MAGNITUDE 7
Metals

Magnitude 7 Metals LLC.

P.O. Box 395
391 St. Jude Industrial Park
Marston, MO 63866
Tel (573) 643-0023
Fax (573) 643-0016

RECEIVED
OCT 20 2021
ECAD/AIR

October 4, 2021

EPA Region VII
Missouri Air Compliance Coordinator
11201 Renner Blvd
Lenexa, KS 66219

CERTIFIED MAIL #7011 2000 0002 1115 9237

Air Pollution Control Program
Enforcement Section Chief
P.O. Box 176
Jefferson City, MO 65102

AirComplianceReporting@dnr.mo.gov

RE: SEMI-ANNUAL MONITORING REPORT FOR MAGNITUDE 7 METALS LLC

Attached are the annual monitoring reports for Magnitude 7 Metals LLC operating permits. Magnitude 7 has four separate operating permits as follows:

1. OP2001032
2. OP2001033
3. OP2001-062
4. OP2001-066

If you have any questions, or need additional information, you may contact Art Nispel or me at (573) 643-0023.

Sincerely,

Nancy Halford

Nancy Halford
Environmental Superintendent

Enclosure

CC: C. Reali
J. Reali
A. Nispel

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
AIR POLLUTION CONTROL PROGRAM

PART 70 OPERATING PERMIT COMPLIANCE AND MONITORING REPORT

FIPS NO.	PLANT NO.
143	0008

INSTALLATION NAME
Magnitude 7 Metals LLC

INSTALLATION LOCATION (STREET ADDRESS AND CITY)
391 St. Jude Industrial Park, P.O. Box 395, Marston, MO 63866

OPERATING PERMIT NUMBER	DATE OPERATING PERMIT ISSUED
OP2001-032,-033,-062,-066	7/23/2001

TYPE OF REPORT

☐ Annual Compliance Certification ■ Semi-Annual Monitoring Report ☐ Exceedance Report

If Annual Compliance Certification, is the Annual Compliance Certification being submitted to also fulfill the reporting requirements for the Semi-Annual Monitoring Report? ☐ YES ☐ NO

REPORTING PERIOD START DATE	REPORTING PERIOD END DATE
01/01/2021	06/30/2021

	RESPONSIBLE OFFICIAL	PERMIT CONTACT PERSON
Name	Charles Reali	Nancy Halford
Title	CEO	Environmental Superintendent
Mailing Address	PO Box 395 Marston, MO 63866	PO Box 395 Marston, MO 63866
Telephone Number with Area Code	573.643.0023	573.643.0023

Has the above information changed since the issuance of the operating permit? ■ YES ☐ NO

CERTIFICATION STATEMENT

I certify, based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate and complete.*

SIGNATURE OF RESPONSIBLE OFFICIAL	DATE SIGNED
Charles Reali	10-4-21

PRINT NAME OF RESPONSIBLE OFFICIAL
Charles Reali

*This certification means that the signatory has verified compliance with all applicable regulations and operating permit conditions, and that the installation has complied with all monitoring, record keeping, reporting and testing conditions specified in the operating permit unless specified differently in a deviations report. For information concerning administrative and civil penalties, consult Section 643.085 of the Revised Statutes of the State of Missouri (RSMo) and Section 643.151 RSMo, respectively.

PART 2 DEVIATION INQUIRY

FIPS NO.	PLANT NO.
143	0008

INSTALLATION NAME
Magnitude 7 Metals LLC

REPORTING PERIOD

January 1, 2021 - June 30, 2021

1. PLANT-WIDE PERMIT CONDITIONS

Did the installation experience any deviations during the reporting period from the plant-wide permit conditions?

☐ YES ■ NO

2. EMISSION UNIT PERMIT CONDITIONS

Did the installation experience any deviations during the reporting period from the emission unit permit conditions?

■ YES ☐ NO

3. CORE PERMIT REQUIREMENTS

Did the installation experience any deviations during the reporting period from the core permit conditions?

☐ YES ■ NO

4. GENERAL PERMIT REQUIREMENTS

Did the installation experience any deviations during the reporting period from the general permit conditions?

■ YES ☐ NO

NOTE: If you checked "Yes" in any of the four deviation questions above, and the installation has not previously reported the deviations, the installation must complete Part 3 of the Compliance Certification and Monitoring Report Form.

5. CURRENT COMPLIANCE STATUS

Are you currently in compliance with all air pollution requirements?

☐ YES ■ NO

The testing required by permit conditions EU3760-4000, EU2010-004, EU2030-004, and EU2050-004 are not required as carbon bake 1 and potline 3 are not operating.

