



NOTICE AND AGENDA OF THE YAKIMA REGIONAL CLEAN AIR AGENCY BOARD OF DIRECTORS' REGULAR MEETING

NOTICE

NOTICE is hereby given that the Yakima Regional Clean Air Agency Board of Directors' Study Session will be held at the Yakima City Hall, City Council Chambers on Thursday, December 8, 2016 at 1:30 p.m. to discuss proposed ammonia project. The Regular Meeting will follow at 2:00pm.

STUDY SESSION @ 1:30 p.m.

Proposed Ammonia Project

Mark Edler/Keith Hurley

PUBLIC COMMENTS

This is a public meeting. If you wish to address the Board concerning any air quality matter, you may do so now. Please come forward to the podium, stating your name for the record. The Chair has the right to place a time limit on each person asking to be heard.

AGENDA

REGULAR MEETING @ 2:00 p.m.

1. 2:00 P.M. Call to Order
2. Roll Call
3. Additions or Deletions to Agenda

*Board Chair
Quatandra Jarvis
Board Chair*

CONSENT AGENDA

4. Consider Approving the Consent Agenda, Items for action 4.1 through 4.4. The Board may approve the Consent Agenda by single motion in whole or in part, with or without further discussion.
 - 4.1 By consent, approve November 10, 2016 Board Meeting Summary;
 - 4.2 By consent accept and file, YRCAA November, 2016 Monthly Activity Report;
 - 4.3 By consent approve 2017 Board Schedule; and
 - 4.4 By consent approve 2017 Holiday Schedule.

Action Requested: Approve Consent Agenda Items 4.1 through 4.4.



REGULAR AGENDA

5. Receive YRCAA Director's Report. *Gary Pruitt*
Action Requested: No report this month.

ACTION ITEMS

6. Accept Fiscal Reports. *Christa Owen*
• Approve Fiscal Vouchers and Payroll Authorization Transfers;
• BVA(s) – FYI;
• Supplemental Income Status Report for CY 2015; and
Action Requested: Approve Fiscal Vouchers, Payroll Authorization Transfers, Accept and File Fiscal Reports.
7. Permit Fees *Hasan Tahat*
Action Requested: Approve Resolution 2016-10

DIVISION REPORTS

8. Engineering and Planning Division *Hasan Tahat*
Accept Engineering and Planning Division Report
Action Requested: Accept and file Report – No action required
9. Compliance and Enforcement Division *Keith Hurley*
Accept Compliance and Air Monitoring Division Report
Action Requested: Accept and file Report - No Action Required
10. Executive Division Report *Mark Edler*
Accept Executive Division Report
Action Requested: Accept and file Report – No action required

OTHER BUSINESS

11. Other Business and Adjournment *Board Chair*
Present Gary Pruitt with Thank You Clock.

The Next Board of Directors Meeting is scheduled for Thursday, January 12, 2017 at the City of Yakima Council Chambers, 129 N Second Street, Yakima.



Yakima Regional Clean Air Agency (YRCAA) Ammonia Research Project Draft Work Plan

Project Description:

The YRCAA proposes the establishment of four ammonia (NH_3) gas sampling sites to assess short-term trends (one year) in ambient NH_3 concentrations. Two sites are to be established in the upper county, with one located at the Washington State Department of Ecology's (WADOE) air monitoring site located on top of the Yakima Mental Health facility while the other will be located at a field site located north of Highway 24, and no closer than 500m (1,640') from the Devries Family Farm LLC Dairy Facility. Two additional sites will be placed in the lower county, with one sampler located on top of Harrison Middle School in Sunnyside and the other being located at a field site located at 1320 Braden Road, Grandview, WA 98953.

Objective:

It is hoped that the resulting data will illustrate the degree to which ammonia contributes to the formation of aerosol nitrates, and subsequently to what extent aerosol nitrites contribute to the formation of $\text{PM}_{2.5}$ concentrations during days of elevated $\text{PM}_{2.5}$ values. It is also anticipated that the data will provide YRCAA staff with a better estimate of total nitrogen inputs to the Yakima County Air Shed and a more thorough understanding of the county's emission inventory.

Discussion:

NH_3 is a gas readily released into the air from a variety of biological sources, as well as from industrial and combustion processes. It is also the most prevalent base gas in the atmosphere. While it has many beneficial uses, NH_3 can detrimentally affect the air quality by contributing to the formation of aerosol nitrites, which are a major contributor to the formation of $\text{PM}_{2.5}$. Possible health effects of ammonia gas in the atmosphere include short-term irritation of the eyes and lungs, and the long-term effects on the cardiovascular system through inhalation of fine particulate matter formed from ammonia in the atmosphere.

The Yakima Air Wintertime Nitrate Study (YAWNS) was conducted in January 2013, with measurements made mostly in the upper Yakima valley. The objective of the study was to investigate the scientific reasons behind high aerosol nitrate content in $\text{PM}_{2.5}$ in the area. The YAWNS study found that ammonia emissions from agricultural operations combined with NO_x from vehicles under the right meteorological conditions to produce aerosol nitrate. One of the limitations of the study was that no representative measurements of nitrate were conducted in the lower Yakima valley, in spite of most ammonia sources being located in the lower Yakima valley. To address this limitation, Ecology collected several gravimetric samples using Federal Reference Method (FRM) $\text{PM}_{2.5}$ samplers in Sunnyside and Toppenish, between November 2015 and January 2016. The Teflon filters were analyzed for nitrate at Ecology's Manchester Environmental Laboratory. The analysis of the FRM samples indicated, on average, nitrate accounted for about a quarter of the $\text{PM}_{2.5}$ mass at Yakima and a third at Sunnyside. Elevated nitrate levels occurred in both valleys simultaneously, on days with high relative humidity, low temperatures and low winds. This suggests common sources of aerosol nitrate precursors in both valleys.

Work/Duties:

The YRCAA project team will consist of the following personnel and duties:

Keith Hurley (Compliance & Enforcement Division Supervisor) - Project Manager, overseeing all work conducted by YRCAA.

Kelsey Sanford (Compliance & Enforcement Division Air Monitoring Technician) - Primary Air Monitoring Technician, conducting all day-to-day operations including Quality Control (QC) checks, sampler maintenance checks and services, setup and collection of bi-weekly samples, and sample shipment to the National Atmospheric Deposition Program (NADP) at the Illinois State Water Survey (ISWS).

Dustin Harrington (Compliance & Enforcement Division Field Agent) - Secondary/Backup Air Monitor Technician, conducting all duties above during the absence of the Primary Technician.

Hasan Tahat (Engineering Division Supervisor) - Conducts agency review of all collected data, writes comprehensive data review/interpretation for presentation to the YRCAA Board of Directors upon completion of project.

Proposed Budget:

Funding in the amount of \$14,404.44 will be provided by the YRCAA. The following table provides an estimate of costs to conduct the project.

YRCAA Ammonia Gas Research Project Draft Work Plan Summary of Estimated Costs				
Expenditure	Cost / Unit	Cost	Hours	Cost
Initial Setup & Familiarization Training (Harrington)	Billing Rate / Hour	\$38.33	8	\$ 306.64
Initial Setup & Familiarization Training (Sanford)	Billing Rate / Hour	\$29.86	8	\$ 238.88
One year Operational Support & Maintenance (Sanford)	Billing Rate / Hour	\$29.86	52	\$1,552.72
<u>Contracted Costs:</u> Four AMoN Sites 27 Samples per site Chemical Analysis Set Up Costs Coordination	N/A	N/A	N/A	\$11,208.00
Data review & Report (Tahat)	Billing Rate / Hour	\$59.82	10	\$598.20
Vehicle Fuel & Maintenance	Per year	\$500.00	Annual	\$500.00
Total Costs				\$14,404.44

General:

NADP Data Policy- The ISWS is responsible for managing the information presented on the NADP database and on the NADP Website, <http://nadp.isws.illinois.edu>. Information presented on the NADP Website is in the public domain, except for those images and graphics created by third parties and used by permission. NADP data and Information Use Conditions are posted online at <http://nadp.isws.illinois.edu/NADP/useConditions.aspx>.



Summary of the Governing Board of Directors Meeting

Location, Date and Time:

Yakima City Hall Council Chambers, November 10, 2016 Time: 1:30 p.m.

1. Jon DeVaney, Board Chair, called the Meeting to order at 1:30 p.m.
2. Quatandra Jarvis, Clerk of the Board conducted roll call. There was a quorum

BOARD MEMBERS:	Present	STAFF:	Present
Jon DeVaney, Representative-At-Large	x	Executive Director	
Norm Childress, Small Cities Representative	x	Quatandra Jarvis, Clerk of the Board	x
Steven Jones, Ph.D., County Representative	x	Mark Edler, Executive Supervisor	x
Bill Lover, Largest City Representative	x	Christa Owen, Fiscal Manager	x
Rand Elliott, Yakima County Commissioner	x	Hasan Tahat, Engineering and Planning Supervisor	x
		Keith Hurley, Compliance and Enforcement Supervisor	x
LEGAL COUNSEL: Gary Cuillier, Board Counsel			
MEDIA: Mike Brown, YPAC			

3. **Additions and Deletions to Agenda:**

- Action Item #6, Permit Fees was deleted and to be continued to the December Board Meeting.

Public Comment:

- Kathleen Rogers, Grandview- Ms. Rogers shared some numbers with the Board regarding her dedication to bringing data to the Board Meetings.
- Sandy Braden, Friends of Toppenish Creek- Ms. Braden asked if the Board had heard from the Attorney General's Office regarding her inquiry. Mr. DeVaney replied no; He contacted Representative Johnson, Representative Johnson has not received a response either.

Regular Agenda:

4. **Consent Agenda**

- Approved in its entirety by motion made by Rand Elliot and seconded by Bill Lover.

5. **Director's Report**

- No report this month.

AGENDA ITEM NO. 4.1

Action Items:

6. Permit Fees:

- Deleted.

7. Fiscal Report:

- Payroll for October was \$63,266.37;
- A/P was \$22,546.53;
- Out of A/P, Wood Stove Change-Out was \$1,930 and Enterprise was \$2, 669.53.

Motion to approve made by Norm Childress, seconded by Steven Jones, Ph.D. Motion approved.

DIVISION/PROGRAM REPORTS (See written reports for complete details.)

8. Engineering and Planning Division Report:

- Attended one source test;
- Issued one New Source Review;
- Had several conference calls with Ecology regarding some changes they are making to rule making;
- Had several technical assistance meetings. There were no exceedances for the month of October; and
- Results from the corner in regards to the farmer who died in Wisconsin, found cause of death to be acute exposure to hydrogen sulfide gas. Mr. DeVaney asked if there were additional information as to how the farmer was exposed. Dr. Tahat explained that Wisconsin has different dairy practices from Yakima, in that when the lagoon was stirred there was no dispersion, it stayed at ground level.

9. Compliance and Enforcement Division Report:

- AODs were added; and
- Referenced a thank you email from a complainant;

10. Executive Division Report:

- Wood Stove Change-out program doing well. Mr. Lover asked about reaching out to the tribe. Mr. Edler explained that the grant does not allow that, however, rebates can be offered to individuals who live on the reservation;
- Had an air quality presentation at Whitney Elementary on October 21st;
- Participated in the Youth Environmental Summit; and
- The Air Quality Forum will be reinstated tentatively January 10, 2017 on a quarterly basis. Mr. DeVaney asked if a briefing of a particular topic would be prepared for the forum. Mr. Edler responded that there would be, however, the Agency would prefer the public provide the topic of discussion as the forum is for them.

11. Other Business and Adjournment

- The position of the Executive Director is open and is scheduled to close December 1, 2016.

