



September 10, 2018

Dan Rooney
General Manager
ADF International
1900 Great Bear Ave.
Great Falls, MT 59404

Dear Mr. Rooney:

Montana Air Quality Permit #4990-02 is deemed final as of September 8, 2018, by the Department of Environmental Quality (Department). This permit is for a structural steel fabrication 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,

A handwritten signature in cursive script that reads "Julie A. Merkel".

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

A handwritten signature in cursive script that reads "Rhonda Payne".

Rhonda Payne
Air Quality Scientist
Air Quality Bureau
(406) 444-5287

JM:RP
Enclosure

Montana Department of Environmental Quality
Air, Energy & Mining Division

Montana Air Quality Permit #4990-02

ADF International
1900 Great Bear Ave.
Great Falls, MT 59404

September 8, 2018



MONTANA AIR QUALITY PERMIT

Issued To: ADF International
1900 Great Bear Ave.
Great Falls, MT 59404

MAQP: #4990-02
Application Complete: 7/12/2018
Preliminary Determination Issued: 8/3/2018
Department's Decision Issued: 8/23/2018
Permit Final: 9/8/2018

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to ADF International, 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

The ADF International structural steel fabrication plant is located at 1900 Great Bear Avenue, Great Falls, Montana, in the south ½ of Section 30, Township 21 North, Range 4 East, Cascade County.

B. Current Permit Action

On June 11, 2018, the Department of Environmental Quality – Air Quality Bureau (Department) received a request to modify MAQP 4990-01. The modification is for the addition of 19 additional gas shield welders, 19 additional gas cutting torches and to remove one FICO plasma table and one Gemini plasma table. Additional information was received on July 12, 2018. This permit action incorporates the equipment, updates the emission inventory and updates rule references.

Section II: Conditions and Limitations

A. Emission Limitations

1. ADF shall not operate or have on site more than 61 gas shielded welders each with a deposition rate of 12.5 pounds per hour (lb/hr). Welding wire used with welders shall be mild steel metal core wire (ARM 17.8.749).
2. The welders shall utilize gas metal arc welding (GMAW) and 85% argon and 15% carbon dioxide (CO₂) gas shield with a flow rate of 40 cubic feet an hour (ARM 17.8.752).
3. ADF shall not operate or have on site more than 49 natural gas/oxygen torches (ARM 17.8.749).
4. ADF International 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).

5. ADF International 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).
6. ADF International 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 in Section II.A.4. (ARM 17.8.749).
7. ADF International shall comply with all applicable standards and limitations, and the reporting, recordkeeping and notification requirements contained in 40 Code of Federal Regulations (CFR) 63, Subpart XXXXXX *National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories* (ARM 17.8.342 and 40 CFR 63, Subpart XXXXXX).

B. Testing Requirements

1. ADF shall conduct visual determination of fugitive emissions in accordance with the requirements in 40 CFR 63, Subpart XXXXXX (ARM 17.8. 342 and 40 CFR, 60, Subpart XXXXXX).
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 of Environmental Quality (Department) may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. ADF shall prepare and submit annual certification and compliance reports for each affected source according to the requirements of 40 CFR 63, Subpart XXXXXX (ARM 17.8. 342 and 40 CFR, 60, Subpart XXXXXX).
2. ADF International 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.
3. 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).

4. ADF International shall notify the Department of any construction or improvement project conducted, pursuant to ARM 17.8.745, that would include the addition of a new emissions unit, 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. The notice must be submitted to the Department, in writing, 10 days prior to startup 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(l)(d) (ARM 17.8.745).
5. All records compiled in accordance with this permit must be maintained by ADF International 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).

D. Notification

ADF shall provide the Department with written notification of the actual start-up date of the 19 new gas shield welders and torches postmarked within 15 days after the actual start-up date (ARM 17.8.749).

In accordance with 40 CFR 63, Subpart XXXXXX, ADF International shall provide written initial notification and notification of compliance to the Department required for a new affected source no later than 120 days after initial startup (ARM 17.8.342 and ARM 17.8.749).

