August 12, 2016

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

Dear Mr. Rooney:

Montana Air Quality Permit #4990-01 is deemed final as of August 13, 2016, by the Department of Environmental Quality (Department). This permit is for a structural steel fabrication plant. 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

Rhonda Payne
Environmental Science Specialist
Air Quality Bureau
(406) 444-5287

JM:RP
Enclosure

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

Montana Air Quality Permit #4990-01

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

August 13, 2016

MONTANA AIR QUALITY PERMIT

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

MAQP: #4990-01
Application Complete: 3/30/2016
Preliminary Determination Issued: 7/7/2016
Department's Decision Issued: 7/28/2016
Permit Final: 8/13/2016
State ID #: 013-0042

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 February 26, 2016, the Department of Environmental Quality – Air Quality Bureau (Department) received a request to modify MAQP 4990-00. The modification is 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.

Section II: Conditions and Limitations

A. Emission Limitations

1. ADF shall not operate or have on site more than 42 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 (CO_2) 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 two plasma cutters with a cutting speed of a ½-inch plate of 145 inches per minute each (ARM 17.8.749).

4. The plasma cutters shall each be equipped with drawdown ventilation and a downdraft cartridge filter dust collection system (ARM 17.8.752).

5. ADF shall not operate or have on site more than 30 natural gas/oxygen torches (ARM 17.8.749).

6. 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).

7. 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).

8. 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).

9. 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

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 #4990-01

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:

- 42 gas shielded metal arc welders
- 30 natural gas/oxygen torches
- Two gas shielded dry cutting plasma cutting tables equipped with drawdown ventilation and a downdraft cartridge filter dust collection systems

B. Source Description

The ADF International fabrication plant utilizes welders, 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 42 welders used in the ADF International facility are Epco gas shielded arc welders using 85% argon and 15% carbon dioxide (CO_2) shielding gas. The welding wire is a Hobart FabCor Edge AWS A5.18:E70C-6M H4 mild steel metal core wire. The facility includes 30 natural gas/oxygen torches, a Ficep Tipo B254 CNC plasma cutting table equipped with a HyperTherm HPR 260 gas shielded dry plasma cutter and a Ficep Gemini plasma cutting table, also equipped with a HyperTherm HPR 260 gas shielded dry plasma cutter as well as a TAMA air filtration system.

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.

D. Current Permit Action

ADF submitted an application to the Department on February 26, 2016, to On February 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 is 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 serves to update the permit to reflect current permit language and rule references used by the Department. As such, **MAQP #4990-01** replaces MAQP #4990-00.

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 PM_{10}
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 (PM_{10}) 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 March 22, 2016, 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 (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 MAQP #4990-00 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 PM_{10} 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 #4990-01. The Department reviewed the analysis, as well as previous BACT determinations. The proposed new Gemini plasma table cutter is operationally similar to the existing FICO plasma table and is designed to operate with TAMA air filtration equipment.

PM/PM10/PM2.5

Particulate matter (PM) (including total particulate, PM10 and PM2.5) emissions from 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 PM2.5 emission rates and appropriate test methods. As such, the following conservative assumption was made for the emissions from cutting: All PM emissions are PM10, and all PM10 emissions are PM2.5.

Plasma Table Dust Collectors

The plasma cutter proposed is a Ficep Gemini G32HPE CNC machine equipped with a HyperTherm HPR 260 plasma cutting system. The HyperTherm HPR 260 uses a 200-amp, gas shielded dry cutting process. The cutting speed at ½" plate is 145 inches per minute. The plasma-cutting table is equipped with drawdown ventilation and a TAMA Air Filtration down flow booth equipped with Donaldson Torit Ultra-Web SB cartridges providing a 95% capture and control efficiency. Estimated emissions were calculated using emission factors from Document IE-174-93 "Emission Of Fumes In Plasma Cutting of Stainless Steel and Mild Steel" incorporated by reference into AP-42. Maximum PTE for plasma fumes is 11.4 tpy PM10.

