 19, 2000), Conclusion Nos. 62-65 (“OHA”).

26 ¹⁹ *Ecology v. Barden*, SHB No. 83-42 (1985), Conclusion X; *Luce v. Snoqualmie*, SHB No. 00-034 (2001),
Conclusion V(2).

27 ²⁰ Similarly, post-certification data, reports and plans that were not in being at the time of issuance of the
28 certification, cannot *ex post facto* form the basis of Ecology’s determination of reasonable assurance. The question
this Board must answer is whether Ecology had before it at the time of certification information sufficient to provide
reasonable assurance that the project would not violate water quality standards.

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4 and Groundwater Monitoring Plan (Condition E.3); a revised Low Streamflow Analysis and Low
5 Flow Offset Proposal (Condition L.1); a Construction Stormwater Pollution Prevention Plan and
6 Erosion and Sediment Control Plan (Conditions H.3 and K.1); a Spill Prevention and
7 Containment Plan (Condition L.1); a site specific study before stormwater from new surfaces can
8 be discharged into receiving waters (Condition J.2.a); and a Stormwater Facilities Operation and
9 Maintenance Plan (Condition J.2.f).
10

11 These address essential components of the Third Runway project and the proposed
12 mitigation. Without the information, it was (and still is) pure speculation whether the project
13 will not result in violation of water quality standards. Virtually none of these have been finalized
14 and approved, and some have yet to even be submitted.²¹
15

16 Indeed , the more central the issue is to the protection of state waters, the farther away
17 Ecology is from having even a post-hoc basis for certification. For example, the Port only

18 ²¹ Ecology admits that it has not approved the Port's plan for mitigation of permanent impacts to Wetland
19 17A complex, even while acknowledging that an approved plan is needed for reasonable assurance and that none
20 ~~existed~~ when Ecology issued the 401 in September. Kenny Dep. at 257. Similarly, Ecology again admits that the
21 Port did not submit a Surface Water and Groundwater Monitoring Plan until after Ecology issued the 401. Ecology
22 concedes that the plan is needed for reasonable assurance -- but that Ecology has yet to approve it. Kenny Dep.
23 at 304, 306. In fact, Ecology will be asking the Port to make revisions *Id.*

24 The Port submitted revisions to the NRMP in November 2001 (3 months after issuance of the August 401)
25 and Ecology still has yet to approve it. Kenny Dep. at 232. Repeatedly, Ann Kenny admitted at her deposition that
26 Ecology needs the revisions to the NRMP and the further information the Port is to supply in the revised NRMP to
27 have reasonable assurance. (provide information on shade cloth, Kenny at 161; revise to provide for monitoring
28 hydrologic conditions of wetlands, Kenny at 163; revise to require observable surface flow in Miller Creek at all
times, Kenny at 176-77; provide information on irrigation system to support mitigation for Miller Creek relocation,
Kenny at 180; provide information on sediment migration, Kenny at 181; provide information on Miller Creek
instream and buffer enhancements; provide details of stream diversion and flow dispersion structures, Kenny at 183;
and provide information concerning post-construction hydrological support for Wetlands 9, 11, and 44a, Kenny at
185-6). None of these revisions or further information was available to Ecology when it issued the 401 in August
or again in September and could not have formed the basis of reasonable assurance.

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4 submitted in December a revised low flow plan . (Kenny at 230). It contains so many changes
5 that Ecology is now requiring the Port to submit a "validation report" on the modeling which
6 underlies its critical assumptions. (Kenny at 215). Ann Kenny flatly admits that Ecology needs
7 such validation and further "corrections" to the plan before Ecology can have reasonable
8 assurance -- even though the 401 was issued last September. (Kenny at 225-28). As of Ms.
9 Kenney's deposition on February 20, 2002 -- six months after issuance of the August 401
10 certification and one month before the start of this Board's trial -- the Port's low flow plan had
11 not been approved. (Kenny at 230).

12
13 The Port also has yet to submit the site-specific study required by Condition J.2.a or the
14 Stormwater Facilities Operations and Maintenance Plan required by Condition J.2.f. (Kenny at
15 320, 321). Ecology now admits, as it must, that both are necessary for reasonable assurance.
16 (Kenny at 316, 322). The site specific study is needed to set appropriate effluent limitations in
17 the Port's NPDES permit to address metal contaminants from third runway project new
18 impervious surfaces. (Kenny at 318). This Board has previously held that Ecology cannot have
19 reasonable assurance for 401 certifications where it "defers the entire analysis to the NPDES
20 permit application process."
21

22 That would be tantamount to writing a blank check for extensive construction related to
23 the mine without ever knowing whether it is feasible to comply with water quality laws in
24 its operation. It would be in derogation of section 401 and defy common sense to
25 proceed without reasonable assurance that discharges can be regulated under an NPDES
26 permit.

27 *OHA*, Order Denying Summary Judgment on Waste Rock Discharges at 2, 1999 WL 825751.

28 By deferring the issue of appropriate effluent limitations for the NPDES permit until the Port
completes and Ecology approves a site-specific study instead of dealing with the issue prior to

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4 issuance of the 401, Ecology has written a “blank check for extensive construction” without ever
5 knowing whether it will be feasible to comply with water quality standards.

6 The ongoing barrage of new data, plans and reports, corrections and validation demands
7 provides overwhelming proof that Ecology’s review is a “work in progress,” remarkably similar
8 to that which this Board struck down in Battle Mountain Gold. *OHA*, Conclusions 44 and 51
9

10 **D. The 401 Falls Far Short of Reasonable Assurance that the Port’s Proposed Wetland**
11 **Fills, Stream Alterations and Related Activities Will Not Violate Water Quality**
12 **Standards (Issue 7, Issue 19)**

13 Wetlands have long been recognized for their importance in, among other things,
14 controlling erosion and protecting down-stream water quality. *United States v. Akers* 1985 U.S.
15 Dist. Lexis 23436 (E.D. CA 1985) at 27) (copy attached). The purpose of the water quality
16 standards is to prevent water quality from falling below acceptable levels. *PUD No. 1 v.*
17 *Ecology, supra*, 511 U.S. at 704 (1994) (citations omitted) (copy attached). Wetlands are
18 “waters of the State” protected by the state’s water quality standards.²² Ecology’s guidelines
19 under those standards for wetlands provide that:

20 The primary means for protecting water quality in wetlands is through implementing the
21 antidegradation section of the water quality standards. The antidegradation policy in the
22 water quality standards establishes the bottom line for water quality protection in
23 Washington’s waters: ‘existing beneficial uses shall be maintained and protected and no
24 further degradation which would interfere with or become injurious to beneficial uses shall
25 be allowed.’²³

26 In applying the antidegradation policy to wetlands this Board has explained that “[T]he
27 antidegradation policy is expressed in terms of a goal that there be no net-loss of wetlands. In

28 ²² Water Quality Guidelines for Wetlands, Department of Ecology Publication No. 96-06 (April 1996), p. 50 (Ex. 2024) (also citing 40 C.F.R. §122.2, defining waters of the United States to include wetlands).

²³ *Id.*, p. 3 (citing WAC 173-201A-070).

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4 regulating activities impacting wetlands the department requires a staged analysis and mitigation
5 ratio.” OHA, *supra*, at Conclusion 66 (citing *O’Hagen v. DOE*, PCHB No. 95-25 (1995)). It has
6 rejected “off-site and out-of-kind mitigation” as insufficient because it did not focus on “actual
7 compensation for or replacement of lost resources.” *Id.*, at Findings 53-54. The Port proposal
8 here suffers from the same fatal flaw.

9
10 The first version of the Port’s application to come before Ecology several years ago
11 admitted to less than ten acres of wetlands loss at the site. The current 401 acknowledges
12 elimination of approximately 20 acres, including high-functioning wetlands necessary for
13 maintenance of a critical mass, as well as relocation of Miller Creek into the peat area of Vacca
14 Farm, an existing wetland.

15 The shortcomings in the Port’s wetlands proposal have not improved with age. For
16 example:

- 17
18 a. The in-watershed mitigation proposed in exchange for eliminating wetlands does
19 not reflect the functional losses identified by the Port.
20
21 b. The mitigation proposed is dominated by enhancement of upland habitat already
22 protected by stream buffer regulations.
23
24 c. The kingpin of the Port’s in-basin wetlands mitigation, Vacca Farm (a Class 1
25 wetland in the City of SeaTac) does not meet the criteria for a restoration.
26
27 d. Use of Water Resource Inventory Area 9 (WRIA 9) as a planning unit for aquatic
28 resource protection in Miller, and Des Moines Creek watersheds is inconsistent
with best available science and will result in degradation of beneficial uses within
these watersheds.
e. There remains no reasonable assurance that seepage flows to remaining wetlands
will be protected leading to the conclusion that further wetland impacts will occur
than what has been identified by the Port to date.²⁴

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²⁴ Azous Prefiled, pp. 3-4.

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5 The Port's "mitigation" proposal is not even "apples to oranges," but would substitute lemons (less
6 valuable, low-functioning wetlands and non-wetlands on and off the site) for apples (high-
7 functioning, actual wetlands at the site). *See, e.g.,* Azous Prefiled at pp. 7-8. It does not require a
8 wetland scientist to recognize the self-defeating nature of the premise that buffers and uplands can
9 be substituted for wetlands in a particular watershed: under this theory, wetlands could be
10 supplanted entirely under the rubric of "mitigation."

11
12 The Port and Ecology's heavy reliance on the Port's "restoration" of 6.6 acres of the
13 Vacca Farm into new wetlands is particularly illustrative of how far the Port plan falls short of
14 the state's anti-degradation requirement, regardless of how one "counts" the out-of-basin
15 "mitigation" proposed miles away in Auburn. Erik Stockdale, Ecology's wetland expert, even
16 commented by email to colleagues that it was "funny" that the Port's attorneys were citing Vacca
17 Farm wetlands to "argue for reduced property valuation in the condemnation proceeding," while
18 claiming wetland restoration credit from Ecology as if the wetlands did not functionally exist.
19 Stockdale Dep. at 177-181.²⁵ At the same time, Ecology has known that the Port has eschewed a
20 more legitimate in-basin mitigation opportunity.²⁶

21
22 ²⁵ Azous Prefiled, Exhibit J (Transcript of testimony of Port wetlands expert Jim Kelley in King County Superior
23 Court No. 99-2-26788-5, June 5, 2001; *See, Stockdale Dep. at 177-178 (Kelley participation); Sheldon Prefiled at 7,*
24 ¶11, 12, 13).

25 ²⁶ As Erik Stockdale, Ecology's wetlands expert, testified at deposition:

26 I told Jim [Kelley, the Port's wetlands expert] that there is an in-basin mitigation opportunity Ecology and
27 EPA identified as desirable to the Port. The Port has, to date, not considered it. That is the headwater
28 wetland in the Walker Creek basin. There is an undetermined amount of fill that can be removed from that
wetland. This may be a mitigation opportunity the Port can purchase to raise their ratio to 1 to 1. If the
PCHB asks me if the Port pursued all in-basin mitigation opportunities, I will have to say no.
Stockdale Dep. at 28 (emphasis added). Mr. Stockdale confirmed in his January 23, 2002, deposition that the
mitigation he described was never included as part of the Port's plans and that if he were asked the same question
today by the PCHB (that is whether the Port had "pursued all in-basin mitigation opportunities" he would still have
to answer in the negative). *Id.* at 29.

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4 The proposed Miller Creek relocation is also indicative of the fundamental flaws in the
5 Port's wetlands plans. ACC expert Dyanne Sheldon has explained that the relocation is unlikely
6 to succeed due to its location in the midst of a peat area, its gradient, and its design, including use
7 of a fabric liner. Sheldon Prefiled, *passim*.²⁷ Further, as Ms. Sheldon points out, while the
8 Miller Creek relocation into the midst of a Vacca Farm peat area is touted by the Port as a plus in
9 assessing impacts vs. mitigation, that benefit fades when it is acknowledged that the relocation
10 will actually displace 1.16 acres of Vacca Farm wetlands, permanently -- an impact which is not
11 included in the Port's NMRP and not recognized by Ecology. Sheldon Prefiled at ¶14, p. 8.

13 The 401 approval of the Port's wetlands proposal also provides no reasonable assurance
14 because they are not based on meaningful pre-construction baseline and post-construction
15 performance standards. In fact, while the August 401 explicitly required "pre-construction
16 monitoring" to establish a baseline for wetland hydrology, that requirement was conspicuously
17 dropped at the Port's request in the September version after at least one Port/Ecology
18 conversation in which it was noted that "can't come up with a threshold with one year of data."
19 Stockdale Dep. at 185-186. Mr. Stockdale also testified at deposition that, despite the
20 importance of wetland hydrology, there was no performance standard in the 401 to maintain such
21 wetland characteristics as standing or flowing water, although such wetlands exist at the site and
22 have different functions than ones without those characteristics. *Id.* at 201-204. The net result is
23 a wetland mitigation plan that drops any pretense of establishing a true pre-construction baseline
24 and avoids any performance standards which would allow such baseline to be enforced for the
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27 ²⁷ ACC expert William Rozeboom testifies that the relocated channel, as designed, will at least intermittently fail to
28 achieve the target minimum flow depth. (Rozeboom Prefiled. at 8, ¶ 51.)

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4 critical wetland hydrology function.

5 **E. The 401 Fails to Provide Reasonable Assurance in Its Reliance on Future**
6 **Monitoring as a Substitute for Current Proof of Compliance, And In Its Failure to**
7 **Require Adequate Pre-construction Monitoring (Issue 7)**

8 The 401 Certification inappropriately relies upon future monitoring as a substitute for
9 reasonable assurance now that water quality standards will not be violated. While this might be
10 appropriate in the case of small projects which do not entail massive and irretrievable
11 manipulation of entire watersheds, it fails to comply with water quality standards here. For
12 example, Condition E of the Certification (at p 19) requires the submittal of a post-construction
13 monitoring plan to:

14 monitor runoff and seepage from Port 404 projects where fill is placed for compliance
15 with applicable surface water criteria. Ground water down-gradient from the fill shall be
16 monitored for compliance with applicable ground water criteria.

