DEQ
Montana Department
of Environmental Quality

February 11, 2017

Susan Stanley
Plant Manager
City of Billings – Public Works Department
Water Reclamation Facility
P.O. Box 30958
Billings, MT 59111

Dear Ms. Stanley:

Montana Air Quality Permit #3827-02 is deemed final as of February 11, 2017, by the Department of Environmental Quality (Department). This permit is for a wastewater treatment facility. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

Julie A. Merkel
Permitting Services Section Supervisor
Air Quality Bureau
(406) 444-3626

John P. Proulx
Environmental Science Specialist
Air Quality Bureau
(406) 444-5391

JM:JP
Enclosure

Montana Department of Environmental Quality
Air, Energy, and Mining Division

Montana Air Quality Permit #3827-02

City of Billings – Public Works Department
Water Reclamation Facility
P.O. Box 30958
Billings, MT 59111

February 11, 2017

MONTANA AIR QUALITY PERMIT

Issued To: City of Billings
Public Works Department –
Water Reclamation Facility
P.O, Box 30958
Billings, MT 59111

Permit #3827-02
Application Complete: 12/15/2016
Preliminary Determination Issued: 01/10/2017
Department's Decision Issued: 01/26/2017
Permit Final: 02/11/2017
AFS #111-0037

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to the City of Billings Public Works Department – Water Reclamation Facility (Billings WRF), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended, for the following:

SECTION I: Permitted Facilities

A. Plant Location

Billings WRF owns and operates a municipal wastewater treatment plant located at 725 Highway 87 East in Billings, Montana. The legal description of the site is in the southeast ¼ of Section 27, Township 1 North, Range 26 East, in Yellowstone County, Montana. The facility incorporates a digester gas-fired internal combustion engine to produce electricity, an emergency/back-up industrial flare, various boilers, and associated equipment. A complete list of permitted equipment is contained in the permit analysis to this permit.

B. Current Permit Action

On December 8, 2016, the Montana Department of Environmental Quality (Department) received an application from the Billings WRF for the modification of MAQP #3827-01. Specifically, the current permit action adds natural gas-fired boilers and air handling units (AHU) as well as emergency diesel generators to the facility's MAQP while removing two decommissioned boilers and an existing emergency diesel generator from the equipment list. A detailed description of the current permit action is contained in Section I.D of the MAQP Analysis.

SECTION II: Conditions and Limitations

A. Emission Limitations and Operational Conditions

1. The 658 brake horsepower (bhp) capacity Waukesha rich-burn internal combustion engine shall combust only digester gas collected from the wastewater treatment process (ARM 17.8.749 and ARM 17.8.752).

2. Emissions from the 658-bhp capacity Waukesha digester gas-fired rich-burn internal combustion engine shall be controlled by good combustion practices and proper operation and maintenance. Emissions from the unit shall not exceed the following (ARM 17.8.752):

a. NO_X: 12.2 pounds per hour (lb/hr)
b. CO: 6.0 lb/hr
c. Sulfur dioxide (SO_2): 6.8 lb/hr

3. The IBR boiler may combust pipeline quality natural gas and/or digester gas only (ARM 17.8.752).

4. The emergency/back-up digester gas industrial safety flare shall be used, as necessary, to destroy any excess digester gas not used by either the Waukesha digester gas-fired engine and/or the IBR natural gas/digester gas fired boiler (ARM 17.8.749 and ARM 17.8.752).

5. Billings WRF shall limit the use of the emergency diesel generators to times of need for emergency power generation or up to 100 hours per year for maintenance and testing, in accordance with Title 40 Code of Federal Regulations (40 CFR) 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ (ARM 17.8.749, 40 CFR 60, Subpart IIII, and 40 CFR 63, Subpart ZZZZ).

6. Billings WRF shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304 and ARM 17.8.752).

7. Billings WRF shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).

8. Billings WRF shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation (ARM 17.8.749).

9. Emissions from the five (5) Thermal Solutions EVA-3000, 3.0 MMBtu SPB-BLR natural-gas-fired boilers shall be controlled by good combustion practices and proper operation and maintenance (ARM 17.8.752).

10. Emissions from the two (2) Hastings HVAC SBD-112, 0.258 MMBtu SPS-AHU natural gas-fired air handling units shall be controlled by good combustion practices and proper operation and maintenance (ARM 17.8.752).

11. Emissions from the one (1) Modine HBP075TMRHN, 0.063 MMBtu RSB-AHU natural gas-fired air handling unit shall be controlled by good combustion practices and proper operation and maintenance (ARM 17.8.752).

12. Billings WRF shall comply with all applicable standards and limitations, and the monitoring, reporting, recordkeeping, and notification requirements contained in 40 CFR 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* and 40 CFR 63, Subpart ZZZZ, *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, for any applicable diesel engine (ARM 17.8.340; 40 CFR 60, Subpart IIII; ARM 17.8.342 and 40 CFR 63, Subpart ZZZZ).

B. Testing Requirements

1. Billings WRF shall initially test the Waukesha digester gas-fired rich-burn engine for NO_x and CO emissions, concurrently, and demonstrate compliance with the NO_x and CO emission limits within 90 days of issuance of Permit #3827-01. After the initial source test, additional testing to monitor continued compliance with the NO_x and CO emission limits shall be conducted as required by the Department (ARM 17.8.105 and ARM 17.8.749).

2. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

3. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. Billings WRF shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

   Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. Billings WRF shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

3. All records compiled in accordance with this permit must be maintained by Billings WRF as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

4. Billings WRF shall maintain an emergency/back-up digester gas industrial safety flare operations log to monitor compliance with the applicable operating conditions in Section II.A.4. The log shall contain, at a minimum, the initials of the documenting personnel and the fuel usage and run-times for the emergency/back-up digester gas industrial safety flare, the Waukesha digester gas-fired engine, and the IBR natural gas/digester gas-fired boiler.

The information contained in the emergency/backup digester gas industrial safety flare operations log shall be submitted to the Department upon request (ARM 17.8.749).

5. Billings WRF shall document, by month, the hours of operation of the emergency diesel generators. By the 25th day of each month, Billings WRF shall total the emergency diesel generators operating hours for the previous month. The monthly information will be used to verify compliance with the operational limitations in Section II.A.5. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

SECTION III: General Conditions

A. Inspection – Billings WRF shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment such as continuous emission monitoring systems (CEMS) or continuous emission rate monitoring systems (CERMS), or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if Billings WRF fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Billings WRF of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).

D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties, or other enforcement action as specified in Section 75-2-401, *et seq*., MCA.

E. Appeals – Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board.

If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.

F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the Department at the location of the source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by Billings WRF may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Duration of Permit – Construction or installation must begin or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

Montana Air Quality Permit (MAQP) Analysis
City of Billings Public Works Department – Water Reclamation Facilty
MAQP #3827-02

I. Introduction/Process Description

The City of Billings Public Works Department – Water Reclamation Facility (Billings WRF) owns and operates a municipal wastewater treatment plant. The facility is located at 725 Highway 87 East in Billings, Montana. The legal description of the site is in the Southeast ¼ of Section 27, Township 1 North, Range 26 East, in Yellowstone County, Montana.

A. Permitted Equipment

The Billings WRF owns and operates a Waukesha digester gas-fired rich-burn engine with a maximum rated design capacity of 658 brake horsepower (bhp); five (5) Thermal Solutions EVA-3000 3.0 million British thermal units per hour (MMBtu/hr) natural gas boilers (SPB-BLR 1-5); two (2) Hastings HVAC SBD-112 0.258 MMBtu/hr natural gas air handling units (AHU) (SPS-AHU 1 and 2); one (1) Modine HBP075TMRHN 0.063 MMBtu/hr AHU (RSB-AHU); an IBR natural gas- and/or digester gas-fired boiler with a heat input capacity of 3.78 MMBtu/hr; an emergency back-up digester gas industrial safety flare; two emergency diesel generators with maximum rated design capacities of 2,922 and 239 horsepower (hp), respectively; and wastewater process tanks (Clarifiers, Aeration Basins).

B. Source Description

The Billings WRF operates a Waukesha internal combustion engine that is fired with digester gas collected from the digesters at the waste-water treatment facility. Digesters are used during the treatment and processing of municipal wastewater. The digesters are covered tanks operated under anaerobic conditions (i.e., without oxygen). Although variable, the gas produced by the digesters is approximately 63% methane (CH_4) and 36% carbon dioxide (CO_2) with relatively low levels of hydrogen sulfide (H_2S) and nitrogen and trace level contaminants.

Billings WRF collects the digester gas and uses it as fuel in the Waukesha engine to generate electricity. The Waukesha engine and associated co-generation equipment produces approximately 1.5 million kilowatt-hours of electricity annually (5-year average, 2000-2004). The electricity is used directly at the Billings WRF facility and consequently reduces the demand for electricity from the power grid. Approximately 25% of the annual electricity demand for the Billings WRF facility is supplied by the digester gas co-generation system.

C. Permit History

On August 22, 2006, the Billings WRF was issued final **Permit #3827-00** for the operation of a 658-bhp Waukesha digester gas-fired rich-burn engine; a 16.74 MMBtu/hr capacity Cleaver Brooks natural gas-fired boiler; a 2.20 MMBtu/hr capacity American Standard natural gas-fired boiler; a 3.78 MMBtu/hr IBR natural gas or digester gas-fired boiler; an emergency back-up digester gas industrial safety flare; a 425-horsepower emergency diesel generator; and various wastewater process tanks.

On August 9, 2007, the Montana Department of Environmental Quality (Department) received a complete application from the Billings WRF for the modification of Permit #3827-00. Specifically, the Billings WRF proposed modification of the previous Best Available Control Technology (BACT)-determined oxides of nitrogen (NO_x) and carbon monoxide (CO) emission limits applicable to the Waukesha digester gas-fired engine. The initial Waukesha engine BACT determinations for NO_x and CO emissions were established using published emission factors for the combustion of landfill gas because emissions data directly related to digester-gas combustion were not available at the time of initial permit development. Since issuance of Permit #3827-00, the Billings WRF has conducted source testing for NO_x and CO demonstrating that the BACT limits established under Permit #3827-00 are not achievable on a consistent basis. A more complete analysis of the previous and current NO_x and CO BACT determinations for the affected unit and pollutants is contained in Section III of the Permit Analysis to this permit.

