



BEFORE THE DIRECTOR OF THE
ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

In the Matter of:
Minerals Research, Inc. - Cottonwood Plant
located at 705 E Birch St., Cottonwood,
Yavapai County, Arizona
Place ID 172594

CONSENT ORDER

Docket No. A-12-23

I. RECITALS

- A. Minerals Research, Inc. is the owner and operator of Minerals Research – Cottonwood Plant located at 705 E Birch St., Cottonwood, Yavapai County, Arizona.
B. Michael Vick is the President of Minerals Research, Inc. and certifies that he is fully authorized to execute this Consent Order on behalf of Minerals Research, Inc. and to legally bind Minerals Research, Inc. to this Consent Order.
C. The Director of Arizona Department of Environmental Quality (ADEQ) has jurisdiction of this action's subject matter and is authorized to issue this Consent Order pursuant to the Arizona Revised Statutes (A.R.S.) § 49-461, § 41-1004, and § 41-1092.07(F)(5).
D. Minerals Research, Inc. agrees that ADEQ has jurisdiction of this action's subject matter.
E. This Consent Order contains the full terms of the agreement between Minerals Research, Inc. and ADEQ.
F. Minerals Research, Inc. voluntarily agrees to this Consent Order based only on the terms contained in the Consent Order.
G. Minerals Research, Inc. understands that agreeing to this Consent Order does not resolve any liability that it may have for civil penalties for a violation of any state or federal environmental law.
H. Minerals Research, Inc. understands that agreeing to this Consent Order does not mean it admits to any civil or criminal liability, or waives any right or assertion of any defense available to Minerals Research, Inc. under applicable law.

- I. Minerals Research, Inc. does not admit the validity of any Agency Determinations and Findings contained in this Consent Order.
- J. Minerals Research, Inc. agrees not to dispute the validity or terms of this Consent Order in any future proceeding to enforce the terms of this Consent Order.
- K. Minerals Research, Inc. retains the right to dispute the validity of any Agency Determinations and Findings contained in this Consent Order in any proceeding other than a proceeding to enforce the terms of this Consent Order.

II. AGENCY DETERMINATIONS AND FINDINGS

The Director makes the following Agency Determinations and Findings that Minerals Research, Inc. has violated a requirement of A.R.S., the Arizona Administrative Code (A.A.C.), or an ADEQ issued permit, as described below:

- A. On June 13, 2023, ADEQ performed an on-site inspection at Minerals Research – Cottonwood Plant. Information gathered during the inspection and file reviews following the inspection, revealed that Minerals Research, Inc. does not have the correct air quality permit for its operation.
- B. On June 10, 2022, Minerals Research, Inc. received a Crushing and Screening General Permit (LTF #72319, ATO #122389) through myDEQ for its Cottonwood Plant. However, further source review by ADEQ revealed that the material processed by Minerals Research, Inc. (copper ore slag) does not meet the definition of a nonmetallic mineral as defined in 40 CFR 60.671 and therefore Minerals Research, Inc. does not qualify for a crushing and screening general permit.
- C. On September 11, 2023, ADEQ issued a Notice of Violation (NOV) to Minerals Research, Inc. for failure to obtain the proper air quality permit.
- D. ADEQ has established the operating limitations listed in Section III of this order to assure compliance with applicable Arizona Law pending issuance of an appropriate air quality permit for Minerals Research, Inc.’s Cottonwood Plant.

III. COMPLIANCE SCHEDULE

ADEQ and Minerals Research, Inc. agree on the following compliance requirements and completion deadlines, and Minerals Research, Inc. agrees to comply with the provisions of this Consent Order as follows:

- A.** Minerals Research, Inc.'s Cottonwood Plant includes the process equipment as listed in Attachment 1: Equipment List. Excluding trivial activities and qualifying routine maintenance, repair or replacement, Minerals Research, Inc. shall not modify or install new process equipment not listed in Attachment 1 without prior approval from ADEQ.
- B.** Minerals Research, Inc. shall operate all associated control equipment as listed in Attachment 1 at all times when the process equipment is in operation.
- C.** By October 31, 2023, Minerals Research, Inc. shall submit to ADEQ an administratively complete air quality permit application for a Class II permit.
- D.** By October 31, 2023, Minerals Research, Inc. shall submit to ADEQ a Dust Control Plan. At minimum, the dust control plan shall include operation and maintenance procedures for proper operation of the Primary and Secondary Crushing and Screening Plants along with preventative measures to minimize fugitive dust from process equipment, storage piles, and the blasting operation.
 - a.** Minerals Research, Inc. will update this plan as necessary and will submit to ADEQ a copy of updated plans.
 - b.** ADEQ will notify Minerals Research, Inc. of any deficiencies in the plan as necessary and will work with Minerals Research, Inc. on corrective actions as needed.
- E.** Until ADEQ issues a Class II permit to Minerals Research, Inc., Minerals Research, Inc. shall comply with the following requirements.
 - a.** Minerals Research, Inc. shall be limited to the following throughput limits.
 - i.** The Primary Crushing and Screening Plant shall be limited to 2,000 tons per day of material processed.
 - ii.** The Secondary Crushing and Screening Plant shall be limited to 190 tons per day of material processed.

