UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

| | | |
|---|---|---|
| IN THE MATTER OF | ) | APPROVAL TO TREAT |
| | ) | |
| SAFETY-KLEEN SYSTEMS, INC. | ) | AND COMMERICALLY |
| | ) | |
| 601 RILEY ROAD | ) | STORE POLYCHLORINATED |
| | ) | |
| EAST CHICAGO, IN 46312 | ) | BIPHENYLS (PCBs) |
| | ) | |
| IND 077 042 034 | ) | |

## AUTHORITY

This approval is issued pursuant to section 6(e)(1) of the Toxic Substances Control Act (TSCA), 15 U.S.C. 2605(e)(1), and the Federal Polychlorinated Biphenyls (PCB) Regulations, 40 Code of Federal Regulations (CFR) Part 761.

Failure to comply with the approval conditions specified herein shall constitute a violation of 40 CFR §§ 761.50(a), 761.60(e) and 761.65(d) and may also be a violation of other provisions of the PCB regulations in 40 CFR Part 761. A violation of the regulations is a prohibited act under Section 15 of TSCA, 15 U.S.C. 2614.

The regulations pertaining to PCB storage, 40 CFR § 761.65(d), designate the U.S. Environmental Protection Agency (EPA) Regional Administrator as the approving authority. The EPA Headquarters Delegation 12-5 authorizes the re-delegation of approval authority for PCB storage and disposal facilities from Regional Administrators to Regional Division Directors. Under the EPA Region 5 Delegation 12-5, dated July 15, 2014, the approval authority for PCB storage and disposal approvals was delegated from the Regional Administrator to the Director, Land and Chemicals Division (LCD), EPA Region 5.

## SUMMARY AND FINDINGS

Background information, process description, demonstration test result summaries, and the EPA's findings related to this approval are included in Appendices I through IV.

Safety-Kleen Systems, Inc. (Safety-Kleen) is the owner of the hydro-treatment unit which is designed to non-thermally destroy PCBs in contaminated waste oil, hereafter referred to as "oil", and produce oil products suitable for sale. The EPA has carefully assessed Safety-Kleen's operations, and has audited and observed a demonstration of the PCB treatment system's

capabilities and efficiency. The EPA finds that Safety-Kleen's PCB treatment system, when treating oil containing PCBs in accordance with the conditions of this approval, provides PCB destruction equivalent to an approved TSCA incinerator, as required by § 761.60(e).[1] Further, the EPA finds that Safety-Kleen's process, when operated in accordance with this approval, will not present an unreasonable risk of injury to health or the environment.

## EFFECTIVE DATE

This approval to operate is effective upon signature by the EPA Region 5 Director of LCD and shall expire ten years from the date of signature unless otherwise specified in Condition 22.





[1] The regulations at §761.60(e) allow for the destruction of PCBs using methods other than incineration, provided the alternative method can achieve a level of performance equivalent to an incinerator approved under §761.70 or a high efficiency boiler operating in compliance with §761.71. The level of performance required for non-thermal destruction is measured differently than for thermal methods. It is the Agency's policy that non-thermal methods operating under 761.60(e) that destroy PCBs to < 2 ppm meet an equivalent level of performance to an incinerator approved under §761.70 or a high efficiency boiler operating in compliance with §761.71. See Draft Guidelines for Permit Applications and Demonstration Test Plans for PCB Disposal by Non-Thermal Alternative Methods, August 21, 1986.

## DEFINITIONS AND ACRONYMS

Definitions found in 40 CFR 761.3 apply unless otherwise noted below.

"Application" means all data and materials upon which the EPA based its decision to approve Safety-Kleen's PCB treatment system and commercial storage areas, e.g., information submitted to the EPA by Safety-Kleen to define, represent, or describe proposed testing protocols, proposed design and operations, and operational limits of the PCB treatment system. This includes the request for approval required by §§ 761.60(e) and 761.65(d) and such data and materials submitted in relation to both the demonstration and operation of the PCB treatment system. The application materials were submitted by Safety-Kleen to EPA on several dates throughout the approval process.

"Batch" means a cycle of continuous operation of the PCB treatment system, consisting of start-up, treatment, and decontamination stages.

"Closure" means the cessation of the use of a subject facility, and activities undertaken to secure the facility and control, minimize or eliminate the threat to human health and the environment from the facility. General closure requirements for PCB commercial storage facilities are set forth in the TSCA regulations at § 761.65(e).

"Closure Plan" means written plan for achieving proper closure of a subject facility. The closure plan identifies the steps that the owner or operator of the facility shall take to close the PCB wastes treatment and storage facility in a manner that eliminates the potential for post-closure releases of PCBs which may present an unreasonable risk to human health or the environment. Closure plan requirements for PCB commercial storage facilities are set forth in the TSCA regulations at § 761.65(e).

"Data" means: (a) a formal report from a chemical analysis laboratory; or (b) appropriate chemical instrument print outs from a chemical instrument that have appropriate controls, standards, and written instrumental operating parameters and conditions. Technical judgment or experience is not considered analytical data.

"Day" means a calendar day, unless otherwise specified.

"Director" means the Director, Land and Chemicals Division, EPA Region 5.

"EPA" means the United States Environmental Protection Agency, Region 5.

"Facility" means all contiguous land and structures (such as a single manufacturing plant) at which Safety-Kleen's PCB treatment system disposal and storage operations are conducted.

"LCD" means Land and Chemicals Division.

"Lost-time injury" or "lost workday injury" means an injury related to the operation of Safety-Kleen's PCB treatment system which results in an employee not performing his/her normal assignments during the workday and/or any successive workday following the day of injury.

"Major modification" means any change to capacity, design, operations, or any other changes significantly affecting, or having the potential to significantly affect, overall PCB destruction efficiency, performance, or environmental impact of Safety-Kleen's PCB treatment system or storage.

"Minor modification" means administrative and informational changes, correction to typographical errors, changes to conform with agency guidance or regulations, or any other change which does not affect the overall performance or environmental impact.

"Oil" is used in this approval to mean waste oil for recycling.

"Operations" means the process of treating PCBs ≥ 50 parts per million (ppm), or PCBs < 50 ppm that were originally ≥ 50 ppm and subsequently diluted to levels < 50 ppm, including start-up (e.g., powering up, running any oil through the equipment) of Safety-Kleen's PCB treatment system, preparation of PCB-regulated oil feed, and decontamination of Safety-Kleen's PCB treatment system and supporting components once treatment is terminated.

"Operator" means Safety-Kleen Systems, Inc., 601 Riley Road, East Chicago, Indiana 46312, which operates the PCB alternative treatment technology and storage facility.

"Owner" means SK Holding Company, Inc. SK Holding Company, Inc. is a wholly-owned subsidiary of Safety-Kleen, Inc., which is a wholly-owned subsidiary of Clean Harbors, Inc.

"PCB" means polychlorinated biphenyls as defined in § 761.3.

"PCB-regulated oil" means oil that is regulated by TSCA due to the PCB concentration or the PCB concentration of the source of the PCBs in the oil.

"PCB treatment system" means catalytic hydrogenation system, also known as the hydrotreater, including Reactors R-403/4, R-405, R-401 A/B and R-451 A/B while processing PCBs at the East Chicago, Indiana facility, as demonstrated in the weeks of January 24 and March 5, 2016.

"PCB pre-treatment system" means Safety-Kleen's dehydration and distillation process which occurs prior to hydrotreatment. Distillation is a decontamination method that does not require approval from EPA (see § 761.79(b)).

"Process waste" means wastes generated by Safety-Kleen's PCB treatment process.

"RCRA" means Resource Conservation and Recovery Act.

“Reactor change” means the action of alternating an online reactor to its spare. Specifically, a reactor change would be R-401A to R-401B, R-451A to R-451B, R-403 to R-404, and vice versa for each example.

“Region 5” means the EPA region headquartered in Chicago, Illinois, serving Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin, and 35 Tribes.

"Regional Administrator" means the Regional Administrator, EPA Region 5.

“Regional PCB Coordinator” means the contact listed on the following website for EPA Region 5: https://www.epa.gov/pcbs/program-contacts.

“RTPS” means the RCRA/TSCA Programs Section in the RCRA Branch of the Land and Chemicals Division, EPA Region 5.

"Site" has the same definition as “Facility.”

“Spill” has the same meaning as "Spill" as defined in the EPA's PCB Spill Cleanup Policy in § 761.123.

“Total PCBs” means the sum of detected PCB concentrations quantified using EPA Methods 8082, 680, 608, ASTM D4059, or Safety-Kleen’s analytical Standard Operating Procedure for the Analysis of Total Poly-Chlorinated Biphenyls, as applicable.

“Year” means any 365 consecutive days except in the occurrence of a leap year, which contains 366 days. The year does not necessarily begin on January 1st.

Safety-Kleen Systems, Inc.
East Chicago, Indiana

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CONDITIONS OF APPROVAL

Per § 761.60(e), this approval waives otherwise applicable requirements of §§ 761.60(a) and 761.70. This approval may reference additional requirements of 40 CFR Part 761 but Safety-Kleen should not rely solely on this approval for all requirements related to PCBs or the disposal of PCB waste. In the event that the information contained in the Application or other supporting documents differs from the conditions specified in this document, the conditions of this document shall govern.

1. Feedstock Restrictions

   a) Safety-Kleen shall only treat waste oil for recycling, referred to in this approval as oil. Safety-Kleen shall not treat oil that is characteristic of mineral oil dielectric fluid (MODEF). Oil that is contaminated by MODEF may be treated but the oil must be characteristic of the oil that Safety-Kleen demonstrated during the weeks of January 24, 2016 and March 6, 2016. Safety-Kleen and Safety-Kleen's parent company and subsidiaries, cannot intentionally mix PCB-contaminated MODEF with oil for treatment through the PCB treatment system.

   b) Safety-Kleen may feed PCB-regulated oil into the PCB pre-treatment system in concentrations no greater than 30 ppm[2].

   c) Safety-Kleen may dilute PCB-regulated oil with concentrations less than or equal to 200 ppm with non-regulated (PCBs < 50 ppm) oil to reduce the concentration to between 15 ppm and 30 ppm. TSCA-regulated oil with a PCB concentration of < 15 ppm may not be diluted. Safety-Kleen may dilute PCB-regulated oil with concentrations greater than 200 ppm provided they perform the increased sampling frequency as described in Condition 3. EPA reserves the right to deny approval for the dilution of PCB-regulated oil with concentrations of 2,000 ppm or greater.

   d) Prior to treatment, Safety-Kleen shall characterize the feedstock for PCBs (Aroclor type and concentration). The feedstock shall be sampled and analyzed by gas chromatography in accordance with the procedures described in Safety-Kleen Method 9202 which is based on EPA SW-846 Method 8082.

   e) Whenever PCB-regulated oil is handled in containers outside of the PCB treatment system, the containers must be clearly labeled in accordance with 40 CFR 761 subpart C so as to distinguish them from treated product containers.

   f) The vacuum fuel stripper (VFS) fuel from the PCB pre-treatment system shall not be fed into the hydrotreater.