17 * * * *

18 In the event monitoring detects exceedances of the water quality criteria in either surface
19 or ground water; Ecology may revise the fill criteria and/or require corrective action.

20 It will be too late to protect project area wetlands and streams from contaminated
21 embankment seepage after the Port has placed the 20 million cubic yards of contaminated fill in
22 the more than one mile long embankment. Moreover, this monitoring provision itself was
23 significantly weakened in the September 401. The August 10 certification (Section B "Permit
24 Duration", pp. 3-4) stated that "this Order shall be valid during construction and long-term
25 operations and maintenance of the project" (emphasis added). The September 401 Certification
26 (p. 4), section B, among other things, cut back the embankment groundwater monitoring plan to
27 just 8 years, presumably from the date of issuance of the September 21 Certification. Yet, ACC
28 expert Dr. Lucia has pointed out that it could be years following construction of the embankment

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4 before water infiltrates through it. Instead, infiltration will be “absorbed by the fill and relatively
5 little water would be released into the drainage layer for some unknown period of time.”²⁸
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7 Similarly, the monitoring condition in 401 section F (p. 19) for groundwater
8 contaminants is substantially weakened by amendments which limit it to just eight years. In his
9 deposition, Ching Pi-Wang of Ecology’s toxics cleanup program testified that he was responsible
10 for drafting Condition F of the original August 401, which he provided to Ann Kenny in June
11 2001. Ching-Pi Wang Dep., at p. 20. Mr. Wang could not recall having any involvement in the
12 modification of the 401 conditions between the August and the September 21 version and
13 testified that he was not consulted on this change. *Id.* at pp. 24-25. Mr. Wang further testified
14 that the risk of utility lines becoming flow paths for contaminants “might be a concern (sic) after
15 eight years if monitoring ceases.” *Id.* at p. 26.
16

17 The 401 Certification also fails to require pre-construction monitoring necessary to
18 determine whether water quality standards will be met.²⁹ Ecology has failed to require the Port
19 to perform pre-construction monitoring of existing beneficial uses necessary to determine
20 whether they will be maintained. As Dr. Strand explains in his pre-filed testimony:

21 In the context of what is known about the natural resources of the project streams, it
22 should be pointed out that the Port’s analyses of impacts for the proposed Master Plan
23 Update Improvements are inadequate because the Port has yet to undertake a quantitative
24 survey of the fish and other aquatic organisms found in the project streams. In other
words, the Port has not established a baseline condition. In my opinion, this is a critical

25 ²⁸ Lucia pre-filed testimony at ¶¶ 19, 22.

26 ²⁹ Existing beneficial uses must be maintained in Class AA waters such as Miller, Walker and Des Moines Creeks.
These include:

27 Fish and shellfish: salmonid migration, rearing, spawning, and harvesting. Other fish migration, rearing,
28 spawning, and harvesting. Clam, oyster, and mussel rearing, spawning, and harvesting. Crustaceans and
other shellfish (crabs, shrimp, crayfish, scallops, etc.) rearing, spawning, and harvesting. [and] Wildlife
habitat.

WAC 173-201A-030(1).

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4 deficiency because the appropriateness of regulatory approval and mitigation must be
5 assessed, using this baseline, before approval of the proposed project can be granted.

6 Strand Pre-filed Testimony at ¶ 5.

7 **F. The 401 Falls Far Short of Reasonable Assurance That There Will Not Be Low Flow**
8 **Impacts and Consequent Water Quality Degradation as a Result of the Project**
9 **(Issue 8).**

10 **1. Introduction**

11 The streams affected by the Port's Third Runway Project, Des Moines, Miller and
12 Walker Creeks, are designated as Class AA streams under state water quality standards, WAC
13 173-201A-130, a classification that entitles them to the highest level of protections under the
14 law. WAC 173-201A-030(1). The streams support a diverse and abundant fish fauna, including
15 salmon and trout. Strand Direct ¶ 4. They also support a significant amount of public recreation,
16 flowing through public parks in Des Moines and Normandy Park, before finally discharging to
17 Puget Sound. Nelson Direct, pp. 2-3. Flowing at extremely low levels during the summer
18 months, the removal of even small quantities of water from these streams poses significant
19 hazards to their aquatic health. Luster Direct at 21; Ex. 376 at ¶ 33; Ex. 2131.

20 Ultimately, the Third Runway Project will rob Des Moines, Walker and Miller Creeks of
21 much-needed water during the summer season, and degrade their ability to support characteristic
22 uses, including protection of aquatic species at all life stages and human recreational use. WAC
23 173-201A-030(1)(b)(iii), (iv) and (v). The conditions contained in Section I of the September
24 21, 2001 § 401 Certification, Ex. 1, pertaining to low stream flow mitigation, are not adequate to
25 mitigate this harm to the streams, nor to prevent degradation of their water quality.
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27 In Washington, projects that impact stream flows and instream uses are subject to special
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4 scrutiny in the permitting process. To obtain § 401 certification, the Port must demonstrate that
5 legal and practical means were (and are) in place to permanently mitigate low flow impacts.
6 *Ecology v. PUD No. 1 of Jefferson County*, 121 Wn.2d 179, 185-192, 849 P.2d 656 (1993), *aff'd*,
7 511 U.S. 700 (1994). Where, as here, mitigation is speculative, it is not legally adequate for
8 providing reasonable assurance for issuance of a § 401 Certification. *Okanogan Highlands*
9 *Alliance v. Ecology*, PCHB No. 97-146, *et seq.*, Conclusion No. 58. *See Hayes v. Yount*, 87
10 Wn.2d 280, 293, 552 P.2d 1038 (1976). The inherent uncertainties in the Port's Low Flow Plan
11 render it legally inadequate to meet the standards for § 401 certification. *PUD No 1 of Pend*
12 *Oreille County v. Ecology*, PCHB No. 97-177, *et seq.*, Amended Final Findings, Conclusions and
13 Order, Finding No. 25 (2000); *appeal pending*, Washington Supreme Court Docket No. 70372-8.
14

15 2. **Early History of the Low Flow Plan**

16 As early as 1998, Ecology directed the Port to submit a low stream flow mitigation plan
17 to offset impacts resulting from its substantial alteration of watershed hydrology. Solving the
18 low flow issue has proved problematic for the Port, and draft low flow plans have circulated for
19 years. Exs. 1107, 1108, 681, 1217; Ex. 245 at ¶ 17. In particular, the Port has failed repeatedly
20 to secure a water supply for the plan, one of the factors causing withdrawal of the prior § 401
21 application in September 2000. Ex. 93 Mitigation schemes have varied from one plan to the
22 next (Willing Direct at ¶¶ 11-14), each presenting new problems. Ex. 248 at 6-13; Ex. 48.
23

24 In 1999, Ecology contracted with King County Department of Natural Resources to
25 review the Port's stormwater management plan, which was being developed under an
26 abbreviated version of King County Surface Water Design Manual (KCSWDM) standards.
27 Rozeboom Direct at ¶¶ 6-8; Ex. 40 at ¶ 2. When the Port's low flow plan was segregated from
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4 the stormwater plan in December 2000, King County reviewer Kelly Whiting was called upon to
5 review that document as well. Throughout this process, however, Mr. Whiting repeatedly
6 warned that his review encompassed stormwater modeling and facility design elements only.
7
8 Ex. 48 (cover letter), 461 (cover letter and comments at 1), Ex. 40 at ¶¶ 3, p. 6 (point 2 – first
9 bullet). The KCSWDM did and does not contain performance standards against which the
10 viability and success of the Port’s low flow mitigation proposal can be evaluated. *Id.*, Willing
11 Direct ¶ 16; Ex. 2068. Mr. Whiting, a surface water hydrologist, also declined to review the
12 plan’s groundwater modeling components. Ex. 458 at 1; Ex. 461 (letter at 2, comments at 1).

13 After more than a year of desultory effort, the Port issued an incomplete draft of its low
14 flow mitigation plan in July 2001. Ex. 1259; Ex. 2009. It proposed the use of stored stormwater
15 as a mitigation source, a completely novel concept. Willing Direct at ¶¶ 12, 15; Ex. 244 at ¶ 7;
16 O’Brien at 32. The July 2001 document was literally so incomplete (whole sections were
17 missing) that it offered no basis for determining whether there was reasonable assurance that the
18 Port’s novel proposal (for use of stormwater) would offset the impacts of the Third Runway
19 Project. Willing Direct at ¶ 17; Rozeboom Direct at ¶ 10; Luster Direct at 22; Ex. 513; Ex. 376 at
20 ¶ 34; Ex. 40 at 6 (second bullet); Ex. 244; Ex. 245; Ex. 246; Ex. 354 at ¶¶ 8-20. King County
21 reviewer Kelly Whiting recommended to Ecology that a complete plan be required of the Port
22 prior to issuance of the § 401 Certification. Ex. 462, Ex. 40 at 6; Whiting (2/28) at 251; Ex. 53.

23 Ecology nevertheless issued the 401 based on the incomplete July 2001 plan.
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25 “Condition” I is really a multi-page list of what is missing. It reads as an RFP or scoping
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27 **AR 002414**

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4 document rather than a permit designed to protect water quality in perpetuity. Ex. 1, pp. 22-25.³⁰

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6 **3. December 2001 Low Flow Plan**

7 The Port submitted a revised low flow mitigation plan in December 2001. Ex. 1308. The
8 new version contains substantial flaws, the chief being that it also is incomplete. Ecology has not
9 approved the plan. In February 2002, it directed the Port to prepare a validation report to help
10 Ecology determine whether the December Plan's modeling assumptions and conclusions are
11 valid. Ecology further directed the Port to produce a 'corrected' version of the December 2001
12 Low Flow Plan, in a format not yet determined. Ecology § 401 coordinator Ann Kenny has
13 stated that the agency cannot have 'reasonable assurance' that the plan will mitigate for harm to
14 stream water quality pending the outcome of this latest review process. Kenny Dep. at 222-230.

15 King County's Kelly Whiting also reviewed the December 2001 Low Flow Plan, and
16 identified numerous flaws. In a February 23, 2002 memorandum, Mr. Whiting stated that King
17 County (on behalf of the Department of Ecology) could not concur in the plan until satisfied that
18 certain assumptions were justified and mistakes corrected. Ex. 458 at 1.³¹

19
20 **4. General Explanation of Low Flow Modeling**

21 In order to identify low flow impacts, the Port modeled both pre- and post-construction

22 ³⁰ The Low Flow Plan's (LFP's) reliance on the use of long term dead storage of water, which is likely to lead the
23 accumulation and concentration of settleable solids and particulate-based pollutants from the airport stormwater
24 runoff. That dead storage water would be released up to nine months later under very low-flow conditions with little
25 or no opportunity for dilution of any concentrated pollutants. (See, Rozeboom Ex. F at 3, ¶ 10 and Ex. C at 6, ¶ 5;
26 see also, Willing at 6 ¶ 15, and 8-9 ¶20.)

27 ³¹ Mr. Whiting's 2/23/02 review comments are annotated revisions to drafts developed in January and February
28 2002. These comments were not provided in response to ACC's routine public records requests to Ecology, nor
29 were they provided as supplemental responses to ACC's requests for production in this matter. ACC was only able
30 to obtain them through a public disclosure request to King County submitted a few days before Mr. Whiting's
31 deposition on 2/28/02. The Board should note in particular that Ecology took pains to hide Mr. Whiting's comments
32 from its public record. For example, Ann Kenny testified at her 2/20/02 deposition that Mr. Whiting provided her
33 with a copy of his review comments at a 2/12/02 meeting, but she returned them when the meeting concluded.
34 Kenny Dep. at p. 204.

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4 hydrologic conditions in Miller, Walker and Des Moines Creeks. The difference between the
5 two conditions presumably represents the streamflow impacts caused by the Third Runway
6 project for which mitigation is required.
7

8 The pre-construction condition modeled was based on the land use in the area in 1994.
9 Using an HSPF model, the Port analyzed how, in the context of the 1994 land uses, various
10 levels of rainfall (derived from a variable period of record) would reach the streams – through
11 direct runoff, stormwater system drainage, or groundwater infiltration and flow paths. This
12 analysis was then used to model the lowest 7-day period of low flows for each year and the
13 seasonal windows within which those low flows occur. From this information the Port selected
14 the threshold flows below which mitigation would be required (0.33 cfs for Des Moines Creek,
15 0.77 cfs for Walker Creek, and 0.73 cfs for Miller Creek) and the mitigation window (July 24-
16 Oct 24 for Walker Creek and July 30-Oct 31 for Des Moines Creek). Ex. 1308 at 2-2, 3-1.
17

18 For post-construction modeling, the Port projected land uses for the year 2006 (including
19 the embankment and new runway, but excluding the Industrial Wastewater System (IWS) and
20 Des Moines basin fill borrow areas) and again analyzed, using HSPF plus two groundwater
21 models (Hydrus and Slice), how differing levels of rainfall on those surfaces would reach the
22 streams. Utilizing the results from the various rainfall scenarios, the Port projected summer
23 streamflows following completion of the Third Runway project. Comparing its 2006 results to
24 the 1994 low flow conditions, the Port calculated its mitigation requirements to be 0.11 cfs for
25 Walker Creek, 0.08 cfs for Des Moines Creek, and 0 cfs for Miller Creek.³² Ex. 1308 at 2-11.
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27 ³² In the withdrawn July 1998 § 401 Certification issued by Ecology to the Port, Ecology accepted a low flow plan
28 that required the Port to augment flow anytime it fell below 1 cfs, a much more protective standard for the affected

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4 Embedded within this conceptual approach were a number of complex decisions,
5 elements, and assumptions. Many of the approaches used by the Port were unreasonable, and
6 have been called into question by Ecology (King County), ACC -- and even Port reviewers.
7

8 **5. Calibration**

9 Calibration is a critical step in model development, by which the model output, achieved
10 through simulation of environmental conditions, is compared with actual data (such as stream
11 gauge records) to determine whether model predictions are valid and reliable -- or must be re-
12 calculated. The Port has failed for years to accomplish a credible level of calibration.