Section III: General Conditions

- A. Inspection – ADF International 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 (CEMS, 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 ADF International fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving ADF International 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 therefor, 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, failure to pay the annual operation fee by ADF International 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
ADF International
MAQP #4990-02

I. Introduction/Process Description

ADF International owns and operates a structural steel fabrication facility. The facility is located 1900 Great Bear Avenue, Great Falls, Montana, in the south ½ of Section 30, Township 21 North, Range 4 East, Cascade County. A complete listing of equipment and activities is included in Section I.B. of this permit analysis.

A. Permitted Equipment

Equipment used at the facility includes:

- 61 gas shielded metal arc welders
- 49 natural gas/oxygen torches

B. Source Description

The ADF International fabrication plant utilizes welders and natural gas/oxygen torches and two plasma-cutting tables to complete a variety of structural steel projects. These projects are often a mix of standard steel structures/components, complex and heavy steel components, and miscellaneous/architectural metals, their proportion varying for each project.

The 61 welders used in the ADF International facility are Epco gas shielded arc welders using 85% argon and 15% carbon dioxide (CO₂) shielding gas. The welding wire is a Hobart FabCor Edge AWS A5.18:E70C-6M H4 mild steel metal core wire. The facility also includes 49 natural gas/oxygen torches.

C. Permit History

On November 8, 2013, the Department of Environmental Quality – Air Quality Bureau (Department) received a Montana Air Quality Permit (MAQP) to construct a structural steel fabrication plant. **MAQP #4990-00** was issued on January 22, 2014.

ADF submitted an application to the Department on February 26, 2016, to modify MAQP 4990-00. The application was ruled incomplete for lack of payment and proof of public notice. These items were due to the Department April 13, 2016 and were received by the Department on March 30, 2016.

On April 29, 2016, the application was ruled incomplete to address items missing from the initially submitted Best Available Control Technologies (BACT) analysis. The additional information was due to the Department by May 31, 2016 and was received on May 31, 2016.

The modification was for the addition of a second plasma table manufactured by Gemini and equipped with a TAMA air filtration system. The Gemini plasma table is operationally similar to the existing FICO plasma table. In addition to permitting the new plasma table, this permit action served to update the permit to reflect current permit language and rule references used by the Department. As such, **MAQP #4990-01** replaced MAQP #4990-00.

D. Current Permit Action

On June 11, 2018, the Department received a request to modify MAQP 4990-01. The modification is for the addition of 19 additional gas shield welders, 19 additional gas cutting torches and to remove one FICO plasma table and one Gemini plasma table. The application was missing a Best Available Control Technology (BACT) analysis addressing potential control measures for the new equipment. The BACT analysis was received by the Department on July 12, 2018. This permit action incorporates the equipment, updates the emission inventory and updates rule references.

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 of Environmental Quality (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).

ADF International 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 PM₁₀
11. ARM 17.8.230 Fluoride in Forage

ADF International 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, ADF International 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 17.8.322 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.
6. 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.
7. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). This facility is not an NSPS affected source because it does not meet the definition of any NSPS subpart defined in 40 CFR Part 60.
8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR Part 63, as listed below:
 - a. 40 CFR 63, Subpart A – General Provisions apply to all equipment or facilities subject to an NESHAP Subpart as listed below:
 - b. 40 CFR 63, Subpart XXXXXX - National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories. Owners or operators of an area source that is primarily engaged in the operations in one of the nine source categories listed in paragraphs (a)(1) through (9) of this section, including (a)(4) Fabricated Structural Metal Manufacturing are subject to this subpart. The provisions of this subpart apply to each new and existing affected source listed and defined in paragraphs (b)(1) through (5) of this section if you use materials that contain or have the potential to emit metal fabrication or finishing metal HAP (MFHAP), defined to be the compounds of cadmium, chromium, lead, manganese, and nickel, or any of these metals in the elemental form with the exception of lead. ADF International is subject to this subpart because they own and operate a new welding affected source, defined as the collection of all equipment and activities necessary to perform welding operations which use materials that contain MFHAP or have the potential to emit MFHAP, and constructed after April 3, 2008.

