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March 31, 2016

Patrick Lizon
Water Quality Program
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P.O. Box 47600
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RE: Comments on Ecology's Water Quality Policy 1-11, Assessment of Water Quality for the Clean Water Act Section 303(d) and 305(b) Integrated Report - from Clark Regional Wastewater District, the City of Vancouver and the City of Camas

Dear Mr. Lizon:

Clark Regional Wastewater District, the City of Vancouver and the City of Camas support the Washington State Department of Ecology (Ecology) process to implement the Water Quality Policy 1-11 and update the 303(d) List as part of our State's responsibility under the Clean Water Act. We have reviewed the Water Quality Policy 1-11 document (*Assessment of Water Quality for the Clean Water Act Section 303(d) and 305(b) Integrated Report*, July 2012) during the public comment period and we have specific comments on this document and its selection and application of data in the 303(d) listing process. Since the 303(d) listings are a focal point for many state and federal regulations, it is very important that the Water Quality Policy 1-11 is clear and logical so that 303(d) listings are well-founded and accurate to provide a true representation of the waterbody. All of the input provided herein is focused on improving the process for this outcome.

As a result, this letter is being submitted to Ecology to provide specific comments on the *Water Quality Program Policy 1-11, Chapter 1 – Assessment of Water Quality for the Clean Water Act Sections 303(d) and 305(b) Integrated Report*.

Comments on the *Water Quality Program Policy 1-11, Chapter 1*

COMMENT 1:

Policy Document Reference: [2. Waterbody Segments and GIS Layers - Page 5, paragraph 4:](#)

"To promote national consistency in accurate measurement and reporting, EPA has recommended that states use the National Hydrography Dataset (NHD) for segmentation of rivers and streams."

Discussion/Basis for Comment:

We support Ecology's implementation of the National Hydrography Dataset for river segmentation and locating sampling stations, since accurate representation of sampling station sites (and distinction of bankside samples from in-river samples) is very important to interpreting the results. The current

waterbody segmentation system employed by Ecology can result in very large and, in certain cases, somewhat arbitrary assignments of segments.

Recommendation:

It would be best to assign segments based on reaches between large river confluences and referencing distinct physical features such as bridges. The segmentation system also needs to include the “start” and “end” river miles in large rivers where they are readily known from USGS records or NOAA-NOS charts, in addition to the latitude and longitude from the National Hydrography Dataset.

COMMENT 2:

Policy Document Reference: [4. Public Participation and Submitting Information: Listing cycles and call for data - Page 7, paragraph 5:](#)

“Data collected within ten years of the published call-for-data end date for each Assessment will be consolidated and assessed with other data of the same waterbody segment and parameter. Data older than ten years will not be used in the Assessment but may be submitted to Ecology’s Environmental Information Management (EIM) system for other purposes. These data may be used when necessary to determine historical natural conditions if the data meet the QA requirements in place at the time of its collection.”

Discussion/Basis for Comment:

The technical basis for retaining the use of water quality data 10 years old is unclear and should not be the practice when credible data sources collected within a more recent timeframe exist for a river reach. For example, older monthly or quarterly sampling data along a river bank cannot be considered reliable or representative when there are more recent continuous monitoring data available to Ecology that are representative of flowing river conditions.

Recommendation:

It is recommended that Ecology strengthen the language in the policy document to emphasize reliance on the highest quality and most recent-origin data and therefore base policy determinations on the most representative data available in a segment.

COMMENT 3:

Policy Document Reference: [4. Public Participation and Submitting Information: Listing cycles and call for data - Page 8, paragraph 1:](#)

“EIM does not currently accept continuous data. However, on a case-specific basis Ecology may accept continuous data in electronic form for purposes of the Assessment.”

Discussion/Basis for Comment:

It is important for Ecology to accept continuous water quality monitoring data sets. These data are required by the agency to document diurnal patterns in pH, dissolved oxygen, and temperature measurements in a receiving stream. Water quality monitoring instruments that are properly calibrated

and maintained are highly reliable for recording water quality data that are necessary to accurately evaluate waterbody conditions.

Recommendation:

It is recommended that Policy 1-11 be updated to support Ecology acceptance of continuous water quality monitoring data sets.