d. Baghouse PM₁₀ Emissions Limits

Baghouse	PM ₁₀ Emissions Limit (lbs/ton)
BH-600	0.0051
BH-601	0.0146

- e.** Within thirty (30) days of the effective date of this order, Minerals Research, Inc. shall install and operate a pressure differential monitor to measure the differential pressure (dP) from the inlet and outlet of each baghouse (BH-600 and BH-601) in inches of water.
- i.** Minerals Research, Inc. shall record the dP on a daily basis, for every production day.
 - ii.** Minerals Research, Inc. shall maintain each dP within the manufacturer's recommended values.
 - iii.** dP values observed outside of the manufacturer's recommended values shall be investigated and resolved in a timely fashion. For any resolutions requiring more than seventy-two (72) hours from the time of discovery, Minerals Research, Inc. shall submit to ADEQ, for approval, within two (2) business days from discovery, a plan for corrective actions.
- f.** Except as required by paragraph "j" below (40 CFR Part 60, Subpart UUU Requirements), Minerals Research, Inc. shall not cause, allow or permit to be emitted into the atmosphere, any plume or effluent, which exceeds 20% opacity.
- g.** Minerals Research, Inc. shall not cause opacity of emissions greater than 40% from any fugitive dust non-point sources (open areas, roadways & streets, storage piles, and material handling).
- h.** Minerals Research, Inc. shall monitor and record daily opacity from all process equipment and fugitive sources for each production day.
- i.** Minerals Research, Inc. shall have on site a certified EPA Reference Method 9 visible emissions observer.

- ii. Minerals Research, Inc. shall conduct daily instantaneous surveys of visible emissions from both process sources in operation and fugitive dust sources.
 - iii. If any instantaneous survey appears greater than the applicable opacity standard, Minerals Research, Inc. shall immediately conduct a six-minute EPA Reference Method 9 observation of the visible emissions.
 - iv. Minerals Research, Inc. shall record the name of the observer, date of the observation, and results of the observation for all instantaneous and Method 9 observations.
- i. Minerals Research, Inc. shall employ reasonable precautions to prevent excessive emissions from becoming airborne. Reasonable precautions can include, but is not limited to, housekeeping measures, use of dust suppressants, water spray, and temporary enclosures. Records of reasonable precaution activities shall be maintained for each production day.
 - j. 40 CFR Part 60, Subpart UUU Requirements for Dryers in Mineral Industries
 - i. The Fluid Bed Dryer (BH-601 exhaust) shall not discharge into the atmosphere particulate matter in excess of 0.025 grains per dry standard cubic foot (gr/dscf).
 - ii. The Fluid Bed Dryer (BH-601 exhaust) shall be limited to 10 percent opacity.
 - iii. To demonstrate compliance with subparagraphs “i” and “ii” above, Minerals Research, Inc. shall conduct an initial performance test of the Fluid Bed Dryer (BH-601 exhaust) no later than one-hundred and twenty (120) days from the effective date of this order.
 - 1. Method 5 shall be used to determine compliance with the particulate matter concentration in subparagraph “i” above. The sampling time and volume for each test run shall be at least 2 hours and 1.70 dscm.
 - 2. Method 9 and the procedures in § 60.11 shall be used to determine opacity from the stack emissions.