[2] Safety-Kleen measured the concentration of the feedstock as 19.3 ppm in their laboratory. Based on the demonstration test performance and in consideration of the acceptable range in PCB testing, EPA has confidence that treating feedstock up to 30 ppm will present no unreasonable risk of injury to health or the environment.

g) Safety-Kleen may propose a modification to this condition in the future, should it successfully demonstrate to EPA through an approved demonstration test that Safety-Kleen's PCB treatment system is capable of treating higher concentrations of PCBs. Authorized EPA representatives will witness the demonstration and obtain split samples for verification of analytical results. The volume of oil to be processed during the demonstration run must be no more than what can be processed in a 24-hour time period, if run continuously, and must be split into three batches.

2. Operating Condition Restrictions

Operation of the PCB treatment system shall be subject to the conditions of this approval and shall be consistent with the procedures and specifications included in Safety-Kleen's Application.

a) Notification

Since the re-refining process is normally used for non-PCB waste oil, Safety-Kleen must submit a written notification to the EPA, RCRA/TSCA Programs (RTPS) Section and other regulating agencies at least 30 days prior to processing PCB-regulated waste oil. The notification must include the concentration of PCBs in the oil to be processed through the re-refining system.

b) Treatment Unit Shutdown

The PCB treatment system shall be immediately and automatically shut down under any process conditions that would present an unacceptable risk to personnel, the facility, or the environment.

After an automatic shutdown, Safety-Kleen shall take corrective measures to prevent further occurrences before resuming operations. If automatic shutdowns of the PCB treatment system occur more than three times within a year, as defined in the definitions section of this document, Safety-Kleen shall follow the requirements in Condition 6. Any one occurrence counts towards the three.

Safety-Kleen shall immediately switch the PCB treatment system to unregulated oil (< 50 ppm PCBs) and put the unit on recycle upon failure of the monitoring and/or recording equipment for the parameters specified in Condition 9(a) or failure to operate within the operating parameters listed in Condition 2(c). After such a switch is triggered, Safety-Kleen shall not resume treatment operations until the equipment is repaired or replaced with functional equipment. All effluent oil shall be captured and tested.

In the event that a reactor change is necessary, the hydrotreater will be fed with non-PCB-regulated oil until the reactor change is complete. PCB-regulated feed may resume once the new reactor is online and three consecutive reactor effluent sample results are non-detect for PCBs at a detection limit of 2 ppm.

c) Operating Parameters

Safety-Kleen shall operate the PCB treatment system as a continuous flow through process in accordance with the parameter limits specified in this condition (which were demonstrated during the weeks of January 24 and March 6, 2016). The values for the parameters listed in this condition must be based on a rolling 60-second average and be recorded at least every 60 seconds during the operation of the PCB treatment system:

1) Reactor temperature (TIC-495) shall be no less than 590°F during PCB treatment.

2) Reactor feed oil flow rate (FIC-404) shall be no greater than 175 gpm.

3) Reactor pressure (PIC-478) shall be no less than 770 psi.

During PCB processing, Safety-Kleen must continuously monitor and record all of the above operating parameters by means of an on-line computer system. Safety-Kleen must install alarms, set at the range limits given above, which will sound in the control room if process conditions reach or fall outside the range limits. During an upset condition, the operator at the control room must take corrective action to return the operating condition to the operating limits. In the event that the operating conditions cannot be restored within 5 minutes for reactor temperature and feed oil flow rate and within 20 minutes for reactor pressure, then Safety-Kleen shall switch the PCB treatment system to unregulated oil (< 50 ppm PCBs) and put the unit on recycle within one minute.

3. Sampling Plan

a) Safety-Kleen shall follow the sampling plan in the submitted Application for sampling contaminated feed oil and post-treatment concentrations of PCBs in the treated oil to ensure compliance with Condition 9 of this permit.

b) The sampling procedure and frequency described below shall be implemented for every batch of TSCA-regulated PCB oil fed into the PCB Treatment System. Analytical requirements are presented in Conditions 1(d) and 4(a).

| **Sample Location** | **Acceptable Limits** | **Sampling Frequency for PCB Feedstock Oil ≤ 200 ppm*** | **Sampling Frequency for PCB Feedstock Oil > 200 ppm*** |
|---|---|---|---|
| Guard Tank | --- | Each Guard Tank | Each Guard Tank |
| Feed to Pre-Treatment Tank V-201 | 15 to 30 ppm PCBs** | Every 2 hours for first 8 hours of processing. If all product samples < 2 ppm PCBs after 8 hours, then once every 4 hours | Every 2 hours during processing. |
| Feed to Hydrotreater | NA | | |
| Hydrotreater Product R-405 Outlet | < 2 ppm PCBs | | |

*Feedstock oil concentrations listed are the PCB concentrations in the oil prior to any blending/diluting of oil to the pre-treatment system.

**For PCB-regulated oil at concentrations of < 15 ppm PCBs and ≥ 2 ppm PCBs, EPA may be contacted for authorization to treat this oil. No PCB-regulated oil at concentrations of < 15 ppm PCBs and ≥ 2 ppm PCBs is to be treated without prior EPA authorization.

c) Any organic distillation fraction that is not hydrotreated, must be analyzed using the analytical procedure in Condition 1(d) or 4(a), as applicable, to ensure the distillation fraction is < 2 ppm PCBs. In accordance with 40 CFR§ 761.1(b)(2), PCBs must be quantified based on the formulation of PCBs present in the material analyzed.

4. Treatment Verification and Disposal of Oil That Could Not Be Adequately Treated

a) Safety-Kleen shall take representative samples of treated oil after the reactor at the R-405 outlet but before the bulk tank and analyze the samples for the concentration of PCBs in accordance with the procedures described in Safety-Kleen's Standard Operating Procedure for the Analysis of Total Poly-Chlorinated Biphenyls which is used to determine the concentration of total PCBs as a sum of total congeners and is based on EPA SW-846 Method 8082. The frequency of the sample collection is discussed in Condition 3(b).

b) If the concentration of PCBs in the treated oil is ≥ 2 ppm PCBs, Safety-Kleen shall either:

1) Repeat treatment of the treated oil in the PCB treatment system until the concentration of PCBs in the treated oil is < 2 ppm PCBs or the treatment has been repeated three times, whichever occurs first; or

2) If Safety-Kleen elects to dispose of treated oil with ≥ 2 ppm PCBs without repeating treatment as described in Condition 4(b)(1) or if the concentration of PCBs in the treated oil is ≥ 2 ppm PCBs following the third repeated treatment under Condition 4(b)(1), Safety-Kleen must dispose of the treated oil in accordance with 40 CFR part 761, subpart D as if it contains the PCB concentration of the undiluted untreated feedstock oil. The burden of ensuring proper disposal (including shipment to an appropriate disposal facility) shall be Safety-Kleen's.

5. Decontamination of Process Tanks and Piping System

After completing the batch processing of the PCB-regulated waste oil through the hydrodtreating system, the process system tanks and piping system must be decontaminated in accordance with the following procedure.

1) Tank heels shall be removed either immediately before processing PCB-regulated oil or after processing PCB-regulated oil through the PCB treatment system but before the decontamination steps listed below.

2) Fill the PCB treatment system process tanks with oil containing less than 2 ppm PCBs (rinsate) to the same level (volume) of the PCB-regulated oil that was processed. Process this oil through the PCB treatment system. Repeat this procedure two more

times.

3) Sample the rinsate and each process stream in accordance with the sampling schedule and requirements in Condition 3.

4) If any process stream samples have a PCB concentration of 2 ppm or greater, feed additional volumes of rinsate through the PCB pre-treatment (if necessary) and treatment system until the PCB concentration of each process stream is less than 2 ppm. Any process streams with a PCB concentration of 2 ppm or greater shall be re-processed through the PCB treatment system or disposed in accordance with 40 CFR Part 761 Subpart D.

5) The pre-treatment system must be decontaminated in accordance with 40 CFR § 761.79.

6. Requirements Upon Repeated Failure to Achieve PCB Treatment Level of < 2 ppm

Immediately upon the third incidence of failure to achieve the required treatment level of <2 ppm PCBs after 4 treatments (the initial treatment plus three repeat treatments) or fewer, if Safety-Kleen elects to dispose of treated oil ≥ 2 ppm PCBs without repeating treatment as described in Condition 4(b), within any year, Safety-Kleen shall cease operations of the PCB treatment system and shall notify the Regional PCB Coordinator by phone within three business days after the third incidence of failure. Safety-Kleen shall also submit a written report to the Regional PCB Coordinator within seven days of ceasing operations. The written report shall include information on the conditions under which the treatment failed, the likely cause(s) of the treatment failures, the final disposal location of the waste, steps being taken to improve the performance of the PCB treatment system, and the estimated time before the PCB treatment system is able to perform as specified in this approval. In such instances, the malfunctioning PCB treatment system shall not resume operation until the problem has been corrected and Safety-Kleen receives approval from the Director, LCD, EPA Region 5 via written or resumed correspondence to resume operation. The EPA may require a performance demonstration or submittal of appropriate data and/or information before Safety-Kleen may resume PCB treatment operations to confirm that the system has been fully repaired.

7. Damage to the PCB Treatment System

Safety-Kleen shall report any non-routine damage to the PCB treatment system (e.g. pipe rupture, hail damage) that may impact the treatment system's ability to operate in accordance with this approval within two business days following the date of the damage by phone to the Regional PCB Coordinator. This reporting is required for damage that occurs one week prior to processing PCBs and damage that occurs while processing PCBs. Regular maintenance and repair of consumable system components (e.g. pump seals, compressor diaphragm) is not included in this condition. Within five business days following the date of the damage, Safety-Kleen shall submit a written report that addresses such non-routine damage to the Regional PCB Coordinator. The written report shall include information on the incident

causing the damage, the cause(s) of the incident, steps being taken to repair the system, and the estimated time before the system is able to perform as specified in this approval. Safety-Kleen shall receive approval from the Director, LCD, EPA Region 5 via written or emailed correspondence before resuming any PCB treatment operations. The EPA may require a performance demonstration or submittal of appropriate data and/or information before Safety-Kleen may resume PCB treatment operations to confirm that the system has been fully repaired.