Motion to adjourn made by Rand Elliot seconded by Bill Lover.

Jon DeVaney, Board Chair

Quatandra Jarvis, Clerk of the Board

Audio CD of this meeting is available at the YRCAA.
Meeting Summary submitted to Board for approval.

Date of Release: December 1, 2016
Date of Consideration: December 8, 2016
To: Board of Directors
From: Office of the Executive Director
Subject: Monthly Activity Report

Activity	FY16	Sept. 16	Oct. 16	Nov. 16	FY16 thru Nov.	FY17 thru Nov.
Minor Source Inspections	107	1	9	5	107	15
Complaints Received	201	8	14	22	112	44
NOVs Issued	85	3	10	8	31	21
AODs Issued	0	0	3	1	0	4
Warning Notices Issued	7	0	3	1	29	4
NOPs Issued	60	3	5	7	22	15
SEPA Reviews	245	25	24	9	126	58
AOP Applications Received	1	0	0	0	0	0
AOPs Issued or Renewed	3	0	0	0	0	0
Deviations/Upsets Reported	12	1	1	1	5	3
AOP Inspections	8	0	0	0	5	0
Public Workshops	0	0	0	0	3	0
Media Events	0	0	0	0	0	0
Media Contacts	19	1	0	0	15	1
Education Outreach Events	8	1	1	1	2	3
Sources Registered	381	0	1	0	0	1
NSR Applications Received	10	1	3	1	12	5
NSR Approvals Issued-Temporary	1	0	0	0	0	0
NSR Approvals Issued-Permanent	13	2	1	3	8	6
NODRs Received	189	24	17	24	98	65
Agricultural Burn Permits Issued	206	5	18	12	42	35
Conditional Use Permits Issued	11	1	0	1	3	2
Residential Burn Permits Issued	240	0	39	0	315	39
Burn Ban Days	90	26	0	3	24	29
Public Records Requests Fulfilled	26	1	6	7	6	14

Acronyms:

AOP - Air Operating Permit; **NODR** - Notification of Demolition and Renovation; **NOP** - Notice of Penalty; **NOV** - Notice of Violation; **NSR** - New Source Review; **SEPA** - State Environmental

AGENDA ITEM

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Executive Memorandum

Date of Release: December 1, 2016

DATE OF CONSIDERATION: December 8, 2016

TO: Board of Directors

FROM: Office of the Executive Director

SUBJECT: Board of Directors Meetings

ISSUE: Approval of schedule and location for the Board of Directors meeting on the second Thursday of each month.

RECOMMENDATION(S): By consent, approve dates and locations listed below for the Regular Board of Directors Meetings.

DISCUSSION: The time and location remains the same; 1:30 p.m. Study Session and 2:00 p.m. Regular Board Meeting. Location for Board Meetings shall be at Yakima City Hall, City Council Chambers, 129 N Second St., Yakima, WA. If there is a change of venue the Board and public will be notified. The 2017 board schedule is proposed as follows:

January 12, 2017
February 9, 2017
March 9, 2017
April 13, 2017
May 11, 2017
June 8, 2017
July 13, 2017
August 10, 2017
September 14, 2017
October 12, 2017
November 9, 2017
December 14, 2017



Executive Memorandum

Date of Release: December 1, 2016

DATE OF CONSIDERATION: December 8, 2016

TO: Board of Directors

FROM: Office of the Executive Director

SUBJECT: 2017 Holiday Schedule

ISSUE:

Whether or not, the YRCAA Board of Directors should approve and adopt the 2017 Holiday Schedule

RECOMMENDATION(S):

By consent, approve and adopt the 2017 Holiday Schedule.

DISCUSSION:

Every year staff presents the Board of Directors with a holiday schedule. The following rules govern the use of the holidays observed by the Clean Air Agency staff per, Administrative Code Part B, Section 9, Subsection 9.7, Benefits, 9.7.1 Holidays:

- Whenever a legal holiday falls on a Saturday, the preceding Friday shall be the legal holiday.
- Whenever a legal holiday, falls on a Sunday, the following Monday shall be the legal holiday.
- An employee scheduled, and approved for annual leave, or on sick leave, when a holiday occurs will not be charged against their leave for that day.

The YRCAA offices will be closed for the following:

New Years' Day	Monday	January 2, 2017
Martin Luther King Day	Monday	January 16, 2017
President's Day	Monday	February 20, 2017
Memorial Day	Monday	May 29, 2017
Independence Day	Tuesday	July 4, 2017
Labor Day	Monday	September 4, 2017
Veteran's Day	Saturday	November 11, 2017
Thanksgiving Holidays	Thursday & Friday	November 23 and November 24, 2017
Christmas	Monday	December 25, 2017

AGENDA ITEM NO. 4.4



Executive Memorandum

Date of Release: December 1, 2016

Date of Consideration: November 8, 2016

To: YRCAA Board of Directors

From: Office of the Director

Christa Owen

Subject: Fiscal Program Report

Issue: Consider Fiscal Reports, forms, and vouchers.

Recommendation(s): Accept, and approve by minute action, November 2016 AP Fiscal Vouchers (23,060.20), and November Payroll Authorization (\$63,993.53). Out of A/P, \$12,399.21 was for Wood Stove Change-out Expenses, and \$812.00 was for Enterprise expenses.

Discussion: November Accounts Payable and Payroll Authorizations are enclosed for your approval. BVA and Supplemental Income are included as informational items.

Enclosures

AGENDA ITEM NO. 6



November 28, 2016

Fund 614-614 YRCAA

Fund 614-141 Enterprise

<u>Name</u>	<u>Warrant/MICR #</u>	<u>GL #</u>	<u>Amount</u>	<u>Date</u>
Abadan Reprographics	32941	4801	\$ 89.39	11/29/2016
Bradley A. Mellotte	32942	4501	\$ 3,480.00	11/29/2016
Neil Creasy*	32943	4101	\$ 400.00	11/29/2016
Crystal Springs	32944	3101	\$ 21.97	11/29/2016
KeyBank	32945	Various	\$ 1,750.40	11/29/2016
Nth Degree Environmental Engineering	32946	4101	\$ 1,125.00	11/29/2016
Radio Yakima*	32947	4401	\$ 625.00	11/29/2016
Ron's Office Equipment	32948	3101	\$ 200.22	11/29/2016
Veronica Ledesma	32949	4901	\$ 400.00	11/29/2016

Total:

\$ 8,091.98

***Reimbursement from Grant**

****NOC/Enterprise**

This is to certify that the invoices and warrants above for the Yakima Regional Clean Air Agency have been examined, audited and approved by the Alternate Auditing Officer for payment.

Total Amount: **\$ 8,091.98**

Jon DeVaney, Board Chairman

12/8/2016

Gary W. Pruitt, Executive Director

11/29/2016



November 10, 2016

Fund 614-614 YRCAA

Fund 614-141 Enterprise

<u>Name</u>	<u>Warrant/MICR #</u>	<u>GL #</u>	<u>Amount</u>	<u>Date</u>
Absolute Comfort Technology, LLC*	32927	4101	\$ 2,419.55	11/14/2016
Charter Communications	32928	4201	\$ 726.19	11/14/2016
Coastal Farm and Ranch*	32929	4101	\$ 1,882.54	11/14/2016
Coleman Oil Company	32930	3201	\$ 195.05	11/14/2016
Cuillier Law Office	32931	4101	\$ 980.00	11/14/2016
Doug Downard*	32932	4101	\$ 400.00	11/14/2016
Five K Technologies	32933	3502	\$ 25.00	11/14/2016
Fosseen's Home & Hearth*	32934	4101	\$ 6,422.12	11/14/2016
Leaf	32935	4501	\$ 186.07	11/14/2016
Russ Luckey*	32936	4101	\$ 250.00	11/14/2016
Splash Express	32937	4801	\$ 10.15	11/14/2016
Verizon Wireless	32938	4201	\$ 328.92	11/14/2016
Washington County Fair Complex**	32939	4501	\$ 812.00	11/14/2016
YRCAA	32940	4901	\$ 330.63	11/14/2016

Total:

\$ 14,968.22

***Reimbursement from Grant**

****NOC/Enterprise**

This is to certify that the invoices and warrants above for the Yakima Regional Clean Air Agency have been examined, audited and approved by the Alternate Auditing Officer for payment.

Total Amount: **\$ 14,968.22**

Jon DeVaney, Board Chairman

12/8/2016

Gary W. Pruitt, Executive Director

11/14/2016

AUTHORIZATION FOR ELECTRONIC FUNDS TRANSFER

Direct Deposit Payroll & Payroll Taxes

Date: 11/29/2016

District: Yakima Regional Clean Air Agency

Contact Person: Christa Owen

Address: 329 North First Street, Yakima, WA 98901

Telephone No. 834-2050 ext 104 Telefax No. 834-2060

Authorization is given for the Yakima County Treasurer to electronically transfer the amounts listed below:

Name of Bank: Key Bank of Washington

ABA Routing Number: [REDACTED]

Bank Account Number: [REDACTED]

Payroll Date: December 1, 2016

Transfer Amount(s): \$ 63,993.53

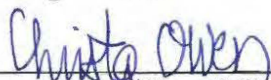
Total Amount of Electronic Transfer: \$ 63,993.53

Authorizing Signatures (*No facsimile signatures accepted.*):



Auditing Officer

Chairman Board of Directors



Alternate Auditing Officer

Date November 29, 2016

Note: The Yakima County Treasurer's Office must receive the completed authorization by 12:00 noon, two (2) business days prior to payroll date. An original must be provided to the County Treasurer's Office if a telefax is sent. *Do not consider a telefax delivered until you have verified with the Treasurer's Office that it has been received.*

Contact Persons at County Treasurer's Office: **Cindy**

Telephone Number: 509-574-2780
(01-2008)

Telefax Number: 509-574-2801

YAKIMA REGIONAL CLEAN AIR AGENCY
SUPPLEMENTAL INCOME STATUS for 2016 on November 30, 2016
CY 2016 \$.40 PER CAPITA (Rounded Amounts)

City/Town	Past Due	Assessment Amount	Total Amt Due	Date Received	Amount Received	Balance Due	Responses
Grandview	\$ -	\$ 4,468	\$ 4,468	2/1/2016	\$ 4,468	\$ -	Paid in full
Granger	\$ -	\$ 1,398	\$ 1,398	2/1/2016; 4/19/2016; 10/14/16	\$ 1,049	\$ 350	3/4 paid
Harrah	\$ -	\$ 258	\$ 258	2/1/2016	\$ 258	\$ -	Paid in full
Mabton	\$ -	\$ 924	\$ 924	1/19/2016	\$ 924	\$ -	Paid in full
Moxee	\$ -	\$ 1,488	\$ 1,488	1/19/2016	\$ 1,488	\$ -	Paid in full
Naches	\$ -	\$ 326	\$ 326	1/14/2016	\$ 326	\$ -	Paid in full
Selah	\$ -	\$ 2,958	\$ 2,958	1/20/2016	\$ 2,958	\$ -	Paid in full
Sunnyside	\$ -	\$ 6,492	\$ 6,492	1/25/2016; 4/12/2016; 7/11/16; 10/11/16	\$ 6,492	\$ -	Paid in full
Tieton	\$ -	\$ 502	\$ 502	2/1/2016	\$ 502	\$ -	Paid in full
Toppenish	\$ -	\$ 3,582	\$ 3,582	2/1/2016	\$ 3,582	\$ -	Paid in full
Union Gap	\$ -	\$ 2,456	\$ 2,456	2/1/2016	\$ 2,456	\$ -	Paid in full
Wapato	\$ -	\$ 2,016	\$ 2,016	1/11/2016	\$ 2,016	\$ -	Paid in full
City of Yakima	\$ -	\$ 37,232	\$ 37,232	1/20/2016; 4/12/2016; 7/11/16; 10/17/16	\$ 37,232	\$ -	Paid in full
Zillah	\$ -	\$ 1,256	\$ 1,256	1/22/2016	\$ 1,256	\$ -	Paid in full
Yakima Co.	\$ -	\$ 34,164	\$ 34,164	1/1/2016; 4/1/2016; 7/1/16; 10/1/16	\$ 34,164	\$ -	Paid in full
Totals:	\$ -	\$ 99,520	\$ 99,520		\$ 99,171	\$ 350	