The operation of the table and control device does not generate an appreciable increase in emissions that would eventually reach the atmosphere. Therefore, additional add-on controls at the point of exhaust to the atmosphere would incur great cost for the minimal environmental benefit. Based on the information provided in the application and the previous BACT determination for the FICO plasma table equipped with the Donaldson air filtration system permitted in MAQP#4990-00, the Department determined that the use of the drawdown ventilation and TAMA air filtration down flow booth for the Gemini plasma cutter constitutes BACT.

III. Emission Inventory[1]

	Max PTE[2] (tpy)
PM_{10}	60.8

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

Welders

Assuming: 42 Epco Gas Shielded Welding Machines Using 85% Argon/15% CO_2
Hobart 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 * 42 welders = 6.3 lbs/hr

Compound	Percent Fumes	Fume Gen. Rate Lbs/Hr	Emissions Lbs/Hr	Max TPY
PM10	1	6.3	6.3	27.6
Al	0.01	6.3	0.063	
CaCo3	0.01	6.3	0.063	
CaF2	0.04	6.3	0.252	
Cu	0.01	6.3	0.063	
Fe	0.75	6.3	4.725	
Mg	0.05	6.3	0.315	
Mo	0.01	6.3	0.063	
Si	0.02	6.3	0.126	
Tio2	0.1	6.3	0.63	

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 PM2.5 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 PM2.5. (64.3% of Particulate emission is PM2.5).

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 E = 0.079 lbs/hr Fume Generation Rate * 30 Torches = 2.37

Compound	Percent Fumes	Fume Gen. Rate Lbs/Hr	Lbs/Hr Emissions	Max TPY
PM10	1	2.37	2.37	10.38
Ba	0.01	2.37	0.0237	
Mn	0.3	2.37	0.711	
Si	0.05	2.37	0.1185	
Fe	0.67	2.37	1.5879	
Mg	0.01	2.37	0.0237	
Cr	0.02	2.37	0.0474	
Sn	0.01	2.37	0.0237	
Ga	0.01	2.37	0.0237	
Ni	0.05	2.37	0.1185	
Al	0.02	2.37	0.0474	
Mo	0.04	2.37	0.0948	
Ca	0.02	2.37	0.0474	
V	0.01	2.37	0.0237	
Cu	0.1	2.37	0.237	
Zn	0.1	2.37	0.237	
Co	0.02	2.37	0.0474	
Zr	0.02	2.37	0.0474	
K	0.1	2.37	0.237	

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

Plasma Cutter

Assuming: A36 Mild Steel MSDS
Hypertherm HyPerformance HPR260 Performance Table
Cutting Amperage 200 Amps with compressed air and oxygen
Dry Type Cutting
Cutting speed at 1/2" steel plate = 145 inches per minute
Emissions per cutter = 19.5 grams/min * 0.00220 (conv Factor) = 0.0429 lbs/min / 145 in/min = 0.0003 lbs/inch
Emissions per cutter = 0.0003 lbs/inch * 145 in/min * 60 min = 2.6 lbs/hr
Total emissions (2 cutters) = 2.6 lbs/hr * 2 = 5.2 lbs/hr

Compound	Percent Fumes	Fume Gen. Rate Lbs/Hr	Emissions Lbs/Hr	Max TPY
PM10	1	5.2	5.2	22.78
Fe	0.99	5.2	5.148	
C	0.0026	5.2	0.01352	
Mn	0.0075	5.2	0.039	
Cu	0.002	5.2	0.0104	
P	0.0004	5.2	0.00208	
S	0.0005	5.2	0.0026	

Emission factor taken From "Emission of Fume, Nitrogen Oxide and Noise in Plasma Cutting of Stainless Steel and Mild Steel" - Bromsen B. et.al
Document IE-174-93 Edition March 1994 incorporated by reference into AP-42

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/PM2.5).

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 #4990-01, 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?
		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, and Mining Division
Air Quality Bureau
P.O. Box 200901, Helena, Montana 59620
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FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: ADF International

Montana Air Quality Permit Number (MAQP): MAQP #4990-01

Preliminary Determination Issued: July 7, 2016
Department Decision Issued: July 27, 2016
Permit Final:

1. *Legal Description of Site*: The ADF International facility would be 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 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.

