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ENVIRONMENTAL  
HEARINGS OFFICE

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3	AIRPORT COMMUNITIES COALITION,	)	No. 01-133
4	Appellant,	)	No. 01-160
5	v.	)	SECOND DECLARATION OF DR.
6	STATE OF WASHINGTON,	)	PATRICK LUCIA IN SUPPORT OF
7	DEPARTMENT OF ECOLOGY; and	)	ACC'S MOTION FOR STAY
8	THE PORT OF SEATTLE,	)	(Section 401 Certification No.
9	Respondents.	)	1996-4-02325 and CZMA concurrency
		)	statement, issued August 10, 2001,
		)	Reissued September 21, 2001, under No.
		)	1996-4-02325 (Amended-1))

Dr. Patrick Lucia declares as follows:

1. I am over the age of 18, am competent to testify, and have personal knowledge of the facts stated herein.
2. Paragraphs 2 - 5 of my first declaration in support of stay describes my qualifications and familiarity with the proposed Third Runway and related master plan improvements at Sea-Tac Airport.
3. I have reviewed the Port's and Ecology's declarations, exhibits and sur-reply memoranda.
4. Review of the issues raised leads to a clear conclusion that the Department of Ecology does not have reasonable assurance that the fill placed to construct the embankment will meet the environmental criteria and subsequently that the water infiltrating through the embankment will not transport hazardous substances through the drainage layer and into sensitive areas below the embankment.

DECLARATION OF DR. PATRICK LUCIA IN  
SUPPORT OF ACC'S MOTION FOR STAY - 1

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**ORIGINAL**

**AR 006454**

1           5. The second declaration of C. Lin Gould states that the MTCA method A cleanup level for  
2 arsenic (20 milligrams per kilogram) “represents ‘natural background’ as described in WAC 173-340-  
3 900 at Table 740-1 (footnote b).” That footnote states that the MTCA method A cleanup level for  
4 arsenic is “based on direct contact using Equation 740-2 and protection of ground water for drinking  
5 water use using the procedures in WAC 173-340-747(4), adjusted for natural background for soil”  
6 (emphasis added).  
7

8           6. The 20 milligrams per kilogram (mg/kg) of arsenic allowed by the amended certification’s  
9 fill criteria is approximately three times greater than the Puget Sound natural background level  
10 (7mg/kg) established in DOE Publication #94-115, Natural Background Soil Metals Concentrations in  
11 Washington (October 1994).  
12

13           7. The Port’s Sur Reply Brief (p.3) states that “for two substances-antimony and arsenic-the  
14 401 Certification requires the use of background constituent concentrations.” Publication #94-115  
15 does not establish a natural background soil concentration for Antimony, and as discussed in paragraph  
16 6 above, the Puget Sound natural background concentration for arsenic is 7 mg/kg compared to the  
17 20 mg/kg of arsenic allowed in the Certification’s numeric criteria.  
18

19           8. In addition to arsenic, the soil concentrations allowed in the Certification for, cadmium,  
20 chromium, lead, mercury and nickel all exceed Puget Sound background levels.

21           9. In a footnote 4 on page 3 of the Port’s Sur Reply Brief, the Port states that the Certification’s  
22 numeric criteria for antimony; selenium and silver were set at the Practical Quantitation Limits (PQL).  
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25 DECLARATION OF DR. PATRICK LUCIA IN  
SUPPORT OF ACC’S MOTION FOR STAY - 2

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1 The Certification allows for soil concentrations of 16 mg/kg for antimony, 5 mg/kg for selenium and 5  
2 mg/kg for silver.

3 10. As stated in DOE's Guidance on the use of the PQL tables "In some instances (indicated  
4 by a "thumbs-up" icon in the tables), the laboratories were able to attain a PQL lower than the federal  
5 PQL. For example, Table II for soil indicates antimony using Method 6010 attains a PQL range of 1.5 -  
6 10 mg/kg with a PQL of 16 mg/kg." In addition to antimony, the tables also indicate that PQLs lower  
7 than the federal PQLs have been established for both selenium and silver.