13 Poor Streamflow Calibration: In particular, in its calibration of streamflow under
14 existing conditions -- i.e., establishing the baseline against which the Third Runway impacts can
15 be measured -- the Port's simulations of streamflow in Walker Creek and Des Moines Creek
16 simply do not match the historic data recorded at upstream gauges in the basins, a problem
17 admitted in the Low Flow Plan and pointed out to the Port repeatedly by the King County and
18 ACC reviewers. Ex. 1308 at A-46. In Walker Creek, the Port's modeling under-simulates peak
19 and low flows as reported on stream gauges and utilizes assumptions about tributary
20 groundwater that are inconsistent with actual conditions.³³ In Des Moines Creek, modeling also
21 consistently under-simulates flows.³⁴ In Miller Creek, model inputs are inaccurate.³⁵ The
22 Walker, Miller and Des Moines Creek modelers inexplicably assigned inconsistent values to
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26 streams. The Port agreed to this mitigation at the time because it believed, erroneously, that it had access to a water
27 right and well that would provide ample water supply. Once the mitigation plan shifted to the ersatz stormwater
28 reservoirs, the Port could no longer afford to capture and maintain water to augment streamflows at this level.
Luster Direct at 21-22.

27 ³³ Leytham Direct at ¶¶ 7-16; Ex. 513 at ¶¶ 6-9.

28 ³⁴ Leytham Direct at ¶¶ 21-24, Willing Direct at ¶ 19.

³⁵ Leytham Direct at ¶¶ 17-20.

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4 certain parameters (e.g. infiltration values for till/grass in the Miller and Walker Creek basins),
5 leading to differing results in how much water percolates slowly to groundwater and thence to
6 the stream versus quickly running off as surface flow.³⁶ These calibration problems led King
7 County's Mr. Whiting to conclude there "is less than a good match" and to request a validation
8 report examining why the Port's computer modeling does not match the actual record. Ex. 458
9 at 5-6.
10

11 No Groundwater Calibration: A calibration issue arises from the fact that the Hydrus and
12 Slice groundwater model results were not calibrated at all. Although the Port collected data in
13 1998 analyzing infiltration and groundwater flow through parts of the embankment already in
14 place, those results were rejected by the Port's Hydrus/Slice modelers in selecting assumptions
15 about infiltration and interior flow rates through the future embankment. Actual embankment
16 infiltration rates are significantly less than that assumed in the Port's models, as demonstrated by
17 the pools of water readily observed on the existing embankment. Leytham Direct, Att. I. This
18 calls into question the Port's projections for contributions to summertime base flow to Miller and
19 Walker Creeks.³⁷ The Port's failure to calibrate is particularly important given its simultaneous
20 oversimplifying (and incorrect) assumption that the millions of cubic yards of fill materials
21 within the embankment will be homogeneous,³⁸ coupled with its use of a one-dimensional
22 Hydrus model, which does not model the movement of water laterally through the embankment
23 and therefore overpredicts the rate at which water will move downward through the embankment
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27 ³⁶ Leytham Direct at ¶¶ 26-31.

³⁷ Leytham Direct at ¶¶ 32-41; Lucia Direct at ¶ 7.

28 ³⁸ Lucia Direct at ¶¶ 24-32; Leytham Direct at ¶¶ 32-41

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4 and arrive at streams.³⁹

5 Failure to Fulfill § 401 Conditions: Finally, the Low Flow Plan fails to address
6 calibration requirements set forth in the § 401 Certification. The Plan does not present data
7 regarding low flow simulations at the Tyee Weir gauge as specifically required by Condition
8 I.1.b.i of the § 401 Certification.⁴⁰ The basis for this requirement is that the Tyee gauge is a
9 more geographically appropriate source of gauging data. The 401 also requires a discussion of
10 the accuracy of the calibration in predicting low flows at upper stream gauges and a statement of
11 adequacy of the calibrations for the purpose of low flow simulation. Ex. 1 at 22 (Condition
12 I.1.a.iii). The minimal discussion in the December 2001 plan falls far short of these
13 requirements. Rozeboom Direct at ¶ 13.

14
15 **6. Multiple Models**

16 A second fundamental problem with the Port's approach is the mix-and-match modeling
17 it employed to determine how the embankment will affect streamflow. To assess rainfall
18 infiltration into the embankment, the Port used HSPF, the model used to track the fate of rainfall
19 throughout the Third Runway project. But HSPF cannot model vertical groundwater flow, so the
20 HSPF results from atop the embankment became input for Hydrus, a model that analyzed how
21 water would infiltrate and flow through the embankment until it reached the bottom. The Port
22 elected to use a one-dimensional version of Hydrus, however, and so had to employ a third
23 model, called Slice, to assess how water at the bottom of the embankment would move laterally
24 to the toe and discharge to the surface. This 1-D Hydrus oversimplified water travel times, and
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27 ³⁹ Lucia Direct at ¶¶ 36-41.

28 ⁴⁰ Leytham Direct at ¶ 24; Ex. 458 at 5.

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4 ignored lateral movement of water, resulting in a likely over-prediction of the rate at which water
5 moves through the embankment.⁴¹
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7 Slice output then became input for the watershed-scale HSPF model, which was used to
8 finally assess when and in what quantities water would discharge to streams. Leytham Direct at
9 ¶ 36. These multiple transitions between programs added undesirable complexity and significant
10 potential for human error, as data was worked through the several transitions from one program
11 to another.⁴² Indeed one major error was identified in October 2001.⁴³

12 It is not per se improper to use multiple models to assess impacts of a project, but there
13 must be a sound basis for integrating model results. For the low flow model of the embankment,
14 the Port chose to use HSPF estimates of groundwater flow for current conditions, then compared
15 that against Hydrus/Slice results for future conditions to arrive at its estimate of impacts. This is
16 not a valid analytical approach. Rozeboom Direct at ¶ 24. As a result, the existing and future
17 conditions model results are not reliable for purposes of determining impacts to streams.
18

19 7. Target Flows

20 Mitigation Window: The Low Flow Plan states that it identifies its target streamflows by
21 selecting the 2-year (50%) recurrence interval of 7-day low flow periods, derived from a 47-year
22 period of record. Ex. 1308 at 2-2. But for Walker and Miller Creeks, the period of record was
23 actually four years (not 47 years) which were not representative of a dry period. Rozeboom
24 Direct at ¶32. Further, the analysis indicates that the impacts of the Third Runway Project will
25 reduce base flows in local streams as early as June each year, when streamflows drop to their
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27 ⁴¹ Lucia Direct at ¶¶ 33-34; Leytham Direct at ¶ 35.

⁴² Lucia Direct at ¶ 35.

28 ⁴³ Ex. 1308 at 1-2 and -3; Ex. 460; Ex. 53.

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4 seasonal lows. Mitigation, however, will not commence until July 24 for Des Moines Creek and
5 August 1 for Walker Creek. Ex. 1308 at 3-1. The 401 requires only that the Port monitor
6 adverse impacts to aquatic biota during June and July. Ex. 1 at 33 (Condition I.1.e.vi).
7

8 This flaw is a reflection of Ecology's failure to require adequate flow targets. In its 1998
9 §401 decision, Ecology determined that a 1 cfs minimum flow in Des Moines Creek was an
10 appropriate mitigation target.⁴⁴ The Des Moines Basin Plan also recommends a 1 cfs minimum.
11 Ex. 2131. King County shares the concern that the streams will be adversely impacted in early
12 summer.⁴⁵ Yet, the Port's low flow "mitigation" is not designed to address this problem, perhaps
13 because it could not be easily addressed.

14 Vault Filling: The Port's plan proposes to fill mitigation reservoirs with stormwater that
15 would otherwise be headed to the streams during low flow periods. This vault-filling will
16 essentially rob the streams of early summer flows. Ex. 458 at 8. For example, at present, the
17 mean fill time for the Walker Creek "mitigation" reservoirs is 71 days, with a maximum
18 (presumably occurring during low rainfall years) of 213 days. Ex. 1308 at 3-3. King County has
19 recommended that reservoir filling occur during the winter season and take no longer than 60
20 days maximum. Ex. 458. The Port's proposal will solve nothing, but instead rob Peter (robbing
21 streams of flows potentially during 2/3 of the year) to pay Paul (augmenting low flows in a
22 couple of especially dry months).
23

24 **8. Model Inclusiveness: IWS & Borrow Pits**

25 The Port's model of 1994 versus 2006 conditions excludes two activities that now have
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27 ⁴⁴ Luster Direct at 21-23; Ex. 376 at ¶ 33.

28 ⁴⁵ Ex. 461 (comments) at 2; Ex. 458 at 8-9.

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4 and will continue to have significant effects on stream flow conditions: the expansion of and
5 lining of lagoons for the Industrial Wastewater System (IWS) and the excavation of fill materials
6 from borrow areas in the Des Moines Creek basin.
7

8 IWS Upgrades: The expansion of and leak prevention efforts for the IWS are intended to
9 reduce the amount of water infiltrating to groundwater from the IWS lagoons and areas that
10 formerly discharged to the stormwater system. This reduction in infiltration will reduce base
11 flows in Des Moines and Walker Creeks. Rozeboom Direct at ¶¶ 15-17. In previous § 401
12 applications withdrawn by the Port, Ecology directed the Port to include the IWS upgrades that
13 caused diminution in baseflows as part of its low flow analysis, based on the requirement to
14 consider direct, indirect and cumulative impacts associated with the project. Luster Direct at 9.
15 In this § 401 Certification, however, that requirement was dropped. As a result, the “existing”
16 conditions model actually uses future land use acreages that exclude 163 acres that are now
17 contributing water (through infiltration and groundwater flow) to Des Moines and Miller Creek
18 stream flow. Rozeboom Direct at ¶ 17. Consequently, the existing conditions model
19 significantly underestimates contribution to flows in the two affected streams, contributing to an
20 underestimation of post-construction target flows.⁴⁶
21

22 Des Moines Basin Borrow Areas: The low flow model incorrectly assumes no land use
23 changes with respect to borrow areas in the Des Moines Creek basin. Three large, now-forested
24 borrow areas will be mined for 6.7 million cubic yards of fill material for the embankment. Two
25 of the areas have been zoned for conversion to aviation facilities at the Port’s request, thus
26 adding significant impervious surface in the basin, which will reduce base flows in Des Moines
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28 ⁴⁶ Rozeboom Direct at ¶¶ 18-19; Ex. 242.

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4 Creek. This was not modeled as a part of the future conditions element of the Low Flow Plan.⁴⁷

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6 **9. Particular Groundwater Model Problems**

7 Lag Time: The Hydrus/Slice model assumes steady-state conditions, and the Low Flow
8 Plan makes no contingency for the lag time between when the embankment is built and the
9 arrival of water, flowing through the embankment to its drainage layer, at the rates predicted in
10 the model. In the interim, the embankment will contribute less water to the streams than
11 predicted.⁴⁸ Preliminary analyses of embankment groundwater flow under “wetting up”
12 conditions were performed by Dr. Lucia, resulting in the unsurprising determination that many,
13 many months (several years) will pass before water in the taller portions of the embankment
14 emerges as base flow for Miller and Walker Creeks.⁴⁹

15 Soil Parameters: The Hydrus model relies on a single set of soil parameters to represent
16 the behavior of 20 million cubic yards of fill that will be obtained from a variety of sources. This
17 gross simplification will lead to significant discrepancies between predicted streamflows and
18 what would actually occur after construction.⁵⁰

19 Seismic Soils: The Hydrus/Slice model fails to take into account the Port’s recent
20 proposal to excavate “seismically questionable materials” at the base of the embankment. *See*
21 Ex. 154. Removing these wetland soils will (in addition to other impacts) reduce the amount of
22 water seeping to the streams during low flow periods.⁵¹

23 Deep Groundwater: The Port’s HSPF watershed model assumes reintroduction of deep
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26 ⁴⁷ Rozeboom Direct at ¶¶ 20-22; Ex. 44 at 2-3.

⁴⁸ Lucia Direct at ¶¶ 20-23.

⁴⁹ Lucia Direct at ¶¶ 23, 25-41 (and illus.).

⁵⁰ Lucia Direct ¶¶ 24-32.

⁵¹ Rozeboom Direct at ¶ 25.

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4 groundwater into Miller Creek, an alteration from the model prepared by Pacific Groundwater
5 Group in June 2000. No explanation is provided as to why or how this water will now appear in
6 Miller Creek at times which conveniently ameliorate low flow impacts of the embankment.⁵²
7

8 Double-Counting: Double-counting of groundwater occurs in the Miller Creek model.⁵³

9 The model also overestimates the infiltration capacity of the embankment itself, utilizing rainfall
10 data that masks accelerated runoff during high intensity rainfall events. This error is
11 compounded by incorrect assumptions about hydraulic conductivity of embankment soils.⁵⁴ As a
12 result, the model overestimates the amount of groundwater that will infiltrate into the
13 embankment and be available to support base flows during low flow periods.