In addition, the initial application for Permit #3827-00 assumed a maximum facility digester gas throughput rate of 63 million standard cubic feet per year (MMscf/yr); however, since issuance of Permit #3827-00, the Billings WRF has determined that this assumed digester gas throughput rate was underestimated and the actual capacity is 76 MMscf/yr. Therefore, the permit action re-evaluated all emitting units affected by the increased digester gas throughput value including the Waukesha digester gas-fired rich-burn engine, the IBR natural gas/digester gas-fired boiler, and the emergency back-up digester gas industrial safety flare. The application for Permit #3827-00 assumed that the permitted emergency back-up digester gas industrial safety flare only operated at times when the affected digester gas-fired units at the facility (Waukesha engine and IBR boiler) were not in operation. However, in practice, because the flare is an emission control strategy in and of itself, the emergency back-up digester gas industrial safety flare operated on a relatively continuous basis, as necessary, to destroy any digester gas not used by either the Waukesha engine or IBR boiler. In light of this information, Section II.A.6 and Section II.C.4 of the permit were modified to accurately reflect and regulate the emergency back-up digester gas industrial safety flare operations. **MAQP #3827-01** replaced Permit #3827-00.

D. Current Permit Action

On December 8, 2016, the Department received a complete application from the Billings WRF for the modification of MAQP #3827-01. Billings WRF is requesting to add five (5) Thermal Solutions EVA-3000, 3.0 MMBtu/hr natural gas boilers (SPB-BLR 1-5); two (2) Hastings HVAC SBD-112, 0.258 MMBtu/hr natural gas AHUs (SPS-AHU 1 and 2); one (1) Modine HBP075TMRHN 0.063 MMBtu/hr AHU (RSB-AHU); replace the existing digester gas-fired industrial safety flare with a like-kind unit; as well as installing a new 2000 kilowatt (kW) (2,922 hp) emergency diesel generator and retroactively including an existing 150 kW (239 hp) emergency diesel generator. The City of Billings also intends to decommission two existing boilers (Cleaver-Brooks natural gas-fired boiler and American Standard natural gas-fired boiler) and one existing emergency diesel generator (425 hp Cummins emergency diesel generator). The current permitting action also updates the facility name from "Wastewater Treatment Plant" to "Water Reclamation Facility" as well as updates the permit to reflect current permit language used by the Department. **MAQP #3827-02** replaces MAQP #3827-01.

E. Additional Information

Additional information, such as applicable rules and regulations, BACT/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department. Upon request, the Department will provide references for location of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq*., Montana Code Annotated (MCA).

   Billings WRF shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation.

   (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}
11. ARM 17.8.230 Fluoride in Forage

Billings WRF must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, Billings WRF shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.316 Incinerators. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any incinerator, particulate matter in excess of 0.10 grains per standard cubic foot of dry flue gas, adjusted to 12% carbon dioxide and calculated as if no auxiliary fuel had been used. Further, no person shall cause or authorize to be discharged into the outdoor atmosphere from any incinerator emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes.
6. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.

7. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.

8. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS). Billings WRF is considered an NSPS affected facility under 40 CFR Part 60 and is subject to the requirements of the following subparts.

    a. 40 CFR 60, Subpart A – General Provisions apply to all equipment or facilities subject to an NSPS Subpart as listed below:

    b. 40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE). Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are manufactured after April 1, 2006, and are not fire pump engines, and owners and operators of stationary CI ICE that modify or reconstruct their stationary CI ICE after July 11, 2005, are subject to this subpart. Based on the information submitted by Billings WRF, the CI ICE equipment to be used under MAQP #3827-02 are subject to this subpart because it is considered stationary CI ICE.

9. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. This rule incorporates, by reference, 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Source Categories. Billings WRF is considered a NESHAP-affected facility under 40 CFR Part 63 and is subject to the requirements of the following subparts.

    a. 40 CFR 63, Subpart A – General Provisions apply to all equipment or facilities subject to a NESHAPs Subpart as listed below.

    b. 40 CFR 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants (HAPs) for Stationary Reciprocating Internal Combustion Engines (RICE). An owner or operator of a stationary reciprocating internal combustion engine (RICE) at a major or area source of HAP emissions is subject to this rule except if the stationary RICE is being tested at a stationary RICE test cell/stand. An area source of HAP emissions is a source that is not a major source. Based on the information submitted by Billings WRF, the RICE equipment to be used under MAQP #3827-02 are subject to this subpart because they are considered stationary CI RICE engines.

D. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. Billings WRF submitted the required permit application fee for the current permit action.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

   An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.

E. ARM 17.8, Subchapter 7 – Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify, or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year of any pollutant. Billings WRF has a PTE greater than 25 tons per year of NO_x, CO, and SO_2; therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, modification, or use of a source. Billings WRF submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. Billings WRF submitted an affidavit of publication of public notice for the December 1, 2016, issue of *The Billings Times*, a weekly newspaper of general circulation in the City of Billings in Yellowstone County, Montana, as proof of compliance with the public notice requirements.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Billings WRF of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or modified source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of intent to transfer, including the names of the transferor and the transferee, is sent to the Department.

F. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

   This facility is not a major stationary source because this facility is not a listed source and the facility's PTE is below 250 tons per year of any pollutant (excluding fugitive emissions).

G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:

   a. PTE > 100 tons/year of any pollutant;

   b. PTE > 10 tons/year of any one hazardous air pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

   c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing Montana Air Quality Permit #3827-01 for the Billings WRF, the following conclusions were made:

   a. The facility's PTE is less than 100 tons/year for any pollutant.

   b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year for all HAPs.

   c. This source is not located in a serious PM_{10} nonattainment area.

   d. This facility is subject to current NSPS (40 CFR 60, Subpart IIII).

   e. This facility is subject to current NESHAP (40 CFR 63, Subpart ZZZZ).

f. This source is not a Title IV affected source

g. This source is not a solid waste combustion unit.

h. This source is not an EPA designated Title V source.