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. ADF International submitted the appropriate 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. ADF International has a PTE greater than 25 tons per year of particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀) and particulate matter with an aerodynamic diameter of 2.5 microns or less (PM_{2.5}) 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. ADF International 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. ADF International submitted an affidavit of publication of public notice for the June 9, 2018, issue of the *Great Falls Tribune*, a newspaper of general circulation in Great Falls, Montana in Cascade County, 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 ADF International 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 (PM₁₀) in a serious PM₁₀ 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 MAQP #4990-02 for ADF International, 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 PM₁₀ nonattainment area.
 - d. This facility is not subject to any current NSPS.
 - e. This facility is subject to 40 CFR 63, Subpart XXXXXX - *National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories.*
 - f. This source is not a Title IV affected source, or a solid waste combustion unit.
 - g. This source is not an EPA designated Title V source.

Based on these facts, the Department determined that ADF International will be a minor source of emissions as defined under Title V.

III. BACT Determination

A BACT determination is required for each new or modified source. ADF International 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.

A BACT analysis was submitted by ADF International in permit application #4990-02, describing particulate matter emission control options for the gas shield welders and torches. The Department reviewed these methods, as well as previous BACT determinations. The following control options have been reviewed by the Department to make the following BACT determination.

The welders used in facility are Epco gas shielded arc welders using 85% argon and 15% CO₂ with a deposition rate of 12.5 lbs per hour and flow rate of 40 cubic feet an hour. The welding wire used is Hobart FabCor Edge AWS A5.18: E70C-6M H4 mild steel metal core

wire. Estimated emissions were calculated using emissions factors from Publication AWS F1.6.2003 “Guidelines for Estimating Welding Emissions for EPA and Ventilation Permit Reporting.” Maximum PTE for welding fumes is 40.07 tpy of PM₁₀.

There will be 49 Natural Gas/Oxygen torches used at the facility. Estimated emissions were calculated using emission factors from Tables 5.2 and Table 5.3 of AWS Publication “Fumes and Gases in The Welding Environment”. The calculated maximum PTE for torch fumes is 16.95 tpy per PM₁₀.

BACT - PM/PM₁₀/PM_{2.5}

Particulate matter (PM) (including total particulate, PM₁₀ and PM_{2.5}) emissions from welding and cutting originate when a metal is heated above its boiling point and its vapors condense into very fine, particles (solid particulates). There is a lack of available PM_{2.5} emission rates and appropriate test methods. As such, the following conservative assumptions were made: All PM emissions are PM₁₀, and all PM₁₀ emissions are PM_{2.5}.

Step 1 - Identify All Control Technologies

PM, PM₁₀, and PM_{2.5} emissions could theoretically be reduced in welding and cutting operations by using several methods:

- Source Capture Dust Collectors
- Ambient Dust Collectors
- Wire/Shield Gas Selection

A discussion of each type of control technology is contained below.

Source Capture Dust Collectors

Using 61 Capture Arms at each weld station, each arm being 14’ long, 6” in diameter mounted on a 10’ boom, giving a working reach of 24’ per hood, anticipating 800 cfm per arm. All fumes would be collected in a central Camil Gold Series GS40 dust collector with internal sprinkler system, Baldor Premium E Motor, solenoid heater, and spark arrestor with clean air returning to shop space. The vertical design of the filter cartridges provides more efficient pulsing of dust, thus eliminating uneven dust loading associated with horizontally mounted cartridges. High entry cross flow inlet eliminates upward can velocities and the channel baffles installed in the inlet protect the filters from incoming dust and separate the larger particles directly into the hopper, reducing the load on the filters.

Ambient Dust Collectors

Installation of two GS48 Gold Series Dust Collectors. The GS48, are modular design dust collector with heavy duty carbon steel construction. The dust collector module constructed of 7-gauge carbon steel. Door, hopper, inlet and panels are all 10-gauge steel. The vertical design of the filter cartridges provides more efficient pulsing of dust, thus eliminating uneven dust loading associated with horizontally mounted cartridges. High entry cross flow inlet eliminates upward can velocities and the channel baffles installed in the inlet protect the filters from incoming dust and separate the larger particles directly into the hopper, reducing the load on the filters.

Wire/Shield Gas Selection

Several welding options were considered for the welding wire/rod.

SMAW also known as MMW or manual metal arc, stands for Shielded Metal Arc Welding. The welding rod is solid and is coated with flux. SMAW has fume generation rates 0.2 – 1.2 g/min.