8. Process Waste Disposal and Handling Requirements

a) Safety-Kleen shall sample and analyze any non-liquid and non-aqueous liquid process wastes generated by the operation of PCB treatment system. Safety-Kleen shall dispose of non-liquid and non-aqueous liquid process wastes with PCB concentrations of ≥ 2 ppm PCBs (e.g., sludge) as if it contained the PCB concentration of the pre-treated feedstock or it's analytical concentration, whichever is higher (see §§ 761.50 for disposal options).

Safety-Kleen may dispose of non-liquid and non-aqueous liquid process wastes generated by the PCB treatment system with concentrations < 2 ppm as a non-regulated PCB material, but final disposition of such waste must comply with all local, state, and federal regulations.

b) Safety-Kleen shall sample and analyze any aqueous liquid process wastes.

1) For aqueous liquid process wastes containing < 0.5 ppb PCBs, Safety-Kleen may manage and dispose of these wastes as non-regulated PCB materials for purposes of 40 CFR part 761, but final disposition of such aqueous liquid process streams must comply with all local, state, and federal regulations.

2) For aqueous liquid process wastes containing between ≥ 0.5 ppb and < 3 ppb, Safety-Kleen shall dispose of these wastes in compliance with § 761.50(a)(3). For aqueous liquid process wastes containing ≥ 3 ppb, Safety-Kleen shall dispose of these wastes in accordance with §§ 761.50(a)(3) and 761.60(a) or decontaminate them in accordance with § 761.79.

c) Safety-Kleen shall comply with the labeling and marking requirements for storage, holding, and process tanks (PCB Containers) at §§ 761.40 and 761.45 for all aqueous liquid process wastes which contain PCB levels ≥ 0.5 ppb and for non-liquid and non-aqueous wastes that contain PCB levels ≥ 2 ppm.

9. Monitoring, Recordkeeping, and Reporting Requirements

a) Safety-Kleen shall monitor, record, and maintain the following PCB treatment system operating parameters and information:

1) Quantity of contaminated oil treated for each treatment batch;

2) Concentration of PCBs in the contaminated feed oil before and after blending (if applicable) for each treatment batch;

3) Amount of non-regulated oil used in each treatment batch;

4) Concentration of PCBs entering the hydrotreater;

5) Post-treatment concentrations of PCBs in the treated oil for each treatment batch;

6) A rolling 60-second average of each of the operating parameters listed in Condition 2(c) in Safety-Kleen's PCB treatment system during each treatment batch beginning before treatment is started, and ending when the tanks have been flushed;

7) Estimated quantity of PCB-regulated wastes generated from each batch, including treated oil that could not be successfully treated to achieve levels below 2 ppm PCBs;

8) Identification of facilities used to dispose of the PCB wastes listed in Condition 9(a)(7), and method of disposal;

9) Date, time, and duration of treatment batches;

10) The name and address of each client whose PCB-regulated oil was treated by the PCB treatment system;

11) A copy of the raw data, gas chromatograms, and final results from the tests required by Conditions 1, 4, and 8;

12) A summary of the total volume of PCB-regulated oil treated by the PCB treatment system during the previous year; and,

13) Any and all reports required by Conditions 6, 7, and 11.

b) Safety-Kleen shall develop, compile, and maintain the records in Condition 8(a) in a paper or electronic log. Safety-Kleen shall maintain the records for all ongoing and past PCB treatment batches conducted in the previous five years and make the records available for inspection by authorized representatives of the EPA upon request.

c) If Safety-Kleen initiates and completes closure of the PCB treatment system while this approval is in force or if the approval expires, Safety-Kleen shall electronically submit all records to the Regional Administrator, care of (c/o) Regional PCB Coordinator, within 90 calendar days of certifying closure or the expiration, whichever comes first.

d) Safety-Kleen shall maintain annual records on the disposition of all PCBs stored at the facility or treated by the PCB treatment system and submit them annually to the Regional Administrator, c/o Regional PCB Coordinator, in compliance with § 761.180(b).

10. Notification of Operations

a) In accordance with §761.60(f), Safety-Kleen shall give the following written notices to the state and local governments within whose jurisdiction its facility is located:

1) Notice at least 30 days before a facility is first used for disposal of PCBs required by the TSCA regulations; and

2) At the request of any state or local government, annual notice of the quantities and general description of PCBs disposed of during the year. This annual notice shall be given no more than 30 days after the end of the year covered.

b) Safety-Kleen shall provide an annual, non-confidential written notification to the local fire departments and other applicable local emergency response authorities in the jurisdiction where the facility is located. These written notifications shall specify the following information:

1) Company Identification: address, telephone number and brief description of the East Chicago, Indiana facility where PCB treatment system is located;

2) Personnel Identification: Safety-Kleen contact name(s), email address(es), and telephone number(s) of personnel who are responsible for oversight of the PCB treatment operations at the facility;

3) The number to a phone that the operator(s) have access to and that is located near the PCB treatment system in the facility;

4) Description of the nature of the PCB treatment activity, including estimates of the amount and concentration of PCB-regulated oil that would be treated on an average day;

5) Safety Data Sheets (SDS) for the principal chemicals in the treatment unit, and/or to be treated in the treatment unit (including PCBs, catalyst, and any other chemicals, if applicable);

6) The approximate quantities of principal chemicals in each treatment unit, and/or to be treated in the treatment unit; and

7) General location of Safety-Kleen's PCB treatment system and PCB storage tanks within the facility.

11. PCB Spills

In the event Safety-Kleen believes, or has reason to believe, that a spill (as defined in the EPA's PCB Spill Cleanup Policy in § 761.123) of PCBs has, or may have, occurred from any activities or devices related to Safety-Kleen's PCB treatment system or from storage units and their connecting equipment (e.g., containers, forklifts), Safety-Kleen shall notify the Regional PCB Coordinator by phone immediately after initial response actions have been taken to ensure the protection of human health and the environment. Safety-Kleen shall control and clean up any spills of PCBs or other fluids as provided in the Spill Prevention, Control and Countermeasure Plan provided in the application. Furthermore, if, during the term of this approval, there is a spill or release of the equivalent of one pound or more by weight of PCBs, Safety-Kleen must notify the National Response Center (NRC) at (800) 424-8802 immediately. In addition, Safety-Kleen must notify the State Emergency Response Commission (SERC) and Local Emergency Planning Committee (LEPC).

In addition, Safety-Kleen shall submit a written report to the Regional PCB Coordinator no later than 15 business days after the spill occurred that describes the: a) spill; b) known or suspected cause(s) of the spill; c) operations that were being conducted prior to, and during, the spill; d) cleanup actions conducted; and e) changes in operations that Safety-Kleen implemented to prevent such spills from occurring in the future. Safety-Kleen may submit the report specified by Condition 12(g) in place of the spill report described in this condition.

For spills greater than 55 gallons, of PCB-regulated material, or material that has not been verified to have PCBs < 2 ppm, Safety-Kleen shall not feed any PCB material into Safety-Kleen's PCB treatment system after a spill has occurred until the cause of the spill has been determined and corrected to the satisfaction of the EPA. Safety-Kleen shall not resume PCB treatment operations until written or emailed approval is received from the Director, LCD, EPA Region 5.

Safety-Kleen shall also report PCB spills in accordance with applicable federal, state, and local requirements.

12. Health and Safety

a) Safety-Kleen shall maintain and operate its PCB treatment system in a way that minimizes the possibility of a fire, explosion or any unauthorized release of PCBs to air, soil or surface water which may present an unreasonable risk of injury to human health or the environment.

b) Safety-Kleen shall take all necessary precautionary measures to ensure the operation of the PCB treatment system is in compliance with applicable health and safety standards, as required by this approval and other applicable federal, state and local laws, regulations and ordinances. Safety-Kleen shall report by phone to the Regional PCB Coordinator by the end of the business day immediately following any incident that resulted in any lost-

time injury occurring as a result of Safety-Kleen's PCB treatment equipment or operations. Safety-Kleen shall submit a written report describing the incident to the Regional PCB Coordinator within five business days.

c) At all times, the operators of the PCB treatment system shall have immediately accessible a device such a telephone or a hand-held two-way radio, capable of summoning emergency assistance from local fire departments, police departments, or state or local emergency response teams.

d) Safety-Kleen shall test and maintain (to the extent necessary to assure proper operation in time of emergency) all facility communications or alarm systems, fire protection equipment and spill control equipment.

e) Safety Plan

Before storing or treating any PCB-regulated oil, Safety-Kleen shall develop and maintain at the facility a safety plan for the activities covered by this approval. At a minimum, Safety-Kleen shall include the following information in the safety plan:

1) Scope of work (description of the treatment process, maximum volume of contaminated oil that might be found at any given time within Safety-Kleen's PCB treatment system or in associated storage containers, and any hazardous materials to be used in the treatment process);

2) Project personnel, including roles, responsibilities and qualifications, name of on-site safety manager, and name(s) of any on-site cardiopulmonary resuscitation (CPR)/First-Aid certified person(s);

3) Emergency contact information, including local authorities (e.g., local fire and police departments) and nearest medical facility that would accept patients contaminated with chemicals;

4) Hazard identification (e.g., potential for reactions/fires) and control/mitigation measures;

5) Names of all chemicals used or stored at the facility along with approximate quantities and the corresponding SDS;

6) Emergency action plan(s) specifying the following:

A. Contact information – facility management, and the emergency coordinator responsible for handling emergencies (with 24-hour a day contact in the event of an emergency), including both phone numbers and email addresses;

B. Evacuation plan(s);

C. First aid location(s);

D. Eye-wash station location(s);

E. Fire extinguisher location(s);

F. Location of SDS;

G. Flammable storage area(s); and

H. Smoking/non-smoking areas.

Safety-Kleen shall submit a copy of the safety plan to the Regional PCB Coordinator or the Director, LCD, EPA Region 5, upon request. Safety-Kleen shall immediately revise the safety plan if any of the relevant information in this approval or the safety plan itself changes.

f) Emergency Coordinator

Safety-Kleen shall, at all times, have at least one designated employee either at the operating site premises or on call (i.e., available to respond to an emergency by reaching the operating site within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator shall be thoroughly familiar with all aspects of Safety-Kleen's safety plan, operations and activities at the site, the location and characteristics of waste handled, and the facility layout, including the hazards associated with both the facility's PCB and non-PCB operations.

g) Emergency Procedures

1) Whenever there is an imminent or actual release of PCBs to air, soil, or surface water, or an incident that results or may result in injury to health or the environment ("emergency incident"), for example from fire, spill, or explosion, the emergency coordinator (or his/her designee when the emergency coordinator is on call) shall immediately:

A. Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and

B. Notify appropriate Federal, State and/or local emergency response entities (e.g., fire departments).

2) Whenever there is an emergency incident, the emergency coordinator shall as soon as practical identify the character, exact source, amount, and real extent of any released

materials. The emergency coordinator shall also assess possible hazards to health or the environment that may result from the emergency incident. This assessment shall consider both direct and indirect effects of the emergency incident (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any PCB surface water run-off from water or chemical agents used to control fire and heat-induced explosions).

