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6 Attorneys for Respondent BROWNING-FERRIS
7 INDUSTRIES OF CALIFORNIA, INC.

8 **BEFORE THE HEARING BOARD OF THE**
9 **SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

11 **In the Matter of**

12 SOUTH COAST AIR QUALITY
13 MANAGEMENT DISTRICT,

14 Petitioner,

15 vs.

16 BROWNING-FERRIS INDUSTRIES OF
CALIFORNIA, INC., a California
17 Corporation dba SUNSHINE CANYON
LANDFILL,

18 [Facility ID No. 49111]

19 Respondent.

Case No. 3448-18

RESPONDENT'S STATUS REPORT

Health and Safety Code §41700 and
District Rule 402

Hearing Date: September 3, 2025
Time: 9:30 a.m.
Place: Hearing Board
South Coast Air Quality
Management District
21865 Copley Drive
Diamond Bar, CA 91765

25 Respondent Browning-Ferris Industries of California, Inc. ("BFIC") hereby submits this
26 status report as required by the Stipulated Abatement Order ("SAO") issued by this Hearing Board,
27 effective as of March 19, 2025. Listed below are each of the action items set forth in the SAO and
28

1 the status of BFIC's compliance with each item. BFIC believes it is successfully implementing each
2 of the action plan items in the SAO.

3 4 **1. Collaboration on Mitigation Measure Protocols**

5 **Requirement:** Respondent shall collaborate with the SCL-LEA to develop and implement
6 protocols for the monitoring and evaluation of the effectiveness of each of the individual
7 mitigation measures identified for implementation in this Order, and the potential effectiveness
8 of the different mitigation measures when utilized in combination (to help determine the best
9 complementary combination of mitigation measures for the different types of odors and
10 different root causes). Respondent shall report back on the status of this assessment of
11 mitigation measures, including development of protocols, at the Status Hearing identified in
12 Condition no. 1.

13
14 **Status:** Collaboration with the SCL-LEA is ongoing. While third-party vendors have provided initial
15 protocols, BFIC understands that the SCL-LEA will establish the final standardized protocols for
16 evaluating mitigation measures. BFIC and its consultants will continue to provide support and
17 information as required.

18 19 **2. Pilot Projects**

20 **Requirement:** Respondent shall perform, or cause to be performed, the following pilot projects,
21 shall document efforts to implement the following pilot projects, and shall report back on the
22 status of each pilot project as part of the Status Hearing identified in Condition no.1:

23 **a. Microbiology-based Mitigation (Application):** Respondent shall, within six months of
24 issuance of this Order, incorporate application during the unloading, spreading, and
25 compacting operations of the working face, of aerobic microbiology-based solution(s) to
26 enhance the oxidation of odiferous compounds ("fresh trash odors") and methane within the
27 current lift of waste being disposed, and shall initiate and support research to validate the
28 short-term and long-term effectiveness of the application, including efforts to ensure no
unintended consequences of the application. Respondent shall document application efforts
and shall report back on the status of the application and research at the Status Hearing
identified in Condition no. 1.

Status: Implemented. Application of LEF's Bio Cleanse solution to the working face during waste
unloading, spreading, and compacting operations began on June 3, 2025, and is continuing.
Additional microbiology-based solutions (Eco-Flush, Bio S.I., Bac-Terra) are also being evaluated
for effectiveness on fresh trash and leachate odors.

1 **b. Microbiology-based Mitigation (Foam Gun Application):** Respondent shall, to the extent
2 reasonably feasible, apply odor neutralizer and microbiology-based solution(s) at the same
3 time using a foam gun during the unloading, spreading, and compacting of the waste on the
4 daily working face.

5 **Status:** Implemented. Laboratory testing confirmed that the odor neutralizer is compatible with the
6 microbiology solutions. A technical memorandum memorializing these findings was issued on
7 July 22, 2025, and has been provided to the SCL-LEA. Field application of both solutions
8 simultaneously via foam gun is occurring at the working face.

9 **c. Microbiology-based Mitigation (EnviroCover ADC):** Respondent shall, prior to the
10 application of EnviroCover as an alternative daily cover at the end of the operating day, apply
11 an additional spraying of aerobic microbiology-based solution(s) and an additional anaerobic
12 microbiology-based solution(s) to enhance the oxidation of odiferous compounds ("fresh trash
13 odors") and methane within the current lift of waste being disposed.