Based on these facts, the Department determined that Billings WRF is a minor source of emissions as defined under Title V. However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit, Billings WRF will be required to obtain a Title V Operating Permit.

III. BACT Analysis and Determination

A BACT determination is required for each new or modified source. Billings WRF shall install on the new or modified source the maximum air pollution control capability which is technically practicable and economically feasible, except that BACT shall be utilized. The following BACT analysis and determination evaluates NO_x and CO emissions from the proposed boilers, AHUs, and emergency diesel generators.

Boilers – Natural gas-fired boilers are inherently low emitters of air pollution due to the characteristics of the fuel. Worst-case potential NO_x and CO emissions from the five proposed boilers are 6.44 tons per year (tpy) and 5.41 tpy, respectively. All other pollutant potential emissions are below 1 tpy. Due to low potential emissions, incorporation of available pollutant-specific control technologies would result in high cost-effective values ($/ton removed) thereby making pollutant-specific add on controls for NO_x, CO, SO_2, $PM/PM_{10}/PM_{2.5}$ and VOCs economically infeasible. Therefore, the City proposes proper operation and maintenance of the boilers with no additional control as BACT.

The proposed air handling units (SPS-AHU-1, SPS-AHU-2, and RSB-AHU) are all less than 1.0 MMBtu/hr in size. Due to their small size, potential emissions for each regulated pollutant are below l tpy. Due to low potential emissions, incorporation of available pollutant-specific control technologies would result in high cost-effective values ($/ton removed) thereby making pollutant specific add-on controls for NO_x, CO, SO_2, $PM/PM_{10}/PM_{2.5}$, and VOCs economically infeasible. Therefore, the City proposes proper operation and maintenance of the air handling units with no additional control as BACT.

Diesel Generators – The diesel emergency generators are only used in circumstances where the normal sources of power to the WRF are interrupted, and during monthly testing (approximately two hours a month), resulting in inherently low potential emissions of all regulated pollutants. Due to low potential emissions, incorporation of available pollutant-specific control technologies would result in high cost-effective values ($/ton removed) thereby making pollutant-specific add-on controls for NO_x, CO, SO_2, PM, PM_{10}, $PM_{2.5}$, and VOCs economically infeasible. Therefore, the City proposes proper operation and maintenance of the generators with no additional control as BACT.

Flare – The like-kind replacement flare will be operated in the same manner as the existing flare and will not result in any change in emissions. As such, the conclusions of the BACT analysis presented in the air quality permit technical document dated September 25, 2007 remain valid and no further evaluation is included here.

Conclusion – The Department has reviewed the BACT analysis provided by Billings WRF and determined that good combustion practices and proper operation and maintenance constitute BACT based on a cost per ton analysis for the natural gas-fired boilers, AHUs, and the emergency diesel generators. Additionally, the previous BACT analysis submitted for the digester flare remains valid as Billings WRF is conducting a like-kind replacement for the existing flare.

IV. Emission Inventory

Existing Emission	tons of pollutant/year[a]						
Emitting Unit	**PM**	**PM_{10}**	**$PM_{2.5}$**	**NO_x**	**CO**	**SO_2**	**VOC**
Waukesha Digester Gas-Fired Engine	0.21	0.21	0.21	53.44	26.28	29.83	0.65
American Standard Natural Gas-Fired Boiler	0.07	0.07	0.07	0.96	0.81	0.01	0.05
Digester Gas Industrial Safety Flare[c]	0.03	0.03	0.03	0.06	1.18	2.4	0.22
Wastewater Process Tanks[d]	---	---	---	---	---	---	---
Total Emissions	**0.31**	**0.31**	**0.31**	**54.46**	**28.27**	**32.24**	**0.92**

[a] A complete emission inventory was included in the applications for air quality Permits #3827-00 and #3827-01 and is on file with the Department

[b] Assumes worst-case emissions combusting either 100% natural gas (PM, PM_{10}, NOx, CO, VOC) or 100% digester gas (SO_2)

[c] Assumes continuous operation combusting any excess digester gas not used by other permitted digester gas-fired units

[d] Emissions assumed to be zero or negligible for all regulated pollutants from these process units

New Emissions	tons of pollutant per year						
Emitting Unit	**PM**	**$PM_{Cond.}$**	**$PM_{Filt.}$**	**NO_X**	**CO**	**SO_X**	**VOC**
SPB-BLR 1 through 5	0.49	0.37	0.12	6.44	5.41	0.039	0.35
SPB-BLR (individual)	0.098	0.074	0.024	1.288	1.082	0.0078	0.07
SPS-AHU 1 and 2	0.017	0.013	0.004	0.22	0.17	0.0013	0.0122
SPS-AHU (individual)	0.0085	0.0065	0.002	0.11	0.085	0.00065	0.0061
RSB-AHU	0.0021	0.0015	0.0005	0.027	0.023	0.0002	0.0015
Total Emissions	0.62	0.47	0.15	8.09	6.77	0.05	0.44

	PM	**PM_{10}**	**$PM_{2.5}$**	**NO_X**	**CO**	**SO_X**	**VOC**
2000 kW Diesel Generator (2682 hp)	1.61	1.61	1.61	17.5	4.02	5.91	1.83
150 kW Diesel Generator (201 hp)	0.13	0.13	0.13	1.85	0.40	0.12	0.15
Total Emissions	1.74	1.74	1.74	19.35	4.42	6.03	1.98