FY 2017 Monthly BVA

November 2016 Report Date: December 8, 2016		Budget	Actual Current	Actual Year to Date	Year to Date % of Budget
REVEUNE					
REVENUE 614 YRCAA Base Operations					
Stationary Source Permit Fees					
614-32190001	Minor Sources	\$ 156,353	\$ -	\$ 4,077	2.6%
614-32190008	Synthetic Minor Sources	\$ 21,280	\$ -	\$ -	0.0%
614-32190006	Complex Sources	\$ 20,560	\$ -	\$ -	0.0%
614-32290001	Title V Sources	\$ 122,891	\$ -	\$ 124,949	101.7%
614-32190002	New Source Review	\$ 30,000	\$ 3,749	\$ 23,775	79.2%
<i>Subtotal, Stationary Source Permit Fees</i>		\$ 351,084	\$ 3,749	\$ 152,801	43.5%
Burn Permit Fees					
614-32290005	Residential Burn Permits	\$ 62,450	\$ 48	\$ 24,816	39.7%
614-32290007	Agricultural Burn Permits	\$ 33,000	\$ 1,564	\$ 6,549	19.8%
614-32290011	Conditional Use Burn Permits	\$ 2,329	\$ 218	\$ 218	9.4%
<i>Subtotal, Burn Permit Fees</i>		\$ 97,779	\$ 1,830	\$ 31,583	32.3%
Compliance Fees					
614-32190005	Asbestos Removal Fees	\$ 35,956	\$ 3,004	\$ 11,571	32.2%
614-32190009	Construction Dust Control Fees	\$ 8,608	\$ 155	\$ 3,839	44.6%
<i>Subtotal, Compliance Fees</i>		\$ 44,564	\$ 3,159	\$ 15,410	34.6%
<i>Subtotal, All Permit Fee Revenue</i>		\$ 493,427	\$ 8,738	\$ 199,794	40.5%
Base Grants					
614-33366001	EPA, Core Grant	\$ 123,501	\$ 30,520	\$ 61,040	49.4%
614-33403101	DOE, Core Grant	\$ 82,384	\$ 20,688	\$ 41,376	50.2%
<i>Subtotal, Base Grants</i>		\$ 205,885	\$ 51,208	\$ 102,416	49.7%
Fines & Penalties					
614-35990001	Civil Penalty	\$ 2,500	\$ 11,012	\$ 26,893	
614-35990001	Other Fines	\$ -	\$ -	\$ -	
<i>Subtotal, Fines & Penalties</i>		\$ 2,500	\$ 11,012	\$ 26,893	
Supplemental Income					
614-33831001	Supplemental Income	\$ 99,988	\$ -	\$ 39,294	39.3%
<i>Subtotal, Supplemental Income</i>		\$ 99,988	\$ -	\$ 39,294	39.3%
Other Income					
614-36111001	Interest	\$ 1,801	\$ 271	\$ 1,319	73.3%
614-36990014	Miscellaneous Income	\$ 1,200	\$ -	\$ 13	1.1%
<i>Subtotal, Other Income</i>		\$ 3,001	\$ 271	\$ 1,332	44.4%
<i>Total YRCAA Base Operations Revenue</i>		\$ 804,801	\$ 71,230	\$ 369,728	45.9%
REVENUE 614 YRCAA Grant Operations					
614-33403105	Wood Stove Ed	\$ 5,418	\$ -	\$ 5,331	98.4%
614-33403108	PM 2.5	\$ 21,050	\$ -	\$ 10,525	50.0%
614-33403107	Woodstove Change-out	\$ 145,797	\$ 15,345	\$ 46,913	32.2%
<i>Total YRCAA Grant Operations Revenue</i>		\$ 172,265	\$ 15,345	\$ 62,769	36.4%
REVENUE Enterprise Operations					
614-34317001	VE Certification Fees	\$ 85,925	\$ 16,250	\$ 34,550	40.2%
614-34317002	Other Enterprise Revenue	\$ 450	\$ -	\$ 75	16.7%
<i>Subtotal, Enterprise Revenue</i>		\$ 86,375	\$ 16,250	\$ 34,625	40.1%
<i>Total Base, Grant and Enterprise Revenue</i>		\$ 1,063,441	\$ 102,824	\$ 467,122	43.9%

FY 2017 Monthly BVA

November 2016	Budget	Actual Current	Actual Year to Date	Year to Date % of Budget
Report Date: December 8, 2016				

EXPENSES 614 YRCAA Base Operations

Salaries				
614-1001	Salaries	\$ 507,693	\$ 44,740	\$ 213,246 42.0%
614-2002	Benefits	\$ 187,777	\$ 15,719	\$ 74,924 39.9%
614-1003	Overtime	\$ -	\$ -	\$ - #DIV/0!
Subtotal, Salaries		\$ 695,470	\$ 60,459	\$ 288,170 41.4%

Supplies

614-3101	Office Supplies	\$ 7,450	\$ 384	\$ 2,015 27.1%
614-3101	Safety Equipment	\$ -	\$ -	\$ - #DIV/0!
614-3201	Vehicles, Gas	\$ 3,325	\$ 195	\$ 766 23.1%
614-3501	Small Tools/Equipment	\$ -	\$ -	\$ - #DIV/0!
614-3502	Computer Network	\$ 10,466	\$ 520	\$ 3,631 34.7%
Subtotal, Supplies		\$ 21,241	\$ 1,099	\$ 6,413 30.2%

Services

614-4101	Professional Services	\$ 15,000	\$ 2,105	\$ 18,376 122.5%
614-4101	Laboratory Analyses	\$ 157	\$ 40	\$ 40 25.5%
614-4125	Treasurer, Yakima County	\$ 1,679	\$ 152	\$ 758 45.1%
614-4201	Communications, Phones/Internet	\$ 12,444	\$ 1,055	\$ 5,279 42.4%
614-4202	Postage	\$ 3,900	\$ 196	\$ 747 19.2%
614-4301	Travel & Transportation	\$ 3,650	\$ 33	\$ 69 1.9%
614-4401	Public Education	\$ 4,000	\$ 3	\$ 570 14.3%
614-4401	Publications, Legal Notices	\$ 526	\$ -	\$ - 0.0%
614-4501	Rents & Leases, Equipment	\$ 1,982	\$ 186	\$ 1,187 59.9%
614-4501	Rents & Leases, Space	\$ 41,760	\$ 3,480	\$ 17,400 41.7%
614-4601	Insurance	\$ 13,398	\$ -	\$ 12,662 94.5%
614-4801	Maintenance, Motor Vehicles	\$ 2,229	\$ 831	\$ 1,141 51.2%
614-4801	Maintenance, Equipment	\$ 1,853	\$ 89	\$ 586 31.6%
614-4801	Maintenance, Computers	\$ 150	\$ -	\$ 357 238.0%
614-4801	Maintenance, Building	\$ 520	\$ -	\$ 349 67.1%
614-4901	Memberships	\$ 230	\$ -	\$ - 0.0%
614-4901	Training	\$ 2,898	\$ -	\$ 1,764 60.9%
614-4901	Service Chgs & Interest	\$ 4,600	\$ 331	\$ 1,269 27.6%
614-4901	Miscellaneous Services	\$ 2,600	\$ 400	\$ 908 34.9%
614-4901	DOE Oversight Fees	\$ 4,787	\$ -	\$ - 0.0%
Subtotal, Services		\$ 118,363	\$ 8,901	\$ 63,462 53.6%

Capital Out-Lay & Fixed Assets

614-6401	Capital Out-Lay/Fixed Assets	\$ -	\$ -	\$ - #DIV/0!
Total YRCAA Base Operations Expenses		\$ 835,074	\$ 70,460	\$ 358,045 42.9%

EXPENSES 614 YRCAA Grant Operations 614-33403105 Wood Stove Ed

Salaries				
614-1001	Salaries	\$ 3,956	\$ -	\$ 636 16.1%
614-2002	Benefits	\$ 1,462	\$ -	\$ 223 15.3%
614-1003	Overtime	\$ -	\$ -	\$ - #DIV/0!
Subtotal, Salaries		\$ 5,418	\$ -	\$ 859 15.9%

Supplies

614-3101	Office Supplies	\$ -	\$ -	\$ - #DIV/0!
Subtotal, Supplies		\$ -	\$ -	\$ - #DIV/0!

FY 2017 Monthly BVA

November 2016		Budget		Actual Current		Actual Year to Date	Year to Date % of Budget
Report Date: December 8, 2016							
Services							
614-4139	Professional Services	\$ -	\$ -	\$ -	\$ -		#DIV/0!
614-4202	Postage	\$ -	\$ -	\$ -	\$ -		#DIV/0!
<i>Subtotal, Services</i>		<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>		<i>#DIV/0!</i>
<i>Subtotal, Woodstove Grant Expenses</i>		\$ 5,418	\$ -	\$ 859			15.9%
614-33403108 PM2.5							
Salaries							
614-1001	Salaries	\$ 15,367	\$ 1,051	\$ 5,080			33.1%
614-2002	Benefits	\$ 5,683	\$ 369	\$ 1,437			25.3%
614-1003	Overtime	\$ -	\$ -	\$ -			#DIV/0!
<i>Subtotal, Salaries</i>		\$ 21,050	\$ 1,421	\$ 6,864			32.6%
Supplies							
614-3101	Office Supplies	\$ -	\$ -	\$ -			#DIV/0!
<i>Subtotal, Supplies</i>		\$ -	\$ -	\$ -			#DIV/0!
Services							
614-4101	Professional Services	\$ -	\$ -	\$ -			#DIV/0!
<i>Subtotal, Services</i>		\$ -	\$ -	\$ -			#DIV/0!
Capital Out-Lay & Fixed Assets							
614-6401	Capital Out-Lay/Fixed Assets	\$ -	\$ -	\$ -			#DIV/0!
<i>Subtotal, PM 2.5 Grant Expenses</i>		\$ 21,050	\$ 1,421	\$ 6,864			32.6%
614-33403107 Woodstove Change-out							
Salaries							
614-1001	Salaries	\$ 11,357	\$ 1,564	\$ 8,201			72.2%
614-2002	Benefits	\$ 4,201	\$ 550	\$ 2,272			54.1%
614-1003	Overtime	\$ -	\$ -	\$ -			#DIV/0!
<i>Subtotal, Salaries</i>		\$ 15,558	\$ 2,114	\$ 11,082			71.2%
Supplies							
614-3101	Office Supplies	\$ -	\$ -	\$ 43			#DIV/0!
<i>Subtotal, Supplies</i>		\$ -	\$ -	\$ 43			#DIV/0!
Services							
614-4101	Professional Services	\$ 123,607	\$ 12,399	\$ 40,061			32.4%
<i>Subtotal, Services</i>		\$ 123,607	\$ 12,399	\$ 40,061			32.4%
Capital Out-Lay & Fixed Assets							
614-6401	Capital Out-Lay/Fixed Assets	\$ -	\$ -	\$ -			#DIV/0!
<i>Subtotal, Woodstove Change-out Grant Expenses</i>		\$ 139,165	\$ 14,513	\$ 51,186			36.8%
<i>Total, Grant Operations Expenses</i>		\$ 165,633	\$ 15,934	\$ 58,909			35.6%
EXPENSES 141 Enterprise Operations							
Salaries							
141-1001	Salaries	\$ 12,776	\$ -	\$ 5,723			44.8%
141-2002	Benefits	\$ 4,722	\$ -	\$ 1,932			40.9%
141-1003	Overtime	\$ -	\$ -	\$ -			#DIV/0!
<i>Subtotal, Salaries</i>		\$ 17,498	\$ -	\$ 7,734			44.2%