14 **Status:** Implemented. An additional spraying of Bio Cleanse microbiology solution is being applied
15 to the waste lift at the end of each operating day prior to the application of EnviroCover ADC.

16 **d. Microbiology-based Mitigation (Soil Enhancement Protocols):** Respondent shall, within two
17 months of issuance of this Order, initiate an innovative pilot program, including providing access to
18 grids for testing, for the purpose of supplementing the effectiveness of soil, mulch, compost, (or
19 combination of) using microbiology-based technologies to enhance the oxidation of odiferous
20 compounds and or methane. Respondent's efforts shall include collaborating with the SCL-LEA to
21 determine a set of evaluation protocols to determine the potential effectiveness for full-scale future
22 application using best practices.

23 **Status:** In Progress. Test plots have been staked out by the SCL-LEA to evaluate LEF's Bio Cleanse
24 and Bio S.I.'s SD 25 and Ag Formula products. The evaluation of these test plots is ongoing.

25 **e. Microbiology-based Mitigation (Cover Soil):** Respondent shall, to the extent that daily cover
26 soil and/or intermediate cover soil are utilized as a vegetative layer, make efforts to improve
27 the biofiltration properties of the soil by improving the organic content (for example, carbon
28 content) by adding organic soil, compost, and/or biochar to enhance the microbiology-based
29 solution's impact on plant root growth and its ability to oxidize landfill gas in an effort to
30 increase the phytoremediation ability of the vegetation.

31 **Status:** In Progress. Efforts to improve the biofiltration properties of cover soil are being integrated
32 into the soil enhancement work described in Condition 2(d). This includes the planned use of organic
33 materials to enhance the soil matrix and support microbial activity and phytoremediation.

34 **f. Microbiology-based Mitigation (Phytoremediation Protocols):** Respondent shall, within two
35 months of issuance of this Order, facilitate access and perform or cause to be performed, an

1 application to enhance phytoremediation on multiple test grids. Respondent's efforts shall
2 include collaborating with the SCL-LEA to determine a set of evaluation protocols to
3 determine the potential effectiveness for full-scale future application to enhance
4 phytoremediation using best practices. Respondent shall document the efforts to enhance
5 phytoremediation and shall report back on the status of the efforts at the Status Hearing
6 identified in Condition no. 1.

7 **Status:** In Progress. A pilot program with Windfall Bio is underway. Test plots have been established
8 and SCL-LEA has been conducting baseline methane monitoring since May 14, 2025. Custom flux
9 boxes for measuring emissions have been installed, and the test plots were inoculated with the
10 microbial solution on June 17 and June 24, 2025. Monitoring of effectiveness is ongoing; however,
11 the results available to date are very promising.

12 **g. Closure Turf:** Respondent shall examine the feasibility of not removing the existing
13 ClosureTurf when cell development impacts an area for the purpose of developing a landfill
14 gas collection system and a leachate collection system that would function with the ClosureTurf
15 remaining in place. Respondent shall report back on the status of the potential to and benefits
16 of leaving ClosureTurf in place at the Status Hearing identified in Condition no. 1.

17 **Status:** The feasibility of not removing ClosureTurf except where absolutely necessary has been
18 examined and recommended procedures have been implemented. To minimize odor and gas releases
19 during cell development, BFIC is implementing a procedure to remove only the upper turf component
20 of the ClosureTurf system while leaving the underlying impermeable membrane substantially intact.

21 **h. Enhanced Surface Emissions Data Collection:** Respondent shall initiate an innovative pilot
22 program for the purpose of improving surface emissions data collection (for example, by
23 collecting more real time data and including data collected in the evenings, and for example,
24 by use of technology such as drones and or tracked robotic vehicles) to identify potential
25 problematic grids and areas (for the purpose of identifying areas to implement additional
26 corrective measures) to improve landfill gas collection and to minimize the potential for fresh
27 trash odors to be carried by landfill gas emissions. Respondent shall collaborate with the SCL-
28 LEA on the enhanced surface emissions data collection efforts and shall provide access to the
Facility on a case-by-case basis as recommended by the SCL-LEA. Respondent shall report
back on the status of the enhanced surface emissions data collection efforts at the Status
Hearing identified in Condition no. 1.