3. Performance tests shall be conducted during representative operations of the source.
 4. A test plan (protocol) shall be submitted to ADEQ at least 14 working days prior to the test.
 5. Minerals Research, Inc. shall provide safe sampling platforms, sampling ports adequate for the test methods required, and any utilities necessary to complete the performance test.
 6. Each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic mean of the results of the three runs shall apply.
 7. A written report of the results of performance tests conducted shall be submitted within 4 weeks after the test is performed. All performance testing reports shall be submitted in accordance with the Arizona Testing Manual and A.A.C. R18-2-312.A.
- k.** All excess emissions, including exceedances of any emissions and opacity limits, shall be reported to ADEQ as outlined in A.A.C. R18-2-310.01.A, B, and C.
- l.** Recordkeeping requirements: Minerals Research, Inc. shall retain records of all required monitoring data and support information required by this order for a period of at least five (5) years from the date of monitoring.
- m.** Duty to Provide Information: Minerals Research, Inc. shall furnish to ADEQ, within a reasonable time, any information that ADEQ requests in writing to determine compliance with this order. All records required by this order shall also be made available to ADEQ upon request.

IV. STATUS REPORTS

- A. Minerals Research, Inc. agrees to submit a written status report to ADEQ by the 10th of every month, beginning the first month following the effective date of this Consent Order

and ending with the first status report filed after ADEQ issues the permit referenced in section III.B of this order. Each written status report shall be for the previous calendar month and shall:

1. Describe what measures that have been taken under Section III of this Consent Order;
 2. Certify when compliance with the requirements of Section III of this Order are achieved;
 3. Be accompanied by evidence showing compliance, as appropriate. Evidence showing compliance can include documents, photographs, or copies of any other supporting information that Minerals Research, Inc. deems necessary.
- B. ADEQ will review the status reports and inform Minerals Research, Inc. in writing of any disputes. Minerals Research, Inc. must incorporate all required modifications, changes or other alterations that ADEQ requests to the status report within a reasonable time as specified by ADEQ.

V. COMPLIANCE WITH OTHER LAWS

- A. This Consent Order does not address releases, contamination, sources, operations, facilities or processes not expressly stated by the terms of this Consent Order, and does not interfere with the rights that the State of Arizona or Minerals Research, Inc. have under any federal or Arizona environmental statutes and rules regarding such issues.
- B. This Consent Order is not a permit of any kind, does not modify any permit of any kind, nor is it an agreement to issue a permit of any kind under federal, state or local law.
- C. This Consent Order does not alter, modify or revoke federal, state, or local law.
- D. This Consent Order is not a defense to any action to enforce any such permits or laws.
- E. Minerals Research, Inc. has an obligation to:
 1. Apply for, obtain, and comply with all applicable permits.
 2. Comply with federal, state or local law.
 3. Comply with the terms of this Consent Order.

VI. SITE ACCESS

Upon presenting credentials to authorized personnel on duty, ADEQ may at any time enter the premises at the Facility in order to observe and monitor compliance with the provisions of this Consent Order. This right of entry is in addition to ADEQ's rights under applicable law.

VII. CORRESPONDENCE

- A. Minerals Research, Inc. shall send all correspondence by email, mail, or hand delivery, such as documents, materials, plans, notices, or other items under this Consent Order, to:

Arizona Department of Environmental Quality
Air Quality Compliance Unit
Attention: Jean H. Ziga, Case Manager
1110 West Washington Street
Phoenix, Arizona 85007-2935
Telephone: 602-771-3090
Email: ziga.jean@azdeq.gov

- B. Any submission to ADEQ is treated as submitted when ADEQ receives it.
- C. ADEQ shall send all correspondence by email, mail, or hand delivery under this Consent Order to:

Michael Vick
4620 S. Coach Dr.
Tucson, AZ 85714
(520-271-6129)
mikevick@mineralsresearch.com

VIII. RESERVATION OF RIGHTS

- A. ADEQ agrees to this Consent Order based solely upon currently available information. If additional information is discovered, which indicates that the actions under this Consent Order are or will be inadequate to protect human health, safety, or the environment, or to conform with applicable federal or state laws, ADEQ has the right to require further action.
- B. ADEQ has the right to:
1. Seek civil penalties for any and all violations of A.R.S. Title 49 or the applicable rules, occurring before the effective date of this Consent Order or upon breach of this Consent Order;

2. Disapprove Minerals Research, Inc.'s work that fails to comply with this Consent Order;
3. Take enforcement action for any and all violations of this Consent Order; and,
4. Take enforcement action for any and all violations of A.R.S. Title 49 or the applicable rules, occurring after the effective date of this Consent Order.

C. As to this Consent Order, Minerals Research, Inc. waives all rights to appeal this Order under A.R.S. Title 41, pursuant to the ability to waive this right based on A.R.S. § 41-1004.