3. *Objectives of Project*: The addition of the second plasma table would allow ADF International to increase the business and revenue 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 air quality preconstruction permit to the second plasma cutter. Doing so would reduce cutting capacity for the facility and could potentially limit business opportunities. 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 #4990-01.

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

Any impacts to terrestrial and aquatic life and habitats from the new plasma table would be minor because it would be located within the ADF International building with no new dedicated exhaust to the atmosphere. Further, minor impacts to the surrounding area from the small potential increase in air emissions (see Section VI of the permit analysis) would be realized due to dispersion of pollutants.

Terrestrials (such as deer, antelope, rodents, and insects) would use the general area of the facility. The area around the facility would be fenced to limit access to the facility. The fencing would likely not restrict access from all animals that frequent the area, but it may discourage some animals from entering the facility property. Any impacts to terrestrial and aquatic life and habits would have minor and typical impacts. Therefore, the operation of the equipment would create minor impacts to terrestrial and aquatic life that is present in the area.

B. Water Quality, Quantity and Distribution

This project would have a minor effect on the water quality, water quantity, and distribution. Increased runoff from the facility will be contained in an engineered onsite storm water detention pond. Further, minor 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

Any impacts resulting from the proposed project to geology and soil quality, stability, and moisture would be minor because all proposed activities with respect to limits and practices associated with installation of the new plasma table would take place within the defined ADF International property boundary, an existing industrial site. Further, minor impact to the surrounding area from the air emissions (see Section VI of the permit analysis) would be realized due to dispersion of pollutants.

D. Vegetation Cover, Quantity, and Quality

Only minor impacts would be expected to occur with respect to vegetative cover, quality, and quantity because the proposed project would operate in an existing industrial site 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, deposition on vegetation from the proposed project would expect to be minor.

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 property boundary, 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 #4990-01 would include conditions limiting the impacts of the emissions of air pollution from the new plasma table. 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 impact the unique endangered, fragile, or limited environmental resources because emissions of PM10 and PM2.5 would increase slightly in the area. However, the Department believes that any impacts would be minor due to the relatively small amount of the above listed pollutants emitted, dispersion characteristics of the pollutants and the atmosphere, and conditions placed in MAQP #4990-01, 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

Demands on environmental resources of water, air, and energy would be minor. The proposed project would require minimal use of water, and energy demands would be addressed with the installation of a 3,000 amp 480 volt service with power factor correction equipment. The project would result in minor increases in PM10 and PM2.5; however, the Department believes that any impacts would be minor due to dispersion characteristics of pollutants and the atmosphere, and conditions placed in MAQP #4990-01, 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 due to the fact that 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 #4990-01. 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 new plasma table would have a minor impact on local and state tax base and tax revenue as the operation is very small in size. The facility would continue to employ 300 personnel. Thus, only minor impacts to the local and state tax base and revenue could be expected from the employees and facility production.

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 a new plasma table within the existing industrial site. In addition, MAQP #4990-01 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. As described in Section 7.F of this EA, the air emissions from this facility would be minimized by the use of the drawdown ventilation and Donaldson Torit collection system for the plasma table cutter that would be required by MAQP #4990-01. 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 as a result of this permitting action. The construction process would require additional construction related work. Any impacts to the quantity and distribution of employment would be expected to be minor.

H. Distribution of Population

Given the minor proposed changes, it is not expected that the activities from the new plasma table would disrupt the normal population distribution of any given area. No secondary activities are identified to move to the current proposed area as a result 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. Current traffic patterns and quantity would not be affected by the proposed project. In addition, no increased demands on employee water and sewage disposal facilities would occur.

J. Industrial and Commercial Activity

The operation of the new plasma table 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, secondary activities are not expected from the operation of the new plasma table.. Therefore, no industrial and commercial activity resulting from the current permit action is expected.

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 #4990-01.

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 structural steel fabrication plant. MAQP #4990-01 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: April 20, 2016