Pennsylvania
Department of
Environmental Protection

MEMO

TO	Indspec RACT File Homer City TVOP File
FROM	Matthew M. Williams *MMW* Facilities Permitting Chief Northwest Regional Office
THROUGH	Lori McNabb *LLM* Air Quality Program Manager Northwest Regional Office
DATE	February 26, 2026
RE	Available ERCs after Potential RACT Reductions Indspec., Petrolia Borough, Butler County

MESSAGE:
Indspec engaged in the manufacturing of Resorcinol, which is used in the tire manufacturing process and in the manufacture of adhesives and resins. Co-products from this facility include phenol, sodium sulfite, sodium sulfate, resins, and adhesives. The processes involved the handling and storage of materials, reactor vessels, mixers, dryers, boilers, and other related process equipment. The facility was a major source for Title V Permitting, due to the potential emissions of NO_x, SO_x, VOCs, PM_{10}, and HAPs.

From a letter dated December 13, 2017, Indspec announced on March 27, 2017, the facility would be closing. On July 31, 2017, production ceased for all organic resin products at the facility with all intermediate production and utility operations with a projected ending by September 22, 2017. From a letter dated August 30, 2018, the actual shutdown date for the last of the process sources was September 11, 2017.

ERC / RACT 2 Background:

The DEP reviewed the sources identified in the Indspec ERC application and conducted a review of the available ERCs to determine if any of the credits need to be reduced and that the ERCs were surplus, permanent, quantified, and federally enforceable in accordance with 25 PA Code §127.207. For additional details on that review, refer to the Revised Emission Reduction Credits Review

memo (Indspec ERC memo) dated October 20, 2020 and the Review of Application for RACT II memo (RACT 2 memo) dated October 20, 2020. The recommendation of the Indspec ERC memo was that the facility generated 130.94 tons of VOC ERCs with the over control of emissions of Source 235 (Tank T-3034) which was converted from storing resorcinol to storing only waste water. The overcontrolled VOC emissions do not expire in accordance with 25 PA Code §127.206(e). In addition to the non-expiring credits, the DEP reviewed potential VOC credits for Sources 038 (#8 Keeler Boiler), 040(#10 Boiler), 057(Caustic Pot Heaters – 5 units), 100(Copeland), 134(#3 Acid Sodiator), 147A(Two Benzene Storage Tanks), 147F(Formaldehyde Storage TankT-2050), 147H(Styrene Tank), 149(Reactor 506), 150(Reactor 507), 159(BRA/HER Reaction Processes), 163(Brittle Resin Pastille Equipment), 165(Process Piping in Benzene & Phenol Service), 165A(Components Subject to Subpart UU – LDAR), 166(Carbonator), 170(Raw Material Unloading/Storage @ Hill Plant), 171(Resin Loading @ Hill Plant), 178(Krystal Units #1 and #2), 180B(250 HP air compressor), 237(Tanks T-3056), 135(Miscellaneous Process Vents (135MPV)), 147B(Two Ether Storage Tanks), and 165B(Components Subject to 25 PA Code §129.71) (hereinafter referred to as Other Sources). It is noted that other credits were also reviewed and approved for Indspec for NOx, CO, SOx, PM10, and PM2.5 but they are not mentioned in further detail in the subject memo because only the VOC credits are being considered for Homer City.

The DEP reviewed and approved 68.6 tons of ERCs from the Other Sources. Of the Other Sources, the individual sources each emitted less than 2.7 TPY VOC and were considered subject to the presumptive RACT 2 requirements of 25 PA Code §129.97(c)(2) which had no emission limits but instead determined RACT 2 as "install, maintain, and operate in accordance with good operating practices". Likewise, the same sources are subject to the similar requirement for RACT 3 as referenced in 25 PA Code §129.112(c)(2) which also only requires the source to be installed, maintained and operated in accordance with the manufacturer's specifications and with good operating practices. Since there are no additional limits or controls involved with these presumptive RACT 2 and RACT 3 requirements for the sources less than 2.7 TPY VOC, the sources do not need to reduce the emissions credits approved under RACT 2 or RACT 3.