COMMENT 4:

Policy Document Reference: [4. Public Participation and Submitting Information: Listing cycles and call for data - Page 8, paragraph 3:](#)

“Quality assurance requirements must be met by all data used for this assessment. Sampling and analyses must be conducted under a documented QA Project Plan or other quality assurance procedures that Ecology determines to be equivalent in providing for high quality data.”

Discussion/Basis for Comment:

Ecology needs to provide public access to documented QAPPs and other quality assurance procedure documents that Ecology has deemed equivalent and are the basis for data acceptance in 303(d) listings. This would improve transparency and would also support objective analysis in determining the most representative data available for a segment.

Recommendation:

It is recommended that Policy 1-11 be updated to require Ecology to provide public access to documented QAPPs and other quality assurance procedure documents that are the basis for data acceptance in 303(d) listings. It is also recommended that Ecology provide public access to field calibration logs and field data sheets for any data that is accepted and applied in 303(d) listings, most certainly for Category 5 listings.

COMMENT 5:

Policy Document Reference: [4. Public Participation and Submitting Information: Listing cycles and call for data - Page 8, paragraph 4:](#)

“Occasionally, Ecology receives unusable data that cannot be relied upon to determine the status of water quality. Data that is considered unusable will not be used for the Assessment or maintained in the Assessment database. These data may still be available in EIM with the appropriate associated QA designation. The following are examples of unusable data:

- *Adequate quality control efforts are not documented.*
- *There are problems regarding quality assurance, sampling, laboratory procedure, or similar issues that do not meet the minimum requirements for a QA Project Plan.*
- *Data quality control documentation is available, but Ecology has significant concerns about its reliability.*

- *The sample location information is not provided or is insufficient to apply the data to the appropriate waterbody segment.*
- *The data do not contain the required elements necessary for assessing compliance with water quality standards described in General Requirements of Section 4.*

Discussion/Basis for Comment:

Data that is judged by Ecology to be invalid can be misrepresentative of actual water quality conditions.

Recommendation:

It is recommended that Policy 1-11 be updated to require Ecology to exclude such unusable data from the EIM database.

COMMENT 6:

Policy Document Reference: 4. Public Participation and Submitting Information: General Requirements - Page 10, three bullets at top of page (emphasis added):

- *“If requested by Ecology for interpreting or validating data, any other information, such as complete field notes, photographs, climate, or other information related to flow, field conditions, or documented sources of pollutants in the watershed.*
- *The following information must be retained for at least five years (ten years for records associated with data from grant and loan projects) and provided to Ecology if requested:*
 - I. Other information, such as complete field notes, photographs, weather, or other information related to flow, field conditions, or documented sources of pollutants in the watershed for interpreting or validating data.*
 - II. All records associated with the generation and interpretation of sample results, including documentation related to adherence to the QA Project Plan, or coordinate with Ecology to ensure that adequate records are maintained.*
- *Field instruments, such as multi-parameter devices (Hydrolabs™), must be operated and calibrated according to the manufacturer’s recommendations, or other acceptable demonstrated method. Calibration information and any other appropriate documentation of accuracy must be submitted if requested by Ecology.”*

Discussion/Basis for Comment:

It is essential that complete field notes, including calibration records, are provided with data sets so that Ecology (and the public) can judge data validity. If data records are only maintained for five years, then data older than five years cannot be validated and should not be retained in EIM without the supporting documentation remaining in Ecology’s possession.

Recommendation:

We recommend that Ecology make this a requirement rather than an option for data submittals and data that are being applied in water quality assessments and 303(d) listings.

COMMENT 7:

Policy Document Reference: [4. Public Participation and Submitting Information: General Requirements - Page 10, paragraph 4 \(emphasis added\):](#)

“Verification of adherence to QA requirements may be examined by Ecology through the use of selected sampling of projects entered into EIM. The results of the limited audit will be used to determine if additional investigation is warranted. Corrective action may include the censoring of QA levels entered into EIM, rejection of data, or other actions deemed appropriate.”

Discussion/Basis for Comment:

It is very important that all data used to document a Category 5 listing are reviewed for validity, since Category 5 listings have significant impacts to dischargers and therefore have serious implications for the expenditure of public funds.

Recommendation:

We strongly recommend that Ecology require that all data submittals applied in water quality 303(d) Category 5 listings be validated for adherence to QA requirements.