The testing required by permit conditions EU4710-003 through EU4870-003 under Permit OP2001-066 are not required as they are not operating.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
AIR POLLUTION CONTROL PROGRAM

PART 70 OPERATING PERMIT COMPLIANCE AND MONITORING REPORT

PART 3 – DEVIATIONS FROM REQUIRED MONITORING

FIPS NO.	PLANT NO.	INSTALLATION NAME
143	0008	Magnitude 7 Metals LLC

REPORT PERIOD START DATE	REPORT PERIOD END DATE
01/01/2021	06/30/2021

PERMIT CONDITION	POLLUTANT	MONITORED LEVEL	MONITORING METHOD	DEVIATION DESCRIPTION	DEVIATION DATE	DEVIATION DURATION	CAUSE OF DEVIATION	CORRECTIVE ACTION
EU1970-004 EU1990-004	HAP-TF	2.4 lb/ton	ST	Fluoride emissions	1st half year	7 - 24 hr days	Deviations included in "ACTIONS Emission Control Project Actions & Expenditures.xlsx"	Corrective actions included in "ACTIONS Emission Control Project Actions & Expenditures.xlsx"
EU1970-004 EU1990-004	HAP-POM	1.4 lb/ton	ST	POM emissions	1st half year	3 - 24 hr days	Deviations included in "ACTIONS Emission Control Project Actions & Expenditures.xlsx"	Corrective actions included in "ACTIONS Emission Control Project Actions & Expenditures.xlsx"
Semi-Annual Monitoring Report	All	N/A	RPT	Submitted late	10/1/2021	3 days late	Failed to report.	Add to list of reporting requirements.

ATTACH ADDITIONAL PAGES, AS NEEDED. Email to AirComplianceReporting@dnr.mo.gov

MISSOURI DEPARTMENT OF NATURAL RESOURCES
AIR POLLUTION CONTROL PROGRAM

PART 70 OPERATING PERMIT COMPLIANCE AND MONITORING REPORT

PART 4 – DEVIATION REPORT SUMMARY

FIPS NO.	PLANT NO.
143	0008

INSTALLATION NAME

Magnitude 7 Metals LLC

REPORTING PERIOD

01/01/2021-06/30/2021

WERE THERE ANY OTHER MONITORING DEVIATION (EXCESS EMISSION) REPORTS SUBMITTED TO THE MISSOURI DEPARTMENT OF NATURAL RESOURCES - AIR POLLUTION CONTROL PROGRAM DURING THIS REPORTING PERIOD?

☐ YES ☒ NO (If yes, submit a copy of the report or complete the deviation report summary below.)

PERMIT CONDITION	REPORTING REQUIREMENT	DATE SUBMITTED

Magnitude 7 Metals LLC
FINAL Potline Roof and Stack Total Results

Potline 1			PARTICULATE (lbs/ton Al)				POM (lbs/ton Al)				FLUORIDE (lbs/ton Al)			
Start Date	Start Time	Run	ROOF	STACK	TOTAL	LIMIT	ROOF	STACK	TOTAL	LIMIT	ROOF	STACK	TOTAL	LIMIT
01/12/21	9:00	1	4.2	0.4	4.6	**7.4**					1.5	0.5	2.0	**1.9**
01/26/21	9:00	2	3.3	0.4	3.7	**7.4**					1.3	0.5	1.7	**1.9**
02/02/21	9:00	3	6.2	0.4	6.6	**7.4**					2.2	0.5	2.6	**1.9**
02/23/21	9:00	1 POM				**7.4**	1.3	0.2	1.5	**1.1**				
03/09/21	9:00	2 POM				**7.4**	0.8	0.2	1.0	**1.1**				
03/30/21	9:05	3 POM				**7.4**	1.4	0.2	1.6	**1.1**				
04/15/21	9:00	6				**7.4**					2.2	0.3	2.5	**1.9**
05/19/21	9:00	7				**7.4**					1.6	0.3	1.9	**1.9**
06/02/21	9:00	8				**7.4**					3.1	0.1	3.2	**1.9**
06/16/21	9:00	9				**7.4**					2.3	0.1	2.5	**1.9**
06/17/21	9:00	10				**7.4**					2.8	0.1	2.9	**1.9**
06/29/21	9:00	11				**7.4**					2.0	0.1	2.2	**1.9**
Averages:			4.6	0.4	5.0	**7.4**	1.2	0.2	1.4	**1.1**	2.1	0.3	2.4	**1.9**

Magnitude 7 Metals LLC
FINAL Potline Roof and Stack Total Results

Potline 2			PARTICULATE (lbs/ton Al)				POM (lbs/ton Al)				FLUORIDE (lbs/ton Al)			
Start Date	Start Time	Run	ROOF	STACK	TOTAL	LIMIT	ROOF	STACK	TOTAL	LIMIT	ROOF	STACK	TOTAL	LIMIT
01/12/21	9:05	1	3.1	0.9	4.0	**7.4**					1.2	0.2	1.4	**1.9**
01/26/21	9:05	2	3.2	0.9	4.2	**7.4**					1.4	0.2	1.5	**1.9**
02/02/21	9:30	3	3.0	0.9	3.9	**7.4**					1.1	0.2	1.3	**1.9**
02/23/21	9:05	1 POM				**7.4**	0.9	0.2	1.1	**1.1**				
03/09/21	9:05	2 POM				**7.4**	1.3	0.2	1.5	**1.1**				
03/30/21	9:10	3 POM				**7.4**	1.0	0.2	1.2	**1.1**				
04/15/21	9:05	5 POM				**7.4**	0.7	0.2	0.8	**1.1**				
05/19/21	9:05	6 POM				**7.4**	0.9	0.2	1.1	**1.1**				
Averages:			3.1	0.9	4.0	**7.4**	1.0	0.2	1.1	**1.1**	1.2	0.2	1.4	**1.9**