14 **10. Validation Report & Final Approval**

15 In a meeting with Port staff and consultants on February 19, 2002, Mr. Whiting requested
16 that the Port prepare a validation report to assess whether the Port's modeling is adequate. Mr.
17 Whiting was particularly concerned that modeling changes between the July 2001 and December
18 2001 versions of the Low Flow Plan required verification to determine that they did not alter the
19 prediction of impacts to the streams.⁵⁵ Ecology § 401 coordinator Ann Kenny directed the Port
20 to prepare the validation report for review by Mr. Whiting. Kenny at 215. It is not known when
21 the report will be prepared, how it will be reviewed, or how the Port will address any problems
22 identified in the report, although clearly all of this is occurring after the February 1 deadline for
23 submittal of post-§ 401 reports. First Pre-Hearing Order at 4-5. What is known, however, is that
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25

26 ⁵² Rozeboom Direct at ¶ 26.

27 ⁵³ Rozeboom Direct at ¶ 27; Ex. 458 at 3.

28 ⁵⁴ Rozeboom Direct at ¶¶ 28-29; Leytham Direct at ¶¶ 38-41.

⁵⁵ Whiting Dep. at 148-51; Ex. 458.

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4 the December 2001 Low Flow Plan has not yet been approved by Ecology as set forth in § 401
5 Certification Condition No. C(4), Ex. 1 at 6, and that even under Ecology’s moving-target
6 interpretation of § 401 (which allows certification prior to the analysis necessary to support it),
7 Ecology does not yet have “reasonable assurance” that water quality standards will not be
8 violated. Kenny Dep. at 225-26.
9

10 **11. Conclusion Regarding Low Flow Plan**

11 Finally, the 401 requires that the Port “include contingency measures to offset reduced
12 recharge in the event the Third Runway embankment fill . . . does not meet performance
13 standards for infiltration rates.” Ex. 1 at 23. But the low flow plan proposes only that, if the
14 embankment fails to infiltrate the projected amounts of water, the Port will “adapt water
15 management practices to the as-built conditions.” Ex. 1308 at 5-10 to 5-11. The Port refuses to
16 use enhanced infiltration (i.e., artificially pushing water through the embankment) because of
17 concerns about embankment instability. The reference to adaptation of water practices is
18 therefore a dead-end: the Port has already failed several times to obtain a source of mitigation
19 water. The Port’s proposal does not meet the requirements of the § 401 Certification.
20

21 Despite issuance of the 401 six months ago, Ecology still does not have reasonable
22 assurance that the Port’s low flow mitigation plan will work.

23 **G. There Can Be No Reasonable Assurance in the Absence of a Water Right and**
24 **Required SEPA Compliance (Issue 9).**

25 In Washington, the beneficial use of public waters requires a water right. RCW
26 90.03.010; *Postema v. Pollution Control Hearings Board*, 142 Wn.2d 68, 79, 11 P.3d 726
27 (2000). The Port’s proposal to capture, detain and release 31 acre-feet of stormwater for
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4 instream flow mitigation purposes is a beneficial use for which water rights should be required.
5 Absent water rights, the Port's use of water is illegal and cannot be guaranteed to be available in
6 perpetuity to offset the permanent impacts of the Third Runway Project. Without water rights
7 Ecology cannot have reasonable assurance that the Port's mitigation will remain instream. And
8 by failing to adhere to water code procedures, the Port has circumvented environmental review
9 of its mitigation plan, a critical step in assessing the true impacts of Port's water usage. *OHA*,
10 *supra*, Supplemental Order on Petition for Reconsideration (2/14/00). When issuing a § 401
11 Certification, Ecology must utilize all appropriate requirements of state law. 33 U.S.C. §
12 1341(d); *Ecology v. PUD No. 1, supra*, 121 Wn.2d at 192. The water right permitting
13 provisions, RCW 90.03.010 and .290, and associated SEPA laws are such requirements and must
14 be implemented here.⁵⁶

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16
17 Use of water for instream flow protection and enhancement is a beneficial use under the
18 water code, and typically requires a water right. RCW 90.54.020; *OHA, supra*, Summary
19 Judgment on Stipulated Issues Nos. 20, 21 and 22 (10/23/98); Willing Direct at ¶ 15. Ecology
20 issues water rights for instream uses both as new water rights, *e.g., Conifer Ridge Enterpr. v.*
21 *Ecology*, PCHB No. 96-11 at II.4(e), II.5 (4/30/98) and as trust water rights. Ch. 90.42 RCW;
22 *Okanogan Wilderness League v. Ecology*, PCHB No. 98-84 (1999). The purpose of creating
23 instream water rights for mitigation is to mimic the natural hydrologic cycle. *OHA, supra*, Final
24 Order at Finding No. 8 (1/19/00).

25 The question whether the capture of stormwater is an appropriation requiring a water

26
27 ⁵⁶ ACC incorporates by reference the briefs, declarations and attachments presented in its Opening and Reply
28 Memoranda for Summary Judgment Regarding the Absence of a Water Right for Third Runway § 401 Certification
(dated 1/4/02 and 1/22/02). That motion was denied by the Board on 2/6/02.

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4 right depends upon the end use. The detention of stormwater to attenuate peak flows does not
5 require a water right because there is no beneficial end use. However, the capture of stormwater
6 for later beneficial use does require a water right. For example, a pending proposal by a power
7 plant developer in eastern Washington to use stormwater for cooling purposes has been
8 determined to require a water right. Ex. 682. Again, the use of water for low stream flow
9 augmentation or mitigation is a beneficial use. It is illegal for the Port to capture water for a
10 beneficial use without a water right. And, consequently, it is impossible for a 401 to issue until
11 the Port has the necessary right to the water which its 401 relies on.
12

13 The illegality of relying on water which cannot be captured without a right to do so
14 should be enough to preclude 401 approval. There are additional consequences to be considered
15 as well. The low flow impacts of the Port's project extend throughout the length of the affected
16 streams. Whiting Dep. at 185. Thus, the Port needs to maintain mitigation water instream from
17 the point where Project impacts begin, to the mouth. At present, the Low Flow Plan contemplates
18 only that the Port put water instream at "points of compliance." Ex. 1308 at 2-1. Thus, the 401
19 would not require the Port to ensure that its mitigation water remains instream as it flows through
20 the communities of Burien, Des Moines, and Normandy Park.
21

22 The water that the Port puts into Des Moines and Walker Creeks is at risk of being
23 removed by third parties. While the affected streams are currently closed to new water rights,
24 WAC 173-509-040, that closure is merely administrative, contains an exemption and, moreover,
25 is subject to change in the future. The exemption allows new withdrawals of water
26 notwithstanding the closure where "it is clear that overriding considerations of the public
27 interest will be served." WAC 173-509-060. This is a viable exemption; Ecology utilized the
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4 “overriding public interest” provision just last year to allow irrigation water withdrawals on the
5 Columbia River.

6
7 Further, Instream Resource Protection rules such as Ch. 173-509 WAC are under scrutiny
8 and subject to change. To encourage newly formed watershed planning groups, Ecology very
9 recently issued a guidance document advising the public on how they may lift stream closures
10 and amend minimum instream flow rules. Ex. 757 at 8, 31. If and when Des Moines, Miller and
11 Walker Creek closures are lifted, there are already several pending applications for new
12 appropriations from these streams or tributary groundwater can and will be processed. Ex. 758.
13 At that point, absent a water right, the Port’s mitigation water will be available for appropriation
14 by others.

15
16 There can be no reasonable assurance on a critical element of the Port’s low flow plan --
17 water supply -- where the Port has no right to capture and beneficially use the water in question
18 and no legal means in place to keep that water in the affected reach of the streams (from point of
19 compliance to mouth) as the place of use. Section 401 law requires no less.⁵⁷

20 **H. There Is No Reasonable Assurance that Stormwater Will Not Violate Water Quality**
21 **Standards (Issues 10, 11 and 12).**

22 The Section 401 Certification is not based on reasonable assurance that the Third
23 Runway Project will not violate state water quality standards in affected surface waters, because
24 it allows discharge of polluted stormwater during peak flow periods resulting from storm events.

25 ⁵⁷ *Ecology v. PUD No. 1, supra*, at 192. The Port’s failure to obtain a water right also implicates SEPA. Ch. 43.21C
26 RCW; *Stempel v. Dep’t of Water Resources*, 82 Wn.2d 109, 188 (1973). As indicated in the Battle Mountain Gold
27 decisions, complex instream mitigation plans require environmental review. *OHA*, Final Order at ¶¶ 21-26, 58-61
28 (1/19/00); Supplemental Order on Reconsideration (2/14/00). Like Battle Mountain Gold, questions about the
adequacy of hydrogeologic modeling in assessing impacts, as well as the feasibility of the stormwater reservoir
proposal, including design and water quality issues, should be addressed through a rigorous environmental process.
Id.

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4 **1. "Best Management Practices" Known to Be Deficient in Control of**
5 **Pollutants in Stormwater Do Not Provide Reasonable Assurance.**

6 The Port's stormwater discharges already violate water quality standards at Sea-Tac
7 because of the discharge of pollutants including copper, zinc, turbidity, and de-icing agents
8 called glycols. Significant quantities of these contaminants are transported through the Port's
9 stormwater system and discharged to Des Moines, Miller and Walker Creeks during peak flow
10 periods, to the detriment of aquatic biota. And the amount of contaminated stormwater at STIA
11 will increase significantly as the Port adds an additional 300-plus acres of new and expanded
12 pollution generating impervious surfaces (PGIS) associated with the third runway project.

13
14 The CSMP -- the Port's proposed means of dealing with the increased volumes of
15 stormwater -- relies heavily on the same "best management practices" (BMPs) which have
16 previously failed: detention and BMPs to prevent pollutant loading to surface waters. But
17 because future stormwater discharges would be similar to current stormwater discharges at
18 STIA, the implementation of these similar BMPs to control new discharges in the future will
19 ~~result in similar water quality impacts.~~⁵⁸

20 The 401 essentially addresses the increased volumes of stormwater resulting from the
21 new PGIS in two ways: through the retrofitting of existing stormwater facilities, and through the
22 construction of new facilities to handle additional runoff. However, the "requirement" is illusory
23 at best -- it need only be implemented if the Port (not Ecology) determines that it is "feasible."⁵⁹

24 The 401 nowhere defines the term "feasible." And in fact, the Port has already stated that the
25

26 ⁵⁸ These BMP's are not effective in removing dissolved metals from stormwater, and are not intended to do so.
27 See, Willing at 11-13, ¶¶ 26, 29.

28 ⁵⁹ See, Exh 1 at 26, Cond. J1.c ("the Port must demonstrate that twenty (20) percent of retrofitting has occurred
unless demonstrated that a twenty (20) percent rate isn't feasible").

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4 retrofit plan is infeasible due to cost. Moreover, even were the Port to meet its retrofit ratios, the
5 Project is not likely to be in compliance with water quality standards for many years.⁶⁰

6
7 The Port's proposed stormwater control facilities also raise serious questions. The 401
8 requires the Port to construct at least 15 stormwater vaults and detention ponds for the purpose of
9 capturing and detaining about 390 acre-feet, or 127 million gallons of water. The number and
10 size of these facilities is unprecedented, rendering the mitigation requirements a highly
11 speculative undertaking, from both technical and financing perspectives. For example, the Port
12 proposes to build a vault with a capacity of 88 acre-feet – making it the largest stormwater vault
13 in the country.⁶¹ The stormwater system is expected to cost hundreds of millions of dollars.

14 **2. Continuing Violations of Water Quality Standards and NPDES (402) Permit**
15 **Limits Preclude 401 Certification (Issue 11)**

16 By every available indication, the NPDES permit at Sea-Tac has failed to assure that the
17 Port's stormwater discharges actually comply with water quality standards.⁶² Ecology's own
18

19 ⁶⁰ The CSMP provides an interesting perspective on the retrofitting requirement, contrasting the Ecology stormwater
20 manual with the King County manual which the Port is using, explaining that:

21 The Ecology [Stormwater] Manual requires that water quality BMPs, to the maximum extent
22 practicable, be implemented for the entire site (i.e., new and redeveloped surfaces, water quality
23 treatment, and retrofitting for existing surfaces not otherwise to be redeveloped). The King
County Manual requires that water quality treatment facilities be provided for all runoff from new
and redeveloped or retrofitted Pollution-Generating Impervious Surface (PGIS) and Pollution-
Generating Pervious Surface (PGPS); the King County Manual does not require water quality
treatment for existing surfaces not to be redeveloped.

24 Exh. ___ at 2-6, CSMP sec. 2.2.2 (emphasis added). The passage likely explains both why the Port prefers
25 the KCSWDM to Ecology's Manual, and why securing the 401 prior to the effective date of the new
Ecology Manual was a matter of great urgency.

26 ⁶¹ Dam safety compliance for such facilities has been deferred. See Section ____, *infra*.

27 ⁶² "There is evidence that violations of Toxic Substances (water quality) Criteria in Miller Creek and Des Moines
28 Creek, particularly for copper, lead, and zinc, occur as a result of stormwater discharged by the STIA, and will
continue, and worsen as a result of the Port of Seattle's (Port) Master Plan Update Improvements." Dr. John Strand,
Prefiled Testimony at 2, ¶ 3. In addition, glycols -- aircraft de-icing agents used at STIA -- "are found in winter in
the project creeks at concentrations known to be toxic to fish and other aquatic life." *Id.* at 2-3, ¶ 3.