3) If the emergency coordinator determines that the PCB treatment system or a PCB approved storage unit has had an emergency incident which presents or may present an unreasonable risk of injury to health or the environment outside the site or facility, he/she must report the findings as follows:

   A. If the assessment indicates that evacuation of local areas may be advisable, the emergency coordinator shall immediately notify appropriate local authorities; and

   B. The emergency coordinator shall immediately notify the NRC (using their 24-hour toll free number 1-800-424-8802), the SERC, and the LEPC. The notification must include:

      i. Name and telephone number of reporter;

      ii. Name and address of facility;

      iii. Time and type of incident (e.g., release, fire);

      iv. Name and quantity of material(s) involved, to the extent known;

      v. The extent of injuries, if any; and

      vi. The possible hazards to human health, or the environment, outside the facility.

4) During an emergency incident, the emergency coordinator shall take all reasonable measures necessary to ensure that emergency incidents do not occur, recur, or spread to other PCB waste at the operating site or PCB approved storage area. These measures must include, where applicable and when possible, safely shutting down the PCB treatment system, collecting and containing released waste, removing or isolating containers and equipment, and other measures that can be implemented to protect health and the environment.

5) During an emergency incident, the emergency coordinator shall assess if any non-PCB facility operations/processes need to be suspended or if any immediate measures should be taken to minimize the risk of injury (e.g. from the release of toxics or the spread of fire) that could occur due to the nature of facility operations and chemicals/products stored at the facility.

6) Immediately after an emergency incident has been contained, Safety-Kleen shall provide for treating, storing, and/or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release or emergency incident at the facility.

7) Safety-Kleen shall notify the Regional PCB Coordinator and the EPA Region 5 Emergency Response Section at (312) 353-2318 of the emergency incident by phone immediately after initial response actions have been taken to ensure the protection of human health and the environment.

8) Safety-Kleen shall submit a written report to the Regional PCB Coordinator, the EPA Region 5 Emergency Response Section, SERC, and LEPC no later than 15 business days after the emergency incident occurred that describes the: a) incident; b) cause(s) of the incident, c) operations that were being conducted prior to, and during, the emergency; d) cleanup actions conducted; and e) changes in operations that Safety-Kleen implemented or will implement to prevent such emergency incidents from occurring in the future.

9) Safety-Kleen shall not feed any PCB material into the PCB treatment system or store any additional commercial PCB waste until the cause of the emergency incident has been determined and corrected to the satisfaction of the EPA. Safety-Kleen shall not resume PCB treatment operations until written or emailed approval is received from the Director, LCD, EPA Region 5.

10) Safety-Kleen shall also report PCB emergency incidents in accordance with applicable federal, state, and local requirements.

h) Fire Suppression System

Safety-Kleen's PCB treatment system must have adequate fire suppression capabilities (e.g., sprinkler, standpipe or other specialized system). Separate and distinct fire suppression systems may be necessary based on the location of Safety-Kleen's PCB treatment system relative to the location of the other chemicals nearby and based on the compatibility of the fire suppression system with the fire risk that is being mitigated in that particular area. It is the responsibility of Safety-Kleen to evaluate whether the fire suppression system is appropriate to address the specific hazards based on the design and location of Safety-Kleen's PCB treatment system at the facility. Safety-Kleen's PCB treatment system shall be in compliance with applicable federal, state, and/or local fire suppression requirements.

i) Fire Detection System

Safety-Kleen shall have and maintain an active (24 hours/day) fire detection system (such as smoke alarms). By manual phone calls, alarm pull stations, computer-generated system, or other type of alarm system, immediate notifications shall be made to facility workers, occupants, facility emergency responders (whether they are on-site or off-site),

and local emergency responders (e.g., fire department) of a fire emergency at or near the PCB treatment system.

j) Fire Extinguishers

Safety-Kleen shall maintain and clearly label fire extinguishers and other firefighting equipment that are capable of suppressing fires that may be associated with Safety-Kleen's PCB treatment system and PCB storage units. Labeling shall be based on the compatibility of the extinguisher or equipment with the fire hazard. Adequate fire extinguishers and equipment shall be available at the PCB treatment system. Multiple types of fire extinguishers and firefighting equipment may be necessary to address different fire hazards posed by Safety-Kleen's PCB treatment system and the wastes that it treats. All fire extinguishers shall have the following:

1) Annual inspection tag;

2) A gauge indicating fully charged;

3) Pin with security seal; and

4) Instructions on how to use.

13. Security

Safety-Kleen shall ensure its PCB treatment system and PCB storage units are secure (e.g., with a fence, alarm system, signage) such that only those individuals authorized to conduct operations and approved visitors can access those areas regardless of whether the PCB treatment system is operating.

14. Notifications and Reports

Notifications or reports required to be mailed to the Regional Administrator, c/o Regional PCB Coordinator; Director, LCD; or the Regional PCB Coordinator shall be mailed to: Ralph Metcalfe Federal Building, 77 West Jackson Blvd., Chicago, IL 60604-3590. For electronic submission, contact the Regional PCB Coordinator for the correct email address. Email is preferable to phone and mail communication unless otherwise specified in this approval.

Up to date contact information for the EPA Regional PCB Coordinators can be found on the following website: https://www.epa.gov/pcbs/program-contacts.

15. Agency Approvals/Permits

Operation of Safety-Kleen's PCB treatment system and storage of commercial PCB waste may not commence until Safety-Kleen and/or the facility has obtained all required approvals/permits from federal, state, and local government entities and must immediately cease if Safety-Kleen fails to properly maintain or renew any required approval/permit.

16. Personnel Training

Safety-Kleen shall ensure that personnel directly involved with the operation of the PCB treatment system and storage of PCB commercial waste are familiar with the requirements of this approval.

a) In this regard, Safety-Kleen shall keep copies of the following documents on-site at all times:

   1) This operating approval;

   2) Safety-Kleen's operating approval application;

   3) Safety-Kleen's demonstration test approval request and associated demonstration test authorization issued by the EPA;

   4) The Spill Prevention, Control and Countermeasure Plan; and

   5) Safety-Kleen's sampling and analytical procedures.

b) Safety-Kleen shall also maintain a copy of the sampling and analytical procedures in the laboratory conducting the analyses. At a minimum, Safety-Kleen shall train personnel on the following:

   1) The restrictions on oil which may be treated using Safety-Kleen's PCB treatment system listed in Condition 1;

   2) The recordkeeping, notification and reporting requirements identified in Condition 9 required by this approval, and the location of records and retention times;

   3) The handling and disposal requirements as described in Conditions 4, 6, and 8 for process waste and other materials generated during the operation of Safety-Kleen's PCB treatment system;

   4) The safety, operating, and maintenance procedures listed in this approval;

   5) The procedures for using, inspecting, repairing, and replacing Safety-Kleen's emergency and monitoring equipment, with an emphasis on the fire suppression equipment; and

6) The Spill Prevention, Control and Countermeasure Plan.

17. Storage of PCBs

a) Approved PCB Storage Areas

Safety-Kleen is authorized to store PCB contaminated oil in dedicated oil storage tanks, at or below the capacity limits specified below. Additionally, Safety-Kleen is authorized to store PCB contaminated liquid and solid waste (such as PPE, sorbents, water, and oil) in sixty-five 55-gallon drums at or below the capacity limits specified below. The capacity represents the total waste storage limits for PCBs.

| **PCB Storage Areas** | **PCBs Stored** | **Capacity (gallons)** |
|---|---|---|
| Tanks 101, 102, 103, 104, 105, 106, 107, 108, 110, 111, and 112 | PCB Oil | 325,600 |
| Tank 109 | PCB Oil | 20,400 |
| Tank 120 and 121 | PCB Oil | 31,000 |
| 55 gallon drums in Drum Storage Building in Plant 1 | Liquid and non-liquid PCBs (Protective clothing, absorbents, sample jars, water, oil, etcetera) | 3,575 |

**Total liquid storage in tanks = 377,000 gallons**

**Total storage in containers = 3,575 gallons**

In addition, Safety-Kleen is authorized to store PCB-regulated oil (VFS fuel) that was generated through the pre-treatment system in the following process tanks located in the Intermediate Tank Farm.

- Tanks 931, 933, and 935 (29,610 gallons each)

b) Transfer/Transit Areas

In accordance with the definition of *transfer facility* at § 761.3, Safety-Kleen shall store PCBs in vehicles in transportation areas (such as a roadway or parking area) at Safety-Kleen facility for no more than 10 days from the date of its receipt.

c) Design Requirements of Storage Areas

The PCB container/tank storage units shall be maintained in accordance with the

specifications in Safety-Kleen's Application and shall meet the requirements at § 761.65.

1) Safety-Kleen's facility PCB container storage area shall meet the following storage criteria in accordance with § 761.65(b)(1):

   i. Adequate roof and walls to prevent rain water from reaching the stored PCBs and PCB Items;

   ii. An adequate floor that has continuous curbing with a minimum 6-inch-high curb. The floor and curbing must provide a containment volume equal to at least two times the internal volume of the largest PCB Article or PCB Container or 25% of the total internal volume of all PCB Articles or PCB Containers stored there, whichever is greater;

   iii. No drain valves, floor drains, expansion joints, sewer lines, or other openings that would permit liquids to flow from the curbed area;

   iv. Floors and curbing constructed of Portland cement, concrete, or a continuous, smooth, non-porous surface (as defined in § 761.3), which prevents or minimizes the penetration of PCBs;

   v. Not located at a site that is below the 100-year flood water elevation.

2) Safety-Kleen's facility tank storage areas shall meet the following storage criteria in accordance with § 761.65(c)(7):

   i. The tanks shall be designed, constructed, and operated in compliance with Occupational Safety and Health Standards, 29 CFR 1910.106, Flammable and combustible liquids;

   ii. A Spill Prevention Control and Countermeasure (SPCC) Plan as described in 40 CFR Part 112 shall be prepared and implemented.

d) Types of PCB Storage Allowed

Safety-Kleen is authorized to store PCBs in container storage units and in tank units, as specified in Condition 17(a). These units must meet the requirements of § 761.65(c)(6). Stationary storage containers for liquid PCBs can be larger than the containers specified in § 761.65(c)(6) provided they meet the requirements of § 761.65(c)(7).

Additionally, any container used to store or treat PCB waste that contains $\geq$ 50 ppm PCBs shall be decontaminated in accordance with § 761.79.

e) Marking and Dating Requirements

1) The approved PCB storage areas identified in Condition 17a), shall be marked as required in § 761.40(a)(10).