Status: Implemented. An enhanced data collection program is active, utilizing multiple technologies.
BFIC has deployed drone-based surveys with laser sensors (Firmatek). This is supplemented by SCL-
LEA's use of a Gazoscan laser gun and a Landtec SEM5000 Flame Ionization Detector. Evaluation
of additional technologies (FLIR, LIDAR) is ongoing. The areas with excessive methane emissions
generally coincide with the areas in which, at the direction of the County, BFIC increased the daily

cover soil thickness to 9 inches and left it in place, rather than removing for reuse before placing additional trash.

3. Odiferous Compound Mitigation

Requirement: Respondent shall address odiferous compounds, including fresh trash odors, by performing, or causing to be performed, the following measures:

a. At Republic owned or controlled transfer stations, Respondent shall apply odor neutralizer and incorporate aerobic (and compatible anaerobic) microbiology-based solution(s) to enhance the oxidation of odiferous compounds ("fresh trash odors") prior to disposal of that waste at the Facility; i. Respondent shall document use of odor neutralizers and aerobic (and compatible anaerobic) microbiology-based solution(s), and shall make records available to the South Coast AMD upon request.

Status: Implemented. All six designated Republic transfer stations have been retrofitted with dedicated spray systems in their loading pits. The application of Bio Cleanse solution to waste prior to transport to the facility began at all stations in late May/early June 2025. SCL-LEA inspected two of the stations on June 26, 2025. Drawings and records are being maintained and are available upon request.

b. At the Facility, Respondent shall optimize use of foaming spray at the working face with an odor neutralizer, to be applied during early operating hours and during adverse meteorological conditions;

Status: Implemented. A longer-range foam cannon is in use at the working face, applying a combination of odor neutralizer and microbial solutions.

c. At the Facility, upon acceptance of an identified particularly odorous load, Respondent shall utilize the foam gun for spot applications;

Status: Implemented. A protocol is in place to have transfer stations provide advance notification of any particularly odorous loads. Upon receipt at the facility, such loads are managed with spot applications from the foam gun.

d. At the Facility, upon identification of a particularly odorous load at the working face, Respondent shall cover the odorous load immediately with odor buffering/adsorbing material (such as compost, mulch, ground greenwaste, biochar, soil, or non-odorous municipal solid waste); and

1 **Status:** Implemented. A stockpile of compost is maintained on-site. If an odorous load is identified
2 at the working face, it is immediately mixed with or covered by compost and sprayed with odor
3 neutralizer.

4 **e. Respondent shall report back at the status hearing identified in Condition no. 1 on (i) efforts**
5 **to work with a third-party to develop an enhanced foam product and (ii) the effectiveness of**
6 **both using a longer-range foam gun and of using foaming spray at the working face during**
early operating hours.

7 **Status:** Efforts are ongoing. A longer-range foam cannon has been deployed and is currently in use
8 at the working face to enhance the application of foam during operating hours.

9 10 **4. Leachate Seep Patrols and Mitigation**

11 **Requirement:** Respondent shall conduct daily on-site odor patrols, which shall include efforts
12 **to identify locations of leachate seeps. These efforts shall be conducted and documented as**
required in Condition 6(c) below.

13 **a. In the event that a leachate seep is discovered, Respondent shall utilize a portable sprayer to**
14 **apply odor neutralizer and/or aerobic (and compatible anaerobic) microbiology-based**
15 **(methanotrophic microbes, bacteria, etc.) solution(s) on the leachate seep prior to remediating**
the seep (e.g., covering with soil, etc.).

16 **Status:** Implemented. Patrols are equipped with portable sprayers. Any discovered seeps are
17 immediately sprayed with odor neutralizer and/or microbial solutions prior to remediation.

18 **b. For leachate seeps that are continuous or have pooled (pooling is an accumulation of at least**
19 **25 gallons or greater than 5 square feet of affected surface area), Respondent shall treat the**
20 **leachate with odor neutralizer and or aerobic (and compatible anaerobic) microbiology-based**
21 **(methanotrophic microbes, bacteria, etc.) solution(s), and pump out the leachate into a closed**
liquid storage container (if sufficient quantities of leachate warrant removal) and treat at the
onsite leachate treatment facility.