Facility Wide Emissions Totals								
PM	**PM_{10}**	**$PM_{2.5}$**	**$PM_{Cond.}$**	**$PM_{Filt.}$**	**NO_x**	**CO**	**SO_2**	**VOC**
2.67	2.05	2.05	0.47	0.15	81.90	39.46	38.32	3.34

Boiler Calculation:

Calculation: $\frac{lb}{scf} \times \frac{scf}{btu} \times \frac{btu}{hr} \times \frac{hr}{yr} \times \frac{ton}{lb} = \frac{ton}{yr}$

SPB-BLR-1 through 5

AP-42, Chapter 1 - Small Boilers (<100 mmBTU)

Known			
1020	btu/scf		
3000000	btu/hr		
8760	hr/yr		
0.0005	ton/lb		
100	lb/mmscf	NO_X	AP-42, Chapter 1, table 1.4-1
84	lb/mmscf	CO	AP-42, Chapter 1, table 1.4-1
7.6	lb/mmscf	PM_{Total}	AP-42, Chapter 1, table 1.4-2
5.7	lb/mmscf	$PM_{Cond.}$	AP-42, Chapter 1, table 1.4-2
1.9	lb/mmscf	$PM_{Filt.}$	AP-42, Chapter 1, table 1.4-2
0.6	lb/mmscf	SO_X	AP-42, Chapter 1, table 1.4-2
5.5	lb/mmscf	VOC	AP-42, Chapter 1, table 1.4-2

Emissions			Total		
1.29	ton/yr	NO_X	6.44	ton/yr	NO_X
1.08	ton/yr	CO	5.41	ton/yr	CO
0.10	ton/yr	PM_{Total}	0.49	ton/yr	PM_{Total}
0.07	ton/yr	$PM_{Cond.}$	0.37	ton/yr	$PM_{Cond.}$
0.02	ton/yr	$PM_{Filt.}$	0.12	ton/yr	$PM_{Filt.}$
0.01	ton/yr	SO_X	0.04	ton/yr	SO_X
0.07	ton/yr	VOC	0.35	ton/yr	VOC

Air Handling Unit Calculations:

$$\text{Calculation:} \quad \frac{lb}{scf} \times \frac{scf}{btu} \times \frac{btu}{hr} \times \frac{hr}{yr} \times \frac{ton}{lb} = \frac{ton}{yr}$$

SPS-AHU 1 & 2

Small Boilers (<100 mmBTU)

Known

1020	btu/scf
258000	btu/hr
8760	hr/yr
0.0005	ton/lb

100	lb/mmscf	NO_X	AP-42, Chapter 1, table 1.4-1
84	lb/mmscf	CO	AP-42, Chapter 1, table 1.4-1
7.6	lb/mmscf	PM_{Total}	AP-42, Chapter 1, table 1.4-2
5.7	lb/mmscf	$PM_{Cond.}$	AP-42, Chapter 1, table 1.4-2
1.9	lb/mmscf	$PM_{Filt.}$	AP-42, Chapter 1, table 1.4-2
0.6	lb/mmscf	SO_X	AP-42, Chapter 1, table 1.4-2
5.5	lb/mmscf	VOC	AP-42, Chapter 1, table 1.4-2

Emissions			Total		
0.11	ton/yr	NO_X	0.2216	ton/yr	NO_X
0.09	ton/yr	CO	0.1861	ton/yr	CO
0.01	ton/yr	PM_{Total}	0.0168	ton/yr	PM_{Total}
0.01	ton/yr	$PM_{Cond.}$	0.0126	ton/yr	$PM_{Cond.}$
0.00	ton/yr	$PM_{Filt.}$	0.0042	ton/yr	$PM_{Filt.}$
0.00	ton/yr	SO_X	0.0013	ton/yr	SO_X
0.01	ton/yr	VOC	0.0122	ton/yr	VOC

Calculation: $\frac{lb}{scf} \times \frac{scf}{btu} \times \frac{btu}{hr} \times \frac{hr}{yr} \times \frac{ton}{lb} = \frac{ton}{yr}$

RSB-AHU

Small Boilers (<100 mmBTU)

Known

1020	btu/scf		
63000	btu/hr		
8760	hr/yr		
0.0005	ton/lb		
100	lb/mmscf	NO_X	AP-42, Chapter 1, table 1.4-1
84	lb/mmscf	CO	AP-42, Chapter 1, table 1.4-1
7.6	lb/mmscf	PM_{Total}	AP-42, Chapter 1, table 1.4-2
5.7	lb/mmscf	$PM_{Cond.}$	AP-42, Chapter 1, table 1.4-2
1.9	lb/mmscf	$PM_{Filt.}$	AP-42, Chapter 1, table 1.4-2
0.6	lb/mmscf	SO_X	AP-42, Chapter 1, table 1.4-2
5.5	lb/mmscf	VOC	AP-42, Chapter 1, table 1.4-2

Emissions

0.027	ton/yr	NO_X
0.023	ton/yr	CO
0.002	ton/yr	PM_{Total}
0.002	ton/yr	$PM_{Cond.}$
0.001	ton/yr	$PM_{Filt.}$
0.000	ton/yr	SO_X
0.001	ton/yr	VOC

Diesel Generator Calculation:

$$\text{Calculation: } \frac{lb}{bhp * hr} \times bhp \times hp \times \frac{ton}{lb} = \frac{ton}{yr}$$