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4 NPDES Permit Fact Sheet for Sea-Tac reports that "concentrations of total recoverable copper in
5 ambient waters both upstream and downstream of the [Port's] stormwater discharges generally
6 exceeded the water quality criteria[.]"⁶³ "Assuming no mixing zone," Ecology further
7 acknowledged, "the stormwater discharges from Sea-Tac Airport show reasonable potential to
8 violate the water quality criteria for copper⁶⁴, lead, and zinc[.]"⁶⁵ While Ecology's leading
9 spokesperson on water quality at Sea-Tac, Kevin Fitzpatrick, asserts "it is extremely difficult, if
10 not impossible, to apply the numeric water quality standards in WAC 173-201A to stormwater
11 discharges" (Fitzpatrick at 6, ¶ 10), the numbers tell a different story and the law requires a
12 different conclusion.
13

14 Washington's water quality standards expressly provide that "Activities which cause
15 pollution of stormwater shall be conducted so as to comply with the water quality standards."
16 WAC 173-201A-160(d) (emphasis added).⁶⁶ Nevertheless, the Port and Ecology argue that
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19 ⁶³ Exh. 136 (Fact Sheet for NPDES Permit WA-002465-1, Seattle-Tacoma International Airport) at 26
(citing, the Port's June, 1997 "Stormwater Receiving Environment Monitoring Report") (emphasis added). The
20 Permit Fact Sheet also discusses the results of a "Reasonable Potential Analysis for Copper, Lead and Zinc in
Stormwater" and compares the Port's stormwater data to the fresh water acute water quality criteria for copper, lead
and zinc. *Id.* at 29. Table 9 shows stormwater data exceeding the criteria by factors ranging from 2 to 26. *Id.*

21 ⁶⁴ An employee of Parametrix, consultant to the Port of Seattle, came to the same conclusion. *See*, Exh 630
(E-mail from K. Ludwa to L. Logan and P. Fendt dated June 1, 1999). With reference to the copper standard in
22 Miller and Des Moines Creeks, Mr. Ludwa wrote:

23 I looked at the receiving stream (upstream) data to determine whether the receiving stream is in
compliance with the standards.

24 * * *

25 Using methods analogous to the Reasonable Potential Analysis, I calculated the 90th percentile
26 value for instream copper data and compared it to the standard for the 10th percentile hardness
27 value. Neither stream is currently in compliance, as shown below[.]

28 ⁶⁵ *See*, Exh. 136 (Fact Sheet) at 29. The assumption is both appropriate and necessary: the Port's NPDES
permit authorizes no mixing zone for stormwater discharges. *See*, Exh. 3 (NPDES Permit WA-002465-1) at Cond.
S1. At 8-12 ("Discharge Limitations"); Drabek Dep. at 67.

⁶⁶ Under Washington law, stormwater associated with industrial activity is considered industrial wastewater.
WAC 173-216-030(8). *See generally*, Pedersen V. Washington State Dept. of Transp., 25 Wn. App. 781, 783-86,
611 P.2d 1293 (1980) (NPDES permit coverage required to operate stormwater runoff system).

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4 compliance is required not with state water quality criteria, but only with best management
5 practices (BMPs).⁶⁷ Even if this were true (which it is not), the available evidence for several
6 pollutants including the toxic pollutant -- copper -- indicates that the Port's BMPs are not
7 working. More important, use of BMPs is not equivalent to compliance with water quality
8 standards.
9

10 Ecology asserts that the regulatory approach and management regime codified in its
11 NPDES permit assures the Port's compliance with water quality standards. Yet, the NPDES
12 permit does not even require the Port to gather the sampling information Ecology says it needs to
13 determine whether the Port's discharges cause or contribute to exceedances of numeric water
14 quality standards in the receiving waters. *See*, Exh 3 at 14-18, Cond. S2.B-I (Monitoring
15 Requirements). Mr. Fitzpatrick concedes:
16

17 The NPDES permit does not currently require the Port to monitor upstream or
18 downstream of its stormwater outfalls nor does the permit require the Port to monitor for
19 the dissolved fractions of copper, lead, or zinc. The NPDES permit also does not
20 currently require the Port to monitor the hardness of the receiving water.

21 Fitzpatrick at 4-5, ¶ 7; *see id.* at 6, ¶ 11. The Port's Mr. Smith confirms that the purpose of the
22 Port's NPDES monitoring program is to determine the effectiveness of BMPs -- not to determine
23 compliance with numeric water quality standards. Smith at 3, ¶ 11.

24 As a result, it is not surprising that Mr. Fitzpatrick conceded in his deposition that
25 Ecology does not know whether the Port's stormwater discharges comply with water quality
26

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27 ⁶⁷ *See*, Fitzpatrick at 3 ("The Port's STIA NPDES permit requires the Port to comply with best management
28 practices (BMPs) for the control and treatment of stormwater."); Fitzpatrick Dep. at 103 ("the only thing we're
required to do for stormwater right now is to put BMPs on those."). *See* Smith (Port) Prefiled at 3, ¶ 12.

standards.⁶⁸

3. The 401 Relies on Port BMPs Which Have Not and Will Not Effectively Remove Metals Such as Copper from the Port's Stormwater

"The stormwater quality monitoring record indicates a history of violations of water quality standards at SeaTac Airport." Willing Prefiled at 9, ¶ 22. This is perhaps not surprising, because the Port is primarily using filter strips and bioswales -- BMPs which are not particularly effective at removing metals such as copper and zinc -- to treat its stormwater runoff. Willing at 12, ¶ 26.⁶⁹ This is significant for the 401 decision, because the Port is proposing to use the same ineffective BMPs to "treat" runoff from the proposed third runway. See, Exh. 1213 (CSMP Vol. I) at 7-3 (identifying filter strips as the treatment BMP for stormwater runoff draining from the new impervious areas of the runway and taxiways). The Port's historical lack of success in

⁶⁸ Q. How does Ecology know whether the Port's discharges cause exceedances of these water quality criteria in the receiving waters?

A. We don't know that. That's what we're working on.

Q. You don't know?

A. No. That's what we're working on.

* * *

Q. Hasn't the Department of Ecology certified that the water quality standards are being met at Sea-Tac International Airport?

A. What we have certified in the 401 water quality certification is that we have reasonable assurance that all our state water quality laws and regulations are being met, okay? I do not believe that we have certified that we know with absolute certainty that stormwater discharges are or are not, for that matter, exceeding these standards. But what we have done is say that we have reasonable assurance in finding that out, and in finding that out if it is indeed happening, correcting it.

Fitzpatrick Dep. at 40-41 (emphasis added). See Fitzpatrick Dep. at 28.

⁶⁹ As Dr. Willing explains,

There are several reasons why biofiltration swales and filter strips are ineffective in treating stormwater at SeaTac. One reason is that the SeaTac stormwater waste stream has relatively little suspended particulate matter (Annual Stormwater Monitoring Report, 2001, p. 28), particularly fine organic-rich colloids. Another is that it is difficult to achieve a level flow-spreading configuration in these facilities. They tend to concentrate the flow in a defined channel that meanders down the middle of a swale and does not afford the opportunity for sedimentation. A third is that the chemistry of both runoff and receiving waters tends to favor the more toxic dissolved state instead of the less toxic particulate bound state.

Willing at 13, ¶ 29.

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4 treating the copper in its stormwater does not bode well for its current proposal.

5 The Port's 2001 Annual Stormwater Monitoring Report (Exh. 6) indicates that the copper
6 levels in stormwater discharges from "all outfalls" at STIA exceed the Port-calculated acute
7 freshwater criteria for copper at an assumed hardness of 56 mg/l. More strikingly, the copper
8 levels in stormwater discharges from the "airfield only" outfalls are worse. And the copper
9 levels in stormwater discharges from SDS3 -- the key outfall that drains most of the airfield --
10 are worse still. Moreover, in each category of outfalls shown, at least 75% of the samples
11 exceeded the Port-calculated acute fresh water copper criterion of 10.3 ug/l. And in the samples
12 from SDS3, while copper concentrations in at least 75% of the samples more than double the
13 acute criterion, the copper concentrations in fully one-quarter of the samples more than
14 *quadruple* the acute freshwater standard.
15

16
17 **4. The Port's Lack of an Authorized Mixing Zone Requires End-of-Pipe
Compliance**

18 Ecology and the Port publicly dismiss these figures, asserting that water quality standards
19 apply in the receiving waters -- not in the effluent stream where the Port samples its stormwater
20 discharges.⁷⁰ However, as Ecology's Industrial Permit and Stormwater Unit Supervisor John
21 Drabek -- until recently, the NPDES Permit Manager for STIA -- testified in his deposition,
22 "Unless a mixing zone's been granted, compliance with surface water quality criteria is at the
23 point of discharge." Drabek Dep. at 59. Mr. Drabek further testified, "if I was to determine
24 compliance with surface water quality criteria without a mixing zone, I would take the sample at
25

26
27 ⁷⁰ The Port's NPDES permit does not authorize mixing zones at its outfalls to Des Moines, Miller, or other
streams -- the only mixing zone identified in the Port's NPDES permit is for discharges of industrial wastewater
28 through Outfall 001. See, Exh. 3 at 10, Cond. S1.C.

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4 the point of discharge for the metals." *Id.*⁷¹ See Willing Prefiled at 25, ¶ 46; WAC 173-201A-
5 100(2) ("A discharger shall be required to fully implement AKART prior to being authorized a
6 mixing zone.")⁷²
7

8 **5. Reasonable Assurance Cannot be Based on the Port's NPDES Permit**
9 **Because the Port Routinely Violates the Fresh Water Criteria for**
10 **Turbidity**

11 As with all other pollutants, the Port's stormwater conditions contain no numeric effluent
12 limit for turbidity. However, the state water quality standards provide numeric criteria for
13 turbidity in Class AA waters in WAC 173-201A-030(1)(c)(vi).⁷³

14 In his testimony, Dr. John Strand describes the results of sampling he conducted at the
15 Port's Outfall SDS1 on January 28, 2002 -- the first day of ACC's site visit to STIA -- as follows:

16 turbidity readings I obtained onsite by using a properly calibrated turbidimeter indicated a
17 nearly 10-fold increase in turbidity above ambient (299 vs. 31 NTU [nephelometric
18 turbidity unit], respectively), which greatly exceeds the 5 NTU increase over background

18 ⁷¹ On another key point, Mr. Drabek testified as follows:

19 Q. How do you take a sample to obtain a 1-hour average concentration?

20 A. We have determined compliance with that condition by grab samples.

21 Drabek Dep. at 43.

22 ⁷² In a memorandum reviewing the Port's 1999 Annual Stormwater Report, Parametrix staff including Paul Fendt
23 wrote,

24 Section 4.5.3 states that standards apply to the receiving waters. This is true only if a mixing zone is
25 allowed; otherwise, standards must be met at end-of-pipe. A determination has not been made as to
26 whether STIA's stormwater discharges will be allowed a mixing zone. The first paragraph of section 4.5.3
27 should be deleted.

28 Exh. 663 at 1 (Memorandum to Scott Tobiason dated September 20, 1999).⁷² Similarly, in a subsequent memo to the
Port, Parametrix staff wrote:

AKART: Before Ecology can grant the Port a mixing zone, the requirements for AKART must be fulfilled
(WAC 173-201A-100(2)). Although the Port is applying BMP's to minimize impacts from stormwater
discharges, Ecology has to agree that these meet "all known, available, and reasonable methods of
prevention, control, and treatment". Without a mixing zone, the Port will be forced to use end-of-pipe
concentrations for determining compliance. . . .

Exh. 668 at 3 (Draft Memorandum to Keith Smith dated February 14, 2000).

⁷³ Under the standard, "Turbidity shall not exceed 5 NTU over background turbidity when the background
turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is
more than 50 NTU." WAC 173-201A-030(1)(c)(vi). "'Turbidity' means the clarity of water expressed as
'nephelometric turbidity units' and measured with a calibrated turbidimeter." WAC 173-201A-020.

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4 allowed by the Washington State Water Quality Criteria for Class AA Freshwater[.]⁷⁴

5 The "STIA Construction Site Stormwater Monitoring Reports" designated as Exhibits 7,
6 11, and 13 document numerous exceedances of the 5 NTU turbidity standard resulting from the
7 Port's construction-related stormwater discharges.
8

9 **I. A 401 Certification May Not Be Based Upon Current and Future NPDES (§402)**
10 **Permits (Issue 12, Issue 21)**

11 Under 401, "any such discharge" resulting from a federally permitted activity
12 must comply with the applicable provisions of the CWA, including state water quality
13 standards. 33 U.S.C. § 401(a). Compliance with state water quality standards must be
14 contemporaneous with the commencement of permitted discharges. Washington state
15 water quality law unequivocally states that "Schedules of compliance may not be issued
16 for new discharges." WAC 173-201A-160(4)(b).

17 The instant appeal squarely presents two issues with respect to the future:
18 whether Ecology may prospectively authorize the amendment of the 401 by a future 402
19 permit; and whether Ecology may base its assertion of reasonable assurance on the
20 uncertain outcome of a water effect ratio (WER) study.

21 The August 10 401 Certification was amended at the Port's request to include a
22 revised version of 401 Condition B1. Originally, Cond. B1 provided simply that "This
23 Order shall be valid during construction and long-term operation and maintenance of the
24 project." *See*, Exh. 2 (August 10, 2001 401 at 3, Cond. B1.) As revised, Condition B1
25 now provides in pertinent part that,
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28 ⁷⁴ Strand at 8, ¶ 12.

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5 "This Order shall be valid during construction of the project. The following provisions of
this Order shall be valid during long-term operation and maintenance of the project:

6 * * *

7 (f) In Condition J, Operational Stormwater Requirements, as follows: Those provisions
8 of this condition, including the Comprehensive Stormwater Management Plan, that are
9 incorporated into and superceded by any future Ecology-approved NPDES permit for the
Seattle-Tacoma International Airport (STIA), shall be superceded as determined in that
permit. Any conditions not incorporated into a future Ecology-approved NPDES permit
for STIA shall remain in effect as provided in this condition.⁷⁵

10 "Certified compliance" cannot be reasonably assured by an escape hatch enabling the
11 Port to renegotiate the terms and conditions of the CSMP in an imminent new NPDES permit.⁷⁶
12 Further, § 401 is not satisfied by the imposition of "protective" measures that remain in force
13 only until the authorized project comes on-line, and begins discharging in earnest.

