

COUNTY OF



ALLEGHENY

RICH FITZGERALD
COUNTY EXECUTIVE

Air Quality Program

301 39th Street, Clack Health Center Building 7, Pittsburgh, PA 15201-1811
ph: 412.578.8103 • 24-hr: 412.687.ACHD (2243) • www.alleghenycounty.us/healthdepartment

SUBMISSION FORM – AIR POLLUTION MITIGATION PLAN

APPLICANT INFORMATION

The Air Pollution Mitigation Plan is submitted by affected facilities to meet the requirements of Allegheny County regulations found in §2106.06 (Mon Valley Air Pollution Episode) of Article XXI.

01 Facility Information

Name of Facility	Keywell Metals, LLC - West Mifflin		
Address	890 Noble Drive		
City State Zip+4	West Mifflin, PA 15122		
Permit #	0794	Phone	(412) 685-2854

02 Environmental Contact Information (Person to contact regarding technical details of this mitigation plan)

Name/Title	Lori Riker, Sr. Project Manager, Benchmark/Civil Environmental Engineering & Geology, PLLC		
Address	2558 Hamburg Turnpike, Suite 300		
City State Zip+4	Buffalo, NY 14218		
Email	lriker@bm-tk.com	Phone	(716) 856-0599

03 Responsible Official Information

Name/Title	Frank Lochiatto, General Manager		
Address	890 Noble Drive		
City State Zip+4	West Mifflin, PA 15122		



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Email

flochiatto@keywell.com

Phone (412) 685-2854

04

AFFIDAVIT

I certify that, subject to the penalties of Title 18Pa. C.S.A. Section 4904 and 35 P.S. Section 4009(b)(2), I am the responsible official having primary responsibility for the operation of the facilities to which this air pollution mitigation plan applies and that the information provided in this mitigation plan is true, accurate and complete to the best of my knowledge, information and belief formed after reasonable inquiry.

Signature:

Date

12/7/2021

Typed/Printed Name: Frank Lochiatto



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SUBMISSION FORM – AIR POLLUTION MITIGATION PLAN

- 05** List all equipment or processes at your facility that emit PM₁₀ and/or PM_{2.5}
- | | |
|---------------------------------------|---------------------------|
| East Torch Cutting Station | Scrap metal storage piles |
| West Torch Cutting Station | Paved/unpaved roads |
| Burn-Off Oven | |
| Stainless Steel Ring Crusher/Shredder | |

WATCH PHASE OF MITIGATION PLAN

- 06** How will your facility ensure that equipment which produces particulate emissions is operating in a manner consistent with optimal engineering practices?

The following equipment and processes are operated under restrictions and monitoring requirements in the facility's Operating Permit #0794. Tracking logs at each piece of equipment must be completed during use.

The crusher/shredder is not operated unless the foam suppression system is in operation. The burn-off oven is not operated unless emissions are captured and directed to the afterburner, which must operate at a minimum temperature. The torch cutting station emissions are directed through baghouse dust collectors. Dust suppression materials are used on scrap metal storage piles and roads if visible dust is generated.

- 07** How will your facility ensure that air pollution control equipment is maintained in optimal working condition?

Air pollution control equipment is operated and maintained in accordance with manufacturers' specifications. The facility is required to perform and maintain records of inspections, maintenance, calibrations, and equipment replacement per the Operating Permit.

- 08** How will your facility ensure that actions taken in blocks 05 and 06 are properly monitored, recorded, and reported to the Health Department?

The facility has well-established procedures to track proper operation of process and air pollution control equipment. Staff are trained on proper operation and record keeping requirements. The records are provided to ACHD with the semi-annual reports due February 1 and July 31 and the annual report due August 31.

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SUBMISSION FORM – AIR POLLUTION MITIGATION PLAN

WARNING PHASE OF MITIGATION PLAN

09 How will your facility ensure that procedures are in place so enough staff and resources are available to implement the Mon Valley Air Pollution Warning Phase within 24 hours of the notification from ACHD?

Additional staff is not required as the process equipment is not operated without the associated air pollution control equipment.

10 For every process and piece of equipment, list all available methods to reduce PM_{2.5}/PM₁₀ emissions from your four-year hourly average. During an actual warning phase, the actions to reduce emissions must last the length of the episode.