FY 2017 Monthly BVA

November 2016	Budget	Actual Current	Actual Year to Date	Year to Date % of Budget
Report Date: December 8, 2016				

Supplies

141-3101	Office Supplies	\$ 400	\$ -	\$ 4	1.1%
141-3201	Vehicles, Gas	\$ 1,700	\$ -	\$ 392	23.0%
141-3501	Small Tools/Equipment	\$ 200	\$ -	\$ -	0.0%
Subtotal , Supplies		\$ 2,300	\$ -	\$ 396	17.2%

Services

141-4101	Professional Services	\$ -	\$ -	\$ -	#DIV/0!
141-4202	Postage	\$ -	\$ -	\$ -	#DIV/0!
141-4301	Travel & Transportation	\$ 5,000	\$ -	\$ 3,396	67.9%
141-4501	Rents & Leases, Space	\$ 5,218	\$ 812	\$ 1,312	25.1%
141-4801	Maintenance, Motor Vehicles	\$ 2,100	\$ -	\$ 155	7.4%
141-4801	Maintenance, Equipment	\$ 505	\$ -	\$ -	0.0%
141-4901	Miscellaneous Services	\$ -	\$ -	\$ -	#DIV/0!
Subtotal, Services		\$ 12,823	\$ 812	\$ 4,863	37.9%

Capital Out-Lay & Fixed Assets

141-4500	Capital Out-Lay/Fixed Assets	\$ -	\$ -	\$ -	#DIV/0!
Total Enterprise Operations Expenses		\$ 32,621	\$ 812	\$ 12,993	39.8%

Summary of Revenue vs Expenses:

Prior-Year Carry Over Funds	\$ 125,000	\$ -	\$ 125,000	
Total Revenue, Base, Grants & Enterprise	\$ 1,188,441	\$ 102,824	\$ 592,122	49.8%
Total Expenses, Base, Grants & Enterprise	\$ 1,033,328	\$ 87,205	\$ 429,947	41.6%
Fund Balance	\$ 155,113	\$ 15,619	\$ 162,175	
Operating Reserves	\$ 30,113			
Estimated Available Fund Balance	\$ 125,000			



EXECUTIVE MEMORANDUM

DATE OF RELEASE: December 1, 2016
DATE OF CONSIDERATION: December 8, 2016
TO: Board of Directors
FROM: Office of Engineering and Planning Division
SUBJECT: 2017 Permit Fees

ISSUE

Set permit fees to cover the costs of permit programs, based on a cost and revenue analysis for CY2017.

RECOMMENDATION

Approve Resolution No. 2016-10 – Setting the CY2017 Permit Fees as per attached fee schedule.

DISCUSSION

In November, 2007 your Board authorized the office of the executive director to adjust fees annually, using a cost and revenue analysis to determine the appropriate fees for each upcoming year. We have conducted a cost and revenue analysis to determine the appropriate fees for calendar year 2017. The analysis is based on the costs of receiving permit applications, notifications and plans, drafting and issuing permits and approvals, and assuring compliance with such permits, approvals and plans. Typically, the costs of these vital resources increase. However, workforce restructuring and maximizing systems have resulted in holding costs fairly static over the past three years.

Furthermore, the conducted a cost and revenue analysis indicates that the current permit fees will recover the anticipated 2017 costs of the permit programs. Thus, no fee increases are needed for 2017. The proposed 2017 Permit Fee Schedule, based on the attached permit program cost and revenue analysis, is presented for your consideration and approval.

Encl Resolution No. 2016-10
Proposed 2017 Permit Fee Schedule
Permit Program Cost and Revenue Analysis

AGENDA ITEM NO. 7

RESOLUTION NO.: 2016-10
BEFORE THE GOVERNING BOARD OF THE
YAKIMA REGIONAL CLEAN AIR AGENCY (YRCAA)

APPROVING 2017 PERMIT FEES)

WHEREAS, the Board of Directors of Yakima Regional Clean Air Agency adopted a full cost recovery policy for permits and services on October 15, 1997; and

WHEREAS, existing permit fees, approved on November 12, 2015, are anticipated to recover 2017 permit program operating costs, now therefore;

BE IT RESOLVED, that the YRCAA Board of Directors approve the new 2017 fee schedule; and

BE IT FURTHER RESOLVED, that the Board of Directors approves the fees set forth in the Proposed 2017 Permit Fee Schedule attached to this Resolution; and

BE IT FURTHER RESOLVED, that the Board of Directors authorizes the Agency to implement the adopted fees, effective January 1, 2017.

On motion of _____, seconded by _____, the foregoing resolution is hereby PASSED AND ADOPTED by the Yakima Regional Clean Air Agency Board of Directors on this Eighth day of December, 2016.

Jon DeVaney, Board Chair

Rand Elliott, Director

Steven Jones, Director

Bill Lover, Director

Norm Childress, Director

Quatandra Jarvis, Clerk of the Board

2017 PROPOSED FEES - Compared to 2016, 2015 and 2014

Permit Type	Proposed 2017	2016	2015	2014	Comment
Registration					
Minor Source	\$ 453	\$ 453	\$ 453	\$ 453	Annual
Complex Minor Source	\$ 1,285	\$ 1,285	\$ 1,285	\$ 1,285	Annual
Synthetic Minor Source	\$ 2,660	\$ 2,660	\$ 2,660	\$ 2,660	Annual
Air Operating Permit					
	Varies	Varies	Varies	Varies	Annual
New Source Review	\$ 400 +	\$ 400 +	\$ 400 +	\$ 400 +	Application fee plus cost
Temporary Source Relocation	\$ 125	\$ 125	\$ 125	\$ 125	
Regulatory Order					
	\$ 400 +	\$ 400 +	\$ 400 +	\$ 400 +	Application fee plus cost
General Permit					
	\$ 400 +	\$ 400 +	\$ 400 +	\$ 400 +	Application fee plus cost
SEPA					
	\$ 400 +	\$ 400 +	\$ 400 +	\$ 400 +	Application fee plus cost
Dust Control					
Master Plans	\$ 327	\$ 327	\$ 327	\$ 327	Per plan review
Site Notification	\$ 155	\$ 155	\$ 155	\$ 155	Per plan review
Burn Permits					
Residential	\$ 48	\$ 48	\$ 48	\$ 48	Annual
Agricultural Piles	\$ 1.00	\$ 1.00	\$ 1.00	\$ 1.00	Annual, Per ton
Agricultural Acres	\$ 3.75	\$ 3.75	\$ 3.75	\$ 3.75	Annual, Per acre
Land Clearing					
Land Clearing Piles	\$ 2.18	\$ 2.18	\$ 2.18	\$ 2.18	Per event, Per ton
Land Clearing Acres	\$ 8.13	\$ 8.13	\$ 8.13	\$ 8.13	Per event, Per acre
Structure Fire Training					
Conditional Use	\$ 218	\$ 218	\$ 218	\$ 218	Per event
	\$ 2.18	\$ 2.18	\$ 2.18	\$ 2.18	Per event, Per ton
Demolition / Renovation /					
Asbestos	\$ 867	\$ 867	\$ 867	\$ 867	Quantity
Asbestos Removal Notification	\$ 425	\$ 425	\$ 425	\$ 425	Over 10,000 lf or 50K sf
	\$ 164	\$ 164	\$ 164	\$ 164	1,001-10,000 lf, 5,001-50K sf
	\$ 86	\$ 86	\$ 86	\$ 86	261-1,000 lf, 161-5,000 sf
	\$ 44	\$ 44	\$ 44	\$ 44	11-260 lf, 49-160 sf
	\$ 77	\$ 77	\$ 77	\$ 77	Demolition Only
	\$ 167	\$ 167	\$ 167	\$ 167	0-10 lf or 0-48 sf
	\$ 338	\$ 338	\$ 338	\$ 338	Homeowner any quantity
	\$ 87	\$ 87	\$ 87	\$ 87	Flat roof any quantity
	\$ 39	\$ 39	\$ 39	\$ 39	Annual Notice
					Emergency surcharge
					Revision

YRCAA Permit Program Cost and Revenue Analysis for 2017 Permit Fees

Purpose

The purpose of this analysis is to determine the appropriate Source Registration, Asbestos / Demolition, Dust Plans, and Burn Permits fee amounts for the 2017 calendar year. For this analysis, “appropriate fee amount” is defined as that amount, when multiplied by the number of expected permits for 2017, which will equal that permit type’s share of total Base Operations costs projected for FY2017. That share is the cost of receiving permit applications, notifications and plans, drafting and issuing permits and approvals, reviewing and approving plans and notifications, and assuring compliance with such permits and approvals.

Permit Program Costs

Costs were projected in the FY2017 Budget. Cost categories include salaries and benefits, supplies, services and capital outlay.

Permit Program Revenue

Revenues were tabulated for FY2016 as recorded by the Yakima County Treasurer’s Office and as verified by YRCAA Budget Verification Analyses. Permit Program revenue sources include source registration fees, asbestos / demolition fees, dust plan review fees, and burn (*excluding agricultural) permit fees. Revenue from penalties, Title V Permits, New Source Review, Regulatory Orders, General Permits, Agricultural Burning Permits and SEPA are not considered in this analysis.

Rationale

The rationale is that the permit program’s share of total Base Operations costs should be equivalent to its share of Base Operations revenue and that each permit type’s share of total permit program costs should be equivalent to its share of the total permit program revenue. This analysis examines the costs and revenues for the permit program and determines the appropriate fees for the calendar year 2017.

A spreadsheet was used to calculate the appropriate permit fee amounts. The following procedure was used to arrive at the appropriate permit fee amounts:

1. Calculate permit program’s share of the costs:
 - a. Divide the FY2016 permit program revenue by total FY2016 Base Operations revenue to find the permit program per cent of total revenue; and
 - b. Multiply the revenue percentage by FY2017 projected total Base Operations costs to find the permit program’s share of projected costs.
2. Calculate each permit type’s share of projected permit program costs:
 - a. Divide the revenue from each permit type by the total revenue from the permit program to find each permit type per cent of permit program; and
 - b. Multiply the revenue percentage by total projected program share of costs to find the permit type share of program costs.
3. Calculate the needed increase:
Subtract FY2016 permit type revenue from FY2017 permit type share of costs.
4. Calculate the appropriate permit fee:
 - a. Divide the needed increase by the 2017 expected number of permits; and
 - b. Add the current permit fee to the needed increase to find the appropriate fee.

Findings

Fees for Title V Permits, New Source Review, Regulatory Orders, and General Permits are structured to recover actual costs per permit and require no adjustments. Fees for source registration, asbestos / demolition, dust plans and all burning permits except agricultural permits* which require minor increases by 3.14% (overall) to cover projected costs. Projected FY2017 revenues fall \$9662 short of projected costs.

***Agricultural Burning Permit Fees**

Agricultural burning permit fees are set according to statute by the state Agricultural Burning Practices and Research Task Force (ABPRTF). Effective July 1, 2012 fees were increased by the ABPRTF to the rates shown in the proposed fee schedule. These fees remain unchanged.