COMMENT 8:

Policy Document Reference: [4. Public Participation and Submitting Information: General Requirements - Page 11, paragraph 6 \(emphasis added\):](#)

“Documentation of data verification and data validation must be provided with all data submitted for this assessment process, indicating that the objectives of the QA Project Plan or equivalent QA procedures were met. A usability determination may substitute for data validation. The assessment of the data must also consider whether the data, in total, fairly characterize the quality of the waterbody at that location at the time of sampling”.

Discussion/Basis for Comment:

This program policy is requesting that those responsible for their data submittals also submit data validation documentation or provide a data usability determination. This is appropriate but we want to further emphasize that Ecology must be responsible for additional validation of any data that are being applied in water quality 303(d) listings. It is very important that all data used to document a Category 5 listing are reviewed for validity or credibility by Ecology, since Category 5 listings have significant impacts to dischargers and the expenditure of public funds. It should be the responsibility of Ecology, not the sampling entity, to determine whether the data “fairly characterize” the quality of the waterbody.

Recommendation:

The last sentence should be removed, since it is a request for a qualitative judgement.

COMMENT 9:

Policy Document Reference: [4. Public Participation and Submitting Information: General Requirements - Page 12, paragraph 2:](#)

“Submittals of information by third parties must include documentation addressing the accuracy and completeness of the information submitted to Ecology, including documentation that the required QA objectives were met. The use of third party data will be at the sole discretion of Ecology based on the acceptability of the accompanying documentation.”

Discussion/Basis for Comment:

The program policy does not define “third parties” in the document.

Recommendation:

Please provide a definition of the term “third parties” within the document and provide a logical basis or framework for exercise of Ecology’s discretion, which is based on emphasizing the use of the highest quality data providing the most representative characterization of actual water quality conditions in a segment.

COMMENT 10:

Policy Document Reference: 5. Categories: Category 5. Segment is on 303(d) List - Page 18, paragraph 2 (emphasis added):

“Waterbody segments impaired by a pollutant as determined by the methodology described in this policy, or by well-documented narrative evidence of impairment, will be placed in Category 5. This category will be submitted to EPA as the 303(d) list. A waterbody segment may also be placed in Category 5 if it is currently meeting standards, but credible trend information and data collected through a valid statistical methodology indicates that the water body is not expected to meet applicable water quality standards by the next assessment cycle.”

Discussion/Basis for Comment:

The program policy statement that is underlined is in direct conflict with the data-based selection of the 303(d) listing process.

Recommendation:

Remove the underlined sentence or modify it to define the statistical methodology that would be allowed for a Category 5 listing.

COMMENT 11:

Policy Document Reference: 6. Assessment Methodology - Page 19, paragraph 2 (emphasis added):

“Newly submitted data will be added to previously assessed data that are less than ten years old. Data older than ten years will be used only if no more recent data exists to conduct the assessment. Older data must also meet all QA requirements at the time of submittal, and will be compared against the current policy to make the assessment decision. Data older than ten years will be used whenever necessary to determine historical natural conditions.

Discussion/Basis for Comment:

The technical basis for retaining and using water quality data 10 years old and older is not supportable and does not recognize the importance of seasonal and annual differences in river water quality conditions. Reliable data sources of documented quality and of recent origin for a river reach should be the limitation. For example, the Columbia River reach between the Willamette and Lewis Rivers is listed as Category 5 for bacteria based on one data set from 1992. One data set from 24 years ago is not sufficiently representative of a large water body like the Columbia River to support a characterization of that water body as impaired at the highest category level.

Recommendation:

We recommend modifying the policy statement to remove the use of data 10 years and older, especially in the context of limited data sets that cannot be reasonably understood to represent actual water quality conditions. Furthermore, we recommend that the policy needs to emphasize that water quality data collected within recent years should be considered most representative and should supplant older data.

COMMENT 12:

Policy Document Reference: [6. Assessment Methodology - Page 19, paragraph 3:](#)

“Listings from previous assessment cycles will not be reassessed according to this policy unless more recent information associated with the parameter and waterbody segment is made available.”

Discussion/Basis for Comment:

This program policy statement implies that a prior Category 5 303(d) listing will remain in place without more recent or new data for the waterbody segment. This static approach does not recognize that treatment of wastewater and stormwater discharges to receiving streams has improved over time, which results in improved water quality conditions.