For all equipment, the facility is able to:

- Reduce material throughput by 25% each day
- Reduce operating time by 25% each day

The facility will delay any non-essential outdoor activities to a future day when a mitigation plan is not needed in order to reduce dust generation and fuel use. The facility will employ additional roadway wetting to minimize road dust creation.

11 For each piece of equipment and process, determine which emission reduction methods are feasible. List whether each method is feasible or infeasible and provide a justification for your determination.

As a small scrap metal processor, the facility has the flexibility to modify operations; therefore, the emission reduction methods outlined in Block 10 are all feasible.

12 How will your facility ensure that actions taken in block 10 are properly monitored, recorded, and reported to the Health Department? The General Manager will be responsible for ensuring these actions are properly monitored, recorded, and reported to the Health Department.

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SUBMISSION FORM – AIR POLLUTION MITIGATION PLAN

13 Provide an active spreadsheet containing the following:

- Calculations of your facility's PM_{2.5} and PM₁₀ emissions for each of the past four years (2017-2020) in tons/year for every piece of equipment and process;
- Calculation of average four year emissions of PM_{2.5} and PM₁₀ in lbs/hr for each piece of equipment and process;
- Feasible PM_{2.5} and PM₁₀ emission reductions in lbs/hr that will occur during a warning phase for every piece of equipment and process as well as the facility total; and
- Feasible PM_{2.5} and PM₁₀ emission reductions in percent reduced from the hourly four year average for every piece of equipment and process as well as the facility total percent reduction.

The feasible lb/hr and % emission reductions will be 25% since operations are on a batch basis not continuous.

This spreadsheet will be used to calculate actual emission reductions that will be reported to the Health Department after warning phases have ended.

Refer to attached Summary of Particulate Emissions (2017-2020) and supporting emissions tables.

14 How much time will be required for your facility to implement the emission reductions in block 10?

The facility is able to implement the emission reductions immediately once notice of Warning Phase is issued by ACHD.

SUMMARY OF PARTICULATE EMISSIONS (2017-2020)

**KEYWELL METALS LLC
WEST MIFFLIN, PA**

Equipment/Process	Emissions Control	Actual PM _{2.5} Emission (tons/year)				Average 4-Year PM _{2.5} Emissions		Warning Phase PM _{2.5} Reduction (lb/hr) ²	Actual PM ₁₀ Emission (tons/year)				Average 4-Year PM ₁₀ Emission		Warning Phase PM ₁₀ Reduction (lb/hr) ²
		2017	2018	2019	2020	tons/yr	lb/hr ¹		2017	2018	2019	2020	tons/yr	lb/hr ¹	
Torch Cutting Stations	Dust Collectors	0.0045	0.013	0.0074	0.0030	0.0071	0.0068	0.0051	0.0060	0.018	0.0099	0.0040	0.0094	0.0091	0.0068
Crusher/Shredder	Foam Suppression	N/O	N/O	N/A	N/A	--	--		N/O	N/O	0.10	0.04	0.070	0.067	0.051
Burn-Off Oven	Afterburner	N/O	N/O	N/A	N/A	--	--		N/O	N/O	2.0	0.81	1.4	1.3	1.0
Natural Gas Combustion		N/A	N/A	N/A	N/A	--	--		0.0032	0.0032	0.0032	0.0032	0.0032	0.0031	0.0023
Bulk Material Transfer	Dust Suppressant	N/A	N/A	N/A	N/A	--	--		0.034	0.034	0.034	0.034	0.034	0.032	0.024
Roadways (Paved)	Dust Suppressant	N/A	N/A	N/A	N/A	--	--		0.021	0.021	0.021	0.021	0.021	0.020	0.015
Roadways (Unpaved)	Dust Suppressant	N/A	N/A	N/A	N/A	--	--		0.0030	0.0030	0.0030	0.0030	0.0030	0.0029	0.0022
TOTAL / AVERAGE		0.0045	0.013	0.0074	0.0030	0.0071	0.0068	0.0051	0.067	0.079	2.2	0.91	1.5	1.5	1.1

Notes:

1. Average lb/hr emissions calculated assuming 52 wk/yr, 5 dy/wk, and 8 hr/dy = 2,080 hr/yr
2. Based on a 25% reduction in either material throughput or operating time as all operations are on a batch not continuous basis.