22 **Status:** Implemented. A protocol is in place for managing continuous or pooled seeps. The leachate
23 is treated with neutralizing and microbial solutions and is vacuumed into a closed container for
24 treatment at the on-site facility, as directed by facility personnel.

25 **c. Respondent shall conduct and document patrols at least twice each operating day, once in**
26 **the morning, completing the patrol prior to 8 a.m. and once in the late afternoon, starting the**
27 **patrol after 3 p.m. In documenting the patrol, each day, Respondent shall indicate the area on**
28 **the map where the odor source or leachate were identified. If leachate was discovered, the next**
day a follow-up patrol must be conducted in that same area. i. In the event that two weeks of

twice daily patrols show no exposed liquid/leachate seepage or pooling, Respondent may reduce the inspection frequency to once daily in the morning.

Status: Implemented. BFIC conducted odor controls twice daily, once before 8:00 a.m. and once after 3:00 p.m. but, absent any seeps since late May 2025, has since gone to one patrol per day in the early hours of operation. Documentation of the odor patrols is available upon request.

5. Front Entrance Berm

Requirement: Respondent shall continue construction of the front entrance berm, including landscaping as a physical visual barrier and a physical odor barrier, which shall include a misting system with both odor neutralizer and a waterless vapor odor neutralizer. Respondent shall report back on the status of the berm construction at the Status Hearing identified in Condition no. 1.

Status: In Progress. Construction of the berm is ongoing. The soil importation schedule for Phases 4 & 5 was temporarily altered to allow for access related to fire debris management and will resume shortly following the installation of required drainage infrastructure. Berm completion is currently anticipated by early 2027, subject to change based on longer use of the fire debris access road and any weather delays in the future.

6. Wet Weather Preparation Plan

Requirement: Respondent shall implement the (previously SCL LEA-approved) 2023-2024 Wet Weather Preparation Plan (WWPP) and the current 2024-2025 WWPP, and shall implement additional wet weather mitigation measures when feasible and appropriate, such as grading techniques (for example, rough grading, contour grading, use of erosion control fabrics/mats) to minimize surface erosion and to preserve the low permeability properties of the landfill cover.

Status: Implemented. The current and previous WWPPs are being implemented as required. Planning for the 2025-2026 WWPP began in mid-May, with a draft plan expected by September 1, 2025.

7. Hydroseeding

Requirement: Respondent shall implement as part of its wet weather preparation and as additional odor mitigation, utilization of hydroseeding in areas anticipated to be most effective, as determined in collaboration with the SCL-LEA, for enhanced erosion control, including use of methanotrophic bacteria/microbes in the hydroseeding cover layer to enhance oxidation of odor/methane in addition to enhancing root growth of with the utilization of microbiology with phytoremediation properties.

1 **Status:** In Progress. BFIC is collaborating with the SCL-LEA to identify areas for hydroseeding. Per
2 SCL-LEA recommendation, this work will be performed in the Fall.

3 4 **8. Data Provision to SCL-LEA**

5 **Requirement:** Respondent shall, for the purpose of assessing the overall effectiveness of
6 individual and/or combined mitigation measures, provide to the SCL-LEA the following:
7 landfill gas system operational data, South Coast AQMD Rule 1150.1 instantaneous and
8 integrated surface readings data; individual landfill gas well analytical/operational data; daily
9 collected gas volumes; and meteorological data, and shall also provide the implementation
10 schedule and operational dates of implemented mitigation measure(s). Respondent may
11 designate and mark as confidential data it considers "business sensitive."

12 **Status:** Implemented. SCL-LEA personnel have been provided with access to the necessary data
13 systems described above, including but not limited to data on gas collection system operations,
14 landfill gas volumes collected, LFG composition, surface emissions, wellhead monitoring, and
15 meteorological data.