Recommendation:

Modify the policy statement to reflect the potential for improved water quality conditions over time without additional new data for the water body segment, if a material change in discharge volume or character to the segment has occurred for the parameters at issue in the listing (for example, a more restrictive NPDES permit has been issued or an outfall and related discharge has been physically removed from a waterbody). The policy statement would require a reasonable process such as modeling to document the expected change in water quality from the change in discharge in order to inform the change in listing status. Category 5 303(d) listings based on water quality data that are 10 years or older should be reclassified to Category 3 (segment lacks sufficient data) until new data are provided for the water quality assessment of the vicinity.

COMMENT 13:

Policy Document Reference: [6. Assessment Methodology - Page 19, paragraph 4:](#)

“Only one parameter value per day per segment will be used in the Assessment. Replicate samples taken at the same time and location will be averaged. Otherwise, the highest measurement per day will be used, except for dissolved oxygen for which the

lowest measurement will be used, and except for pH for which the highest or lowest measurement will be used as applicable.”

Discussion/Basis for Comment:

This program policy statement indicates that despite multiple samples or measurements collected on a day that “only one parameter value per day per segment will be used”. This policy negates the importance of sampling to represent diurnal water quality changes such as the use of in situ water quality instruments (i.e. continuous water quality monitoring instrument collecting one measurement per minute during a 24 hour period). It is important to know if the lowest or highest recorded value exceeds a water quality standard, but the complete daily monitoring record needs to be part of the Assessment.

Under the Determination and Use of Field Replicate Samples (on pages 19 and 20) the WQ Policy states that “dissolved oxygen, pH, and temperature samples are averaged if they are in the same location, less than 5 minutes apart. The resulting calculated value is treated as a single sample in the assessment.” These two policy statements in the Assessment Methodology section seem at odds and require clarification. For example, if continuous monitoring is occurring at a site, does the assessment utilize all of the 288, 5-minute average values recorded in a 24-hour monitoring period?

Recommendation:

Provide language in the policy statement to include the complete daily monitoring records in the water quality assessment and clarifying how these types of continuous monitoring data will be applied in the assessment and classification process.

COMMENT 14:

Policy Document Reference: [7. Other Assessment Considerations: Natural Conditions - Page 21, paragraph 3:](#)

“State water quality standards for temperature and dissolved oxygen allow a small increment for human actions when the measurements exceed the criteria due to natural conditions (WAC 173-201A-200(1)(d)(i) and 173-201A-210(1)(d)(i)). The designation of a water body as impaired or as exceeding a water quality criterion for these two parameters due to natural conditions requires a systematic review of available data and the application of best professional judgment of Ecology staff. Reviews involve the examination of all available data from the site in question (including historic data older than ten years), comparison to the most appropriate reference site (if available), and the application of professional judgment based on experience working in the field of freshwater and marine monitoring.”

Discussion/Basis for Comment:

This program policy statement is consistent with WAC 173-201A-200-(1)(d) – which states that “when a water body’s D.O. is lower than the criteria in Table 200 (1)(d) (or within 0.2 mg/l or the criteria) and that condition is due to natural conditions, then human actions considered cumulatively may not cause the D.O. of that water body to decrease more than 0.2 mg/L.” How does Ecology staff determine if single or multiple 0.2 mg/l D.O. exceedances are due to natural conditions and not appropriate to flag as exceedances for 303(d) listing? This policy statement assumes impairment unless a systematic review of available data is performed (including use of data older than 10 years – which we believe is

inappropriate – see preceding Comment 12) and the best professional judgment of Ecology staff is applied.

The Natural Conditions program policy statement (page 21) also states:

“For water bodies that appear to have natural conditions sufficient to override human influences, but the information is not conclusive, the waterbody segment will be placed in Category 2.”

This is the case for dissolved oxygen and pH in the lower Columbia River.

Recommendation:

This approach is punitive to dischargers and water users and should be modified so that the systematic review by Ecology will not incorporate the use of data older than 10 years. Furthermore, if a discharger can demonstrate through Streeter-Phelps modeling of far-field dissolved oxygen effects that the effluent BOD discharged does not create a 0.2 mg/l D.O. decrease, then the corresponding river reach for the discharger should be categorized as not impaired by human action.