FCAW stands for Flux Cored Arc Welding. The flux of the welding wire is in the center of the electrode instead of on the outside. The process requires wire feed spools and cable. The rod is pushed through the center of the cable and through the welding gun. Shielding gas may or may not be used depending on the flux material in the core of the wire. FCAW has the advantage over SMAW for "all position welding" and the speed of welding since the wire is continuously fed. FCAW has fume generation rates of 0.5 – 3.5 g/min.

GTAW stands for gas tungsten arc welding. Most refer to it as "TIG" welding. The electricity is passed through a tungsten electrode and is surrounded by a shielding gas. The welding rod (if used) is consumed in the heat generated by the arc. This type of welding is most commonly used for aluminum, magnesium, stainless steel and copper alloys. This process is slower than FCAW or SMAW but is best for lightweight or thin materials. GTAW is not a viable alternative for plate steel.

GMAW stands for gas metal arc welding. Most refer to it as "MIG" welding; in which a solid wire electrode is fed through a hollow cable and through the welding gun. Shielding gas is required as the wire does not have flux. As with FCAW, this process requires a wire feed system to push the wire through the cable. 0.1-0.5 g/min. GMAW has the lowest fume generation rate.

The choice of shield gas can also affect the amount of fume generation. As the amount of Argon is increased, the lower the fume emissions. Alternatively, the higher the CO₂, the greater the emissions.

Step 2 - Eliminate Technically Infeasible Control Options

None of the controls examined were technically infeasible. However, the Source Capture Controls represented the highest level of preventive maintenance and engineering difficulty due to the extensive network of exposed duct work.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

The following particulate control efficiency ranges were obtained from the appropriate EPA Air Pollution Control Fact Sheets. Note that where no size-specific efficiencies were provided, it was assumed that the stated efficiency range applied to all three particulate size categories even though there are likely significant differences in some cases, especially between control of filterable and condensable particulate emissions. EPA Reported Particulate Control Efficiency Ranges Control Technology PM, PM₁₀, PM_{2.5}. Because all the proposed control equipment uses similar filtration (except the MAU), all control efficiencies will be similar. The differences would be in the ultimate design flow rates.

- Fabric filters - 99-99.9%
- Wire / Shield Gas selection - Baseline

Step 4 - Evaluate Most Effective Controls and Document Results

Environmental Evaluation

No environmental impacts severe enough to eliminate any of these control technologies were identified.

Economic Evaluation

Wyoming Mechanical Supply prepared a cost comparison to be used as a management tool for evaluating the options for particulate emission control at the ADF Fabrication facility.

- Source Capture System and Installation - \$555,160.00
- Ambient Dust Collection System and Installation - \$582,563.00

Step 5 - Identify BACT

Based on the feasibility of all the control options, the Department determined that the use of GMAW Wire, and 85% Argon / 15% Carbon Dioxide Shield Gas constitutes BACT for the new welders and torches.

IV. Emission Inventory¹

	Max PTE ² (tpy)
PM ₁₀	57.02

- Note: 1. Emission inventory provided by applicant.
2. Based on 8,760 hrs/yr

Welders

Assuming: 61 Epco Gas Shielded Welding Machines Using 85% Argon/15% CO₂
Hobart Bros 0.052 Metal-Cored E70C-6M Wire
Max Deposition Rate = 12.5 lbs/hr
Fume Generation Rate = 0.012 lbs fume/lb wire
Emissions = 12.5 lbs/hr deposition rate * 0.012 lbs fume/lb wire = 0.15 lbs/hr fume emissions
All Welders = 0.15 lbs/hr fume gen. rate * 61 welders = 9.15 lbs/hr

Compound	Percent Fumes	Fume Gen. Rate Lbs/Hr	Emissions Lbs/Hr	Max TPY
PM ₁₀	1	9.15	9.15	40.07
Al	0.01	9.15	0.0915	
CaCo ₃	0.01	9.15	0.0915	
CaF ₂	0.04	9.15	0.366	
Cu	0.01	9.15	0.0915	
Fe	0.75	9.15	6.8625	
Mg	0.05	9.15	0.4575	
Mo	0.01	9.15	0.0915	
Si	0.02	9.15	0.183	
TiO ₂	0.1	9.15	0.915	

Fume generation rate taken from AWS F1.6.2003 American National Standard "Guide For Estimating Welding Emissions For EPA and Ventilation Permit Reporting"

Fume constituent data taken from Hobart Bros MSDS No. 415889 and FabcorEdge Data Sheet

Available data regarding PM_{2.5} for GMAW welding using E70 wire has been reviewed and according to Table 7 in "Improving Welding Toxic Metal Emission Estimates in California" UC Berkley, 14 July 2004, 35.7 % of the particulate matter is greater than PM_{2.5}. (64.3% of Particulate emission is PM_{2.5}).