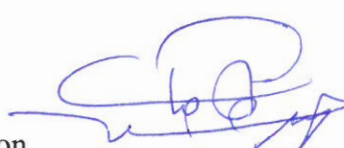
Recommendations

This Office recommends that there be a change in fee amounts and your Board adopt the proposed fee schedule for Calendar Year 2017 as shown to the attached fee schedule.



Executive Memorandum

Date of Release: December 1, 2016
Date of Consideration: December 8, 2016
To: Board of Directors
From: Office of the Engineering and Planning Division
Subject: November Engineering and Planning Division Report



Issue:
Monthly activities report to the Board of Directors of YRCAA.

Recommendation(s):
Accept and File.

Discussion:
The following summarizes some of the activities for the month of November including some additional related information:

- On November 21, 2016 EPA proposed refinements to Section 105 allocation methodology and is soliciting comments on the proposal by December 23, 2016.
- EPA has used the same methodology for allocating Section 105 grants to the regions (for distribution to state and local air agencies) since the 1990s. In recent years, recognizing that the formula was outdated, the agency updated the methodology and proposed phasing it in for FY 2011. However, Congressional appropriations language prohibited EPA from instituting the new formula until FY 2016, when Congress instructed the agency to begin to use the updated methodology.
- For FY 2016, EPA began the phase-in, but provided supplemental funding so that no region would experience a decrease from FY 2015 levels, while regions slated for increases could receive additional grants. In the meantime, during the summer of 2016, EPA worked on further refinements to the methodology that the agency hoped would be simple and straightforward, sustainable over time and transparent.
- The proposed formula relies on certain factors, weightings and update frequencies to calculate regional allocations. Ninety percent of the methodology is based on certain primary factors (e.g., monitoring, nonattainment and maintenance, population, emissions, etc.) that reflect routine and ongoing work on the part of state and local air agencies. The other ten percent focuses on short-term factors that reflect new and emerging activities. The agency's plan is to phase the new formula in over five or ten years and to limit regional losses to no more than 2.5% percent from the prior year's amount in order to "maintain the integrity of state and local air programs and to facilitate a smooth transition.
- Issued three New Source Reviews (NSR) Orders of Approval.
- Had conference calls with Ecology, US EPA and all Local Clean Air Agencies (LCAA) regarding rules making changes and Grant 105, respectively.
- Worked on Title V Air Operating Permit (AOP) renewal.
- Issued one conditional use permit
- Reviewed/responded to 15 SEPA projects.

AGENDA ITEM NO. 8



*Yakima Regional Clean Air Agency
329 North First Street, Yakima WA 98901
(509) 834-2050 yakimacleanair.org*

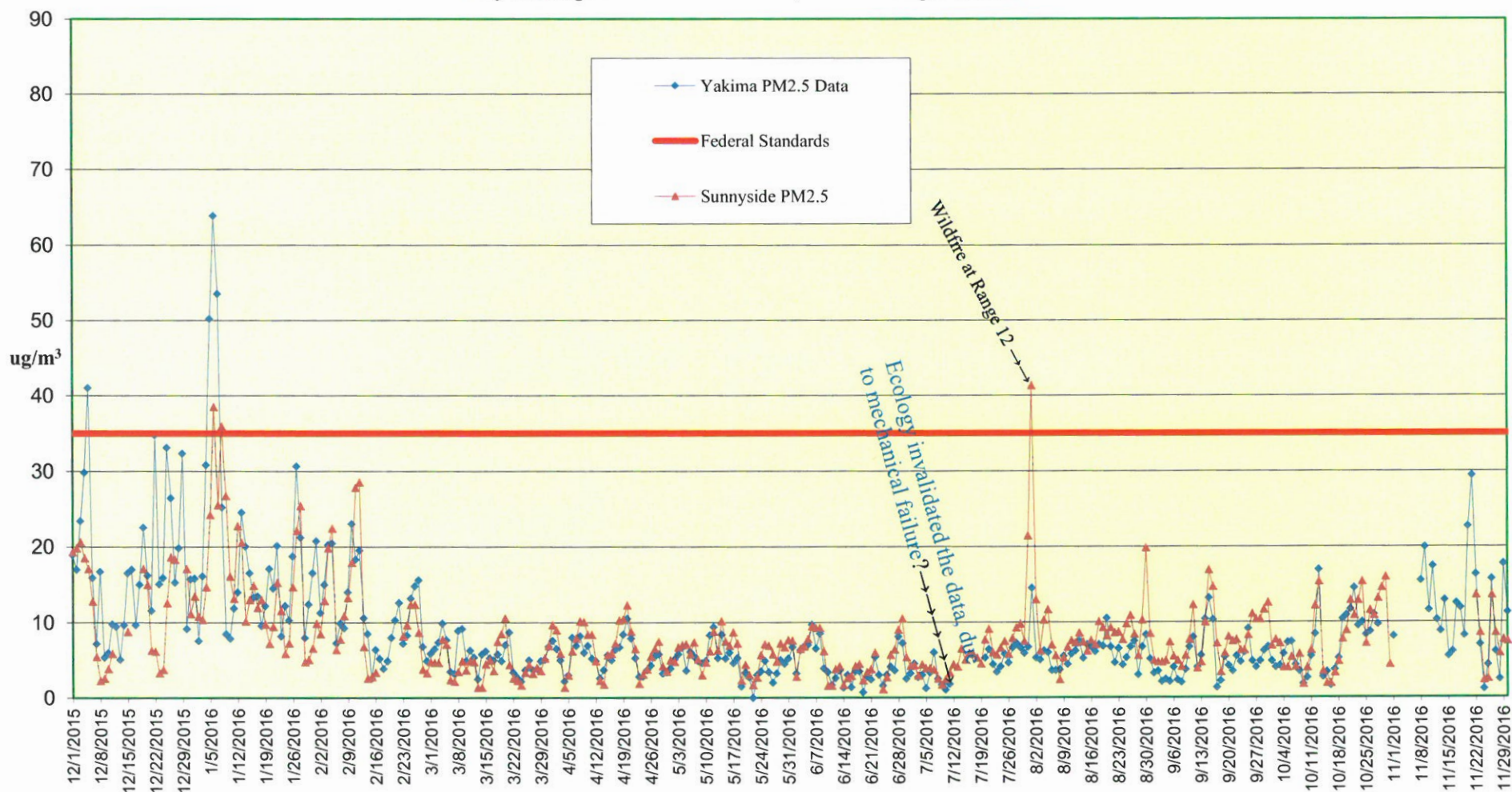
- Issued 12 agricultural burn permits.
- Had several technical assistance meetings with industry.
- Worked on the daily weather forecasts for the burn status and agricultural allocation.
- One burn ban was called during the month of November lasted for two days.
- No exceedance is expected for the month of November for Yakima (see attached graph)

Attachments:

- ✓ *PM_{2.5} Monitor Data for the month of November, 2016 and the annual graphs.*

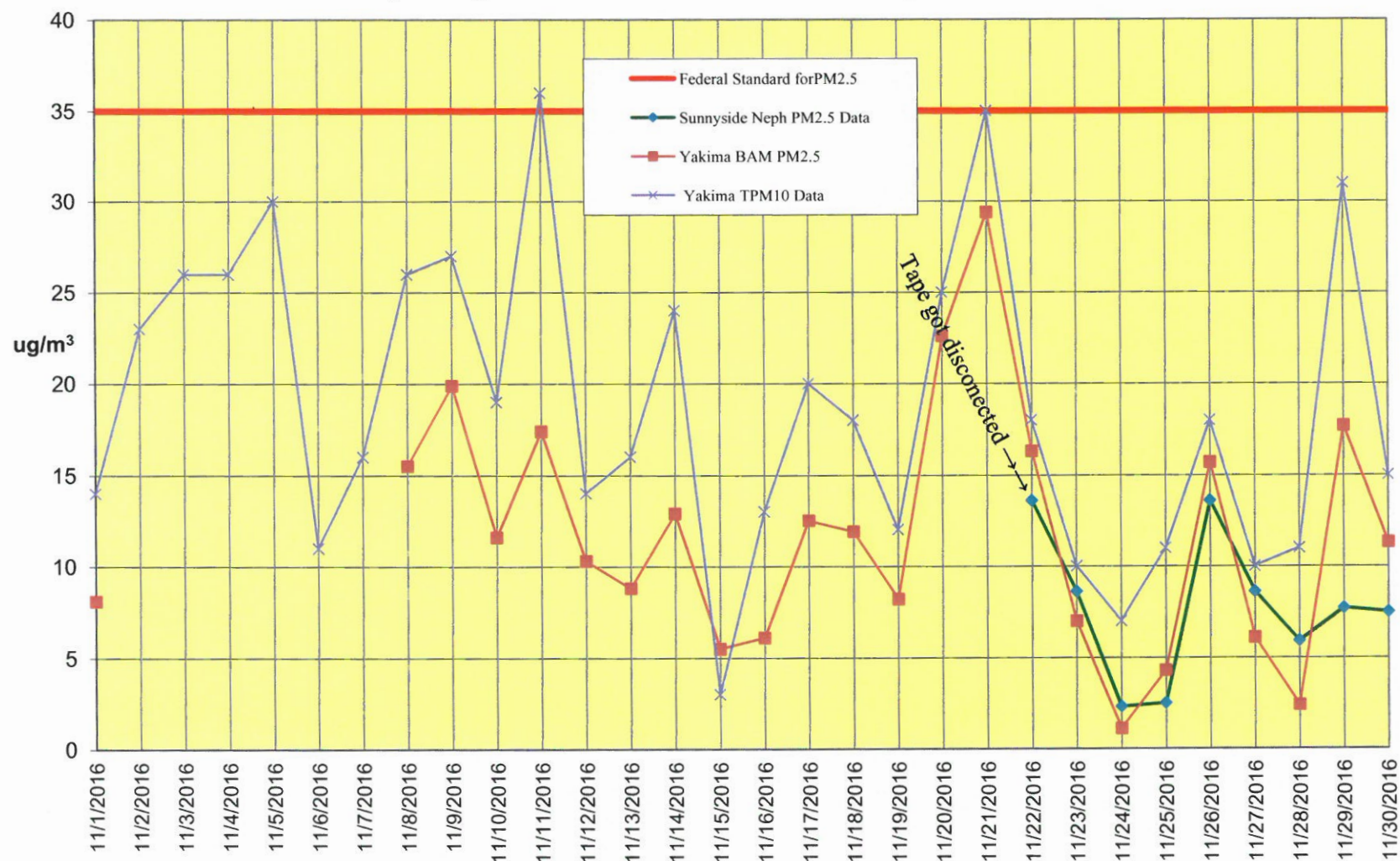
PM_{2.5} FEM/BAM_{2.5}(starting September 15, 2015) Annual Air Monitoring Data, City of Yakima

Daily Averages from December 1, 2015 through October 30, 2016



PM_{2.5} BAM_{2.5} Data and TPM₁₀ for Yakima; Neph PM_{2.5} Data for Sunnyside

Daily Averages Value from November 1, 2016 through November 30, 2016





Executive Memorandum

Date of Release: December 1, 2016

Date of Consideration: December 8, 2016

To: YRCAA Board of Directors

From: Office of the Compliance & Enforcement Division Supervisor

Subject: November 2016 Compliance & Enforcement Division Report *K. Hurley*

Issue: N/A

Recommendation(s): Accept and File

Discussion: During the month of November the Division setup, collected and shipped for analysis approximately 20 Air Monitoring Samples and completed 5 Quality Control checks on 5 Air Monitors. The division also investigated 22 Complaints, issued 8 Notices of Violation (NOV) and 5 Notices of Penalty (NOP) for previously issued NOV's, and issued 1 Assurance of Discontinuance (AOD). In addition, the Division reviewed and processed 23 Notifications of Demolition / Renovation (NODR), 1 Dust Control Plan, and completed 5 Air Pollution Source Site Visits.