COMMENT 15:

Policy Document Reference: [7. Other Assessment Considerations: Listing Challenges and Other Situations - Page 23, paragraph 5 \(emphasis added\):](#)

“An objective of the listing policy is to establish which waterbodies need TMDLs. The decision to place a water body in a given category must be based on data that are representative of the water segment at the time of sampling. Water quality monitoring projects are usually based on objectives to determine the overall quality of the water but not always. There are some projects in which objectives are to study a localized or specific sub-basin of the surface water, such as at the location of a discharge pipe prior to complete mixing, or within a lake swimming beach during times of peak recreation use. The objective of the project must either match the objective of the listing policy or the project data may be pooled with other data that describe the overall condition accurately.”

Discussion/Basis for Comment:

This program policy statement identifies a critical qualification for data used to make Category 5 determinations. Ecology needs to implement a screening process to ensure data collected in locations that are not representative of the overall water segment are excluded from the assessment of that reach. Such data should not be pooled with valid data that have been collected with the intent to accurately characterize water quality in areas that are representative of that segment.

An example of where this screening would be appropriate is evident in the use of water quality data in the assessment of the Columbia River reach below the Willamette River, where pH measurements from the water draining from the East Vancouver Lake Flushing Channel have been included as representative of the main Columbia River (Listing 51515).

Recommendation:

The program policy needs to include a statement that Ecology will implement a screening process to ensure data collected in locations that are not representative of the overall water segment are excluded from the assessment of that reach.

COMMENT 16:

Policy Document Reference: [7. Other Assessment Considerations: Listing Challenges and Other Situations - Page 23, paragraph 6:](#)

“At any time, interested parties may contact Ecology in writing to request that an existing waterbody segment listing be reassessed under the listing factors of this policy. The request must include the following:

- 1. The reason(s) the listing is inappropriate and how the policy would lead to a different outcome.*
- 2. The data and information necessary to enable Ecology to conduct the review.*

The results of assessment reviews which occur between scheduled assessment cycles will become part of the next scheduled draft Assessment report to EPA.”

Discussion/Basis for Comment:

This program policy is very important since it allows for challenges to the listings and potential for adjudication. It should also include the sharing of support documents to ensure a transparent water quality assessment process.

Recommendation:

This policy needs to include a third item under the request – that Ecology must provide the interested party with Ecology’s supporting documentation for the listing including water quality data, QAPP, field records, field calibration records and data validation documents. Sharing these support documents is key to a transparent water quality assessment process.

COMMENT 17:

Policy Document Reference: [8. Specific Submittal and Basis for Assessment Decisions: d. Dissolved Oxygen - Category 5 Determination - Page 38, paragraph 7:](#)

“A waterbody segment will be placed in Category 5 using single sample data when (1) a minimum of three excursions exist from all data considered, and (2) at least ten percent of single grab sample values in a given year do not meet the criterion. A waterbody segment may also be placed in Category 5 for dissolved oxygen when three daily minimum values from continuous monitoring are below the criterion.”

Discussion/Basis for Comment:

The first and last sentences of the policy statement should include reference to multiple measurements collected on separate days of continuous monitoring.

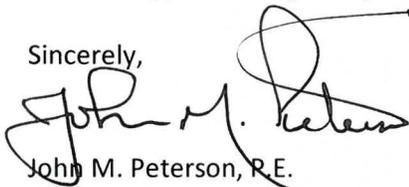
Recommendation:

We suggest that the first sentence of this program policy should be clarified to state *“using sample data when a minimum of three excursions exist”*, and the last sentence of this program policy should be clarified to state *“when three daily minimum values recorded on separate days of continuous monitoring are below the criterion”*.

We appreciate this opportunity to provide our feedback on the *Water Quality Program Policy 1-11, Chapter 1 – Assessment of Water Quality for the Clean Water Act Section 303(d) and 305(b) Integrated Report*. We look forward to receiving responses to our comments and we can be available to discuss our recommendations with Ecology.

In closing, our agencies support and affirm Ecology's work on the assessment of water quality. In order for the process to appropriately safeguard water quality for the nearly 300,000 citizens represented by our agencies, the data utilized in the process needs to be obtained according to industry-standard protocols and be truly representative of the condition of the water body. Only then can the data inform the listing process responsibly. The recommendations provided herein are all intended to provide a more transparent and more accurate process that will lead to policy determinations and categorical listings that are based on the most representative data for actual water quality conditions. We trust that Ecology will thoughtfully consider these comments and take the appropriate action.

Sincerely,



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Clark Regional Wastewater District



Brian Carlson, P.E.
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City of Vancouver



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