Torches

Assuming: Fume Generation Rate for cutting 1/2" plate at normal pressure and cutting speed = 0.60g/min

Fume Generation Rate of 0.60 g/min * 0.00220 (conv. Factor) * 60 min = 0.079 lb/hr

All Torches = 0.079 lbs/hr Fume Generation Rate * 49 Torches = 3.87

Compound	Percent Fumes	Fume Gen. Rate Lbs/Hr	Lbs/Hr Emissions	Max TPY
PM ₁₀	1	3.87	3.87	16.95
Ba	0.01	3.87	0.0387	
Mn	0.3	3.87	1.161	
Si	0.05	3.87	0.1935	
Fe	0.67	3.87	2.5929	
Mg	0.01	3.87	0.0387	
Cr	0.02	3.87	0.0774	
Sn	0.01	3.87	0.0387	
Ga	0.01	3.87	0.0387	
Ni	0.05	3.87	0.1935	
Al	0.02	3.87	0.0774	
Mo	0.04	3.87	0.1548	
Ca	0.02	3.87	0.0774	
V	0.01	3.87	0.0387	
Cu	0.1	3.87	0.387	
Zn	0.1	3.87	0.387	
Co	0.02	3.87	0.0774	
Zr	0.02	3.87	0.0774	
K	0.1	3.87	0.387	

Fume generation data taken from Table 5.2 and Table 5.3 of "Fumes and Gases in the Welding Environment".
Composition of fumes taken from Table 5.3

V. Existing Air Quality

ADF International is located at 1900 Great Bear Avenue, Great Falls, Montana, in the south ½ of Section 30, Township 21 North, Range 4 East, Cascade County, Montana. The air quality of this area is classified as unclassifiable/attainment for National Ambient Air Quality Standards (NAAQS) pollutants, including particulate matter species (PM₁₀/PM_{2.5}).

The Federal Register (September 9, 1980, 45 FR 59315) designated a corridor along 10th Avenue South as nonattainment for CO based upon air quality data gathered at the intersection of 10th Avenue South and 9th Street. The 1990 Clean Air Act Amendments listed Great Falls as an unclassified nonattainment area for CO. This was based on the 1988 and 1989 data in which no violations of either the one-hour or eight-hour standards were recorded.

Montana previously submitted to EPA a CO control strategy for Great Falls that relied upon significant emission reductions at the Calumet Montana Refining Company refinery (formerly Montana Refining Company, Phillips Petroleum, and Simmons Refinery) and federal automobile emission standards. On May 9, 2002, Great Falls was redesignated to attainment for CO under a Limited Maintenance Plan.

VI. Ambient Air Impact Analysis

Based on the information provided and the conditions established in MAQP #4990-02, the Department determined that the impact from this permitting action will be minor. The Department believes it will not cause or contribute to a violation of any ambient air quality standard.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted the following private property taking and damaging assessment.

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?

YES	NO	
		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 no 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 & Mining Division
Air Quality Bureau
P.O. Box 200901, Helena, Montana 59620
(406) 444-3490

ENVIRONMENTAL ASSESSMENT (EA)

Issued To: ADF International

Montana Air Quality Permit Number (MAQP): 4990-02

EA Draft: August 3, 2018

EA Final: August 23, 2018

Permit Final: September 8, 2018

1. *Legal Description of Site:* The ADF International facility is located in the south ½ of Section 30, Township 21 North, Range 4 East, Cascade County.
2. *Description of Project:* The modification is for the addition of 19 gas shield welders and 19 gas torches and the removal of two plasma tables manufactured by Gemini and accompanying air filtration systems.
3. *Objectives of Project:* The addition of the 19 gas shield welders and torches and removal of the two plasma tables would allow ADF International to adjust to production needs and increase the manufacturing capabilities from the fabrication plant.
4. *Alternatives Considered:* In addition to the proposed action, the Department of Environmental Quality (Department) also considered the “no-action” alternative. The “no-action” alternative would deny issuance of the MAQP to the facility. ADF International would be denied the opportunity to upgrade the fabrication facility. Doing so would deny the proposed increase in capacity for the facility and could potentially limit business opportunities. Any potential air emission increases that would be authorized by issuing the MAQP would not occur. However, the Department does not consider the “no-action” alternative to be appropriate because ADF International 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 MAQP #4990-02.
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. 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*

No impacts to terrestrial and aquatic life and habitats would occur from the proposed project because it would be located within the ADF International building with no new dedicated exhaust to the atmosphere.