16 17 **9. Enhancement of Intermediate Cover in Problematic Grids**

18 **Requirement:** Respondent shall collaborate with the SCL-LEA to identify Rule 1150.1
19 monitoring grids with continuing excessive surface emissions and shall enhance the
20 intermediate cover with the most appropriate mitigation measures, which might include: a.
21 Application of intermediate cover to areas with daily cover, prior to the six-month regulatorily
22 required intermediate cover application; b. Enhancement of existing intermediate cover with
23 extra thickness of compacted soil, with lower-permeability soil, if available; c. Enhancement of
24 existing intermediate cover with organic topsoil (compost, mulch, or mix) to create a biofilter
25 layer; d. Enhancement of existing intermediate cover with vegetative cover with native plants
26 (for enhanced biofiltration); e. Application of EnviroCover over a protective soil buffer layer,
27 followed by application of intermediate soil cover; f. Application of PosiShell on top of
28 intermediate cover; g. Application of PosiShell (or other material with more impermeable
properties for "sealing" the top layer) on top of extra-thickness soil for enhanced intermediate
cover; and/or h. Application of a soil "sealant" to increase the impermeability of soil used for
daily cover and intermediate cover.

Status: Implemented. Problematic grids were identified based on methane surveys from January to
April 2025. BFIC is addressing these grids by applying various mitigation measures, including Posi-
Shell (pushed to August due to a delay in well drilling due to the well-drilling subcontractor's worker-
related accident), repairing damaged liner, and increasing the thickness of cover soil.

1 **10. Prioritization of Shallow Collectors in Problematic Grids**

2 **Requirement:** Respondent shall address grids that continue to demonstrate excessive surface
3 emissions by prioritizing installation of shallow horizontal/slope/trench collectors at such grids,
4 and shall assess utilization of large plastic sheeting or Closure Turf cover, with installation of
5 flat/ horizontal landfill gas collection pipes underneath the cover, and shall cover problematic
6 grids with large plastic sheeting or Closure Turf if determined to be feasible and likely to
7 reduce excessive surface emissions.

8 **Status:** In Progress. Shallow collectors and sumps are being installed in problematic areas as
9 necessary. Approximately 20 acres of Posi-Shell application is scheduled for the week of August 4,
10 2025, to further address these grids.

11 **11. Cell Sequencing Plan Review**

12 **Requirement:** Respondent shall review the current Cell Sequencing Plan to determine the feasibility
13 of optimizing the sequence to focus on filling over the grids (and including installation of horizontal
14 collectors from the start of filling) where the practice of nine inches of compacted daily soil without
15 peel back was implemented. If Respondent, in collaboration with the SCL-LEA, determines a revised
16 Cell Sequencing Plan is appropriate, Respondent shall prepare a draft 5-year Cell Development Plan,
17 showing the current Cell and future Cells to the terminal toe berm area. Respondent shall report back
18 on the status of Cell Sequencing Plan at the Status Hearing identified in Condition no. 1.

19 **Status:** In Progress. The Cell Sequencing Plan has been reviewed and modified to prioritize placing
20 fill over identified problematic grids. This revised sequence will be formally incorporated into an
21 updated 5-year Cell Development Plan being prepared by Geo-Logic Associates.

22 **12. Vertical Landfill Gas Collection Wells**

23 **Requirement:** Respondent shall continue implementation of top-down vertical landfill gas
24 collection wells to supplement bottom-up landfill gas collection wells (and elsewhere at the
25 Facility as appropriate) to achieve a minimum of thirty percent (30%) overlap for the effective
26 radius of influence of the vertical landfill gas collection wells. Respondent shall report back on
27 its effort to achieve a minimum of thirty percent (30%) overlap at the Status Hearing identified
28 in Condition no. 1.

Status: In Progress. The installation of approximately 125-130 new vertical gas wells began on April
23, 2025, to achieve and exceed the required 30% overlap of well influence. The drilling is
proceeding at an average of one to three wells per day (except for a one-month cessation on well
drilling in July necessitated by OSHA requirements stemming from a worker fatality on the landfill
subcontractor's well drilling crew) the delay due to the worker-related accident), with intermittent
pauses as required for site logistics. There will be 2 drilling rigs on site starting August 4th, which
will likely increase the well production.

