



Montana Department of
ENVIRONMENTAL QUALITY

Brian Schweitzer, Governor

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March 11, 2008

Wayne Robbins
Great Falls Wastewater Treatment Plant
1600 6th Street NE
Great Falls, MT 59604

Dear Mr. Robbins:

Air Quality Permit #4176-00 is deemed final as of March 11, 2008, by the Department of Environmental Quality (Department). This permit is for the operation of a municipal wastewater treatment plant incorporating a natural gas/digester gas-fired internal combustion engine to produce electricity, an emergency/back-up industrial flare, various boilers, and associated equipment. 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,

Vickie Walsh
Air Permitting Program Supervisor
Air Resources Management Bureau
(406) 444-3490

VW:lr
Enclosure

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air Resources Management Bureau
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FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: City of Great Falls
Wastewater Treatment Plant
1600 6th Street NE
Great Falls, MT 59404

Air Quality Permit Number: 4176-00

Preliminary Determination Issued: 2/06/08

Department Decision Issued: 02/22/08

Permit Final: 3/11/08

1. *Legal Description of Site:* The Great Falls WWTP facility is located in Section 1, Township 20 North, Range 3 East, in Cascade County, Montana.
2. *Description of Project:* Great Falls WWTP owns and operates a municipal wastewater treatment plant incorporating a natural gas/digester gas-fired internal combustion engine to produce electricity, an emergency/back-up industrial flare, various boilers, and associated equipment.
3. *Objectives of Project:* The objective of the proposed air quality permitting action is to bring the Great Falls WWTP facility into compliance with the permitting requirements of the Montana Clean Air Act.
4. *Alternatives Considered:* In addition to the proposed action, the Department also considered the “no-action” alternative. The “no-action” alternative would deny issuance of the air quality preconstruction permit to the proposed facility. However, the Department does not consider the “no-action” alternative to be appropriate because Great Falls demonstrated compliance with all applicable rules and regulations as required for permit issuance. 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 Permit #4176-00.
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.

IV. Emission Inventory

Emitting Unit	tons of pollutant/year ^a					
	PM	PM ₁₀	NO _x	CO	SO ₂	VOC
GE Jenbacher Lean Burn Engine ^b	---	---	19.90	35.22	0.01	2.56
Cleaver Brooks Digester Sludge Heating Boilers ^b (2)	0.16	0.16	2.16	1.82	0.02	0.12
Cleaver Brooks Heating Boilers (2)	0.68	0.68	8.98	7.54	0.06	0.50
67 hp Emergency Generator	0.04	0.04	0.52	0.11	0.03	0.04
Varec Waste Gas Burner ^c	0.23	0.23	0.53	10.00	7.89	---
Wastewater Process Tanks	---	---	---	---	---	10.04
Total Emissions	1.11	1.11	32.09	54.69	8.01	13.26

^a A complete emission inventory was included in the applications for air quality Permits #4176-00 and is on file with the Department

^b Assumes worst-case emissions combusting 100% natural gas

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

V. Existing Air Quality

The Great Falls WWTP is located in Section 1, Township 20 North, Range 3 East, in Cascade County, Montana in Section 1, Township 20 North, Range 3 East, in Cascade County, Montana. The air quality of this area is classified as better than National Standards or unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for criteria pollutants.

VI. Ambient Air Impact Analysis

Based on the relatively low levels of pollutants emitted from the Great Falls WWTP, 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.