14 **2. Reasonable Assurance Cannot Be Based on the Expectation that a Site-Specific**
15 **Study Will Effectively Increase the Applicable Numeric Criteria (Issue 12)**

16 In 1999, an employee of Port consultant Parametrix wrote,

17 As we discussed, a WER of 2 or more for Des Moines and 4 or more for
18 Miller (both of which seem like pretty reasonable bets) would get the receiving

19 ⁷⁵ See, Exh. 1 at 4. ACC questioned ACC 401 writer Ann Kenny about Condition B1(f) in the following exchange:

20 Q. Looking at [401] Condition B1(f) on [page 4], am I to understand -- is it a correct interpretation of that
condition that this current 401 certificate can be amended by a future NPDES permit?

21 A. That is correct.

22 Q. And given that, can't the conditions of the 401 certificate be lessened because it can be
modified by a future NPDES permit?

23 A. They could be, but that's not likely.

24 Q. You agree that the potential exists for the conditions in the 401 certificate to be modified to
result in lesser protection of water quality because it can be modified by a future NPDES permit?

25 A. In theory, the conditions could be modified to a lesser standard.

26 Q. And that's because the standards for reviewing and approving NPDES permits are different than the
standards for reviewing and approving 401
certifications?

27 A. I can't speak to the exact standards used for reviewing 402 --

28 Q. Sure. At a minimum you know you don't need reasonable assurance to issue a 402 permit?

A. That's my understanding.

Kenny Dep. at 149-50.

⁷⁶ As drafted, the 401's phrase "any future Ecology-approved NPDES permit" is loose enough to include the very
NPDES permit that will replace the Port's current permit upon its expiration on June 30, 2002 -- a permit for which
the Port has already applied. See, Exh. ___ (NPDES Renewal Application, dated December 28, 2001).

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4 streams to "compliance."⁷⁷

5 The 401 issued two years later includes a "Condition" authorizing a "site specific
6 study, e.g., a Water Effects Ratio Study (WERS)[.]" See, Exh 1 at 27, Cond. J2(a).⁷⁸ Ms.

7
8 Kenny explained the provision in the following exchange:

9 Q. So is Ecology relying upon future compliance of future NPDES permits to
10 have reasonable assurance that this project isn't going to violate state water
11 quality standards?

12 A. Yes and no. The yes part is that the baseline -- we have established a baseline
13 with the Stormwater Management Plan that we believe is protective of water
14 quality. But once those facilities are up and operating they are covered under the
15 Port's industrial stormwater permit, and that permit is where the monitoring and
16 the adaptive management will be applied, if necessary. Now, where I get
17 reasonable assurance is that I, in my certification, specifically prohibited any
18 discharge of operational stormwater coming from the third runway improvements
19 until a site specific study has been done and approved by Ecology that will
20 establish appropriate effluent limits in the NPDES permit.

21 Kenny Dep. at 314-15 (emphasis added)

22 Ecology's approach would give the Port an unwarranted and illegal compliance
23 schedule extending from the onset of construction until an uncertain future date. See
24 WAC 173-201A-160(4)(a)); WAC 173-201A-160(4)(b)); WAC 173-201A-160(4)(a).

25 Under Okanogan Highlands Alliance, Ecology may not simply defer to the future WERS
26 process its analysis of the Port's ability to implement treatment BMP's necessary to assure that
27 the proposed discharges will comply with water quality standards.

28
⁷⁷ Exh. 603 (quotation marks in original).

⁷⁸ See also, Exh. 668 (Draft Memorandum from Parametrix to Keith Smith). Parametrix wrote:
This memorandum summarizes our efforts to date to develop a site-specific water quality
criterion for copper in Miller, Walker, and Des Moines Creeks. The need for such development is
based on the assumption that the quality of stormwater from the third runway will be similar to
that currently discharged from SDS-3.

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4 **J. The 401 Authorizes Mixing Zones Without Compliance With Water Quality**
5 **Regulations (Issue 13)**

6 As explained in WAC Ch. 173-201A -- Washington's water quality standards -- the term
7 "mixing zone" refers to that portion of a water body where effluent mixes with the receiving
8 water, and so is diluted. WAC 173-201A-020. Mixing zones may be authorized under some
9 circumstances, but, in recognition of their potential for harm, only after stringent procedural and
10 substantive requirements have been met. The 401 leapfrogs these requirements. It pre-
11 authorizes mixing zones for instream and shoreline work now, while deferring until later the
12 required demonstration "to Ecology that any mixing zone is minimized in accordance with WAC
13 173-201A-100(6)." Cond. A(2)(d). The 401 further recognizes that water quality standards may
14 be violated at the edge of the mixing zone, yet offers only weak palliatives for turbidity rate
15 "reduction," rather than measures to stop work until water quality is protected and the damage
16 reversed: "If monitoring indicates turbidity standards are not being met at the boundary of the
17 mixing zone, measures shall immediately be taken to reduce turbidity rates, such as slowing the
18 rate of work, placement of additional sediment curtains, etc." Cond. A.2.(g) (emphasis added).⁷⁹
19
20 WAC 173-201A-100 includes restrictions designed to assure that such mixing zones are not
21 authorized where harm to the environment could result:

22
23 (4) No mixing zone shall be granted unless the supporting information clearly indicates
24 the mixing zone would not have a reasonable potential to cause a loss of sensitive or
important habitat, substantially interfere with the existing or characteristic uses of the

25 ⁷⁹ Ecology's Kevin Fitzpatrick confirms in his prefiled testimony that 401 conditions A.2(d) and (g) authorize
26 mixing zones for instream and shoreline work for the water quality standards' turbidity limits. The author of the
27 401, Ecology's Ann Kenny, confirmed in her deposition that the 401 authorizes mixing zones for the Port's instream
28 work -- which includes relocating substantial portions of streambeds. She said, "We expect that there will be some
need for mixing zones, and (d) and (g) are in there to say that that mixing zone needs to be minimized to the smallest
mixing zone possible . . ." Kenney Dep. at 135, 138. An exhortation in a pre-approval for the zones to be
"minimized" provides no assurance that the water quality standards will be met at the edge of the mixing zone.

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4 water body, result in damage to the ecosystem, or adversely affect public health as
5 determined by the department.

6 * * *

7 (6) The size of a mixing zone and the concentrations of pollutants present shall be
8 minimized.

9 WAC 173-201A-100(4), (6). A second provision of the water quality standards, WAC
10 173-201A-110(3),⁸⁰ applies directly to temporary turbidity mixing zones and explicitly
11 limits the department's authority to authorize such zones:

12 The turbidity criteria established under WAC 173-201A-030 shall be modified to allow a
13 temporary mixing zone during and immediately after necessary in-water or shoreline
14 construction activities that result in the disturbance of in-place sediments. A temporary
15 turbidity mixing zone is subject to the constraints of WAC 173-201A-100 (4) and (6) and
16 is authorized only after the activity has received all other necessary local and state
17 permits and approvals, and after the implementation of appropriate best management
18 practices to avoid or minimize disturbance of in-place sediments and exceedances of the
19 turbidity criteria. [emphasis added]

20 WAC 173-201A-110(3)(a) includes another important restriction nowhere mentioned by
21 Ecology: the maximum allowable mixing zone in waters flowing at or below 10 cfs (cubic feet
22 per second) is 100 feet. Ecology did not address or meet these requirements before including
23 blanket pre-authorization for mixing zones in the 401. Ecology did *not* wait to issue such
24 preauthorization until after the Port obtained HPA approval required from WDFW. The 401 did
25 not require the Port to *identify* -- much less implement -- the necessary best management
26 practices before authorizing the mixing zone for turbidity, nor address its scope and whether the
27 100-foot limitation could be met. It merely requires the Port to submit a "monitoring" plan for
28 review at some unspecified point in the future, prior to the start of construction.⁸¹

⁸⁰ The Certification Order cites WAC 173-201A-100(3) in Cond. A.1

⁸¹ See, Cond. A.2.(a).

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4 Further, Ecology's Ann Kenny was adamant that Ecology did not conduct the
5 crucial mixing zone review required by WAC 173-201A-100(4):
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7 Q. In your reasonable assurance review, did you require any sort of review and approval
8 of mixing zones that were expected to occur through construction of this project?

9 A. It's not required for temporary construction activities. That's not required.

10 Q. Ms. Kenny, that's not my question. Please listen to my question. My question is, as
11 part of your reasonable assurance review, did you require any review and approval of
12 mixing zones?

13 A. No, because it was not required.⁸²

14 Ecology has yet to identify any basis for reasonable assurance that the Port's proposed
15 instream work -- including relocating the stream itself -- can be undertaken without exceeding
16 the 100-foot turbidity mixing zone. As the Board recognized in OHA, supra, however, it is not
17 sufficient to defer such analysis.⁸³

18 Finally, as noted above, the 401 explicitly contemplates exceedances of water quality
19 standards beyond the mixing zones. *See*, Cond. A.2.(g) ("If monitoring indicates turbidity
20 standards are not being met at the boundary of the mixing zone")⁸⁴ However, the 401 does
21 not require the Port to stop work or stop the exceedance⁸⁵ in the event of such a violation of
22 water quality criteria -- and it does not even require the Port to notify Ecology when such an
23

24
25 ⁸² Kenny Dep. at 139-140.

26 ⁸³ "That would be tantamount to writing a blank check for extensive construction . . . without ever knowing whether
27 it is feasible to comply with water quality laws[.]" Okanogan Highlands Alliance v. State of Washington,
28 Department of Ecology, PCHB Nos. 97-146, 97-182, 97-186 and 99-019, 1999 WL 825751 at *2.

⁸⁴ Ecology's anticipation of exceedances of the turbidity standard is appropriate, in light of the Port's
continuing inability to control turbidity in its construction-related stormwater discharges. *See*, Issue # 10, above.

⁸⁵ Instead, the Order decrees that "measures shall immediately be taken to *reduce turbidity rates*, such as
slowing the rate of work" Cond. A.2(g) (emphasis added).

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5 exceedance occurs.⁸⁶ See, 401 at 2-3.

6 **K. The 401 Fill Specifications, Sampling and Testing Protocols and Embankment**
7 **Construction Specifications Are Incapable of Providing Reasonable Assurance that**
8 **Water Quality Standards Will Not Be Violated (Issue 15)**

9 An embankment of 20 million cubic yards of fill would be needed to raise the third
10 runway site to the elevation of the existing runways. The embankment would extend the entire
11 length of the 8000 foot runway (more than one mile). It would be retained, in part, by a
12 Mechanically Stabilized Earth ("MSE") wall 135 feet high at its tallest point (and further topped
13 with a 20 foot high sloped embankment for a total height of 155 feet), for a distance of 1500 feet.

14 This fill threatens water quality in two ways. First, particularly during the years of
15 construction, that surface water runoff from the embankment would transport embankment
16 contaminants to area wetlands and streams. Second, embankment construction would require the
17 Port to "re-plumb" the drainage on the west side of the Airport to support remaining wetlands
18 and Miller Creek. The embankment would be constructed upon a rock drainfield three feet thick
19 (the "drainage layer") designed to collect groundwater seepage through the embankment and
20 transport this water underneath the MSE wall to wetlands between the wall and relocated Miller
21 Creek. Groundwater flowing through the embankment could transport fill contaminants into this
22 drainage layer and into project area wetlands and streams.

23 In Class AA waters, which include Des Moines, Miller and Walker Creeks, and in
24 wetlands, state water quality standards require that "[w]ater quality of this class shall markedly
25 and uniformly exceed the requirements for all or substantially all uses." WAC 173-201A-

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27 ⁸⁶ Rather, the Port is required only to submit monitoring results to Ecology every other month. Cert. Cond.
28 A(2)(h).

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4 030(1)(a). For there to be reasonable assurance that the Third Runway Project will comply with
5 applicable water quality standards, there must be reasonable assurance that surface water runoff
6 from the embankment and water flowing through and out of the drainage layer will not result in
7 violation of Washington's toxic substances water quality standard:
8

9 Toxic substances *shall not be introduced above natural background levels* in waters of
10 the state⁸⁷ which have the potential either singularly or cumulatively to adversely affect
11 characteristic water uses, cause acute or chronic toxicity to the most sensitive biota
dependant upon those waters, or adversely affect public health, as determined by the
department.⁸⁸

12 Therefore, it has long been acknowledged that a 401 would have to include specifications for
13 protection of water resources including standards for both construction of the wall as well as
14 limits on the composition and contaminants in the fill itself.

15 Perhaps because truly clean fill is not a readily available or inexpensive commodity –
16 particularly in the unprecedented quantity needed for the Port's project – the 401 (Condition E,
17 pp. 14-19), as the Board noted in its Stay Order:
18

19 allows, in some cases, fill with contaminants higher than the natural background level in
20 the Puget Sound region. For example, the criteria set in the certification allows fill with
21 2000 mg/kg of chromium and 2 mg/kg for mercury, while the Puget Sound background
22 level for those contaminants are 48 mg/kg and .07 mg/kg, respectively. Additionally, the
fill criteria allows gasoline, diesel and heavy oils, which are not naturally occurring in the
Puget Sound soils.⁸⁹

23
24 ⁸⁷ "Surface waters of the state" includes "lakes, rivers, ponds, streams, inland waters, saltwaters, wetlands and all
other surface waters and water courses within the jurisdiction of the State of Washington." WAC 173-201A-020
(emphasis added).

25 ⁸⁸ WAC 173-201A-040(1) (emphasis added); see also WAC 173-201A-030(1)(c)(vii). Further, there must be
reasonable assurance that water quality in project area wetlands and streams will not be degraded:

26 Existing beneficial uses shall be maintained and protected and no further degradation which would interfere
with or become injurious to existing beneficial uses shall be allowed.