Acronyms:

N/O = Not operational for the full year.
N/A = Not applicable; only PM₁₀ calculated

EMISSION ESTIMATE FOR TORCH CUTTING STATIONS

**Keywell Metals, LLC
West Mifflin, PA Facility**

Month/Year	Actual Operations	Torrit Dust Collectors (lb/month) ¹		Maximum Emissions (tons/month)		12-Month Rolling Average (tons/year)	
	hrs/month	PM _{2.5} =0.06 lb/hr	PM ₁₀ =0.08 lb/hr	PM _{2.5}	PM ₁₀	PM _{2.5}	PM ₁₀
East and West Torch Cutting Stations							
Jan-17	3.5	0.21	0.28	0.0001	0.0001	--	--
Feb-17	5.5	0.33	0.44	0.0002	0.0002	--	--
Mar-17	8.0	0.48	0.64	0.0002	0.0003	--	--
Apr-17	30.5	1.83	2.44	0.0009	0.0012	--	--
May-17	13.5	0.81	1.08	0.0004	0.0005	--	--
Jun-17	17.0	1.02	1.36	0.0005	0.0007	--	--
Jul-17	4.5	0.27	0.36	0.0001	0.0002	--	--
Aug-17	28.5	1.71	2.28	0.0009	0.0011	--	--
Sep-17	18.5	1.11	1.48	0.0006	0.0007	--	--
Oct-17	17.0	1.02	1.36	0.0005	0.0007	--	--
Nov-17	4.0	0.24	0.32	0.0001	0.0002	--	--
Dec-17	0.0	0.00	0.00	0.0000	0.0000	0.0045	0.0060
Jan-18	13.0	0.78	1.04	0.0004	0.0005	0.0048	0.0064
Feb-18	35.0	2.10	2.80	0.0011	0.0014	0.0057	0.0076
Mar-18	71.0	4.26	5.68	0.0021	0.0028	0.0076	0.0101
Apr-18	29.5	1.77	2.36	0.0009	0.0012	0.0075	0.0101
May-18	47.5	2.85	3.80	0.0014	0.0019	0.0086	0.0114
Jun-18	27.0	1.62	2.16	0.0008	0.0011	0.0089	0.0118
Jul-18	12.0	0.72	0.96	0.0004	0.0005	0.0091	0.0121
Aug-18	33.5	2.01	2.68	0.0010	0.0013	0.0092	0.0123
Sep-18	54.5	3.27	4.36	0.0016	0.0022	0.0103	0.0138
Oct-18	81.0	4.86	6.48	0.0024	0.0032	0.0122	0.0163
Nov-18	42.0	2.52	3.36	0.0013	0.0017	0.0134	0.0178
Dec-18	0.0	0.00	0.00	0.0000	0.0000	0.0134	0.0178
Jan-19	0.0	0.00	0.00	0.0000	0.0000	0.0130	0.0173
Feb-19	26.0	1.56	2.08	0.0008	0.0010	0.0127	0.0170
Mar-19	13.0	0.78	1.04	0.0004	0.0005	0.0110	0.0146
Apr-19	33.0	1.98	2.64	0.0010	0.0013	0.0111	0.0148
May-19	49.5	2.97	3.96	0.0015	0.0020	0.0111	0.0149
Jun-19	18.0	1.08	1.44	0.0005	0.0007	0.0109	0.0145
Jul-19	12.0	0.72	0.96	0.0004	0.0005	0.0109	0.0145
Aug-19	58.0	3.48	4.64	0.0017	0.0023	0.0116	0.0155
Sep-19	0.0	0.00	0.00	0.0000	0.0000	0.0100	0.0133
Oct-19	17.0	1.02	1.36	0.0005	0.0007	0.0081	0.0107
Nov-19	20.0	1.20	1.60	0.0006	0.0008	0.0074	0.0099
Dec-19	0.0	0.00	0.00	0.0000	0.0000	0.0074	0.0099
Jan-20	38.0	2.28	3.04	0.0011	0.0015	0.0085	0.0114
Feb-20	15.0	0.90	1.20	0.0005	0.0006	0.0082	0.0109
Mar-20	7.0	0.42	0.56	0.0002	0.0003	0.0080	0.0107
Apr-20	0.0	0.00	0.00	0.0000	0.0000	0.0070	0.0094
May-20	11.0	0.66	0.88	0.0003	0.0004	0.0059	0.0078
Jun-20	0.0	0.00	0.00	0.0000	0.0000	0.0053	0.0071
Jul-20	6.0	0.36	0.48	0.0002	0.0002	0.0052	0.0069
Aug-20	10.0	0.60	0.80	0.0003	0.0004	0.0037	0.0050
Sep-20	0.0	0.00	0.00	0.0000	0.0000	0.0037	0.0050
Oct-20	0.0	0.00	0.00	0.0000	0.0000	0.0032	0.0043
Nov-20	13.0	0.78	1.04	0.0004	0.0005	0.0030	0.0040
Dec-20	0.0	0.00	0.00	0.0000	0.0000	0.0030	0.0040
Average 4-Year Emissions						0.0071	0.0094