2) PCB containers/tanks holding waste containing PCBs at concentrations of ≥ 50 ppm shall be marked as required by § 761.40(a)(1).

3) PCB containers/tanks shall be dated in accordance with § 761.65(c)(8). PCB waste storage areas shall be managed so that the PCB Item can be located by the removal from service date or by the Item's unique tracking number.

4) For PCB waste storage tanks identified in Condition 17(a), Safety-Kleen shall comply with the recordkeeping requirements of § 761.65(c)(8).

f) Aisle Space Requirement and Row Width Limits

Adequate aisle space within the container/tank storage units must be maintained at all times to allow access for purposes of inspection and spill response for leaking containers.

Containers stored on pallets in the container storage units shall be stored in rows no more than one pallet wide when using a standard pallet size of 48"x 48" leaving a minimum 24-inch aisle between the rows and between the rows and walls.

g) Container Stacking and Pallet Use

Containers shall be stacked subject to the following limitations:

1) Safety-Kleen may stack pallets of drums containing PCBs.

2) Pallets of drums shall not be stacked more than three-high. If PCB drums are stacked three high, the containers of each layer must be secured by banding them together (shrink-wrapping).

3) A maximum of four drums will be stored on a pallet. The bottom pallet shall always contain four drums before a second level of drums and pallet are added to provide a stable base.

4) If any PCB containers are placed on a pallet, they shall be within the pallet edges.

h) Management of PCB Containers/Tanks in Storage

PCB containers/tanks shall always be closed during storage, except when adding or removing their contents, and must not be opened, handled or stored in a manner which may damage them or cause leakage.

PCB containers/tanks shall be stored so that required PCB labels, dates of removal from service, and other identification information can be easily read by any inspector.

i) Moveable equipment

1) Pursuant to § 761.65(c)(4), and except as provided below, sampling equipment, tools, and moveable equipment used for handling PCB waste in a PCB container/tank

storage area that comes in direct contact with PCB waste shall not be removed from that container/tank storage area unless it has been decontaminated in accordance with § 761.79.

2) Sampling equipment, tools and moveable equipment used for handling PCBs in one storage area may be transferred to and used in another PCB storage area at the Safety-Kleen facility without prior decontamination, provided the equipment is containerized during the transfer or other appropriate measures are taken to prevent the spread of PCB contamination and exposure to unprotected personnel en route between the two storage areas.

j) Decontamination of Tanks and Liquid Storage Piping System

a) After storing PCB-regulated oil and prior to storing non-PCB-regulated waste oil in a storage tank, Safety-Kleen must remove all free flowing liquid from the bulk container, including liquid which is below the pick-up pipe utilized in operation to drain the tank.

b) Tank heels shall be removed either immediately before storing PCB-regulated oil or after storing PCB-regulated oil in the tank but before the decontamination steps below.

c) Fill the storage tanks with oil containing less than 2 ppm PCBs (rinsate) to the same level (volume) of the PCB-regulated oil that was processed. Process this oil through the PCB pre-treatment and treatment systems. Repeat this procedure two more times. During this procedure, Safety-Kleen shall use the same liquid storage piping system as was used to fill the tanks and pump PCB oil to the pre-treatment system.

d) Sample the rinsate and each process stream in accordance with the sampling schedule and requirements in Condition 3.

e) If any process stream samples have a PCB concentration of 2 ppm or greater, feed additional volumes of rinsate through the PCB pre-treatment or treatment system until the PCB concentration of each process stream is less than 2 ppm. Any process streams with a PCB concentration of 2 ppm or greater shall be re-processed through the PCB treatment system or disposed in accordance with 40 CFR Part 761 Subpart D.

k) Inspection Requirements

All PCB containers stored within the PCB container storage units and all PCB storage tanks shall be checked for leaks at least once every 30 days. Any leaking PCB container and its contents shall be transferred immediately to properly marked, non-leaking containers. Any spilled or leaked materials shall be immediately cleaned up and the materials and residues containing PCBs shall be disposed of in accordance with § 761.61. Records of inspections, maintenance, cleanup and disposal must be maintained in accordance with §§ 761.180(a) and (b).

The condition of floor, joints and curbing in each of the approved PCB container storage units and storage tank enclosures shall be inspected at least once every 30 days. Any needed repairs noted during such inspections shall be made in a timeframe to prevent any spills from being released from the containment area, but no longer than 30 days from the date of the inspection, unless a longer repair period is authorized by the Director of LCD, EPA, Region 5.

l) Dilution Prohibitions

In the event that non-PCB oil is mixed at Safety-Kleen's facility with PCB oil at any concentration ≥ 2 ppm, the resulting oil (for purposes of waste classification/designation) will be classified at the highest concentration of the PCB oil introduced into that container/tank. Similarly, for purposes of waste classification/designation, the concentration in a container/tank is determined by the highest concentration of PCB oil added to it.

m) Recordkeeping and Reporting

Safety-Kleen shall conduct all storage recordkeeping and reporting requirements as required in Condition 9. Records and reports may be in the form of a hardcopy or electronic format.

18. Closure Cost Estimate and Plan, Financial Assurance, and Permanent Closure

a) Closure Cost Estimate and Plan

1) Prior to issuance of this approval, Safety-Kleen submitted to EPA a written closure plan and closure cost estimate that identified the steps and quantified the estimated costs for the activities Safety-Kleen shall conduct to permanently close the PCB treatment system. The provisions of § 761.65(e)(4)-(8) and (f)(2)-(4) shall apply, except as otherwise provided in the Conditions of this approval.

2) The EPA may require Safety-Kleen to adjust the closure plan or closure cost estimate to ensure there would be no unreasonable risk of injury to health or environment.

b) Financial Assurance

1) Financial assurance shall be obtained by Safety-Kleen and submitted to the Regional Administrator, c/o Regional PCB Coordinator, 30 days prior to commencing PCB treatment operations and maintained until closure activities have been completed. Safety-Kleen shall apply the financial assurance requirements in § 761.65(g) for commercial storage facilities to its PCB treatment system and comply with such requirements. Safety-Kleen shall not operate its PCB treatment system or approved PCB storage areas without the necessary financial assurance. § 761.65(g) references the financial assurance mechanisms specified in of 40 CFR 264 subpart H of the

Resource Conservation and Recovery Act regulations. Safety-Kleen may choose any of the financial assurance mechanisms or combination of mechanisms provided for in § 761.65(g). The EPA may require variations in the wording of the instruments from that found at § 264.151.

2) Safety-Kleen shall provide evidence of the increased value of the financial assurance mechanism whenever necessary (e.g. annual inflation adjustment, change in closure cost estimate triggered by modification of closure plan) as required in § 264.143, which is incorporated by reference in § 761.65(g).

3) Safety-Kleen shall also obtain financial assurance for the compensation of third parties for bodily injury and property damage caused by sudden and non-sudden accidental occurrences from, or related to, Safety-Kleen's PCB treatment system and storage operations by complying with the RCRA regulations that address third-party financial assurance liability requirements (i.e., § 264.147).

4) Safety-Kleen shall maintain financial assurance until completion of closure and written notification from EPA releasing Safety-Kleen from maintaining financial assurance in accordance with § 761.65(g).

c) Change to Closure Plan, Closure Cost Estimate, or Financial Assurance Mechanism

If Safety-Kleen wishes to change the closure plan, closure cost estimate, or financial assurance mechanisms due to factors other than inflation, Safety-Kleen shall submit an adjusted plan, cost estimate, or financial assurance mechanism (as applicable) to the Regional Administrator, c/o Regional PCB Coordinator. EPA will review the change(s) and may require Safety-Kleen to revise the adjusted closure plan, closure cost estimate, or financial assurance mechanism prior to approving it.

d) Permanent Closure

1) Failure to submit a request for renewal as described in Condition 23 will be treated as evidence of intent to close Safety-Kleen's PCB treatment system and approved PCB storage areas. If Safety-Kleen does not submit a request for renewal before the time specified in Condition 23, Safety-Kleen shall initiate closure procedures upon expiration of this approval or within 60 days of the last treatment of TSCA-regulated PCB oil by Safety-Kleen's PCB treatment system, whichever occurs first.

2) In the event that Safety-Kleen ceases operations of its PCB treatment system prior to the date of expiration of this Approval or any renewal granted pursuant to Condition 23, Safety-Kleen shall initiate closure procedures within 60 days of notifying EPA that PCB operations will cease.

3) Safety-Kleen shall notify the Regional Administrator, c/o Regional PCB Coordinator, in writing, at least 60 days prior to the date on which final closure of its approved

PCB storage areas or PCB treatment system is expected to begin (see § 761.65(e)(6)(i)).

4) Within 60 days of completion of closure of Safety-Kleen's PCB approved storage areas or PCB treatment system, Safety-Kleen shall submit by registered mail, a certification to the Regional Administrator, c/o Regional PCB Coordinator, that the approved PCB storage areas or PCB treatment system has been closed in accordance with the closure plan (see § 761.65(e)(8)).

5) During the closure activity period, Safety-Kleen shall dispose of all contaminated storage and system component equipment in accordance with the disposal requirements of 40 CFR 761 subpart D or decontaminate the equipment in accordance with § 761.79.

6) Safety-Kleen shall submit records to the Regional Administrator, c/o Regional PCB Coordinator, within 90 days of concluding closure as required in Condition 9(c).

19. Ownership Transfer

a) If Safety-Kleen intends to transfer ownership of Safety-Kleen's approved PCB storage areas or PCB treatment system and the transferee wants to operate the approved PCB storage areas or PCB treatment system under the same or similar terms as this approval, Safety-Kleen shall notify the Regional Administrator, c/o Regional PCB Coordinator, in writing, at least 90 days before transferring ownership of Safety-Kleen's approved PCB storage areas or PCB treatment system. Safety-Kleen shall also submit to the Regional Administrator, c/o Regional PCB Coordinator, at least 90 days before such transfer, a notarized affidavit signed by the transferee that states the transferee is seeking an approval to operate the PCB treatment system. Failure of Safety-Kleen to provide the EPA with this required written documentation of the transfer within the specified time frame would be a violation of this approval and the approval would immediately terminate upon the transfer of ownership.

b) After receiving notification, the EPA may:

1) Issue an amended operating approval substituting the transferee's name for Safety-Kleen's name;

2) Require the transferee to conduct a demonstration test and/or apply for a new PCB disposal approval by either submitting a complete operating approval request or a partial application request (e.g., that focuses on information that demonstrates the transferee has the ability to comply with the terms and conditions of this approval, such as a summary of personnel qualifications and previous training that are relevant to complying with the terms and conditions of this approval, or a summary of previous compliance history, if applicable); or

3) A combination thereof.

c) So that there will be no lapse in financial assurance for the transferred facility, the transferee shall establish financial assurance for closure and submit it to the Regional Administrator, c/o Regional PCB Coordinator, before the approval will be amended to transfer ownership or a new approval will be issued. The transferee must select one of the financial assurance mechanisms listed in the PCB regulations at § 761.65(g). The EPA may require variations in the wording of the instruments from that found at § 264.151. The financial assurance mechanism must be effective as of the date of final approval of the transfer (i.e., the date the amended approval or new approval is signed by the Director, LCD, EPA Region 5).

d) The transferee shall not operate the treatment unit unless the EPA either has amended this approval to allow for such operation or has issued a new approval to the transferee.