27 WAC 173-201A-070(1). See, *PUD No.1 et al. v. Washington Department of Ecology, et al.*, 511 U.S. 700, 719
(1994).

28 ⁸⁹ Stay Decision at p. 17.

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5 **1. The 401 Fill Specifications Do Not Provide Reasonable Assurance.**

6 In briefing on the Stay, ACC pointed out that MTCA⁹⁰-based standards for importation of
7 fill were inappropriate because MTCA was designed to clean up contaminated sites, not to allow
8 contamination down of clean sites. Ecology's own toxics expert, Peter Kmet, cautioned against
9 using MTCA for this purpose: "MTCA should not be used for the establishment of clean-fill
10 criteria" for the airport project.⁹¹ Mr. Kmet recommend that the 401 use the more protective
11 standards in WAC 173-340-900, Table 749-3 (Ecological Indicator Soil Concentrations (mg/kg)
12 for Protection of Terrestrial Plants and Animals) instead of criteria based on MTCA method A.⁹²

13 On the same day that the Board issued its Stay, December 17, 2001, ACC deposed Chung
14 Yee, of Ecology's Toxics Cleanup Program, who has been identified as Ecology's witness on the
15 fill criteria. Mr. Yee testified about Ecology's justification for the 401 numeric fill criteria. He
16 explained that he calculated, using MTCA equation 747-1,⁹³ soil concentrations necessary for the
17 protection of groundwater and surface water. Chung Yee Deposition, pp. 39-40.

18 Mr. Yee calculated that the soil concentration limit for antimony, a toxic metal, for the
19 protection of groundwater was 5.79 mg/kg. When asked why it was nevertheless set higher, at
20 16 mg/kg in the 401, he explained that "the antimony PQL⁹⁴ is 16 milligrams per kilogram." *Id.*
21 at 46. Mr. Yee admitted that there is another, much lower PQL for antimony: 1.5 mg/kg, but
22

23 ⁹⁰ The Model Toxics Control Act, Ch. 70.105D RCW.

24 ⁹¹ Exhibit No. 22.

25 ⁹² Exhibit No. 36.

26 ⁹³ Equation 747-1 is found in WAC 173-340-747 and is used to derive safe soil concentrations of hazardous
27 substances for groundwater protection.

28 ⁹⁴ A PQL is a Practical Quantitation Limit, defined in the MTCA regulations as "the lowest concentration that can
be reliably measured within specified limits of precision, accuracy, representativeness, completeness and
comparability during routine laboratory operating conditions, using department approved methods." WAC 173-340-
200. The MTCA regulations do not provide a list of PQLs, but in his deposition, Mr. Yee indicated that he relied
upon Ecology Implementation Memo No. 3 "PQLs as cleanup standards" (1993) to determine PQLs. Yee
deposition transcript at p. 35, Ex. 36.

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4 explained that “ I selected 16 because it got a thumbs up. I assumed that’s the recommended
5 number.” *Id.* at 47. Mr. Yee was referring to a “thumbs up” icon following the antimony PQL
6 of 16 in Ecology’s Technical Memorandum #3 PQLS as Cleanup Standards (November 23,
7 1993) (“Memorandum 3”). *See* Ex. 26. Mr. Yee’s assumption was wrong. As Ecology’s senior
8 toxics expert testified in his deposition, the “thumbs up” icon is not a recommendation, but a
9 cautionary warning that other test methods have been established with a lower, more protective
10 PQL. *See* Kmet Deposition, p. 36 and Ex. 37.
11

12 Ecology’s Mr. Yee repeated the same mistake in setting 401 limits for silver and
13 selenium. He calculated safe levels for protection of groundwater at .52 mg/kg and .28 mg/kg
14 respectively, but then set the fill criteria at substantially higher levels, 5 mg/kg each, based upon
15 the wrong PQL’s. Chung Yee Dep. at pp. 49-50.⁹⁵
16

17 Mr. Yee further admitted in his deposition that, although he calculated the safe level of
18 soil arsenic for the protection of groundwater to be 2.92 mg/kg, the third runway 401 allows 20
19 mg/kg of arsenic “based on the method A soil cleanup level.” *Id.* at 48. Mr. Yee calculated the
20 mercury soil concentration for the protection of surface waters to be .01 mg/kg, yet the 401
21 certification limit is 2 mg/kg. Exhibit 26. In fact, as described in his prefiled testimony, Mr. Yee
22 set the fill criteria for arsenic, cadmium, chromium, lead, mercury, gasoline, diesel, and heavy oil
23 based only upon the MTCA method A standard. Chung Yee Prefiled testimony at ¶ 7.
24

25 **2. Even If the 401 Fill Criteria, Properly Applied, Would Protect Water
26 Quality, the Sampling and Testing Procedures to “Enforce” Them Do Not.**

27 Under the 401, fill criteria are applied through a “Phase I” and “Phase II” assessment of

28 **AR 002445**

⁹⁵ The lowest PQLs in Memo 3 for selenium and silver are .75 mg/kg and .1 mg/kg respectively.

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5 proposed fill sources prior to importation. Phase I entails only “a fill source description, records
6 review (e.g., agency databases, airphotos, property ownership records), and site reconnaissance.”
7 E. Clark Prefiled Testimony at ¶ 28. Phase II calls for actual sampling but is limited by a table in
8 the 401 (Condition E, p. 16) which requires only six samples from a fill source greater than
9 100,000 cubic yards.⁹⁶ The results are then compared to the numeric fill criteria in the 401 (p.
10 17) “to determine the suitability of the fill source for Port 404 projects.” *Id.* This sampling
11 protocol is far too sparse to provide reasonable assurance that there will not be toxic “hotspots”
12 throughout the embankment. Strand Prefiled Testimony at ¶ 36. In fact, as early as September
13 2000, Ecology’s Toxics Cleanup Program senior engineer, Peter Kmet, recommended that the
14 401 require 10 samples from every 2000 cubic yards, or, for “native borrow pits,” a minimum of
15 10 samples. Exhibit No. 15. Ecology’s own Toxics Cleanup Program Publication 91-30 also
16 recommends a much higher number of samples than proposed in the Certification. Strand Pre-
17 filed Testimony at ¶ 39. For example, for a 200,000-cubic yard candidate fill stockpile, the
18 Toxics Cleanup Program publication recommends a minimum number of 226 samples as
19 compared to the six samples required in the 401.⁹⁷ *Id.* The only apparent basis for requiring
20 only six samples is that requiring more would create a “cost issue” for the Port and Ecology.⁹⁸

21
22 The sampling and testing protocols are also flawed because there are no statistical
23 protocols for evaluating even the sparse sampling data required. Again, as Dr. Lucia explained:
24

25 ⁹⁶ Thus, under the 401, a source site with a million or more cubic yards of fill – far more fill than would ever be used
for any typical fill project – could be approved based on only six samples.

26 ⁹⁷ Ironically, more sampling would be required under the Ecology guidance for a petroleum contaminated site than
the 401 would require for sampling fill which will be placed in areas abutting Class AA waters of the State.

27 ⁹⁸ See Ex. 100 and Hellwig Dep. at 210-214: After repeated questioning, Mr. Hellwig was asked, “Could you point
to any other basis on which -- other than one cost issue or another on which it was decided to go with six samples
rather than 226 samples?” Mr. Hellwig admitted “No.” *Id.* at 214.
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5 protocols should be in place consistent with MTCA (WAC 173-340-740) such that fill
6 should not be accepted from a borrow source if 10% of the samples exceed the criteria or
7 if any one sample exceeded the criteria by a factor of 2.⁹⁹

8 Ecology's own Mr. Kmet made this same point during his deposition in explaining his
9 recommendation that the 401 include test methods specified for soils in WAC 173-340-740:

10 There are three parts to soil compliance criteria in the rule. There's—you've got to meet
11 three parts this test. One is that the upper 95th confidence limit on the mean has to be less
12 than the cleanup, soil cleanup level, that no single sample concentration shall be greater
13 than two times the soil cleanup level, and less than 10 percent of the samples
14 concentration shall exceed the soil cleanup level.¹⁰⁰

15 The 401's studied indifference to sampling and testing procedures recommended in
16 Ecology's own publication and by Mr. Kmet, compounding the non-protective nature of the fill
17 contaminant limits themselves, offer no reasonable assurance of compliance with water quality
18 standards.

19 **3. New Compliance "Alternatives" in the September 21 Certification Further**
20 **Undermine Water Quality Protection.**

21 The September 401 now before the Board differs significantly from the one originally
22 issued by Ecology in August in its last-minute inclusion of additional "compliance" options for
23 the Port for construction of the fill embankment.¹⁰¹ One allows the construction of a "wedge"
24 (also called the "drainage layer cover") of purportedly less contaminated soil 40 feet thick at the
25 face of the embankment, sloping back at a rate of 2%, as a substitute for "applying the

26 ⁹⁹ *Id.* If these protocols were in place, the Port would be precluded from using fill from the Black River quarry
27 (which it is using). Sample data for this source contained copper at concentrations ranging from 97.5 to 131 mg/kg -
28 more than three times the 36mg/kg limit for copper in the 401 Certification. Exhibit 294.

¹⁰⁰ Peter Kmet Deposition Transcript, pp. 43-44.

¹⁰¹ Ecology's Mr. Yee notably testified in deposition that his involvement in the fill contaminant limits ended in
June and that he had no part in evaluating the changes from the August 10 to the September 21 Certification. Yee
Deposition at p. 22. Draft language for the 401 certification allowing the use of the SPLP was sent via email on
Saturday, September 8, 2001, from Tom Newlon, Port Counsel, to Joan Marchioro, Ecology AAG. Exhibit 277.

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4 limitations listed above for the material within the top six feet of the existing ground surface
5 and/or within the first six feet of the embankment.” Certification at p. 18. Thus, instead of
6 requiring that the entire embankment be sandwiched between a six-foot layer (on the surface and
7 above the drainage layer) of less contaminated fill, the September 21 certification requires only a
8 wedge of less contaminated fill that will only cover approximately one-third of the drainage
9 layer. As described in Dr. Lucia’s prefiled testimony, this:

11 represents a relaxation of the requirements, where the upper two thirds of the drainage
12 layer are now exposed to soils with higher levels of metals and petroleum products.
13 There does not appear to be any rationale given for this relaxation, nor any analysis
14 demonstrating that a wedge of less contaminated fill placed immediately above the
drainage layer in the configuration shown in Figure 1 meets an equivalent or more
protective standard than the six-foot enclosure.

15 Lucia Prefiled Testimony at ¶ 11. Thus the “drainage layer cover” will only cover one-third of
16 the drainage layer and the remaining two-thirds of the embankment, contaminated up to the
17 “limits” in the 401, will be placed directly on the drainage layer, which Dr. Lucia describes as a
18 “significant pathway for transport of hazardous substances.” *Id.* at ¶ 12.

19 The other new “compliance” option in the September 401 is the use of the Synthetic
20 Precipitate Leaching Procedure (“SPLP”) which will allow the Port to deposit fill which exceeds
21 the (already nonprotective) 401 contaminant “limits”:

23 if proposed fill (for either the drainage layer cover or the rest of the embankment or other
24 Port 404 projects) does not meet the fill criteria in Condition E.1.(b), the Port can
25 demonstrate the suitability of the fill by employing a [SPLP], SW-846 Method 1312.
SPLP testing shall be conducted according to the SPLP work plan, Attachment E, or as
amended in the future (emphasis added).

26 401 Certification at 18. Attachment E¹⁰² describes the SPLP as a test in which fluid is

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28 ¹⁰² As noted above, the 401 explicitly states that Attachment E can be “amended in the future” – with no restrictions

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4 passed through a soil sample with the fluid then collected and analyzed for contaminants. The
5 screening procedure states that: "results from the SPLP will be compared to freshwater
6 ambient¹⁰³ water quality criteria . . . in WAC 173-201A-040 (adjusted for PQLs)." 401
7 Attachment E, p. 3.
8

9 This is not a feasible method for determining compliance with the toxic substances water
10 quality criteria in WAC 173-201A-040 because there are not criteria in -040 for all the
11 contaminants listed in the 401.¹⁰⁴ For example, although contaminants such as antimony,
12 beryllium, silver and thallium are all listed as constituents of concern and limited (albeit
13 ineffectively) under the 401, there is no freshwater chronic standard in WAC 173-201A-040 for
14 these constituents (compare table on page 17 of the 401 to freshwater chronic criteria in
15 WAC 173-201A-040), and therefore no way to evaluate the outcome of an SPLP test for these
16 contaminants.
17

18 Worse yet, the SPLP method as employed by the Port is, by and large, incapable of
19 detecting the contaminants of concern acknowledged in the 401 at the levels established in
20 WAC 173-201A-040. The Port has a track record in this regard, concerning fill tested since
21 issuance of the September 401 but prior to issuance of the Stay on December 17. For example,
22 in her deposition, Beth Clark, a Port consultant who worked with Port consultant C. Linn Gould
23 on the development of the SPLP protocol, testified concerning a report on SPLP testing for fill
24

25 placed on such amendments.

26 ¹⁰³ WAC 173-210A-040 lists freshwater chronic and acute standards. Based upon calculations prepared by Port
27 consultant C. Linn Gould, the Port apparently assumes that the 401 refers to the chronic criteria. Exhibit 280.
28 Ecology has given no guidance as to what the reference to "ambient water quality criteria" means in the context of
WAC 173-201A-040.

¹⁰⁴ Additionally, as Dr. Lucia points out in his pre-filed testimony, the SPLP test also lacks a statistically meaningful
test protocol. Dr. Lucia pre-filed testimony at ¶ 17.

