CHAPTER 2 OPERATION PERMIT MEMORANDUM

TO:       File

THROUGH:  Stephen S. Ours, P.E.
            Chief, Permitting Branch

FROM:     Abraham T. Hagos
            Environmental Engineer

SUBJECT:  U.S. Department of the Navy, Joint Base Anacostia-Bolling
            Permit to Operate Three Boilers at Building 18

DATE:     September 4, 2019

BACKGROUND INFORMATION

Joint Base Anacostia-Bolling (JBAB) is currently authorized to operate three boilers at the
Building 18 heat plant (CU-18-1, CU-18-2 and CU-18-3) by Permit Nos. 6745, 6746 and 6747
issued on October 21, 2014. As required by that set of permits, emissions testing was performed
in February 2016 on Boiler Nos. 1 and 2. JBAB failed to meet the oxides of nitrogen (NOx)
emission standards while burning natural gas. Boiler No. 3 was down for repairs at the time, so it
was not tested. However, in January 2017, testing was performed on Boiler No. 3. It passed the
testing, though emissions were only slightly below the limit established for NOx while burning
natural gas.

JBAB investigated why they had failed the stack testing for NOx and determined that an
erroneous set of manufacturer’s specifications had been submitted to the Air Quality Division
(AQD) at the time of initial permitting.

In an application dated May 9, 2018, JBAB submitted an application requesting an increase in
the NOx emission limits for natural gas and fuel oil and a small reduction in the carbon
monoxide (CO) emission limit while burning fuel oil to adjust the limits to match the corrected
manufacturer’s specifications. They also requested a decreased oxides of sulfur (SOx) limit to
adjust for tightened fuel sulfur content limits in 20 DCMR 801.

Following a meeting between JBAB and AQD’s Permitting Branch on March 21, 2019, JBAB
submitted a revised application, with cover letter dated May 16, 2019 (received June 12, 2019),
revising their request. In this application, they removed their request to increase the NOx
emission limit while burning fuel oil because they had previously been able to show compliance
with that standard through stack testing. Additionally, they reduced their requested NOx limit
increase for natural gas to 10% above their highest stack test run result, a level substantially
below the newly identified manufacturer’s guarantee. They also slightly increased their requested CO limit while burning fuel oil, while keeping it below the previously permitted value.

AQP agrees with the revised requested values and is proposing to adopt them in the revised and renewed permits as follows:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Each Boiler Individually</th>
<th>Total Combined Annual Emissions Limit From the Three Boilers (ton/yr)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Short-Term Limit</td>
<td>Short-Term Limit</td>
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<tr>
<td></td>
<td>(Natural Gas) (lb/hr)</td>
<td>(#2 Fuel Oil) (lb/hr)</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>1.119</td>
<td>1.066</td>
</tr>
<tr>
<td>Oxides of Nitrogen (NOₓ)</td>
<td>1.210</td>
<td>3.458</td>
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<tr>
<td>Total Particulate Matter (PM Total)*</td>
<td>0.145</td>
<td>0.412</td>
</tr>
<tr>
<td>Volatile Organic Compounds (VOC)</td>
<td>0.091</td>
<td>1.095</td>
</tr>
<tr>
<td>Oxides of Sulfur (SO₂)</td>
<td>0.015</td>
<td>0.045</td>
</tr>
</tbody>
</table>

*PM Total includes both filterable and condensable fractions.

Note: The total annual emissions limitation was determined by selecting the maximum of the natural gas and fuel oil emissions for each pollutant.

In addition to making the above changes, AQP is proposing to renew the permit for the equipment and to update certain other permit language to be more consistent with current permit language. Of significant note, AQP has added a reporting condition (Condition V(m)) to require that the requirements of this permit be incorporated into all relevant reports required by the facility’s Title V permits, including semi-annual reports and annual compliance certifications.

The Joint Base Anacostia-Bolling has not requested that any of the materials submitted with this application be held confidential.

RECOMMENDATIONS

The proposed project and attached permits comply with all applicable federal and District air pollution control laws and regulations.

The proposed permit action will be published in the DC Register and on the Department's website on September 13, 2019. Public comments for the permit action will be solicited through October 15, 2019. AQP will address any comments received before taking any final action on the permit applications. If no adverse comments are received, I recommend that permit Nos.
TECHNICAL SUPPORT MEMORANDUM
U.S. Department of the Navy, Joint Base Anacostia-Bolling
Permits Nos. 6745-R1, 6746-R1, and 6747-R1 to Operate Three Boilers at Building 18
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6745-R1, 6746-R1, and 6747-R1 be issued in accordance with 20 DCMR 200.2 promptly upon completion of the public review period.

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