The following table itemizes, by type, the complaints received and the number of NOV's issued for the month of November 2016:

<u>Type of Complaint</u>	<u># of Complaints</u>	<u># of NOV's</u>	<u># of AOD's</u>
Residential Burning	4	2	0
Agricultural Burning	5	3	0
Other Burning	11-SFBD	1	1-SFBD*
Fugitive Dust	0	0	0
Agricultural Dust	0	0	0
Agricultural Odor	0	0	0
Surface Coating	1	1	0
Odor	1	0	0
Asbestos	0	0	0
Other	0	1-NSR**	0
<u>TOTALS</u>	<u>22</u>	<u>8</u>	<u>1</u>

* SFBD-Solid Fuel Burning Device

** NSR- New Source Review

AGENDA ITEM NO. 9



DEPARTMENT OF
ECOLOGY
State of Washington

**Air Monitoring Data Quality Assessment Report
2nd Quarter 2016**

Prepared by

**Anna Ya-Chun Tai
Air Quality Program**

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Acronyms and Abbreviations

AQP	Air Quality Program
AQS	Air Quality System
CO	carbon monoxide
CV	Coefficient of Variation
DQI	Data Quality Indicator
DQO	Data Quality Objective
EPA	United States Environmental Protection Agency
FEM	Federal Equivalent Method
FRM	Federal Reference Method
MQO	Measurement Quality Objective
NAAQS	National Ambient Air Quality Standards
NCore	National Core Monitoring Network
NIST	National Institute of Standards and Technology
NO	nitric oxide
NO ₂	nitrogen dioxide
PE	Performance Evaluation
PQAO	Primary Quality Assurance Organization
PM ₁₀	particulate matter with diameter less than 10 microns
PM _{10-2.5}	particulate matter with diameter between 10 and 2.5 microns
PM _{2.5}	particulate matter with diameter less than 2.5 microns
ppb	parts per billion
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
SASS	Speciation Air Sampling System
SO ₂	sulfur dioxide
WAQA	Washington Air Quality Advisory

Introduction

The Washington State Ambient Air Monitoring Network (Washington Network) is designed to collect vital air quality information for use by federal, state, and local air agencies as well as tribes, the research community, and the public. These entities use the data collected within the Washington Network to make decisions that will have public health, economic, and political impacts. Air monitoring data are never error free and always contain some level of uncertainty. Therefore, it is critical that ambient air monitoring data collected within the Washington Network are of known, acceptable, and comparable quality. A firm understanding of the amount of inherent error associated with air monitoring data helps reduce the likelihood of decision errors by data users.

In order to provide decision makers with data of known and acceptable quality, the Washington State Department of Ecology (Ecology) implements a quality system that governs the Washington Network ambient air monitoring activities. This quality system, and Ecology's role as the Primary Quality Assurance Organization (PQAO) for the Washington Network, is described in Ecology's Quality Assurance Plan (QAP). Ecology's goal as the PQAO is to implement practices, such as consistency across measurement methods, which will help to reduce the amount of uncertainty associated with data collection. EPA's Quality Assurance Handbook, Volume II, provides principles that help PQAO's achieve this goal:

- Operation by a common team of field operators according to a common set of procedures.
- Use of common standard operating procedures.
- Common calibration facilities.
- Oversight by a common quality assurance organization.
- Support by a common management, laboratory, or headquarters.

The quality assurance regulations set forth in 40 CFR Part 58 Appendix A have been developed to ensure that monitoring programs are planned such that decision makers understand the data quality requirements that are needed in order to determine compliance with the National Ambient Air Quality Standards (NAAQS), that checks are included to assess data quality, and corrective actions are in place to improve quality systems when needed. Washington Network operations are carried out in accordance with these regulations for its Federal Reference Method (FRM) and Federal Equivalent Method (FEM), NAAQS-compliance monitoring. In addition, Ecology has a goal to implement guidance, whenever practical, from the United States Environmental Protection Agency (EPA), Office of Air Quality Planning and Standards for these and other monitoring efforts within the Washington Network.

The Air Monitoring Data Quality Assessment Report for the 2nd Quarter 2016 describes the quality of the data collected from April 1 through June 30, 2016.

Data Quality

To provide decision makers with data of acceptable quality, EPA implemented the Data Quality Objective (DQO) process and established acceptance criteria for precision and bias. DQOs are a set of performance measures used in data collection that specify the level of uncertainty (error) that the decision maker is willing to accept in the data. By knowing how much uncertainty is in the data, especially data collected at locations that are at risk of being declared “nonattainment” or are already in nonattainment, decision makers are provided additional confidence to make informed policy decisions regarding the protection of public health and the environment. DQOs are assessed through the use of data quality indicators (DQIs), which are the quantitative statistics and the qualitative descriptors used to interpret the degree of acceptability or utility of data to the user. The DQIs are used to establish the Measurement Quality Objectives (MQOs). Data quality is assessed quarterly using the EPA’s AMP256 QA Data Quality Indicator Report, downloaded from EPA’s Air Quality System (AQS).

MQOs are based on confidence intervals. A confidence interval is a measurement of how accurate the measurement is. There is a difference between the bias being 5 percent $\pm$ 10 percent as compared to the bias being 5 percent $\pm$ 1 percent. Close attention to these intervals can be helpful in preventing data loss and providing decision makers greater confidence in the data and their decisions.

Sampling Methods

The assessment is divided into four categories: **Automated Data**, **Manual Data**, **Meteorological Data**, and **Washington Air Quality Advisory (WAQA) Data**, and subdivided into monitoring methods specifying allowable uncertainty levels required to meet the DQOs.

Automated, manual, and meteorological data are collected using EPA-tested and approved instruments that directly support rulemaking, enforcement, regulatory, or policy decisions. The data also support research projects of significant national interest requiring the most formal DQOs, including detailed and rigorous quality control (QC) and quality assurance (QA) for legal and scientific defensibility. Most instruments used in the collection of automated and manual data are listed as FRM or FEM.

Data used for the National Air Monitoring Strategy require, at a minimum, routine QC and QA checks as required in the CFR. Results from these checks are entered into the EPA AQS database and aggregated on quarterly, annual, and three-year intervals to assess precision and bias on a state and national level.

WAQA and Air Quality Index (AQI) data are collected with a mix of non-FRM/FEM instruments to report air quality to the public in near-real-time. However, one should use caution when using non FRM/FEM data to make decisions as there can be a greater degree of error inherent in the data.

Automated Data

Data collected by instruments that continuously measure the ambient air are referred to as Automated Data. Automated instruments are designed to measure specific pollutants, including ozone (O₃), carbon monoxide (CO), nitric oxide (NO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and fine and coarse particulate matter (PM_{2.5} and PM₁₀, respectively). Instrument calibrations are checked on a routine basis and the results are used to determine the quality of the data.

Data Quality Indicators for Gaseous Pollutants

One-Point QC Precision Estimate for Gaseous Pollutants (CV%)

On a routine basis, QC checks are performed on the station analyzer to determine the calibration drift of the instrument. The analyzer is challenged with gases traceable to National Institute of Standards and Technology (NIST) standards and the difference between the two is recorded by a data acquisition system and submitted to AQS.

To determine the measure of mutual agreement among the QC checks, the coefficient of variation CV% (precision estimate) is calculated every quarter as described in the Monitoring Rule to assess the precision of the instrument. Slight variations (or wiggle) in the precision is acceptable provided the data is not biased too high or low. Large variations in precision are unacceptable and must be corrected.

Bias Estimate (Bias)

The bias estimate is the systematic difference (or noticeable jump) of the expected concentrations and the measured concentrations over time. As described in the Monitoring Rule, bias estimates are calculated to determine if there is a systematic or persistent distortion of the data which causes error in one direction. A positive (+) bias indicates that the instrument is measuring above the actual (true) value. A negative (-) bias indicates that the instrument is measuring below the actual value. A “±” symbol represents the instrument “straddles the line” and is neither biased positive nor negative.

A continued bias in an instrument close to either side of “true value” is acceptable. However, a continued bias nearing the limits on the MQOs should be corrected before variations in the precision result in the instrument failing to meet the MQOs.

The one-point QC checks are submitted to AQS and aggregated by quarter, annual, and three-year periods to determine if the DQOs are being met on a national level.

Completeness (% Valid Data)

Completeness is a term used to describe, in percentage, the actual amount of data collected compared to what was expected. The percentage of valid data is the measure of data (averaged in hours) obtained from a monitoring instrument (that meets the MQOs) calculated against the

total number of hours in the calendar quarter and may include specific months or number of months in the year that must include valid data to determine if the DQOs were met. The AQP data completeness goal is that at least 80 percent of the expected data be collected each calendar quarter.

Loss of data occurs on occasion and may be a result of a calibration error, malfunction, power loss, telemetry communications, or operator error.

Annual Performance Evaluations

Performance evaluations are independent evaluations of the monitoring site operations conducted by AQP QA personnel. Site evaluations are performed at all automated, manual, and meteorological monitoring sites and concerns noted. The primary purpose of the evaluation is to provide an independent check to determine if the checks made by QA personnel agree with previous QC checks made at the site by automated or manual checks. A large difference between the two may indicate an instrument or systematic problem.

Ozone

The MQO for the measurement of ozone is the precision estimate (CV%) and bias be within ± 7 percent.

Table 1. DQI Results for Ozone Analyzers in Percentage

Location	AQS Number	CV%	Bias	% Valid Data
Anacortes	530570011	2.17	2.07	97
Cheeka Peak	530090013	1.43	± 1.00	98
Cheney	530630001	3.45	3.05	94
Custer	530730005	0.84	1.13	97
Enumclaw	530330023	2.31	- 1.65	93
Greenbluff	530630046	2.10	± 1.68	97
Issaquah	530330010	1.28	± 1.05	98
Kennewick, S. Clodfelter	530050003	1.31	2.04	98
Mt. Rainier, JVC	530530012	1.24	1.35	89
North Bend	530330017	0.95	- 0.95	83
Seattle, Beacon Hill (BH)	530330080	2.06	- 2.27	98
Vancouver	530110011	1.75	- 1.74	97
Yelm	530670005	1.09	- 1.97	97

Annual Performance Evaluations for Ozone

An evaluation involves an independent assessment by AQP QA personnel who use independent equipment to challenge the station analyzer with gas concentrations at levels that best reflect ambient concentrations observed at the monitoring site. The difference between the actual ozone concentrations (generated by the QA personnel equipment) is compared against the station analyzer response. Two independent assessments are performed each year and the observations at each test level are averaged by year.

The analyzers are challenged with independent gas concentrations (Levels 2–6) to best reflect ambient concentrations observed at the monitoring site.

The MQO for audit results is that the difference be within ± 7 percent for Levels 3–6 and within ± 1.5 ppb or ± 15 percent for Levels 1 and 2.