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4 brought to the project site from the Black River Quarry. Exhibit No. 294. The report indicates
5 that copper concentrations from six samples ranged from 97.5 to 131 mg/kg – more than three
6 times the 36 mg/kg limit for copper in the 401 Certification. This violation of the 401
7 contaminant “limits” was not enough to keep the contaminated fill from the site, however,
8 because of the loophole created by the SPLP testing procedure added in the September 401.
9 Instead, the fill was tested under the SPLP and approved because copper was not detected “above
10 the reporting limit¹⁰⁵ of .05 milligrams per kilogram (mg/L) [or 50 ug/l]¹⁰⁶ using SPLP
11 methodology.” In fact, the SPLP test results in that report¹⁰⁷ indicate that for each contaminant
12 tested, the reporting limit was 50 ug/L so that any contaminant that had a limit under WAC 173-
13 201A-040 lower than 50 ug/l could not be detected.
14

15 The freshwater chronic criteria in WAC 173-201A-040 are hardness dependent. As
16 ACC’s Dr. Willing explains in his prefiled testimony:
17

18 The Water Quality Standards for metals in WAC 173-201A.040 are hardness-dependent.
19 Hardness is a water quality parameter that is required in order to know whether a given
20 metal concentration is above the standards or not. See Attachment G, which contains an
21 excerpt of Ecology’s spreadsheet tool TSDCALC9.XLW. This spreadsheet shows that a
22 decrease in hardness from 56 mg/l to 24 mg/l has the effect of lowering the acute water
23 quality criteria for copper and zinc respectively from 10 to 4µg/l, and from 70 to 34 µg/l.

24 Pre-filed Testimony of Dr. Willing at ¶41 and Exhibit G. Thus as hardness decreases, so does
25 the numeric contaminant limits (expressed in micrograms per liter (“ug/l”)) in WAC 173-201A-
26 040. In her deposition, Port consultant C. Linn Gould, who helped develop the SPLP procedure,
27

28 ¹⁰⁵ The reporting limit is the lowest concentration that can be measured for a sample using the test procedure employed.

¹⁰⁶ Milligrams per liter can be converted to micrograms per liter by multiplying by 1000. Thus .05 (mg/L) x 1000 equals 50 ug/l.

¹⁰⁷ Attachment A, page 8 of 18 to of Exhibit 294.

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discussed a spreadsheet she prepared which calculated the WAC 173-201A-040 freshwater chronic criteria in ug/l:

Constituent (sic)	AWQC FW chronic (ug/l)
Antimony	30
Arsenic (total)	150
Barium	NA
Beryllium	5.3
Cadmium	1.1
Chromium (tot)	NA
Cr+3	74
Cr +6	11
Copper	9
Lead	2.5
Mercury	0.012
Nickel	52
Selenium	5
Silver	0.12
Thallium	40
Zinc	110

Exhibit No. 280. It is unknown what hardness value Ms. Gould used to calculate these values, but even assuming they are correct, they show that the Port's SPLP test procedure, which as employed in the Black River quarry report (Exhibit 294) can apparently only detect contaminant concentrations of 50 ug/l, is therefore incapable of determining compliance with the water quality criteria for ten of the thirteen metals of concern listed in the 401 certification.¹ For example, copper, per Ms. Gould, has a

method incorporated into the September 401 of 9 ug/l, yet the SPLP methodology will not detect violations of this standard where the SPLP leachate contains copper concentrations greater than 9 ug/l, but less than 50 ug/l. Thus, the Port found copper at Black River quarry at three times the 401 certification soil concentration limit of 36 mg/kg, but nonetheless imported this fill based on an SPLP methodology that could only detect copper at water concentration levels of 50 ug/l where the Port's own consultant calculated the hardness-adjusted WAC 173-201A-040 limit for copper to be less than 1/5 that amount or 9 ug/l. Clearly, the SPLP "compliance determination"

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5 added to the September 401 after the Port appealed Ecology's August version is a loophole
6 rather than a method for ensuring compliance with water quality standards.

7 Importation of an unprecedented quantity of fill into an area characterized by Class AA
8 waters and wetlands should not be the occasion for an exercise in creative writing rather than
9 protective regulation. The August 401 set limits on fill contaminants which "aspired" to nothing
10 better than allowing some degradation to occur as if the site was already contaminated. The
11 September revisions, drafted largely by the Port and without involvement of Ecology toxics
12 program experts, only make matters worse, adding a means for allowing importation of fill that
13 violated the original (flawed) contaminant limits. The effect is to shift the cost of the Port's
14 project onto the waters of the state. Such cost shifting is not permitted under Section 401.

15
16 **L. There Is No Reasonable Assurance that 401 and Applicable Water Quality Law
Will Not Be Violated as a Result of MSE Wall and Embankment Failure (Issue 16)**

17 Remarkably, the design of the MSE wall is not complete and is still evolving.
18 Kavazanjian pre-filed at 3. Substantial changes in design that create significant new
19 environmental impacts have been made since Ecology issued the 401. *Id.*

20
21 Previously, the Port proposed using in-ground "stone columns" to support the colossal
22 MSE structure to avoid "an open excavation immediately adjacent to Miller Creek and
23 associated wetlands" and to avoid "any potential short-term impacts associated with temporary
24 construction dewatering."¹⁰⁸ Now, reversing course, the Port proposes large-scale excavation of
25 "unsuitable" soils at the site of the MSE wall. Slogging to one of the survey stakes at the
26 proposed site for the MSE wall through Wetland 37c gives one a real sense of the extent of

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28 **AR 002452**

¹⁰⁸ Port response to public comments, Ex. D to Kavazanjian pre-filed.

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5 excavation and dewatering that will be necessary. The excavation may well “encroach upon
6 Miller Creek in some locations, requiring relocation of the stream channel.” Kavazanjian pre-
7 filed at 6. In addition, “degradation and disturbance to the wetlands is likely to extend over an
8 even greater zone than the zone of excavation due to the need to dewater the excavation” and
9 “may well extend 100 ft or more from the edge of the excavation (175 ft or more from the face of
10 the wall).” *Id.* Discharge from the dewatering system represents yet another undocumented
11 impact of the recent design change. *Id.*

12 “Until the West MSE wall design analyses are complete and all of the impacts associated
13 with construction of the West MSE wall have been identified and evaluated, appropriate
14 mitigation measures cannot be established and Ecology cannot have reasonable assurance that
15 water quality standards will not be violated.” (Kavazanjian pre-filed at 8).

17 To the extent it is now known, the Port has designed the wall “based upon a flawed
18 analogy with the design level specified in the Uniform Building Code for ‘ordinary structures’
19 (e.g., commercial buildings and residential structures).” (Kavazanjian pre-filed at 11). The Port
20 arbitrarily uses a 10% in 50-yr design event.¹⁰⁹ In contrast, the designers for the new Tacoma
21 Narrows Bridge use the more conservative 3% in 75 years design event.¹¹⁰ *Id.* The Port’s
22 selection of the less protective “design earthquake” standard ignores the environmental impact of
23 a wall failure and the relatively long required service life of the embankment compared to other
24 less critical commercial structures (Kavazanjian pre-filed at 18):

25
26 **The Port’s failure to select an appropriate seismic design event for a structure of this
magnitude and importance creates substantial uncertainty over whether the West MSE**

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28 ¹⁰⁹ Equivalent to ground motion from a 475-year earthquake.

¹¹⁰ Equivalent to ground motion from a 2,500-year earthquake.

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5 wall will fail in whole or in part and thereby subject the nearby wetlands and Miller Creek to further damage and degradation.¹¹¹

6 Moreover, the connections between the reinforcing strips and the wall facing panels at the
7 base of the wall during an earthquake. (Kavazanjian pre-filed at 14). "Failure of these
8 connections could lead to a global failure of the wall." *Id.*

9
10 "[T]he Port has failed to establish the true extent of impact to the wetlands and Miller
11 Creek from the West MSE wall. Unless and until the Port provides a proper seismic
12 assessment of the massive MSE structure and proper assessment of the impacts of
13 excavation and dewatering, and until the design is complete so that all other impacts of
14 wall construction may be identified and evaluated, the Department of Ecology cannot be
15 reasonably assured that the wetlands and streams will not suffer substantial harm from
16 the construction and from the performance of the structure itself."¹¹²

17 Ecology has ignored serious flaws in the proposed design and construction of the wall in
18 a seismically sensitive area. Recent events suggest the foolishness of such an approach, which is
19 not consistent with reasonable assurance.

20 **M. The Port's Failure to Complete a Fate and Transport Study of Existing
21 Contamination in Violation of the MTCA Agreed Order (Issue 18) Precludes
22 Reasonable Assurance that the Contamination Will Not Result in Violation of §401
23 and Water Quality Law (Issue 17).**

24 There is no dispute that the soil and groundwater underneath the airport operations and
25 maintenance area ("AOMA") are contaminated.¹¹³ As a result of the extensive contamination
26 within the AOMA, Ecology negotiated MTCA Agreed Order No. 97TC-N122 with the Port (Ex.
27 72), which required the Port to develop an actual model to predict groundwater flow and
28 contaminant fate and transport beneath the airport. Subsequently, Governor Locke formally

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26 ¹¹¹ Kavazanjian pre-filed at 12 (emphasis added).

27 ¹¹² Kavazanjian pre-filed at 20.

28 ¹¹³ "Contaminated ground water is present in the perched water bearing zones in isolated areas of the AOMA." Strunk Prefiled at 4. "Ground water impacted above Ecology Model Toxics Control Act (MTCA) standards are contained within the boundaries of the AOMA in both the perched water bearing zone and the Qva aquifer." *Id.* at 7.

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5 certified to the U.S. Secretary of Transportation that completion of the groundwater flow and
6 contaminant transport model was required in order for the State to find, with "reasonable
7 assurance," that the Third Runway Project would "comply with applicable air and water quality
8 standards." Ex. 1085 (June 30, 1997 Governor's Certificate).

9 Yet, the 401 only directs the Port to prepare a BMP construction and monitoring plan for
10 utility corridors (Condition F.1), to train staff in the detection of hazardous materials and
11 contaminated soils and water (Condition F.2), and to update the contaminant inventory
12 (Condition F.3),¹¹⁴ but never mentions the Governor's commitment or the Agreed Order itself.
13 The modeling required by the Order has been placed "on hold" by Ecology. Riley at 11; Wang
14 at 13. Ecology has accepted instead a superficial Preferential Pathways Analysis ("PPA") (Ex.
15 76) of the potential for existing groundwater contaminants to migrate to and be impacted by
16 Third Runway and embankment construction. This PPA is inadequate in scope and in any event
17 is incomplete.¹¹⁵

18
19 Based upon this limited PPA, the Port consultants say "[d]evelopment of the Third
20 Runway is not likely to significantly impact or increase the migration of AOMA Qva
21 groundwater contamination." Strunk Prefiled at 6. These are carefully chosen words. The
22 standard is violation of water quality standards, not increase in migration. For example, if the

23 ¹¹⁴ This is a bureaucratic sidestep:

24 Condition F of the certification describes Ecology's concerns that contaminated groundwater may be
25 intercepted and transported in utility corridors to surface waters. Instead of requiring the Port during
26 certification review to identify the type and extent of contamination present, the measures necessary to
prevent the contamination from moving to nearby surface waters, and contingency plans that would be put
in place should these measures fail, Ecology merely required the Port to provide a future submittal.

26 Luster Prefiled at 24.

27 ¹¹⁵ While the location of contaminants is known in some instances and not known in others, the PPA fails to
28 consider the impact of embankment and wall subgrade improvements and dewatering on groundwater flow and
contaminant fate and transport. Ex. 76 and Kavazanjian Prefiled at 7. It fails to address whole categories of
pollutants, particularly organic solvents, metals and glycols, that are suspected to lie beneath the airport.

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5 Third Runway will facilitate continuance of current levels of migration or provide alternatives
6 for its occurrence, then reasonable assurance could not be found.¹¹⁶

7 **N. The 401's Deferral of Compliance with Dam Safety Requirements Precludes**
8 **Reasonable Assurance that Water Quality Standards Will Not Be Violated (Issue**
9 **22)**

10 The 401 (Condition G, p. 20) does not even require the Port to identify which stormwater
11 management facilities will be subject to dam safety regulations (Ch. 173-175 WAC), let alone to
12 demonstrate that they will be met. The purpose of the dam safety regulations is to "provide for
13 the design, construction, operation, maintenance, and supervision of dams in a manner consistent
14 with accepted engineering practice."¹¹⁷ WAC 173-175-010. While this might be less critical for
15 projects of less Pharonic proportions, the Port's proposed stormwater facilities here will be far
16 more extensive than for a typical project. WAC 173-175-030; see WAC 173-175-020(1).

17 DATED this 12th day of March, 2002.

18 HELSELL FETTERMAN LLP

SMITH & LOWNEY

19 By:

Peter J. Eglick
Peter J. Eglick, WSBA #8809
Kevin L. Stock, WSBA #14541
Michael P. Witek, WSBA #26598

By:

Richard A. Poulin
Richard A. Poulin, WSBA #27782
Attorneys for Appellant CASE

Rachael Paschal Osborn
Rachael Paschal Osborn, WSBA #21618
Attorneys for Appellant ACC

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24 ¹¹⁶ In *OHA*, the Board held "Ecology has not obtained sufficient information to provide reasonable assurance that
25 water quality standards will be protected from leachate discharging from the waste rock facilities." *OHA*,
26 Conclusion 51. The Governor certified years ago that the Agreed Order study requiring the Port to determine based
27 on actual modeling the ground water flow characteristics and fate and transport of pollutants, and potential risks to
28 adjacent surface water bodies, was absolutely necessary to determine levels of risk and whether Ecology could
vouch for compliance with water quality standards. The 401's retreat from this standard is inconsistent with
reasonable assurance.

¹¹⁷ Another purpose is to establish the requirements and owner responsibilities for developing and executing plans
for operation and maintenance, owner inspection and emergency actions.