Emergency Generator, 500 hrs

2922 bhp	or	2000 kw
239 bhp		150 kw

500 hr/yr
0.0005 ton/lb

2922 HP		239 HP	
0.024 lb/bhp *hr	NO_X	0.031 lb/bhp *hr	NO_X
5.50E-03 lb/bhp *hr	CO	6.68E-03 lb/bhp *hr	CO
8.09E-03 lb/bhp *hr	SO_X	2.05E-03 lb/bhp *hr	Sox
0.0022 lb/bhp *hr	PM	2.20E-03 lb/bhp *hr	PM
0.0022 lb/bhp *hr	PM_{10}	2.20E-03 lb/bhp *hr	PM10
0.0022 lb/bhp *hr	$PM_{2.5}$	2.20E-03 lb/bhp *hr	P2.5
2.51E-03 lb/bhp *hr	VOC	2.51E-03 lb/bhp *hr	VOC

Total		Total	
17.53 ton/yr	NO_X	1.85 ton/yr	NO_X
4.02 ton/yr	CO	0.40 ton/yr	CO
5.91 ton/yr	SO_X	0.12 ton/yr	SO_X
1.61 ton/yr	PM	0.13 ton/yr	PM
1.61 ton/yr	PM_{10}	0.13 ton/yr	PM_{10}
1.61 ton/yr	$PM_{2.5}$	0.13 ton/yr	$PM_{2.5}$
1.84 ton/yr	VOC	0.15 ton/yr	VOC

V. Existing Air Quality

The Billings WRF facility is located at 725 Highway 87 East in Billings, Montana. The legal description of the site is in the Southeast ¼ of Section 27, Township 1 North, Range 26 East, in Yellowstone County, Montana. Existing and major new sources of SO_2 locating in the Billings area are regulated under the Billings SO_2 SIP. In addition, the facility is located in an area that has been re-designated from a CO non-attainment area to an attainment area for CO under a limited maintenance plan (LMP). The Billings WRF facility has not been identified in any studies as impacting the previous CO nonattainment area status. In the view of the Department, the amount of controlled emissions, including SO_2 and CO, from this facility will not cause an exceedance of any ambient air quality standard or adversely impact the CO LMP.

VI. Ambient Air Impact Analysis

Based on the relatively low levels of pollutants emitted from the Billings WRF, the Department determined that ambient air impacts from this permitting action will be minor. The Department believes the facility, operating under the limits and conditions included in this permit, will not cause or contribute to a violation of any applicable ambient air quality standard.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following

		questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

Based on this analysis, the Department determined there are not taking or damaging implications associated with this permit action.

VIII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

DEPARTMENT OF ENVIRONMENTAL QUALITY
Air, Energy, and Mining Division
Air Quality Bureau
P.O. Box 200901, Helena, Montana 59620
(406) 444-3490

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: City of Billings Public Works Department –
Water Reclamation Facility
P.O, Box 30958
Billings, MT 59111

Montana Air Quality Permit Number: 3827-02

Preliminary Determination Issued: January 10, 2017
Department Decision Issued: January 26, 2017
Permit Final: February 11, 2017

1. *Legal Description of Site*: The City of Billings Public Works Department – Water Reclamation Facility (Billings WRF) is located at 725 Highway 87 East in Billings, Montana. The legal description of the site is in the Southeast ¼ of Section 27, Township 1 North, Range 26 East, in Yellowstone County, Montana.

2. *Description of Project*: On December 8, 2016, the Montana Department of Environmental Quality (Department) received a complete application from the Billings WRF for the modification of Montana Air Quality Permit (MAQP) #3827-01. Billings WRF is requesting to add five (5) Thermal Solutions EVA-3000, 3.0 million British thermal units per hour (MMBtu/hr) natural gas boilers (SPB-BLR 1-5); two (2) Hastings HVAC SBD-112, 0.258 MMBtu/hr natural gas air handling units (AHU) (SPS-AHU 1 and 2); one (1) Modine HBP075TMRHN 0.063 MMBtu/hr AHU (RSB-AHU); replace the existing digester gas-fired industrial safety flare with a like-kind unit; as well as installing a new 2000 kilowatt (kW) (2,922 horsepower (hp)) emergency diesel generator and retroactively including an existing 150 kW (201 hp) generator. The City of Billings also intends to decommission two existing boilers (Cleaver-Brooks natural gas-fired boiler and American Standard natural gas-fired boiler) and one existing emergency diesel generator (425 hp Cummins emergency diesel generator).

3. *Objectives of Project*: The objectives of the project are to install new, more efficient boilers and AHU while removing older boilers, as well as to update the facility's emergency backup equipment.

4. *Alternatives Considered*: In addition to the proposed action, the Department also considered the "no-action" alternative. The no action alternative would mean that the City of Billings would continue to operate the Waste Water Treatment Facility without replacing any equipment and continue to pay fuel costs associated with operating the current boilers. Without the replacement of the boilers and diesel engines, the Waste Water Treatment Facility would not see reductions in pollutant emission or cost of operations. Therefore, the "no-action" alternative was eliminated from further consideration.

5. *A Listing of Mitigation, Stipulations, and Other Controls*: A list of enforceable conditions, including a BACT analysis, would be included in MAQP #3827-02.

6. *Regulatory Effects on Private Property*: The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

7. The following section summarizes the potential physical and biological effects of the proposed project on the human environment. The "no-action" alternative was discussed previously.

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The following comments have been prepared by the Department.