B. *Water Quality, Quantity and Distribution*

This project would not impact water quality, water quantity, and distribution. The proposed project would occur within an existing building and any runoff from the facility would be contained in an engineered onsite storm water detention pond. Further, no impacts to the surrounding area from the air emissions would be realized due to dispersion of pollutants.

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

No new land would be disturbed to implement the proposed project as the installation of the new equipment would take place within the defined ADF International building, an existing industrial site. There would be no change to the geology or soil quality, stability and moisture.

D. *Vegetation Cover, Quantity, and Quality*

There would be no impacts with respect to vegetative cover, quality, and quantity because the proposed project would operate within the defined ADF International building where vegetation has been previously disturbed. During operations, the facility would be a minor source of emissions and the pollutants widely dispersed (as described in Section 7.F of this EA); therefore, no impacts to vegetation from the proposed project would be expected.

E. *Aesthetics*

No impacts to the aesthetic nature of the area would result from the proposed project action because all proposed activities would take place within the defined ADF International building, an existing industrial site. Any aesthetic impacts would be consistent with current industrial land use of the area.

Overall, there would be no additional impacts to the aesthetic nature of the project area from the addition of the new equipment.

F. *Air Quality*

The area surrounding the proposed project is unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for all criteria air pollutants. The air quality impacts from the current permit action would be minor because MAQP #4990-02 would include conditions limiting the impacts of the emissions of air pollution from the proposed project. Overall, any impacts to the air quality of the project area from ADF International's proposed permit action, including construction activities, normal operations resulting in air emissions, and deposition of air emissions would be minor and in compliance with all applicable MAAQS and NAAQS.

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

The Department previously contacted the Montana Natural Heritage Program (MNHP) in an effort to identify any species of special concern associated with the proposed site location. MNHP identified occurrences of three plant and animal species of concern within the vicinity of the proposed project location. The bald eagle and burrowing owl which are classified as sensitive by the U.S. Forest Service, and the U.S. Bureau of Land Management and the Little Indian Breadroot, a vascular plant classified as sensitive by the U.S. Bureau of Land Management. The proposed project at the ADF International facility would not impact the unique endangered, fragile, or limited environmental resources because emissions of PM₁₀ and PM_{2.5} would decrease slightly in the area. The Department believes that no impacts would occur because the relatively small amount of the above listed pollutants emitted, dispersion characteristics of the pollutants and the atmosphere, and conditions placed in MAQP #4990-02, including, but not limited to, BACT requirements discussed in Section III of the permit analysis for this permit.

H. *Demands on Environmental Resource of Water, Air and Energy*

No impacts to demands on environmental resources of water, air, and energy would occur. The proposed project would require minimal use of water, and no new energy demands would occur because of the project. The project would result in minor decreases in PM₁₀ and PM_{2.5} due to the removal of some previously permitted equipment. The Department believes that no impacts would be occur due to dispersion characteristics of pollutants and the atmosphere, and conditions placed in MAQP #4990-02, including, but not limited to, BACT requirements discussed in Section III of the permit analysis for this permit.

I. *Historical and Archaeological Sites*

In an effort to identify any historical and archaeological sites near the proposed project area, the Department previously contacted the Montana Historical Society, State Historic Preservation Office (SHPO). It is SHPO's position that any structure over fifty years of age would be considered historic and would be potentially eligible for listing on the National Register of Historic Places. If any structures are to be altered and are over fifty years old we would recommend that they be recorded and a determination of their eligibility be made. According to the previous SHPO search, there have been no previously recorded sites within the designated search locale. Because the proposed project at ADF International would not disturb or alter any structure over fifty years of age, SHPO determined that there would be a low likelihood that cultural properties would be impacted. SHPO believes that a recommendation for a cultural resource inventory is unwarranted at this time. Therefore, it is unlikely the current permit action will have an adverse affect on any known historic or archaeological site. However, should structures need to be altered or if cultural materials be inadvertently discovered during this project SHPO should be contacted and the site investigated.