IX. VIOLATIONS OF ORDER

If Minerals Research, Inc. fails to comply with this Consent Order, Minerals Research, Inc. can be liable for other administrative or judicial sanctions, including civil penalties under A.R.S. § 49-463, the same as if for a violation of any State or Federal environmental law.

X. SEVERABILITY

If a court of law declares that any provision of this Consent Order is invalid or unenforceable, all other provisions of this Consent Order shall remain in full force and effect.

XI. AMENDMENTS

Any amendments of this Consent Order must be in writing and Minerals Research, Inc. and ADEQ both must approve the amendments.

XII. EFFECTIVE DATE

The effective date of this Consent Order is the date this Consent Order is signed by ADEQ and Minerals Research, Inc.. If ADEQ and Minerals Research, Inc. sign on different dates, the later date is the effective date of this Consent Order.

XIII. PARTIES BOUND

Minerals Research, Inc. is responsible, and will remain responsible, for carrying out all activities required under this Consent Order, regardless of change in ownership, corporate status, or partnership status, or transfer of assets or real or personal property relating to the subject of this Consent Order, unless:

- A. The Party to whom the right, title, or interest has been sold, transferred, or assigned agrees in writing to fulfill the obligations of this Consent Order; and,
- B. ADEQ approves the provisions transferring the obligation.

XIV. TERMINATION

- A. ADEQ will notify Minerals Research, Inc. in writing that this Consent Order is ended when ADEQ determines that Minerals Research, Inc. has demonstrated that all of the terms of this Consent Order have been satisfied.
- B. Minerals Research, Inc. may apply for termination of this order once ADEQ issues the permit referenced in section III.B of this order. If ADEQ denies Minerals Research, Inc.'s request for termination, ADEQ will notify Minerals Research, Inc. in writing and describe which terms of the Consent Order have not been completed to ADEQ's satisfaction.
- C. ADEQ reserves the right to terminate this Consent Order unilaterally at any time for any reason, but will notify Minerals Research, Inc. in writing as to the reason(s) for termination.

Signed this 10/12/2023
DocuSigned by: _____

Balaji Vaidyanathan
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Balaji Vaidyanathan, Section Manager
Facilities Emissions Control Section
Arizona Department of Environmental Quality

CONSENT TO ORDER

Michael Vick, on behalf of Minerals Research, Inc. acknowledges that he has read all of the Consent Order. Minerals Research, Inc. agrees:

- A. With the statements made,
- B. To this Consent Order with the Arizona Department of Environmental Quality, and,
- C. That Minerals Research, Inc. will comply with Consent Order and waive any right to appeal.

Signed this 10/12/2023.

DocuSigned by:

4897386C0CF6457...
Michael Vick
Minerals Research, Inc.

I HEREBY CERTIFY that on 10/12/2023, the **ORIGINAL** was filed in the facility file located at:

Arizona Department of Environmental Quality
1110 W Washington St
Phoenix, AZ 85007-2935

I HEREBY CERTIFY that on 10/12/2023, a true and correct copy was emailed, if provided, or sent via USPS regular mail to:

Michael Vick
4620 S. Coach Dr.
Tucson, AZ 85714
(520-271-6129)
mikevick@mineralsresearch.com

I HEREBY CERTIFY that on that on 10/12/2023, a true and correct copy was emailed, if provided, or sent via USPS regular mail to:

Arizona Department of Environmental Quality
Office of Administrative Counsel

Curtis Cox, Chief Counsel, Environmental Enforcement Section, Office of the Attorney General
David Kim, Unit Manager, Air Quality Compliance Unit
Jean H. Ziga, Case Manager, Air Quality Compliance Unit

ATTN: Amy Miller
Director, Enforcement and Compliance Assurance
US EPA Region 9
75 Hawthorne Street
San Francisco, CA 94105

DocuSigned by:

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Hearing Administrator

Minerals Research, Inc. (MRI)