For Sources 100, 135 MPV, 150 and 165B, the VOC emissions were greater than 2.7 TPY and a RACT 2 analysis was performed. The RACT 2 VOC analysis identified the existing controls for Source 100 as two scrubbers (C100A and C100B); Source 135MPV as a dual condensers (C135); Source 150 as condenser (C150); and, Source 165B as Leak Detection and Repair (LDAR). The additional controls evaluated as potentially technically feasible for Sources 100, 135MPV, and 150 were catalytic incineration / oxidation, thermal incineration / oxidation, carbon absorption (Scrubber), and condensers. Catalytic incineration / oxidation was considered not technically feasible for Sources 100, 135MPV, and 150, based on the exhaust temperature (185 °F, 20 °F, and 220 °F, respectively for the three sources) which would have to be heated to a minimum of 500 °F. Thermal incineration / oxidation, was considered technically feasible for the same three sources. Carbon adsorption was not considered technically feasible for the same three sources because of the required cooling and dehumidification prior to the adsorption bed which would generate a significant amount of water with no current means to handle (Indspec did not have a waste water treatment plant, and all waste water needs to be hauled offsite). As previously mentioned, absorption (scrubber) is currently being used for Source 100. The scrubber would not be feasible for

Source 135MPV because the exhaust stream is below the freeing point of water and due to the foot print of the facility (area of the facility was tightly packed and space was limited for retrofits or new control installation). The scrubber was not feasible for Source 150 due to the very low concentration of VOC (ppm range) and space was also a limiting factor. A condenser was not feasible for Source 100 because of the large amount of energy required to condense the large exhaust flows and would require a waste water treatment installation. Condensers were technically feasible and were being used by Sources 135MPV, and 150. Source 165B was already applying an LDAR program for monitoring and identifying potential leaks of VOC as fugitive VOC emissions.

The cost analysis conducted for Thermal Incineration / Oxidation was $54,565 per ton of VOC removed for Source 100 based on potential VOC emissions of 17.4 TPY and was considered not economically feasible. The cost analysis conducted for Thermal Incineration / Oxidation was $196,521 per ton of VOC removed for Source 135MPV based on potential VOC emissions of 3.8 TPY and was considered not economically feasible. The cost analysis conducted for Thermal Incineration / Oxidation was $85,487 per ton of VOC removed for Source 150 based on potential VOC emissions of 8.8 TPY and was considered not economically feasible.

The RACT 2 memo provides additional information on the previously mentioned analysis for RACT 2 and provides the VOC conclusion that for Source 100, 135MPV, 150, and 165B, no additional control technologies are deemed RACT 2. Instead RACT 2 is deemed as the continued use of the existing scrubbers with no change in VOC emission rate for Source 100; continued use of the existing condensers with no change in VOC emission rate for Source 135MPV; continued use of existing condenser with no change in the VOC emission rate for Source 150; and continued use of the existing LDAR program with no change in the VOC emission rate for Source 165B.

After conducting the RACT 2 analysis, the DEP granted ERCs based on the actual emissions from the average of the baseline years (2015/2016) for Sources 100, 135MPV,150, and 165B in the amount of 10.87 tons, 37.92 tons, 5.184 tons, and 5.65 tons, respectively. It is noted that Other Sources were not required to be reduced as noted previously and the DEP granted ERCs based on the actual emissions from the average of the baseline years (2015/2016) for Sources 038, 040, 057, 134, 147A, 147F, 14H, 149, 159, 163, 165, 165A, 166, 170, 171, 178, 180B, 237, and 147B of 1.480 tons, 2.475 tons, 0.015 tons, 0.076 tons, 0.063 tons, 0.518 tons, 0.043 tons, 0.397 tons, 0.0002 tons, 0.087 tons, 0.671 tons, 0.276 tons, 0.0001 tons, 0.044 tons, 0.141 tons, 2.324 tons, 0.008 tons, 0.0012 tons, and 0.74 tons, respectively (total of Other Sources without Sources 100, 135MPV, 150, and 165B is 9.3595 tons) (total of Other Sources [after exclusion of 0.38 tons that exceeded the limit of 210 tons for Source 135MPV] is approximately 68.6 tons VOC).

The DEP issued a Federally Enforceable permit for the ERCs to Indspec on December 17, 2020. In a letter from DEP dated June 4, 2025, the ERC transfer from Indspec to Homer City was approved. The letter approved the transfer of 199.54 tons VOC from Indspec to Homer City. Of the total ERCs transferred, 139.94 tons VOC were from Source 235 and are non-expiring based on over control. The remaining VOC (68.6 TPY) credits that were transferred expire September

11, 2027, if the credits are not used in a plan approval or operating permit prior to the expiration date in accordance with 25 PA Code §127.206(f).

According to 25 Pa. Code § 127.206(c), the ERCs are to be proportionally reduced prior to use in a plan approval in an amount equal to the reductions that the generating facility is or would have been required to make in order to comply with new requirements promulgated by the Department or the EPA, which apply to the generating facility after the ERCs were created. On November 12, 2022, the DEP published the final rule for RACT 3 in the Pa Bulletin. Therefore, after November 12, 2022, Indspec' s VOC ERCs in the PA ERC registry system needed to be considered for potential discount to comply with the RACT 3 standards.