20. Process/Equipment Modifications

a) Safety-Kleen shall not make major modifications (e.g., changes of engineering design, ancillary hardware, type of catalyst, process capacity, change in PCB storage areas, or maximum PCB storage volume) to its approved PCB storage areas or PCB treatment system prior to receiving written approval from the Director, LCD, EPA Region 5. If Safety-Kleen desires such major modifications, Safety-Kleen shall submit an approval modification request to the Director, LCD, EPA Region 5. The Director may, depending on the nature of the major modification request, require Safety-Kleen to conduct a demonstration test to ensure the PCB treatment system continues to be in compliance with the applicable performance standards included in this approval and to ensure the PCB treatment system continues to operate in a manner that does not present unreasonable risk of injury to health and the environment.

b) A minor modification is defined as administrative and informational changes, correction to typographical errors, change to conform with agency guidance or regulations, or any other change which does not affect overall performance or environmental impact. A minor modification to this approval or the final application shall be made only after written concurrence by the RCRA Branch Chief, EPA, Region 5.

21. Unit Operators

Operation of Safety-Kleen's PCB treatment system shall be managed and overseen by a qualified Safety-Kleen employee during all times the PCB treatment system is operated.

22. Approval Expiration Date

This approval shall become effective upon signature of the Director of LCD, EPA Region 5 and expire ten years from the date the approval becomes effective except as otherwise specified in Condition 23.

23. Approval Renewal

If Safety-Kleen intends to continue to operate beyond the expiration date of this approval, Safety-Kleen shall submit an approval renewal application request to the Regional Administrator, c/o Regional PCB Coordinator, at least 180 days prior to the expiration date of this approval. The EPA may require Safety-Kleen to conduct a demonstration test to assure the EPA that Safety-Kleen will continue to operate its PCB treatment system in accordance with the applicable performance standards and in a manner that does not present an unreasonable risk of injury to health or the environment. Upon submission of an approval renewal application, EPA will inform Safety-Kleen if a demonstration test plan will be required within 60 days of receiving the renewal application. The demonstration test plan must be submitted at least 90 days prior to the expiration date of this approval. If Safety-Kleen submits this information to the Regional Administrator, c/o Regional PCB Coordinator, in accordance with the stated deadlines, this approval continues in force (i.e., does not expire) until the EPA issues an approval renewal, a conditional approval renewal, or an approval request denial. Safety-Kleen shall not operate under revised operating conditions until the EPA issues Safety-Kleen a fully renewed, and revised, operating approval. If Safety-Kleen does not submit an approval renewal application request to the Regional Administrator at least 180 days prior to the expiration date of this approval, this approval will expire as specified in Condition 22.

The approval renewal application shall include at a minimum a summary of all PCB processing events and results that occurred under the current approval; the requirements in 40 CFR 761.65(d); technical specifications of the PCB treatment system including operating parameters; facility diagrams and maps, especially those related to the PCB storage areas and treatment system; facility plans including the SPCC Plan, Safety Plan, Risk Management Plan, and employee training plans; a current cost estimate and any updates to the closure plan for the PCB storage and handling areas and the PCB treatment system; a copy of the financial assurance for closure; standard operating procedures including analytical procedures, tank inspection procedures, sampling plan for monitoring surface contamination outside of the PCB management areas, and waste oil sampling and acceptance procedures; quality assurance plan; and copies of most recent permits including air and wastewater permits. The approval renewal application and demonstration test plan must include appropriate modifications or updates based on proposed revisions to the original approval, which may include treatment unit design and operation changes, updated safety protocols, and revised operating and testing procedures. For example, if Safety-Kleen is seeking approval to treat another type of PCB material or oil containing concentrations of PCBs $\geq$ 30 ppm, the approval application and demonstration test plan shall reflect those changes.

## APPROVAL

### DECISION TO APPROVE SAFETY-KLEEN's REQUEST TO CONDUCT PCB TREATMENT OPERATIONS AND COMMERCIALLY STORE OIL CONTAINING PCBs

1. Approval to treat and store PCBs is hereby granted to Safety-Kleen Systems, Inc. (Safety-Kleen), of East Chicago, Indiana, subject to the conditions expressed in this approval and consistent with the materials and data included in the application and demonstration test plan and report submitted to the EPA by Safety-Kleen.

2. The EPA finds that Safety-Kleen's PCB treatment system achieves a level of performance equivalent to a TSCA PCB incinerator and finds that, as reflected in the performance test results and as a result of the design aspects of the treatment system and the operating parameters and safety requirements included in this approval, treatment operations will not present an unreasonable risk of injury to health or the environment when operated in accordance with applicable federal PCB regulations and the conditions of this approval.

3. The EPA reserves the right to impose additional conditions or revoke this approval when it has reason to believe that Safety-Kleen's PCB treatment system is not achieving the relevant performance standards; continued operation of Safety-Kleen's PCB treatment system presents an unreasonable risk of injury to health or the environment; new information requires changes; and/or the EPA issues new regulations or standards that impact necessary conditions of this approval.

   The EPA will make best efforts, taking into account the nature of the risk, to provide reasonable advance notice to Safety-Kleen and to provide opportunity for Safety-Kleen to comment on any modifications or termination of the approval. The EPA may require Safety-Kleen to immediately suspend operations while the EPA is deciding whether to impose approval modifications or to terminate this approval.

4. Any departure from the conditions of this approval or the terms expressed in the application must receive prior written authorization from the Director of LCD, EPA Region 5.

5. Safety-Kleen shall be responsible for the actions of its employees and contractors that operate or assist in the operation of its approved PCB storage areas or the PCB treatment system when those actions are related to performance of the approved PCB storage areas or PCB treatment system, including operating or maintaining the equipment.

6. Safety-Kleen shall assume full responsibility for compliance with this approval and all federal, state and local requirements that apply to Safety-Kleen's operation of the approved PCB storage areas and the PCB treatment system, including, but not limited to, any malfunction, spill, pollutant release, incident, or other reporting requirements.

7. The EPA reserves the right for its employees or agents to inspect Safety-Kleen's PCB storage and treatment/disposal activities associated with the approved PCB storage areas and the PCB treatment system at any reasonable time.

8. Violations of any applicable federal PCB regulations or condition of this approval may be subject to enforcement action and may result in termination of this approval. Violation of any requirement of this approval is a violation of 40 CFR 761.60(e), 761.65(d), and 761.50(a) and may also be a violation of other provisions of 40 CFR part 761. A violation of the regulations is a prohibited act under Section 15 of TSCA.

_____ Date: _____

Tinka G. Hyde
Division Director
Land and Chemicals Division
United States Environmental Protection Agency
Region 5

# APPENDIX I

## BACKGROUND

Safety-Kleen Systems, Inc. (Safety-Kleen) operates a used oil re-refinery in East Chicago, Indiana, and is owned by SK Holding Company, Inc. SK Holding Company, Inc. is a wholly owned subsidiary of Safety-Kleen, Inc. Clean Harbors, Inc. acquired Safety-Kleen, Inc. on December 28, 2012.

Safety-Kleen's re-refining process consists of distillation and hydrotreatment. Hydrotreatment uses a catalyst and hydrogen to remove impurities from the oil such as sulfur, chlorine, and oxygen. Safety-Kleen's East Chicago facility receives over 100 million gallons of used oil annually and re-refines the used oil into more than 70 million gallons of base lube oil. The re-refinery process also produces asphaltine bottoms, fuel, and ethylene glycol that is recycled for use as antifreeze.

On October 2, 1998, the United States Environmental Protection Agency (EPA) issued an "Approval to Store and Dispose of PCB Contaminated Waste Oil by Re-refining Process" (PCB Approval) to Safety-Kleen in East Chicago, Indiana. This approval is based upon the capability of the hydrotreating step of Safety-Kleen's re-refining process to destroy polychlorinated biphenyls (PCBs) to a level below 2 parts per million (ppm). The 2 ppm level is EPA's designated limit of detection of PCBs in oil. A process which generates final products containing less than 2 ppm PCBs is considered to have a level of performance equivalent to that required of thermal destruction methods (incinerators and high efficiency boilers). A demonstration of the hydrotreater was conducted in December 1994 and the Agency concluded that Safety-Kleen's re-refining process, when operated in accordance with the conditions of the approval, does not present an unreasonable risk of injury to human health and the environment.

On June 13, 2009, Safety-Kleen submitted a request to EPA for a modification of their Approval conditions. Approval modifications requested include deletion of operating ranges related to distillation, an increase of the hydrotreater feed rate, a reconfiguration of the reactors, a reduction in the sampling required, and modification to the decontamination procedure. Safety-Kleen submitted a Demonstration Plan in November 2009, received approval from EPA to conduct the demonstration, and conducted the demonstration in December 2009. Safety-Kleen stated that due to migration to a new Honeywell DCS (distributed control system) and turnover of key personnel that data is limited for this demonstration run and that this demonstration run was unsuccessful due to a low feed concentration.

On February 7, 2012, EPA received a request from Safety-Kleen to conduct a demonstration run of the hydrotreater to gather additional data to support modifications to the Approval. The demonstration run was approved by EPA and Safety-Kleen conducted the demonstration in December 2012. The PCB Run Report from Safety-Kleen stated that 2012 demonstration was unsuccessful as follows:

*The run was not successful. Though the hydrotreating process destroyed all of the PCB material, and no PCBs were found in dehy fuel, LERT bottoms, asphalt, or water, the hydrotreater could not maintain feed rates over 170 gpm. Rapid pressure drop build in the R-401 reactors required multiple reactor swings during run conditions and further decrease in feed rates. Tight vac oil inventory limited front end rates to match the low HT feed rates, which lengthened the duration of PCB operations for the dehydration and distillation units.*

On September 30, 2015, EPA received another TSCA Demonstration Plan from Safety-Kleen. For this demonstration run, Safety-Kleen proposed feeding the light end fuel (VFS fuel stream) from the distillation process at a slower rate concurrently (slip-streaming) with the other PCB oil from the distillation step which would be fed at the desired modified feed rate of approximately 175 gallons per minute (gpm). EPA approved the demonstration run which was conducted in two batches in January 2016 and March 2016. EPA and the Indiana Department of Environmental Management (IDEM) were present during the demonstration and EPA collected split samples with Safety-Kleen. On July 22, 2016, Safety-Kleen submitted an initial Demonstration Run Report to EPA and IDEM. On May 1 and 19, 2017, Safety-Kleen submitted responses to comments on the Demonstration Run Report to EPA and IDEM. The demonstration run results showed that Safety-Kleen was able to treat PCB oil to less than 2 ppm PCBs using their hydrotreater at a feed rate of 175 gpm. The VHS overhead fuel caused pressure drops in the system even when being fed at a slower rate through the hydrotreater. The 2018 approval will not include feeding the VFS fuel into the hydrotreater.