Magnitude 7 Metals LLC

Deviation Causes and Corrective Actions

Magnitude 7 Metals is working with MDNR to address our causes for deviations in emissions and the corrective actions taken and still in process. Weekly meetings, Scrubber Emissions Improvement and Potroom Control of Emissions, are held and the file, "ACTIONS Emission Control Project Actions and Expenditures.xlsx", is updated monthly with identified deviations and corrective actions, and then sent to MDNR. The summary of this information contained on the first tab of this file is attached.

No.	Item	2021 TOTALS	Q1, 2021	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Comments
1	New Pot shields Received - Number	1,100	600	200	0	0	300	0					300 More New Shields Ordered
	New Pot shields Received - Cost $	$ 550,000	$ 297,000	$ 99,000	$ -	$ -	$ 148,500	$ -					$495/shield
	Pot shields Straightened - Number	1,709	0	555	410	289	195	260					
	Pot shields Straightened - Mhrs	1159		376	278	196	132	176					July Manpower shortage
	Pot shields Straightened - Labor cost $	$ 23,174	$ -	$ 7,526	$ 5,560	$ 3,919	$ 2,644	$ 3,526					$13.56 labor per shield straightened
2	Doghouse/ Module Repair Hours	7,691	1,778	985	1,239	1,615	1,113	962					Q1 Bronco, Lexicon started 4/1/21
	Doghouse/ Module Repair Dollars	$ 420,413	$ 92,520	$ 47,165	$ 63,783	$ 83,147	$ 57,294	$ 76,505					
	Doghouses repaired number	30	-	3	4	13	4	6					
	Modules repaired number	60	34	1	4	10	5	6					
	(45 DOGHOUSES REPAIRED IN 2020 - 3,563 HRS - $184,769)												
3	New Replacement Doghouse/ Module	$ -	$ -	$ -	$ -	$ -	$ -	$ -					Eval Bids vs Repair
4	On-line Fume Leak repair Hours spent	7,737	2,288	1,234	1,463	1,079	495	1,179					July Manpower shortage
	On-line Fume Leak repair Dollars	$ 397,071	$ 117,911	$ 59,980	$ 76,076	$ 56,082	$ 25,740	$ 61,282					
	On-line Fume Leak repair Matls Dollars	$ 367,449	$ 59,803	$ 98,164	$ 90,717	$ 7,480	$ 69,035	$ 42,250					All scrubbers complete 1st round Line 1 main duct complete
5	On-Line Ore Leak Repair Hours spent	2,799	200	835	759.5	819	185	0	-				Mid July Ore Leak and Fume Leak Hours combined
	On-Line Ore Leak Repair Dollars	$ 147,744	$ 10,300	$ 43,003	$ 39,114	$ 42,179	$ 9,528	$ 3,621	-				Aug includes ytd warehouse parts issue
6	Scrubber housekeeping - Contractor $	$ 77,000			$ 77,000								Boomer May 2021-Complete
7	Scrubber Operations Crew Size	18	18	19	18	17	17	19					11 attendants + 8 Operators , 1 supv
	Scrubber Operations Crew Hrs	26,206	9,827	3,458	3,276	3,094	3,094	3,458					
	Scrubber Operations Crew Cost 2021	$ 1,140,000	$ 427,500	$ 150,417	$ 142,500	$ 134,583	$ 134,583	$ 150,417					
8	Emission System Assessment - M14					$ 55,500	X	X					EFI Engineers
9	Scrubber bags replaced (Number)	13,260	6,435	1,560	780	780	-	1,950	1,755				July GCI crane down - major parts
	Scrubber bags replaced (Cost $)	$ 191,880	$ 70,785	$ 17,160	$ 8,580	$ 8,580	$ -	$ 21,450	$ 65,325				
	(66,000 bags - $726,000 - replaced prior to 2021)												
10	Operations expert consultant K Hammil	$ 47,500			$ 22,500	$ 25,000							
	Improve effectiveness of process												
11	M14 Sampling Duct Replacement	$ -											July 2021 ordered; Sept completed
	TOTAL Expenditures Labor + Materials	$ 3,362,232	$ 1,075,819	$ 522,414	$ 525,830	$ 360,970	$ 447,324	$ 359,050	#VALUE!	$ -	$ -	$ -	
	TOTAL Manhours	45,591	$ 14,093	$ 6,888	$ 7,015	$ 6,802	$ 5,018	$ 5,775					
	Scrubber Emissions Improvement mtg												
12	Thursdays since Feb 2021		y	y	y	y	y	y	y				
	Potroom Control of Emissions mtg												
13	Wednesdays since May 12 2021				y	y	y	y	y				