RACT 3 Background

The DEP evaluated the ERCs related to RACT 2 and once again concluded the VOC emissions from Source 235 did not need to be reduced for RACT 3 because Source 235 was subject to the requirements of 25 PA Code §129.71 pertaining to Synthetic organic chemical and polymer manufacturing – fugitive sources. The RACT 3 applicability excludes sources for which the DEP already has applicable standards such as 25 PA Code §129.71 as referenced in §129.111(a).

For Source 100, 135MPV, 150 and 165B, the VOC emissions were greater than 2.7 TPY and a RACT 3 analysis was performed. In accordance with 25 PA Code §129.114(i)(1)(i), the facility and DEP can apply the simplified RACT analysis which would exclude a new economic feasibility analysis based on cost effectiveness that remained greater than or equal to $12,000 per ton of VOC emission reduced.

The components required for the analysis include:

(A) A statement that explains how the owner or operator determined that there is no new pollutant specific air cleaning device, air pollution control technology or technique available.

(B) A list of the technically feasible air cleaning devices, air pollution control technologies or techniques previously identified and evaluated under § 129.92(b)(1)-(3) included in the written RACT proposal submitted under § 129.99(d) and approved by the Department or appropriate approved local air pollution control agency under § 129.99(e).

(C) A summary of the economic feasibility analysis performed for each technically feasible air cleaning device, air pollution control technology or technique listed in clause (B) and the cost effectiveness of each technically feasible air cleaning device, air pollution control technology or technique as submitted previously under § 129.99(d) or as calculated consistent with the ''EPA Air Pollution Control Cost Manual'' (6th Edition), EPA/452/B-02-001, January 2002, as amended.

(D) A statement that an evaluation of each economic feasibility analysis summarized in clause (C) demonstrates that the cost effectiveness remains equal to or greater than $7,500 per ton of NO_x emissions reduced or $12,000 per ton of VOC emissions reduced.

(E) Additional information requested by the Department or appropriate approved local air pollution control agency that may be necessary for the evaluation of the analysis.

AECOM prepared a RACT 3 analysis for Sources 100, 135MPV, 150, and 165B upon behalf of Homer City.

The DEP reviewed the AECOM RACT 3 analysis in conjunction with the RACT 2 and based on the RACT/BACT/LAER Clearinghouse there does not appear to be any new pollutant specific air cleaning devices or air pollution control technologies or techniques available beyond what was stated in the RACT 2 evaluation. AECOM searched the Clearinghouse for VOC from process type 64.001 – Batch Reaction Vessels from November 7, 2017, until February 14, 2026. AECOM identified four facilities located in Texas, each of which is an ethylene cracking or pyrolysis furnace. These furnaces have similar controls to Sources 100 and 150. The DEP is not aware of any new technologies or techniques available since the RACT 2 analysis.

The list of control technologies for RACT 3 were previously identified in this memo for the description of the RACT 2 analysis.

The economic feasibility for RACT 2 was previously identified in this memo and concluded that the cost of control for Sources 100, 135MPV, and 150 were not economically feasible for RACT 2 and would also not be economically feasible for RACT3 based on the cost of control. The cost analysis conducted for Thermal Incineration / Oxidation was $54,565 per ton of VOC removed for Source 100 based on potential VOC emissions of 17.4 TPY and was considered not economically feasible. The cost analysis conducted for Thermal Incineration / Oxidation was $196,521 per ton of VOC removed for Source 135MPV based on potential VOC emissions of 3.8 TPY and was considered not economically feasible. The cost analysis conducted for Thermal Incineration / Oxidation was $85,487 per ton of VOC removed for Source 150 based on potential VOC emissions of 8.8 TPY and was considered not economically feasible. It is apparent from the original cost analysis from RACT 2 that the economic feasibility for RACT 3 would be above $12,000 per ton for VOC control. The DEP did not request any additional information from Indspec or Homer City based on the RACT 3 analysis provided by AECOM. The DEP believes the AECOM analysis and subsequent DEP review satisfy components A-E above (in reference to 25 PA Code §129.114(i)(1)(i).)

It is also noted that the AECOM analysis and the DEP review of that analysis concluded that there does not appear to be any additional State or Federal Regulations that would necessitate a reduction of the ERCs from Indspec based on only potential regulatory changes to control practices such as the LDAR program that was in existence prior to the shutdown of Indspec. Therefore, it is recommended that the Indspec ERC credits be transferred to Homer City and included in the renewal of the Homer City Operating Permit 32-00055 without further reduction.

Conclusion: I recommend the approval of total ERCs in the amount of 199.54 tpy of VOCs from Indspec, after compliance with the RACT 3 requirements.