EPA requested additional information from Safety-Kleen which they submitted in December 2015 and May 2017 in support of their modified Approval to treat and store PCBs. The 2018 modified Approval is based on the observations and analytical results from the 2016 demonstration run, the response to comments on the Demonstration Run Report received in May 2017, and the additional information and documents received from Safety-Kleen in December 2015 and May 2017.

APPENDIX II

PROCESS DESCRIPTION

**Safety-Kleen's Used Oil Re-Refining Process including Catalytic Hydrogenation**

The Safety-Kleen re-refining process includes distillation and catalytic hydrogenation. The catalytic hydrogenation system destroys polychlorinated biphenyls (PCBs). Below is a description of the Safety-Kleen re-refining process including catalytic hydrogenation. Process flow diagrams are included following the process description.

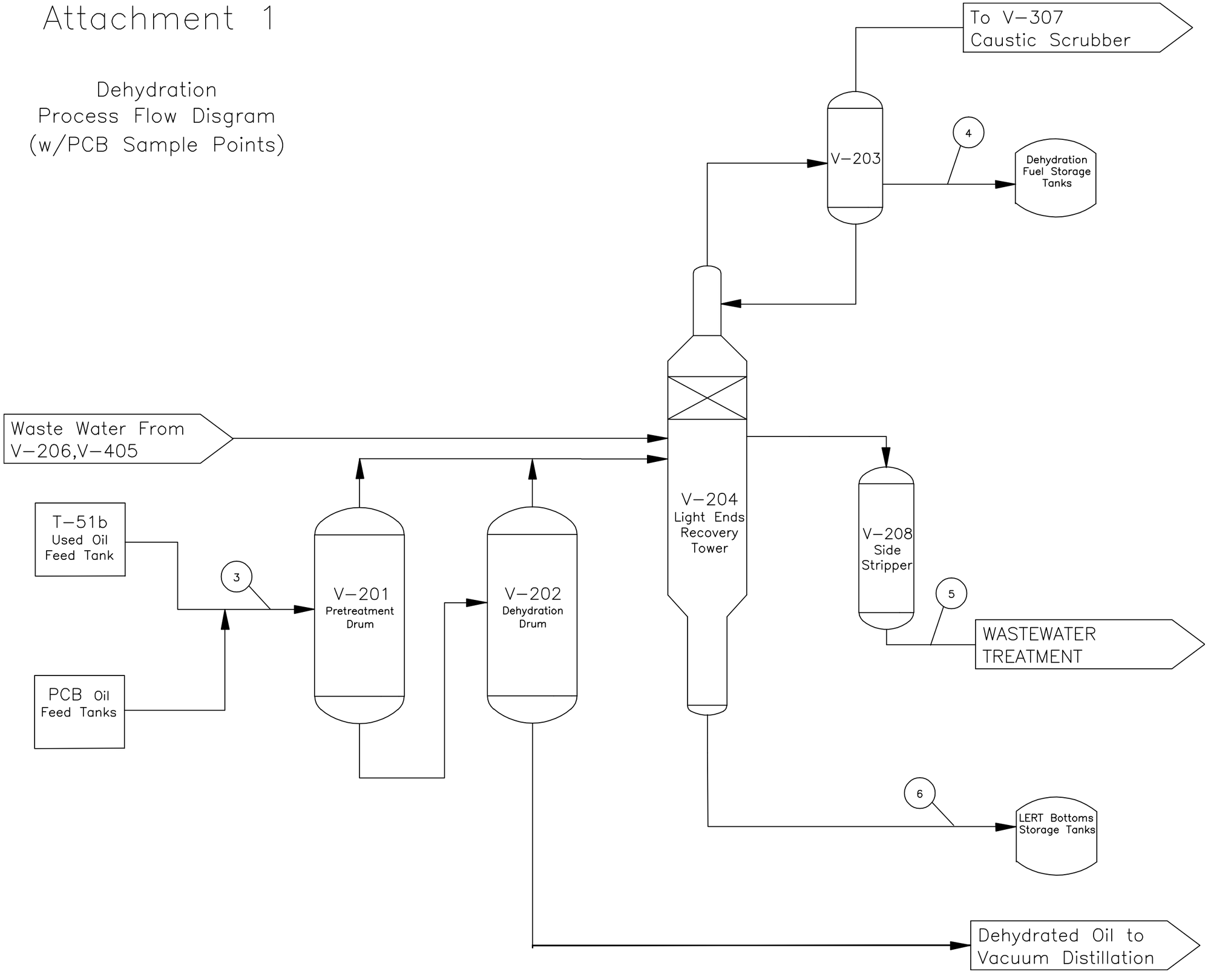
Safety-Kleen's re-refining system involves two basic processes: a distillation process to remove physical impurities, and a hydrotreating process to remove chemical impurities. The distillation process involves dehydration and vacuum distillation. The first distillation step is dehydration which includes a light ends recovery tower (LERT). This step removes the water, ethylene glycol, and any light hydrocarbons (e.g., gasoline and solvents) from the waste oil. The water removed is treated in Safety-Kleen's wastewater treatment system.

The dewatered oil is then processed through vacuum distillation. The oil is processed through vacuum towers, thin film evaporators, and condensers. Vapors from the vacuum fuel stripper (VFS) go through a condenser to produce a fuel by-product. The vacuum distillation produces an asphaltine product, kerosene, the VFS fuel, and different grades of lubricating oil. The lubricating oil is the main product that Safety-Kleen produces from this process. When processing PCB oils, PCBs are carried over into the lubricating oils and VFS fuel during distillation.

The lubricating oils are then chemically treated in the hydrotreater to purify the oil. Hydrotreatment is a common process in petroleum refining and re-refining industries. This step, also called catalytic dechlorination or catalytic hydrogenation, uses hydrogen gas in a high temperature, high pressure catalyzed reaction to remove sulfur, chlorine, oxygen and other chemical impurities from the oil. The catalytic reaction with hydrogen destroys the PCBs by breaking the carbon-chlorine bond in the molecule.

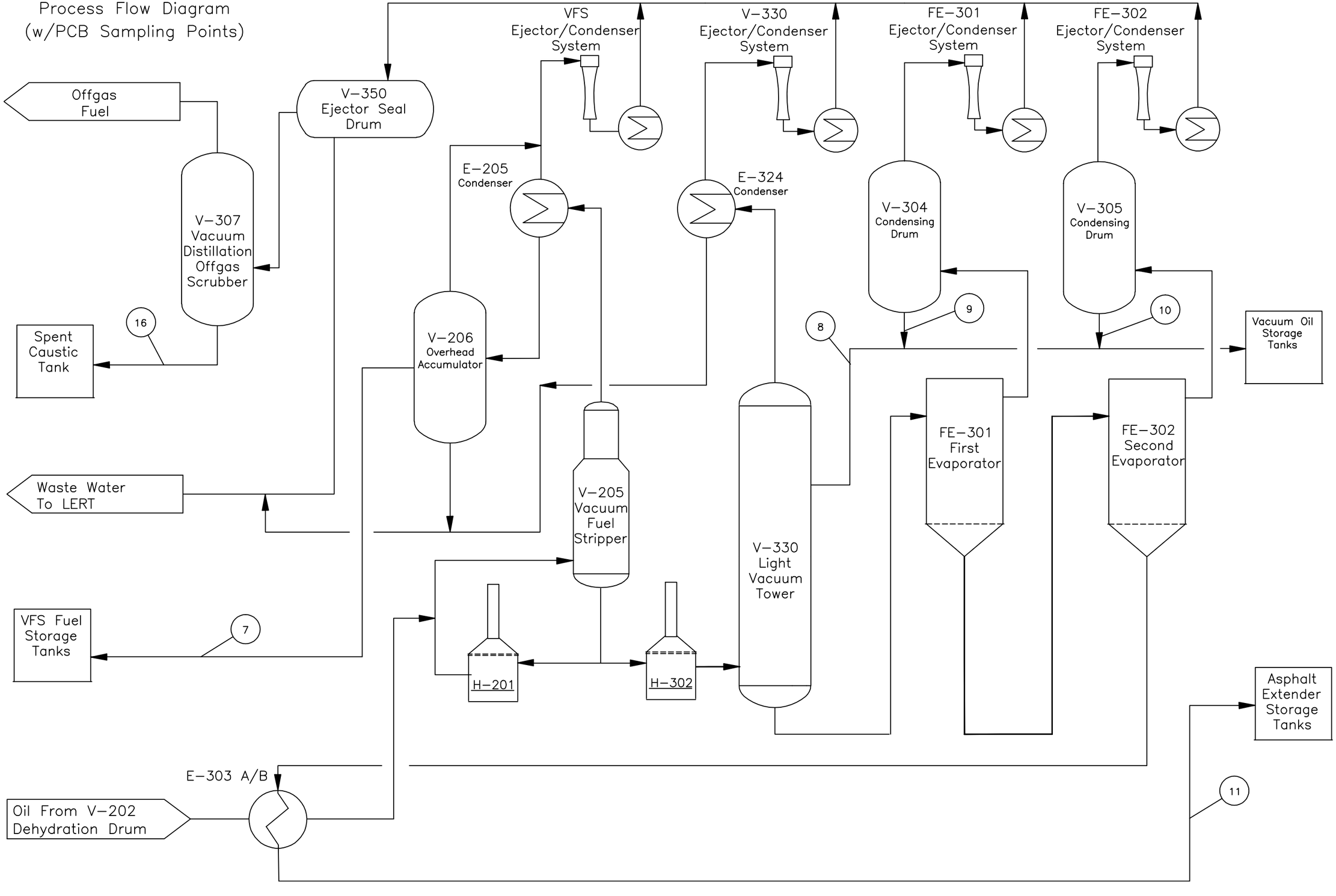
# Attachment 1

Dehydration
Process Flow Disgram
(w/PCB Sample Points)