Notes:

1. Hourly combined emission limit with control using emission calculations from 2008 permit application.

FUGITIVE PARTICULATE EMISSIONS FROM TURNINGS CRUSHER

KEYWELL METALS LLC WEST MIFFLIN, PA

Month/Year	Turnings Processed	Actual PM ₁₀ Emission (tons/year)		12-Month Rolling Average (tons/year)	
	Ton/Month	Uncontrolled	Controlled	Uncontrolled	Controlled
Oct-18	348	1.0	0.010	--	--
Nov-18	282	0.85	0.0085	--	--
Dec-18	217	0.65	0.0065	--	--
Jan-19	363	1.1	0.011	--	--
Feb-19	411	1.2	0.012	--	--
Mar-19	250	0.75	0.0075	--	--
Apr-19	299	0.90	0.0090	--	--
May-19	284	0.85	0.0085	--	--
Jun-19	166	0.50	0.0050	--	--
Jul-19	271	0.81	0.0081	--	--
Aug-19	185	0.56	0.0056	--	--
Sep-19	259	0.78	0.0078	10	0.10
Oct-19	318	0.95	0.010	10	0.10
Nov-19	339	1.0	0.010	10	0.10
Dec-19	186	0.56	0.0056	10	0.10
Jan-20	182	0.55	0.0055	9.5	0.095
Feb-20	277	0.83	0.0083	9.0	0.090
Mar-20	194	0.58	0.0058	8.9	0.089
Apr-20	164	0.49	0.0049	8.5	0.085
May-20	52	0.16	0.0016	7.8	0.078
Jun-20	238	0.71	0.0071	8.0	0.080
Jul-20	36	0.11	0.0011	7.3	0.073
Aug-20	18	0.05	0.00054	6.8	0.068
Sep-20	0	0.00	0.000	6.0	0.060
Oct-20	149	0.45	0.0045	5.5	0.055
Nov-20	23	0.07	0.00069	4.6	0.046
Dec-20	9	0.03	0.00027	4.0	0.040
Average 2-Year Emissions				7.0	0.070

Notes:

1. Particulate emissions assume 5% by weight released during processing with 0.5% liberated as PM₁₀.
2. American Pulverizer SS Shredder equipped with foam suppression system; assumes 99% removal.

PARTICULATE EMISSION ESTIMATE FOR BURN-OFF OVEN

Keywell Metals, LLC West Mifflin, PA Facility

Month/Year	Turnings Processed	Actual PM ₁₀ Emission ^{1,2} (tons/year)		12-Month Rolling Average (tons/year)	
	Ton/Month	Uncontrolled	Controlled	Uncontrolled	Controlled
Oct-18	348	21	0.21	--	--
Nov-18	282	17	0.17	--	--
Dec-18	217	13	0.13	--	--
Jan-19	363	22	0.22	--	--
Feb-19	411	25	0.25	--	--
Mar-19	250	15	0.15	--	--
Apr-19	299	18	0.18	--	--
May-19	284	17	0.17	--	--
Jun-19	166	10	0.10	--	--
Jul-19	271	16	0.16	--	--
Aug-19	185	11	0.11	--	--
Sep-19	259	16	0.16	200	2.0
Oct-19	318	19	0.19	198	2.0
Nov-19	339	20	0.20	202	2.0
Dec-19	186	11	0.11	200	2.0
Jan-20	182	11	0.11	189	1.9
Feb-20	277	17	0.17	181	1.8
Mar-20	194	12	0.12	178	1.8
Apr-20	164	10	0.10	170	1.7
May-20	52	3.1	0.031	156	1.6
Jun-20	238	14	0.14	160	1.6
Jul-20	36	2.2	0.022	146	1.5
Aug-20	18	1.1	0.011	136	1.4
Sep-20	0	0	0.00	120	1.2
Oct-20	149	8.9	0.089	110	1.1
Nov-20	23	1.4	0.014	91	0.91
Dec-20	9	0.5	0.005	81	0.81
Average 2-Year Emissions				140	1.4