VIII. Environmental Assessment

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

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

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Terrestrial and Aquatic Life and Habitats			X			Yes
B	Water Quality, Quantity, and Distribution			X			Yes
C	Geology and Soil Quality, Stability and Moisture			X			Yes
D	Vegetation Cover, Quantity, and Quality			X			Yes
E	Aesthetics			X			Yes
F	Air Quality			X			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources				X		Yes
H	Demands on Environmental Resource of Water, Air and Energy			X			Yes
I	Historical and Archaeological Sites			X			Yes
J	Cumulative and Secondary Impacts			X			Yes

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 Great Falls WWTP, 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 Permit #4176-00, the Department contacted the Montana Natural Heritage Program (MNHP) in an effort to identify any species of special concern that may be located within or near the Great Falls WWTP site (Section 1, Township 20 North, Range 30 East, in Cascade County, Montana). Search results concluded that there are eight such species of special concern on file for the area. The species of special concern located within the defined area include the *Funaria americana* (common name unknown), *Buteo swainsoni* (Swainson's Hawk), *Spea bombifrons* (Plains Spadefoot), *Carex sychnocephala* (Many-headed Sedge), *Psoralea hypogaea* (Little Indian Breadroot), *Centunculus mimus* (Chaffweed), *Entoshodon rubiginosus* (common name unknown), and *Buteo regalis* (Ferruginous Hawk).

While these species of special concern may be found in specific habitats within or near the defined area, the MNHP 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. 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 a digester gas engine which is capable of producing up to 4.73 million kW hours annually, based on its peak generating capacity of 540 kW. Therefore, the project would impact energy resources; however, any impacts would be minor and positive 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.

I. 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 building 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.

J. Cumulative and Secondary Impacts

The Great Falls WWTP is an existing facility. Emissions from the existing Great Falls WWTP would continue to impact the above-cited physical and biological resources of the environment after issuance of Permit #4176-00. However, the purpose of the current permit action would be to bring the existing Great Falls WWTP into compliance with the Montana Clean Air Act through issuance of the required Montana Air Quality Permit. Therefore, because the current permit action would not result in any changes to the existing facility, no direct or secondary and cumulative impacts to the above-cited physical and biological resources of the project area would occur as a result of the current permit action.

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 Permit #4176-00.

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.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Social Structures and Mores				X		Yes
B	Cultural Uniqueness and Diversity				X		Yes
C	Local and State Tax Base and Tax Revenue			X			Yes
D	Agricultural or Industrial Production				X		Yes
E	Human Health			X			Yes
F	Access to and Quality of Recreational and Wilderness Activities				X		Yes
G	Quantity and Distribution of Employment				X		Yes
H	Distribution of Population				X		Yes
I	Demands for Government Services			X			Yes
J	Industrial and Commercial Activity			X			Yes
K	Locally Adopted Environmental Plans and Goals				X		Yes
L	Cumulative and Secondary Impacts			X			Yes

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

- A. Social Structures and Mores
- B. Cultural Uniqueness and Diversity

The proposed project would not have any impact on the above economic and social resources of the proposed area of operation because the project is small by industrial standards and operations would take place within an existing building and no additional construction or employment would be required.

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 with no new construction or ground disturbance occurring as a result of the current permit action.

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

Permit #4176-00 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 Permit #4176-00. 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

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 result in only a minor impact on 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. Overall, any industrial or commercial activity occurring as a result of the project would be minor.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans or goals in the immediate area affected by the proposed project. The state standards would be protective of the proposed project area.

L. Cumulative and Secondary Impacts

The Great Falls WWTP is an existing facility and would continue to impact the above-cited social and economic resources of the environment after issuance of Permit #4176-00. However, the purpose of the current permit action would be to bring the existing Great Falls

WWTP into compliance with the Montana Clean Air Act through issuance of the required Montana Air Quality Permit. Therefore, because the current permit action would not result in any changes to the existing facility, no direct or secondary and cumulative impacts to the above-cited physical and biological resources of the project area would occur as a result of the current permit action.

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 Permit #4176-00.

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

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permitting action is for the operation of the Great Falls WWTP. Permit #4176-00 includes conditions and limitations to ensure the facility will operate in compliance with all applicable rules and regulations. In addition, there are no significant impacts associated with this proposal.

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

EA prepared by: Trista Glazier
Date: January 14, 2008