Table 2. Performance Evaluation Results for Ozone Analyzers in Percent Difference from Assessment Concentration

Location	Level 1 4–6 ppb	Level 2 6–20 ppb	Level 3 20–40 ppb	Level 4 40–70 ppb	Level 5 70–90 ppb	Level 6 90–120 ppb
Anacortes	*	- 4.38	*	*	1.32	1.50
Cheeka Peak	*	5.33	*	*	5.83	5.90
Cheney	*	- 1.67	*	*	- 0.67	0.92
Custer	*	- 4.38	*	*	- 1.60	- 2.08
Enumclaw	*	- 7.80	*	- 3.17	1.47	- 1.00
Greenbluff	18.00	5.56	*	*	2.13	1.27
Issaquah	*	- 2.86	*	*	- 0.56	0.40
Kennewick, S. Clodfelter	*	0.63	*	*	0.14	1.20
Mt. Rainier, JVC	†	†	†	†	†	†
North Bend	*	-15.33‡	*	*	- 4.71	- 2.60
Seattle, BH	†	†	†	†	†	†
Vancouver	*	- 11.11	*	- 0.72	0.85	0.64
Yelm	*	3.13	*	*	1.29	1.00
* No evaluation performed at this level.						
† No evaluation performed during this quarter.						
‡ QA is investigating whether its transfer standard is functioning properly.						

Carbon Monoxide (CO)

The MQO for the measurement of CO at the NCore (NC) sites is that the relative precision (CV%) and bias be within ± 15 percent. For instruments measuring CO for NAAQS attainment (Seattle, 10th & Weller and Spokane), the relative precision (CV%) and bias must be within ± 10 percent. The table below represents the average precision and bias of the CO instruments in the Washington Network.

Table 3. DQI Results for CO Analyzers in Percentage

Location	AQS Number	CV%	Bias	% Valid Data
Cheeka Peak (NC)	530090013	6.72	± 5.51	54*†
Seattle, BH (NC)	530330080	1.13	1.80	97
Seattle, 10th & Weller (near-road)	530330030	6.32	- 5.23	91
Spokane, 3rd & Washington	530630049	4.76	± 4.42	100
* QC check failures.				
† Power outage events.				

Annual Performance Evaluation for CO

An evaluation involves an independent assessment by AQP QA personnel who use independent equipment to challenge the station analyzer with gas concentrations at levels that best reflect ambient concentrations observed at the monitoring site. The difference between the actual CO concentrations (generated by the QA personnel equipment) is compared against the station analyzer response.

The NCore and near-road instruments are challenged with independent gas concentrations (Levels 1–5) to best reflect ambient concentrations observed at the monitoring sites. The Spokane monitor is challenged at higher levels (Levels 5–8) due to the type of instrument being used.

The MQO for performance evaluation results is that the difference be within ± 10 percent for Levels 3–8 and within ± 30 ppb or ± 15 percent for Levels 1 and 2.

Table 4. Performance Evaluation Results for CO Analyzers in Percentage

Location	Level 1 20–59 ppb	Level 2 60–199 ppb	Level 3 200–899 ppb	Level 4 900–2999 ppb	Level 5 3000– 7999 ppb	Level 6 8000– 15999 ppb	Level 7 16000– 30999 ppb	Level 8 31000– 39999 ppb
Cheeka Peak (NC)	*	- 0.60	2.52	3.93	*	*	*	*
Seattle, BH (NC)	†	†	†	†	†	†	†	†
Seattle, 10th & Weller	†	†	†	†	†	†	†	†
* No evaluation performed at this level.								
† No evaluation performed during this quarter.								

Sulfur Dioxide (SO₂)

The MQO for the measurement of SO₂ is the relative precision (CV%) and bias be within ± 10 percent.

Table 5. DQI Results for SO₂ Analyzers in Percentage

Location	AQS Number	CV%	Bias	% Valid Data
Anacortes	530570011	2.81	± 2.46	96
Cheeka Peak	530090013	3.07	± 2.45	94
Seattle, BH	530330080	1.61	± 1.49	98

Annual Performance Evaluation Audits for SO₂

An evaluation involves an independent assessment by AQP QA personnel who use independent equipment to challenge the station analyzer with gas concentrations at levels that best reflect ambient concentrations observed at the monitoring site. The difference between the actual SO₂ concentrations (generated by the QA personnel equipment) is compared against the station analyzer response.

The analyzers are challenged with independent gas concentrations (Levels 1–6) to best reflect ambient concentrations observed at the monitoring site.

The MQO for performance evaluation results is that the difference be within ± 10 percent for Levels 4–6, within ± 15 for Level 3, and within ± 1.5 ppb or ± 15 percent for Levels 1–2.

Table 6. Performance Evaluation Results for SO₂ Analyzers in Percentage

Location	Level 1 0.3–2.9 ppb	Level 2 3–4.9 ppb	Level 3 5–7.9 ppb	Level 4 8–19.9 ppb	Level 5 20–49.9 ppb	Level 6 50–99.9 ppb
Anacortes	-18.52 (- 0.5 ppb)	*	- 15.38 [‡]	*	- 1.92	*
Cheeka Peak	3.57	*	- 6.41	*	3.56	*
Seattle, BH	†	†	†	†	†	†

* No evaluation performed at this level.

† No evaluation performed during this quarter.

[‡] QA is investigating whether its dilution calibrator is functioning properly.

Nitrogen Dioxide (NO₂)

The MQO for the measurement of NO₂ is the relative precision (CV%) and bias be within ± 15 percent.

Table 7. DQI Results for NO₂ Analyzers in Percentage

Location	AQS Number	CV%	Bias	% Valid Data
Seattle, 10th & Weller	530330030	1.29	5.19	90
Seattle, BH	530330080	3.37	4.38	95
Tacoma, S 36th St.	530530024	5.66	8.95	86

Performance Evaluations Audits for NO₂

An evaluation involves an independent assessment by AQP QA personnel who use independent equipment to challenge the station analyzer with gas concentrations at levels that best reflect ambient concentrations observed at the monitoring site. The difference between the actual NO₂ concentrations (generated by the QA personnel equipment) is compared against the station analyzer response.

The analyzers are challenged with independent gas concentrations (Levels 1–6) to best reflect ambient concentrations observed at the monitoring site.

The MQO for performance evaluation results is that the difference be within ± 15 percent for Levels 3–7 and within ± 1.5 ppb or 15 percent for Levels 1–2.

Table 8. Performance Evaluation Results for NO₂ Analyzers in Percentage

Location	Level 1 0.3–2.9 ppb	Level 2 3–4.9 ppb	Level 3 5–7.9 ppb	Level 4 8–19.9 ppb	Level 5 20–49.9 ppb	Level 6 50–99.9 ppb	Level 7 100–299.9 ppb
Seattle, 10th & Weller, near-road	*	*	*	*	*	*	*
Seattle, BH	*	*	*	*	*	*	*
Tacoma, S 36th St.	*	*	*	*	*	*	*

* No evaluation performed during this quarter.

Nitric Oxide (NO)

The MQO for the measurement of NO is the relative precision (CV%) and bias be within ± 15 percent.

Table 9. DQI Results for NO Analyzers in Percentage

Location	AQS Number	CV%	Bias	% Valid Data
Cheeka Peak (NC)	530090013	1.22	- 0.86	93
Seattle, BH (NC)	530330080	3.22	- 6.51	94

Performance Evaluations for NO

The MQO for performance evaluation results is that the difference be within ± 10 percent for Levels 6–7, within ± 15 percent for Levels 3–5, and ± 1.5 ppb or ± 15 percent for Levels 1–2.

Table 10. Performance Evaluation Results for NO Analyzers in Percentage

Location	Level 1 0.3–2.9 ppb	Level 2 3–4.9 ppb	Level 3 5–7.9 ppb	Level 4 8–19.9 ppb	Level 5 20–49.9 ppb	Level 6 50–99.9 ppb	Level 7 100–300 ppb
Cheeka Peak	*	*	1.87	*	14.25	*	7.44
Seattle, BH	†	†	†	†	†	†	†
* No evaluation performed at this level.							
† No evaluation performed during this quarter.							

Data Quality Indicators for Particulate Pollutants

Bias Estimate (Bias)

The bias estimate is the systematic difference of the expected flows and the measured flows over time. As described in the Monitoring Rule, bias estimates are calculated to determine if there is a systematic or persistent distortion of the data which causes error in one direction.

Instrument flow rates can fluctuate over time. A one-point flow rate verification (QC check) of the instrument is performed, at a minimum, every 30 days. The objective of the QC check is to measure the true flow rate of the instrument, using NIST traceable standards, while recording the indicated flow rate of the instrument. The difference between the two is calculated (in percentage) to determine how close to “true” the indicated flow is. A positive (+) bias indicates that the instrument flow rates are operating above the actual (true) value while a negative (-) bias indicates that the instruments flow rate is below the actual value. A “±” symbol indicates that

the instrument “straddles the line” and is neither positively nor negatively biased. The checks are aggregated by quarter, annual, and 3-year periods.

One-Point Flow QCs Precision Estimate for Particulate Pollutants (Average % D)

Every 30 days, a one-point flow rate verification (QC check) is performed on particulate instruments by measuring the actual and indicated flow of the instrument. The actual instrument flow is measured by the station operator using NIST-traceable standards. The difference between the actual flow and the indicated instrument flow is calculated and recorded by the station operator and submitted to the AQS.

Semi-Annual Flow Rate Audits (Audit % D)

In addition to monthly QC checks, an independent flow rate audit is performed by QA personnel on a semi-annual basis. The objective of the auditor is to measure the actual flow rate of the instrument using an independent, NIST-traceable standard, while recording the indicated flow rate of the instrument. The deviation between the two flows is calculated, recorded, and submitted to AQS.

Fine Particulate Matter (PM_{2.5} FEM - Continuous)

The MQO for the measurement of PM_{2.5} using an FEM instrument is that bias and precision (Average % D) be within ± 4 percent. Audit results (Audit % D) must be within ± 4 percent and the Design Flow must be within ± 5 percent.

Table 11. DQI Results for Continuous FEM PM_{2.5} Monitors in Percentage

Location	AQS Number	Average % D	Bias	Audit % D	% Valid Data
Anacortes (8500 TEOM)	530570011	- 0.44	- 0.67	- 2.91	96
Bellingham (1405F TEOM)	530730015	1.01	1.74	*	74†
Bremerton (8500 TEOM)	530350007	0.79	1.20	*	99
Darrington (8500 TEOM)	530610020	1.87	2.83	0.33	86
Ellensburg (1405F TEOM)	530370002	- 0.11	± 0.33	- 2.33	83
Kent (8500 TEOM)	530332004	0.07	± 1.68	*	90
Lynnwood (8500 TEOM)	530610005	- 0.66	- 1.05	*	99
Marysville (8500 TEOM)	530611007	0.00	± 0.67	*	84
Marysville (collocated) (8500 TEOM)	530611007	0.17	± 0.66	*	99
Seattle, 10th & Weller near-road (8500 TEOM)	530330030	0.77	± 1.34	1.69	93
Seattle, BH (NC) (8500 TEOM)	530330080	- 1.31	- 2.75	*	99
Seattle, Duwamish (8500 TEOM)	530330057	- 0.29	± 0.80	*	99

Table 11. DQI Results for Continuous FEM PM_{2.5} Monitors in Percentage

Location	AQS Number	Average % D	Bias	Audit % D	% Valid Data
Spokane, Augusta (BAM 1020)	530630021	0.61	± 1.63	0.00	99
Tacoma, South 36th St. (BAM 1020)	530530024	- 0.59	± 1.59	*	100
Tacoma, South L St. (8500 TEOM)	530530029	- 1.31	- 2.04	*	96
Vancouver 84th Ave. (BAM 1020)	530110024	- 0.40	- 0.98	*	60 [†]
Wenatchee, 5th St. (1405F TEOM)	530070011	0.91	± 2.36	*	98
Yakima S. 4th Ave. (BAM 1020)	530770009	0.61	± 2.39	*	100
* No evaluation performed during this quarter.					
† Data logger failures.					
‡ Failed QC checks.					