Notes:

1. Emissions based on 0.5% by weight released.
2. Thermal afterburner removal at 99%

EMISSION ESTIMATES FOR LIQUEFIED PETROLEUM GAS-FIRED OVEN

Keywell Metals LLC West Mifflin, PA Facility

Combustion Source	Quantity	Unit Rating	Max. Heat Input Rating	
		CF/hr	Btu/hr	MMBtu/hr
Cleaning Oven	1	147	150,000	0.15
Afterburner	1	490	500,000	0.50
Total Heat Input for Units			650,000	0.65

Fuel	Equipment Size	Emission Factors (lb/10 ³ gal) ^{1,2}			
		NO _x ³	SO ₂ ⁴	CO	PM _{TOTAL}
Propane	0.3 to 10 MMBtu/hr	13	0.054	7.5	0.7

Combustion Source	Maximum Heat Input Rating (MMBtu/hr)	Actual Emissions (tpy) ⁵			
		NO _x	SO ₂	CO	PM _{TOTAL}
Oven/Afterburner	0.65	0.060	0.00025	0.035	0.0032

Notes:

1. Obtained from AP-42 Table 1.5-1; Emission Factors for LPG Combustion - Commercial Boilers
2. Based on a propane heat content of 9.15E+07 Btu/10³ gallon
3. Uncontrolled emission source for NO_x
4. Assumes national sulfur content of propane = 0.54 grains/100 ft³
5. Actual emissions based on 5 hours/day, 5 days/week, 52 weeks = 1300 hours/year

Definitions:

MMBtu/hr = million Btu/hr
CF = cubic feet

**EMISSION ESTIMATE FOR DRY BULK MATERIAL TRANSFER
(Sorting of Scrap Metal Piles)**

**Keywell Metals, LLC
West Mifflin, PA Facility**

# Vehicles		Miles Traveled	Vehicle Miles Travelled	PM ₁₀ Emission Factor ¹	PM ₁₀ Emissions (Tons/Year)	
Per Day	Per Year	Per Day	VMT/Year	lb/VMT	Uncontrolled	Controlled ²
18	6,570	3	19,710	0.034	0.34	0.034

Notes:

1. Emission factor obtained from 2008 permit application; no PM_{2.5} emissions generated.
2. ACHD-approved dust suppressant (90% efficiency) used on unpaved areas.

EMISSION ESTIMATE FOR VEHICLE TRAVEL ON PAVED ROADS

Keywell Metals, LLC West Mifflin, PA Facility

Vehicle Type	# Vehicles		Miles Traveled	Vehicle Miles Travelled	PM ₁₀ Emission Factor ¹	PM ₁₀ Emissions (Tons/Year)	
	Per Day	Per Year	Per Day	VMT/Year	Ib/VMT	Uncontrolled	Controlled ²
Passenger Vehicles	10	3,650	0.04	146	0.0335	0.0024	0.00024
Delivery Trucks In	2	730	0.13	95	2.38	0.11	0.011
Deliver Trucks Out	2	730	0.13	95	1.97	0.094	0.0094
Total =						0.21	0.021

Notes:

1. Emission factor obtained from 2008 permit application; no PM_{2.5} emissions generated.
2. ACHD-approved dust suppressant (90% efficiency) used on unpaved areas.

EMISSION ESTIMATE FOR VEHICLE TRAVEL ON UNPAVED ROADS

Keywell Metals, LLC West Mifflin, PA Facility

Vehicle Type	# Vehicles		Miles Traveled	Vehicle Miles Travelled	PM ₁₀ Emission Factor ¹	PM ₁₀ Emissions (Tons/Year)	
	Per Day	Per Year	Per Day	VMT/Year	Ib/VMT	Uncontrolled	Controlled ²
Passenger Vehicles	90	32,850	0.04	1,314	0.012	0.0077	0.00077
Delivery Trucks In	18	6,570	0.09	591	0.042	0.012	0.0012
Deliver Trucks Out	18	6,570	0.09	591	0.033	0.010	0.0010
Total =						0.030	0.0030

Notes:

1. Emission factor obtained from 2008 permit application; no PM_{2.5} emissions generated.
2. ACHD-approved dust suppressant (90% efficiency) used on unpaved areas.