A. Terrestrial and Aquatic Life and Habitats:

Emissions from the project would affect terrestrial and aquatic life and habitats in the proposed project area. However, as discussed in Section VI of the permit analysis, any emissions and resulting impacts from the project would be minor due to the low level of those pollutants emitted.

Further, the waste-water treatment plant is an existing facility and no new construction or ground disturbance to the area would occur as a result of the current permit action. Overall, any impact to the terrestrial and aquatic life and habitats of the proposed project area would be minor.

B. Water Quality, Quantity and Distribution:

By design, the wastewater treatment plant would result in beneficial impact to water quality in the proposed project area. Further, emissions from the proposed project would result in minor negative impacts to water quality in the proposed project area. However, as discussed in Section VI of the permit analysis any emissions and resulting deposition impacts from the project would be minor due to the low level of those pollutants emitted.

Further, the waste-water treatment plant is an existing facility and no new water use would occur as a result of the current permit action. Overall, any impact to the water quality, quantity, and distribution in the proposed project area would be minor and generally beneficial.

C. Geology and Soil Quality, Stability, and Moisture:

The project would not impact the geology, soil quality, stability, and moisture of the proposed project area. The waste-water treatment plant is an existing facility and no new construction or ground disturbance to the area would occur as a result of the current permit action. Further, as discussed in Section VI of the permit analysis, the wastewater treatment plant would result in minor air pollution emissions to the outside ambient environment. These pollutants would deposit on the soils in the surrounding area.

Any impact from deposition of these pollutants would be minor and typical due to the existing industrial nature of the area and the low level of those pollutants emitted. Overall, any impact to the geology and soil quality, stability, and moisture of the proposed project area would be minor.

D. Vegetation Cover, Quantity, and Quality:

The project would not impact the vegetation cover, quantity, and quality in the proposed project area. The waste-water treatment plant is an existing facility and no new construction or ground disturbance to the area would occur as a result of the current permit action.

Further, as discussed in Section VI of the permit analysis, the wastewater treatment plant would result in minor air pollution emissions to the outside ambient environment. These pollutants would deposit on the vegetation in the surrounding area. Any impact from deposition of these pollutants would be minor and typical due to the existing industrial nature of the area and the low level of those pollutants emitted. Overall, any impact to the vegetation cover, quantity, and quality of the proposed project area would be minor.

E. Aesthetics:

The project would result in minor impacts to the aesthetic nature of the proposed project area because the wastewater treatment plant would operate within an existing building located in an area zoned as commercial and no new construction or further site disturbance would be required for the project. Because the wastewater treatment plant is an existing facility located in an area zoned for commercial uses, the project would not change the aesthetic nature of the area. Further, visible emissions from the source would be limited to 20% opacity and the permit would include emission control requirements. Also, the project would not result in excess noise from normal operations. Overall, any impact to the aesthetic character of the proposed project area would be minor.

F. Air Quality:

The proposed project would result in the emission of various air pollutants to the ambient air in the proposed project area. However, based on the relatively low levels of pollutants emitted from the Billings WRF, the Department determined that ambient air impacts from this permitting action would be minor. The Department determined that the facility, operating under the limits and conditions included in this permit, will not cause or contribute to a violation of any applicable ambient air quality standard. Overall, any impact to the air quality of the proposed project area would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources:

During the permit action for MAQP #3827-02, the Department contacted the Montana Natural Heritage Program in an effort to identify any species of special concern that may be located within or near the Billings WRF site. Search results concluded that there are 14 such species of special concern on file for the area. Area in this case is defined by the Township and Range of the proposed site, with an additional 1-mile buffer. The fourteen (14) species of special concern are divided into three groups.

- S2 – At risk because of very limited and potentially declining numbers, extent and/or habitat, making it vulnerable to global extinction or extirpation in the state

- S3 – Potentially at risk because of limited and potentially declining numbers, extent and/or habitat, even though it may be abundant in some areas

- S4 – Uncommon but not rare (although it may be rare in parts of its range). Not vulnerable in most of its range

Of the fourteen (14) species identified, three (3) species are at risk (S2); Sauger, Plains Hog Nosed Snake, and the Western Milksnake. Ten (10) species are potentially at risk (S3) – Plains Spadefoot, Great Blue Heron, Peregrine Falcon, Pinon Jay, Veery, Little Brown Myotis, Hoary Bat, Spotted Bat, Spiny Softshell, and the Great Short Horned Lizard. The remaining species are considered uncommon (S4) – the Bald Eagle.

While these species of special concern may be found in specific habitats within or near the defined area, the search did not indicate that these species of special concern would locate directly on or relatively near the existing industrial site. Given the existing industrial nature of the project area, it is unlikely that these species of special concern would locate on or near the project site and thus unlikely that these species of special concern would realize any impact from the wastewater treatment plant operations beyond minor air emission impacts discussed in greater detail below.

Emissions from the proposed project could impact the previously highlighted unique, endangered, fragile, or limited environmental resources located in the proposed project area. However, as detailed in Section VI of the permit analysis, any emissions and resulting impacts from the project would be minor due to the low concentration of those pollutants emitted and typical due to the existing industrial nature of the area. Overall, any impact to unique endangered, fragile, or limited environmental resources of the proposed project area would be minor.

H. Sage Grouse Executive Order:

The Department recognizes that the site location is not within the Greater Sage Grouse habitat Area as defined by Executive Order No. 12-2015.