J. *Cumulative and Secondary Impacts*

Overall, any cumulative and secondary impacts from the proposed permit modification on the physical and biological resources of the human environment in the immediate area would be minor since the predominant use of the surrounding area would not change as a result of the proposed project. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in

MAQP #4990-02. Therefore, it is not expected that the proposed project, in conjunction with current operations, would result in any significant cumulative impact to the physical environment. Further, it is not expected that the proposed project would result in any secondary impacts on the physical environment.

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

A. *Social Structures and Mores*

The proposed project would not cause a disruption to any native or traditional lifestyles or communities (social structures or mores) in the area because the source would be a minor industrial source, the property on which the project would occur is private land owned by ADF International, and the proposed project would not change the predominant use of the surrounding area.

B. *Cultural Uniqueness and Diversity*

The Department believes that the proposed project would not impact the cultural uniqueness and diversity of the surrounding area because the proposed project would occur at an existing industrial site, in an area surrounded by industrial or agricultural properties.

C. *Local and State Tax Base and Tax Revenue*

The proposed operation of the additional welders and torches would not impact the local and state tax base and tax revenue as the operation is very small in size. The facility would continue to employ 300 personnel. No new employees would be added because of this project. No impacts to the local and state tax base and revenue would be expected from the proposed project.

D. *Agricultural or Industrial Production*

The proposed project would not displace or otherwise affect any agricultural land or practices since ADF International operates on an existing industrial site.

E. *Human Health*

There would be minor potential effects on human health due to installation of the new gas shield welders and torches within the existing industrial site. However, the removal of the two plasma tables would reduce emissions from the facility. In addition, MAQP #4990-02 would include conditions to ensure that the facility would operate in compliance with all applicable air quality rules and standards. These rules and standards are designed to be protective of human health. Also, pollutants would disperse from the ventilation of emissions at this site (see Section 7.F of this EA). Therefore, only minor impacts would be expected on human health from the proposed project.

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

The proposed project would not be expected to have an impact on recreational or wilderness activities because there are no recreational activities or wilderness areas reported to be near the current ADF International site. Therefore, no impacts to the access to and quality of recreational and wilderness activities would be expected.

G. *Quantity and Distribution of Employment*

No change in the number of permanent employees currently onsite would be anticipated because of this permitting action. The construction process to install the new welders and torches and to remove the two plasma tables would require minimal additional construction related work. No impacts to the quantity and distribution of employment would be expected.

H. *Distribution of Population*

Given the minor proposed changes, it is not expected that the activities from the new welders and torches would disrupt the normal population distribution of any given area. No secondary activities are identified to move to the current proposed area because of the current project. Therefore, no effects upon the quantity and distribution of employment and population in this area would be expected.

I. *Demands for Government Services*

The demands on government services would experience a minor impact, due to the company requesting the appropriate permits for the proposed project and to verify compliance with the permits that would be issued. In addition, the permitted source of emissions would be subject to periodic inspections by government personnel. Overall, any demands for government services to regulate the facility or activities associated with the facility would be minor due to the relatively small size of the proposed project.

J. *Industrial and Commercial Activity*

The operation of the new welders and torches would represent only a minor increase in the industrial activity at the site. No additional industrial or commercial activities are identified from the operation of the modified facility. In addition, the removal of the two plasma tables would reduce some activity at the site. Therefore, no notable change to the industrial and commercial activity is expected from the current permit action.

K. *Locally Adopted Environmental Plans and Goals*

The Department is not aware of any locally adopted environmental plans and goals within this area. The MAQP would contain limits for protecting air quality and keeping facility emissions in compliance with state and federal air quality standards.

L. *Cumulative and Secondary Impacts*

Overall, the cumulative and secondary social and economic impacts from this project would be minor because the proposed changes do not constitute any fundamental changes in operation. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in MAQP #4990-02.

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

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permitting action is for the construction and operation of 19 gas shield welders and torches. MAQP #4990-02 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 Quality Bureau, Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

EA prepared by: Rhonda Payne

Date: June 26, 2018