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4 **13. Larger Diameter Well-Casings**

5 **Requirement:** Respondent shall, when feasible and appropriate, utilize larger diameter landfill
6 gas extraction well-casings to improve vacuum levels and utilize a geosynthetic boot, bentonite
7 seal, or additional soil layer (or combination thereof) around the base of the well-casing to
8 minimize landfill gas leakage. Respondent shall maintain records documenting use of larger
9 diameter landfill gas extraction well-casings and/or use of enhancements at the base of the well-
10 casing and shall make records available to the South Coast AQMD upon request.

11 **Status:** Implemented. Of the new wells being installed, approximately ten are being constructed with
12 larger, 10-inch diameter casings to improve vacuum performance. Records documenting these
13 installations are being maintained.

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22 **14. Gas Movement Enhancement Pilot Project**

23 **Requirement:** Respondent shall implement a pilot project to enhance landfill gas movement by
24 identifying and providing access to three locations in different areas of the Facility.
25 Respondent's pilot project to enhance landfill gas movement shall include identifying and/or
26 creating designated pathways of least resistance in the disposal mass by utilizing larger
27 granular materials (for example, crushed concrete or large wood chips, other granular
28 materials) in the form of a layer or a limited circular pad within a radius of influence of a
vertical landfill gas well (below the sealing plug) and tied to a vertical landfill gas collection
well, for among other benefits, preventing pressure build ups and/or blow-outs. Respondent
shall endeavor to determine the optimum amount of interconnectivity of the pathways of least
resistance (or minimum safe distance between porous material pathways) to prevent
unreasonable risk of the spreading of underground oxidation events. Respondent shall
document efforts to enhance landfill gas movement and to determine the optimum amount of
interconnectivity and shall report back on the status of such efforts at the Status Hearing
identified in Condition o. 1.

29 **Status:** In Progress. A design for this pilot project, which will utilize radial collectors ("pancakes")
30 at different depths in bottom-up wells, is being developed by SCS Engineers. Technical details will
31 be provided upon finalization of the design.

1 **15. Smoke Test Protocol**

2 **Requirement:** Respondent shall collaborate with the SCL-LEA to develop a Smoke Test
3 protocol to determine the potential odor transport pathways from the Facility to the
4 community and surroundings based on the various meteorological factors and the current and
5 future development topography of the Facility. Following approval by the SCL-LEA,
6 Respondent shall implement the Smoke Test and use the results to assess the potential for
7 additional odor mitigation measures to reduce and/or prevent the odors from reaching the
8 community (such as physical barriers, dilution, or dispersion technologies, or odor
9 neutralization and/or vapor phase odor neutralization techniques), and shall report on the
10 status of the Smoke Test at the Status Hearing identified in Condition no. 1.

11 **Status:** In Progress. BFIC has received a proposal from SCS Engineers to develop the protocol and
12 conduct smoke tests. Implementation is anticipated in the fall of 2025 to align with meteorological
13 conditions of concern.

14 **16. Partial Final Closure**

15 **Requirement:** Respondent shall start partial final closure for all areas that have already
16 reached final elevation in accordance with a final closure plan approved by the SCL-LEA and
17 the Regional Water Quality Control Board.

18 **Status:** In Progress. Areas that have reached final elevation have been identified. However, the clay
19 material required for a prescriptive final cover is not available. Consequently, BFIC is developing an
20 alternative final cover design for submittal to the SCL-LEA and Regional Water Quality Control
21 Board. Implementation is anticipated to begin in 2026, pending agency review and approval of the
22 alternative design.

23 DATED: August 1, 2025

24 LAW OFFICES OF THOMAS M. BRUEN,
25 A Professional Corporation

26 

27 Thomas M. Bruen
28 Attorneys for Respondent Browning-Ferris
Industries of California, Inc.

Proof of Service

Thomas M. Bruen declares,

I am one of the attorneys of record for Respondent Browning-Ferris Industries of California, Inc. in this proceeding. This will certify that on August 1, 2025, I served a copy of Respondent's Status Report on counsel for the Executive Officer of the South Coast Air Quality Management District by electronic service, addressed to their respective email addresses, as follows:

Karin Manwaring at: kmanwaring@aqmd.gov
Daphne Hsu at: dhsu@aqmd.gov

I declare under penalty of perjury of the laws of the State of California that the foregoing is true and correct. Executed this 1st day of August at Alamo, California.

Thomas Bruen