I. Demands on Environmental Resource of Water, Air, and Energy:

The project would result in minor demands on environmental resources of water as discussed in Section 7.B of this EA. In addition, the proposed project would permit 8 new natural gas fired boilers and AHU and two emergency diesel generators while decommissioning two old boilers and one diesel generator. Therefore, the project would impact energy resources; however, any impacts would be minor due to the relatively small size of the industrial operations and the ability to produce energy thereby avoiding reliance on additional energy resources in the area.

Further, as discussed in Section VI of the permit analysis, the wastewater treatment plant would result in minor air pollution emissions to the outside ambient environment. Any impact from the emission of these pollutants would be minor and typical due to the existing industrial nature of the area and the low level of those pollutants emitted. Overall, any impact to the demands on environmental resource of water, air, and energy in the proposed project area would be minor.

J. Historical and Archaeological Sites:

The proposed project would not result in any impact on historical and archaeological sites in the proposed project area. The wastewater treatment plant would operate within an existing site located in an area zoned as commercial and would not require any additional construction and ground disturbance.

According to previous correspondence from the Montana State Historic Preservation Office, there is low likelihood of any disturbance to any known archaeological or historic site, given previous industrial disturbance within the area. Therefore, the project would not impact any known historic or archaeological site that may be located within or near the proposed operating site.

K. Cumulative and Secondary Impacts:

Overall, the cumulative and secondary impacts from this project on the physical and biological environment in the immediate area would be minor due to the relatively small size and potential environmental impact of the proposed operation. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as outlined in MAQP #3827-02.

8. The following table summarizes the potential economic and social effects of the proposed project on the human environment. The "no-action" alternative was discussed previously.

SUMMARY OF COMMENTS ON POTENTIAL ECENOMIC AND SOCIAL EFFECTS: The Department has prepared the following comments.

A. Social Structures and Mores:

The proposed project would not have any impact on social structures and mores because the proposed project would take place on an already existing industrial site.

B. Cultural Uniqueness and Diversity:

The proposed project would not have any impact on the above economic and social resources as well as the cultural uniqueness and diversity of the proposed area of operation because the project is small by industrial standards and operations would take place within an existing facility.

Further, the surrounding area is currently and would remain commercial/industrial in nature. The predominant use of the surrounding area would not change as a result of the proposed project.

C. Local and State Tax Base and Tax Revenue:

The proposed project would have a minor impact on the local and state tax base and tax revenue because the project is small by industrial standards and would not result in any increased commercial activity beyond the proposed project. Further, the plant would operate within an existing industrial site.

D. Agricultural or Industrial Production:

The proposed project would operate within an existing industrial area; therefore, the project would not affect or displace any land used for agricultural production. Further, because the current action would not require any additional industrial construction and the facility is an existing industrial operation, it is unlikely that the project would impact any industrial production.

E. Human Health:

MAQP #3827-02 would include limits and conditions to ensure the facility would be operated in compliance with all applicable air quality rules and standards. These rules and standards are designed to be protective of human health. As described in Section III of the permit analysis, the air emissions from the proposed facility would be minimized by the use of BACT as required by MAQP #3827-02. Overall, only minor impacts would be expected on human health from the proposed operations.

F. Access to and Quality of Recreational and Wilderness Activities:

Because the proposed project would operate within an existing industrial area, the project would not affect any access to or quality of any recreation or wilderness activities in the area.

G. Quantity and Distribution of Employment:

The proposed project would not require any new employment in the area. The project would utilize existing employee(s) to operate the plant; therefore, the proposed project would not impact the quantity and distribution employment in the area

H. Distribution of Population:

The proposed project would not require any new employment in the area. The project would utilize existing employee(s) to operate the plant; therefore, the proposed project would not impact the quantity and distribution of population and employment in the area.

I. Demands for Government Services:

Government services would be required for acquiring the appropriate permits from government agencies. In addition, the permitted source of emissions would be subject to periodic inspections by government personnel. Demands for government services would be minor.

J. Industrial and Commercial Activity:

The proposed project would not impact local industrial and commercial activity because the proposed project would operate within an existing industrial area, would not require any additional industrial construction, and would not result in additional industrial production.

K. Locally Adopted Environmental Plans and Goals:

The Billings WRF facility is located at 725 Highway 87 East in Billings, Montana. The legal description of the site is in the Southeast ¼ of Section 27, Township 1 North, Range 26 East, in Yellowstone County, Montana. Existing and major new sources of SO_2 locating in the Billings area are regulated under the Billings SO_2 SIP. In addition, the facility is located in an area that has been re-designated from a CO non-attainment area to an attainment area for CO under a limited maintenance plan (LMP). The Billings WRF facility has not been identified in any studies as impacting the previous CO nonattainment area status. In the view of the Department, the amount of controlled emissions, including SO_2 and CO, from this facility will not cause an exceedance of any ambient air quality standard or adversely impact the CO LMP.

L. Cumulative and Secondary Impacts:

Overall, the cumulative and secondary impacts from this project on the physical and biological environment in the immediate area would be minor due to the relatively small size and potential environmental impact of the proposed operation. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as outlined in MAQP #3827-02.

Recommendation: No Environmental Impact Statement (EIS) is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: Permit #3827-02 includes conditions and limitations to ensure the facility would operate in compliance with all applicable rules and regulations. In addition, as detailed in the above EA there are no significant impacts associated with the proposed project.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

Individuals or groups contributing to this EA: Department of Environmental Quality – Air Resources Management Bureau, Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program.

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