8 11. None of the soil metal concentrations in the Certification (including antimony, selenium  
9 and silver) are set to the minimum PQL established in Table II to DOE's Implementation Memo No. 3.

10 12. The Port has seriously misunderstood the issue related to the sampling protocol. When  
11 proper environmental criteria are developed for a project such as the Third Runway Embankment, the  
12 procedures for assuring that the criteria are met should be as rigorous as the potential environmental  
13 threat requires. At any site where the Port will be obtaining fill, the concentrations of potential  
14 contaminants in that fill should be determined in a scientific manner. The Ports proposed approach is  
15 arbitrary and unscientific. The concentration of any contaminant within any substantial amount of fill  
16 cannot be defined by a single test or characterized by a single number. The accepted practice in  
17 environmental engineering is to evaluate the concentration of contaminants based upon achieving a  
18 specified confidence level that a prescribed percentage of the samples will be less than the standard.  
19 For example, the testing program must demonstrate that 95% of the samples are below the natural  
20 background levels. In this case the standard is the 95% confidence level, the number of samples  
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25 DECLARATION OF DR. PATRICK LUCIA IN  
SUPPORT OF ACC'S MOTION FOR STAY - 3

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**AR 006456**

1 required is variable and can only be determined once the variability of the data is known and the  
2 number of samples required can be calculated.

3 13. The Port argues that the Certification requires that the SPLP test be performed if the  
4 concentration of contaminants in the fill exceed the criteria and that this provides a higher level of  
5 assurance. This argument fails to recognize that the testing protocol is insufficient to evaluate whether  
6 the fill will meet the criteria and soils that should have been subjected to the SPLP test will not be  
7 tested and subsequently placed in the embankment. A more appropriate testing and fill acceptance  
8 criteria would be that proposed by Kmet in his e-mail of September 11,2000.

9 14. Ms. Gould states that (Paragraph 14) “ACC has seriously misunderstood the design of the  
10 embankment and specifically the purpose and impact of the drainage layer” and (Paragraph 15) “the  
11 drainage layer will not act like a “pipe” or “conduit” that will discharge surface waters at a point  
12 source.” However, standard engineering design of embankments with drainage layers entails  
13 collection of the water from the drainage layers in a series of pipes or channels that would then  
14 transport this water to one or several discharge points. If the Port is not intending to use standard  
15 engineering practices in the design of drainage systems for the embankment and wall this would raise  
16 issues regarding the structural stability of the embankment and wall. However, in the likely case that  
17 the water is collected and transported via pipes or channels, then the discharge points of this water will  
18 act as concentration locations for the contaminants entering the creek.

19 15. It is also interesting to note that Ms. Gould states (Paragraph 15) that “In reality, water may  
20 enter the drainage layer from above, due to infiltration through the embankment fill. . .” (underlining  
21

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25 DECLARATION OF DR. PATRICK LUCIA IN  
SUPPORT OF ACC'S MOTION FOR STAY - 4

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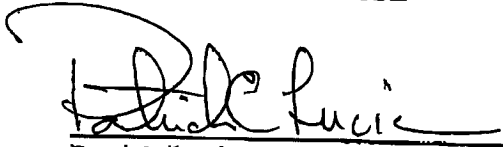
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**AR 006457**

1 added). This statement appears to denote uncertainty in the infiltration from the embankment, while  
 2 on the other hand the Port is counting on this infiltration to help offset the predicted low flows in the  
 3 creek below. In my previous declaration, I raised numerous concerns about the low flow analysis  
 4 performed by the Port and its consultants. Neither the Port's nor Ecology's Sur Replies, nor any of the  
 5 new declarations, have addressed these very valid concerns.  
 6

7  
 8 I declare under penalty of perjury under the laws of the State of Washington that the foregoing  
 9 is true and correct.

10 DATED this 10<sup>th</sup> day of October, 2001, at Walnut Creek, California.

11  
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 13 \_\_\_\_\_  
 14 Patrick Lucia, Ph.D.

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 25 DECLARATION OF DR. PATRICK LUCIA IN  
 SUPPORT OF ACC'S MOTION FOR STAY - 5

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AR 006458