ATTACHMENT 1: EQUIPMENT LIST

Equipment ID	Equipment Description	Max Capacity (TPD)	Control Equipment
Primary Crushing/Screening Plant			
101B	Batch Drop to Primary Hopper/Grizzly	2000	Wet Suppression
102T	Primary Hopper Discharge	2000	Wet Suppression
103T	Hopper Disch Belt to Screen Feed	2000	Wet Suppression
104T	6x14 Screen Feed Belt	3714	Wet Suppression
105E	6x14 Screen	3714	Wet Suppression
106T	6x14 Discharge to Cone Crshr Feed	1710	Wet Suppression
107T	6x14 Discharge Undrs	2000	Wet Suppression
108T	6x14 Discharge Belt	2000	Wet Suppression
109T	Cone Crusher Feed	1710	Wet Suppression
110E	Cone Crusher	1710	Wet Suppression
111T	Cone Crusher Discharge	1710	Wet Suppression
112T	Cone Crusher Disch Conveyor	1710	Wet Suppression
113T	Stacker Conveyor to Stockpile	2000	Wet Suppression
114B	Batch Drop bulk truck loadout	400	Wet Suppression
Secondary Crushing/Screening Plant			
200B	Batch Drop to Secondary Hopper	190	Wet Suppression
201T	GS-300: Hopper Discharge Feeder to CV-300	190	Wet Suppression
202T	CV-300: discharge to CV-401	190	Wet Suppression
203T	CV-401: PEP Secondary Screen Feed	527	Wet Suppression
204E	SC-300: PEP Secondary Screen	527	Wet Suppression
205T	PEP Discharge Overs to CV-404	333	Wet Suppression
206T	PEP Discharge Unders to CV-301	190	Wet Suppression
207T	CV-404: VSI Crusher Feed	341	Wet Suppression
208E	CR-401: VSI Crusher	341	Wet Suppression
209T	VSI Crusher Discharge to CV-402	341	Wet Suppression

210T	CV-402: discharge to CV-403	341	Wet Suppression
211T	CV-403: VSI Return to CV-300	341	Wet Suppression
212T	CV-301: Dryer Feed Belt discharge to DR-500	190	Wet Suppression
213E	DR-500: Fluid Bed Dryer	190	Baghouse BH-601 (243E)
214T	DR-500 Dryer Discharge to CV-501	167	None
215T	CV-501: to MEV2&3 Screen Feed	167	None
216E	SC-600: MEV2 Tertiary Screen #1	84	Baghouse BH-600 (242E)
217E	SC-601: MEV3 Tertiary Screen #2	84	Baghouse BH-600 (242E)
218T	Chute: SC-600 Oversize Feed to CV-404	4.18	None
219T	Chute: SC-601 Oversize Feed to CV-404	4.18	None
220T	Chute: SC-600 Feed to AW 101	29	None
221T	Chute: SC-601 Feed to AW-101	29	None
222T	Chute: SC-600 Feed to CV-610	29	None
223T	Chute: SC-601 Feed to CV-610	29	None
224T	Chute: SC-600 Feed to CV-611	25	None
225T	Chute: SC-601 Feed to CV-611	25	None
226E	AW-101: Rotary air wash	59	Baghouse BH-600 (242E)
227T	AW-101: Rotary air wash feed to CV-601	59	None
228T	CV-601: Coarse Product Feed to CV-612/silos (12-15)	59	Baghouse BH-601 (243E)
229T	CV-612: Silo Shuttle Conveyor Feed to Silos (1,10,11,16)	59	None
230T	CV-610: Medium Product Feed to CV-609	59	None
231T	CV-609: Medium Product Feed to AW-102	59	None
234T	CV-604: Medium Product Transfer to Silos (1,2,3,8,9)	59	Baghouse BH-601 (243E)
235T	CV-611: Fines Product Feed to CV-602	50	None
236T	CV-602: Fines Product Feed to AW-603	50	None
239T	CV-603: Fine Product Transfer to Silos (4,7)	50	Baghouse BH-601 (243E)
244T	Dust Collector 484 discharge to DPG-10B/packaging	11.40	Baghouse BH-600 (242E)
245T	Dust Collector 356 discharge to DPG-10B/packaging	11.40	Baghouse BH-601 (243E)
246E	DPG-10B: Dense Phase Pneumatic System	15.96	Bin Vent (248E)
247T	Discharge from DPG-10B to GSF Silos (5 & 6)	15.96	Bin Vent (248E)

249T	GSF Packaging	6.84	Wet Suppression
250E	Silo screens (silos#1-4,14-16)	24.86	Wet Suppression
251T	Product Packaging & Bulk Loading silos 1-16	122	Baghouse BH-601 (243E)
252T	CV-700: Paper bag transfer to CV-701	52	Wet Suppression
253T	CV-701: Discharge to bagging hopper	52	Wet Suppression
254B	Silo 6 drop to bulk loadout	16	Wet Suppression
255B	Bulk truck loadout GSF	16	Wet Suppression

*Wet Suppression: Water spray or equivalent wet suppression to adequately wet to minimize visible emissions to the extent practical