Particulate Matter (PM₁₀ FEM - Continuous)

The MQO for the measurement of PM₁₀ using an FEM instrument is that total bias be within ± 10 percent; precision (Average % D) and performance evaluation results (Audit % D) be within ± 4 percent.

Table 12. DQI Results for Continuous FEM PM₁₀ Monitors in Percentage

Location	AQS Number	Average % D	Bias	Audit % D	% Valid Data
Colville, E. 1st St.	530650005	1.18	± 1.92	2.14	100
Kennewick	530050002	0.50	± 2.69	- 1.01	81
Spokane, Augusta	530630021	- 0.80	± 2.26	2.14	99
Yakima S. 4th Ave.	530770009	1.67	± 5.46	*	100
* No evaluation performed during this quarter.					

Manual Data

Manual data refers to filter-based monitoring methods which require an operator to physically install and retrieve sample filters. Particulate matter is collected on a sample filter over a 24-hour period. After sampling has been completed sample filters are collected by the operator and sent to the Manchester laboratory for gravimetric analysis. Depending on the method used at the monitoring site, the instrument is designed to selectively collect particulate matter at a specific flow rate on scheduled days.

One-Point Flow Rate Bias Estimate (Signed Bias)

Manual data monitoring methods require accurate flow rate measurements in order to accurately determine pollutant concentrations. Particulate matter concentrations are calculated by the mass of the sample on a filter divided by the volume of air. The volume of air is calculated by the flow rate of the instrument over the elapsed sampling time. Instruments are calibrated to operate at a designed flow rate. Differences in flow rates affect actual concentrations. Figure 1 illustrates how a four percent difference in flow rate impacts the actual concentration of a PM_{2.5} sample.

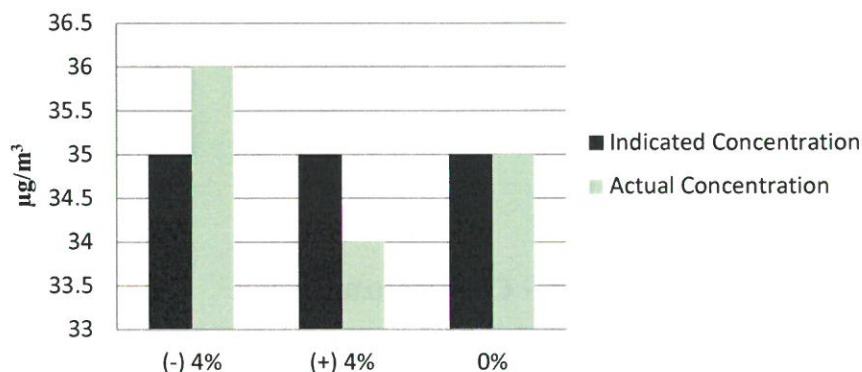


Figure 1. Graph illustrating how flows impact actual concentrations

Instrument flow rates can fluctuate over time. Therefore, a one-point flow rate verification (QC check) on the instrument is required every 30 days. The objective of the check is to measure the true flow rate of the instrument using NIST-traceable standards while recording the indicated flow rate of the instrument. The difference between the two is calculated (in percentage) to determine how “true” the indicated flow is. A positive (+) bias indicates that the instrument flow rate over time is operating above the actual (true) value. A negative (-) bias represents the instrument's flow rate is below the actual value. A “±” symbol represents the instrument “straddles the line” and is neither positively nor negatively biased.

One-Point QC Precision Estimate for Particulate Pollutants (% D)

Monthly QC checks are performed on the instrument by monitoring personnel. The difference between the actual flow and the indicated instrument flow is calculated, recorded, and submitted into the AQS.

Semi-Annual Flow Rate Audits (Audit % D)

In addition to monthly QC checks, an independent flow rate check is performed by QA personnel on a semi-annual basis. The objective of the auditor is to measure the actual flow rate of the instrument using independent NIST traceable standards while recording the indicated flow rate of the instrument. The deviation between the two flows is then calculated and submitted to the AQS.

Fine Particulate Matter (PM_{2.5} FRM - Daily)

The MQO for the measurement of PM_{2.5} using FRM method sampling is that total bias be within ± 10 percent; precision (Average % D) and performance evaluation results (Audit % D) be within ± 4 percent.

Table 13. DQI Results for FRM PM_{2.5} Samplers in Percentage

Location	AQS Number	Average % D	Bias	Audit % D	% Valid Data
Seattle, BH	530330080	- 2.89	- 3.47	*	90
Tacoma, South L St.	530530029	- 0.87	± 2.25	*	88
Tacoma, South L St. (collocated)	530530029	- 1.05	- 2.44	*	75 [†]
Toppenish	530770015	- 0.78	± 2.58	0.42	87
Yakima S. 4 th Ave.	530770009	1.78	± 4.96	*	93
* No evaluation performed during this quarter.					
† Low completeness due to one voided sample (ripped filter) in April and one missing sample in May.					

Precision Estimate for Manual and Continuous Collocated Samples (PM_{2.5}, PM₁₀)

Precision for manual and automated particulate method sampling is estimated using collocated sampling. Unlike the gaseous criteria pollutants where one can use a standard of a known concentration to estimate instrument precision, duplicate measurements are made on-site for comparison. The precision (CV %) should be within ± 10 percent for the FRM and TEOM. Note that the relatively low ambient PM_{2.5} concentrations and the limited number of collected samples (every 12 days) at Tacoma South L St. may yield high imprecision that can be challenging to meet the recommended acceptance range.

Table 14. Precision Estimates for Collocated Samplers in Percentage

Location	Method-Instrument	AQS Number	CV %
Marysville	181-TEOM 8500	530611007	8.79
Tacoma, South L St.	145-FRM PM _{2.5}	530530029	23.32
Seattle, BH	127-PM ₁₀ Coarse	530330080	*
* No collocation for monitoring method.			

PM_{2.5} Chemical Speciation Network

The Chemical Speciation Network (CSN) is a national network of sites used to determine, over a period of several years, trends in concentration levels of selected ions, metals, carbon species, and organic compounds in PM_{2.5}. Flow checks are performed by station operators every 30 days and submitted to a national repository contracted by OAQPS.

In addition to monthly QC checks, an independent flow rate audit is performed by QA personnel on a semi-annual basis. The primary objective of the audit is to measure the true flow rate of the instrument using independent, NIST-traceable, standards while recording the indicated flow rate of the instrument. The deviation between the two flows is calculated. The MQO for the CSN is that the results be within ± 10 percent. Note that the Beacon Hill station is equipped with a Super SASS sampler that has two extra flow channels.

Table 15. Audit Results for Speciation Samplers in Percentage

Location	AQS Number	SASS CH 1 Audit % D	SASS CH 2 Audit % D	SASS CH 3 Audit % D	SASS CH 4 Audit % D	URG Audit % D
Seattle 10th & Weller	530330030	1.47	0.00			- 3.1
Seattle, BH	530330080	*	*	*	*	*
Tacoma, South L St.	530530029	- 0.45	- 0.30			0.6
Yakima S. 4th Ave.	530770009	*	*			*
* No evaluation performed during this quarter.						

Meteorological Data

To ensure data of sufficient quality for modeling applications and permitting use, EPA guidelines for continuous monitoring for Prevention of Significant Deterioration (PSD) are followed for wind speed (WS), wind direction (WD), ambient temperature, ambient pressure (PA) and relative humidity (RH).

Table 16. Data Capture for Meteorological Parameters

Location	AQS Number	WS	WD	AT	PA	RH
Cheeka Peak	530090013	99	99	99	99	99
Colville, E 1st St Established on 5/20/16	530650005	0*	0*	100	---	---
Enumclaw	530330023	97	97	97	---	---
Kennewick	530050002	100	100	100	---	---
North Bend	530330017	100	100	100	---	---
Omak	530470013	100	100	100	---	---
Seattle, 10th & Weller	530330030	96	96	96	---	---
Seattle, BH	530330080	100	100	100	100	100

Table 16. Data Capture for Meteorological Parameters

Location	AQS Number	WS	WD	AT	PA	RH
Spokane, Augusta	530630021	100	100	100	---	---
Tacoma, 36th St	530530024	100	100	100		
Tacoma, Tower Dr.	530531016	100	100	100	---	---
Toppenish	530770015	100	100	100	---	---
Vancouver, Blairmont	530110011	99	99	100	---	---
Wenatchee	530070011	98	98	98	---	---
White Swan	530770016	98	98	100	---	---

* Anemometer malfunctions. It has been corrected in July 2016.

Washington Air Quality Advisory Data

Light Scattering of Fine Particulates (Nephelometer)

The AQP uses a large network of instruments to report PM_{2.5} air pollution information to the public in near “real time” via its WAQA that can be found on its public website. The majority of these instruments (nephelometers) measure light scattering of particulates, not PM_{2.5} directly. Ecology and its partners follow EPA guidance to use nephelometers to report “FRM-like” PM_{2.5} data. Because nephelometers are not an FRM or FEM, PM_{2.5} data collected using nephelometers cannot be used for NAAQS compliance determinations. The data are displayed in “near real time” on Ecology and EPA websites for public information.

Table 17. Completeness Results for Nephelometers

Location	AQS Number	% Valid Data
Aberdeen	530272002	100
Bellevue	530330037	100
Cheeka Peak	530090013	83
Chehalis	530410004	100
Clarkston	530030004	100
Colville, E 1st St.	530650005	100
Dayton	530130002	100
East Wenatchee	530170018	78*
Ellensburg	530370002	100
Kennewick	530050002	100
Lacey	530670013	82
LaCrosse	530750005	100

Table 17. Completeness Results for Nephelometers

Location	AQS Number	% Valid Data
Leavenworth	530070010	100
Longview	530150015	100
Mesa	530210002	100
Moses Lake	530251002	100
Mount Vernon	530570015	100
Neah Bay	530090015	100
North Bend	530330017	98
Omak	530470013	100
Port Angeles	530090009	100
Pt. Townsend	530310003	100
Pullman	530750003	98
Puyallup, 128th Ave.	530531018	100
Ritzville	530010003	100
Rosalia	530750006	100
Seattle, South Park	530331011	100
Shelton	530450007	100
Spokane, Monroe	530630047	100
Sunnyside	530770005	100
Tacoma, Alexander Ave.	530530031	69†
Taholah	530270011	99
Toppenish	530770015	98
Twisp	530470009	100
Walla Walla	530710005	58†
Wellpinit	530650002	100
White Swan	530770016	100
Winthrop	530470010	50†
Yacolt	530110022	100

* Power outage events.

† Failed QC checks.

Note: No QA evaluations are performed on nephelometers. The quality of the data is not assessed.



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Date of Consideration: December 8, 2016
To: Board of Directors
From: Office of the Executive Division *Mark Edler*
Subject: Executive Division Report for November, 2016

WOOD STOVE CHANGE-OUT PROGRAM

- The change out program completed 3 rebates for the month of November 2016. There are 10 low income and 5 rebates in the works, Installers are very busy so progress has slowed.

EDUCATION AND OUTREACH PROGRAMS

- November 9th, the agency participated in the Youth Environmental Summit for middle and high school students at the Yakima Convention Center, approximately 660 students from the Yakima Valley were in attendance.

OTHER INFORMATION

- The agency plans to reinstate Community Air Quality Forum in January of 2017 tentative date for the forum will be held on January 10th at 2:00pm at the YRCAA office. Topics and suggestions for the forum should be submitted to Mark Edler no later than January 5th 2017. The forum will take place on a quarterly basis as long as there is interest.

AGENDA ITEM NO. 10