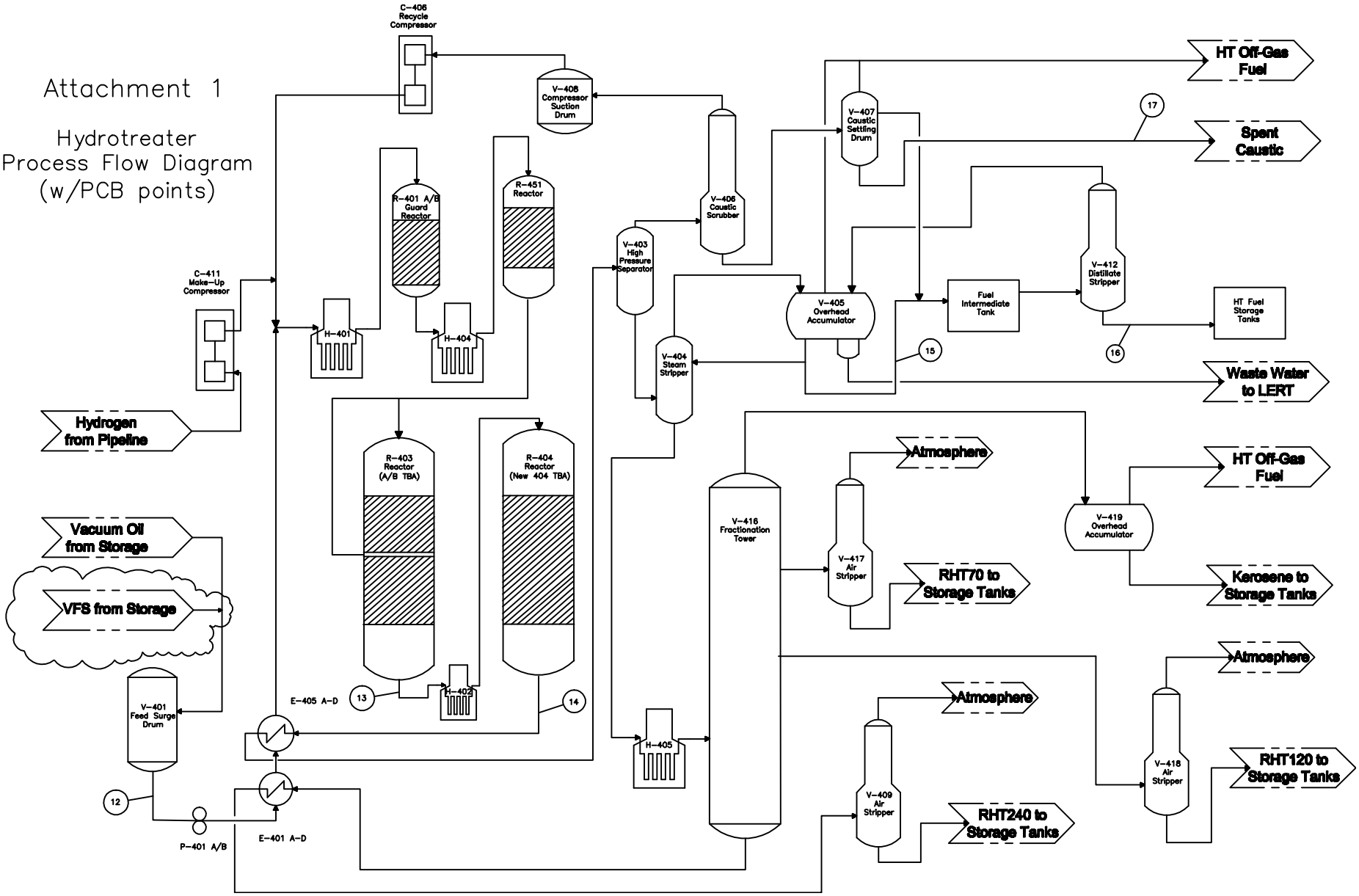
Attachment 1

# Vacuum Distillation Process Flow Diagram (w/PCB Sampling Points)



Attachment 1

Hydrotreater
Process Flow Diagram
(w/PCB points)



APPENDIX III

SUMMARY OF DEMONSTRATION TEST RESULTS

PCB Demonstration Information, January and March 2016

OPERATING CONDITIONS

Total volume of feed oil treated 784,160 gallons

| Parameters | RUN 1 | RUN 2 |
|---|---|---|
| Feed Oil PCB Conc, ppm (Safety-Kleen) | 19.30 | 17.66 |
| Treated Oil PCB Concentration, ppm | < 2 | < 2 |

| | 1st Run | | | 2nd Run | | |
|---|---|---|---|---|---|---|
| | Min | Max | Median | Min | Max | Median |
| Hydrotreater System Pressure (PSIG) | 304.9195 | 840.87589 | 809.27457 | 19.71858 | 1022.7632 | 809.47221 |
| Feedrate to Hydrotreater (GPM) | 0 | 175.20693 | 133.08472 | 0 | 176.6052 | 164.96199 |
| R451A Temperature (F) | 39.14186 | 622.6608 | 612.14106 | Ran R451B Reactor | | |
| R451B Outlet Temperature (F) | Ran R451B Reactor | | | 55.86558 | 620.36638 | 603.95485 |
| R403 Temperature (F) | Ran R404 Reactor | | | 237.6646 | 617.43118 | 609.99154 |
| R405 Temperature (F) | 304.0294 | 647.8214 | 619.99465 | 271.2155 | 629.42234 | 621.19561 |
| R404 top bed temperature (F) | 244.2527 | 619.92946 | 607.24561 | Ran R403 Reactor | | |

The level of performance required for non-thermal destruction is measured differently than for thermal methods. It is the Agency's policy that non-thermal methods operating under 761.60(e) that destroy PCBs to < 2 ppm meet an equivalent level of performance to an incinerator approved under §761.70 or a high efficiency boiler operating in compliance with §761.71. The Agency has determined that if this level of performance is achieved, the operation of this alternative thermal technology will not present an unreasonable risk of injury to health or the environment with respect to PCB emissions.

APPENDIX IV

FINDINGS

1. The facility, located at 601 Riley Road, East Chicago, Indiana, is owned by SK Holding Company, Inc. which is a wholly owned subsidiary of Safety-Kleen, Inc. Safety-Kleen, Inc. is a wholly owned subsidiary of Clean Harbors, Inc. whose corporate headquarters are located at 42 Longwater Drive, Norwell, Maryland.

2. Safety-Kleen's re-refining system involves two basic processes: a distillation process to remove physical impurities, and a hydrotreating process to remove chemical impurities.

3. The distillation parameters are not part of this Approval because 40 CFR 761.79(b) allows distillation without an approval for decontamination of organic liquids to a standard of less than 2 parts per million PCBs.

4. Safety-Kleen conducted a demonstration run in two batches in January and March 2016, processing approximately 860,000 gallons of PCB contaminated waste oil. Extensive laboratory testing and sampling procedures were incorporated into the demonstration test. Both EPA and the Indiana Department of Environmental Management (IDEM) were present during the demonstration runs.

5. On July 22, 2016, Safety-Kleen submitted the initial demonstration run report. On February 23, 2017, EPA submitted comments to Safety-Kleen on the demonstration run report and requested additional information. On May 1 and 19, 2017, Safety-Kleen submitted a revised demonstration run report and additional information requested by EPA. Pertinent test results demonstrate that the hydrotreating step of Safety-Kleen's re-refining process is capable of destroying PCBs. No PCBs were detected per resolvable gas chromatographic peak in the finished products. The PCBs are destroyed in the absence of oxygen and, therefore, the process does not result in the formation of products associated with incomplete combustion, such as dioxins and furans. This was confirmed by the analytical result of a sample taken during the demonstration. Dioxins and furans were not detected in the finished product.

6. Analysis of the split samples collected by EPA during the demonstration test confirms that Safety-Kleen's hydrotreating step of the re-refining process yields finished products with non-detectable PCBs.

7. Safety-Kleen's catalytic dechlorination process takes place in a closed system and has no significant emissions. The catalytic dechlorination process not only destroys PCBs, but generates useful lubricant products.

8. In the 2012 demonstration of Safety-Kleen’s hydrotreater, the vacuum fuel stripper (VFS) fuel caused a build-up in off-gas pressure and pressure drop in the R-401 hydrotrater reactors. In the 2016 demonstration run, the VFS fuel was slip-streamed into the hydrotreater at much lower flow rates of 0.5 to 3 gallons per minute (gpm) in an effort to curtail the build-up of off-gas pressure. The lower VFS fuel flow rate of 0.5 to 3 gpm still

caused a build-up of off-gas pressure and resulted in flaring the gas. VFS fuel is not to be fed into Safety-Kleen's hydrotreater under this approval. Safety-Kleen's hydrotreater was never designed to handle the light end fuels.

9. Safety-Kleen's re-refining system is equipped with safety features which are designed to prevent releases or spills into the environment. The system is designed to enable a shutdown sequence which will cut off power to the oil feed pumps for the distillation system and the hydrotreater during emergency situation. One of these features is an alarm system. All operational staff are trained to respond to early warning alarms in order to avoid potential emergencies. Personnel involved in the general operation and those conducting sampling, use specific safety procedures and use proper protective clothing to minimize worker exposure.

10. Safety-Kleen has provided the EPA with a description of its training program for process operators and technicians. This program is intended to help ensure that the re-refining system is in compliance with applicable safety and health standards. The training program includes descriptions of:

    a. operational procedures for using, inspecting, repairing, and replacing facility equipment, including the monitoring and control system;
    b. recordkeeping and sampling analysis;
    c. key parameters for waste feed cut-off systems;
    d. communications and alarm systems;
    e. response to fires and explosions;
    f. shutdown of operations; and
    g. spill prevention, cleanup and emergency response.

11. Due to the design aspects, operating parameters, and safety measures, EPA finds that the demonstrated performance of Safety-Kleen' s hydrotreater treatment process is equivalent to the performance of a TSCA PCB incinerator and that the operation of the hydrotreating process and storage of PCB contaminated oil does not pose an unreasonable risk of injury to health or the environment.

12. Safety-Kleen has developed and filed with EPA a closure plan and cost estimate for the PCB storage and handling areas and the re-refining system. This plan includes procedures and costs for the decontamination and/or disposal of PCB contaminated equipment, structures and process materials to assure that no PCBs are present after closure.

13. Safety-Kleen has filed with EPA, the necessary financial assurance for closure. The closure plan, closure cost estimate and the provisions for financial assurance for closure are in accordance with 40 CFR §761.65(e), (f), and (g), respectively, and account for the proper closure of the PCB storage and handling areas and the re-refining system, and for the disposal of any stored PCB waste.

14. Safety-Kleen's re-refining process results in the production of lubricating oils that meet the Society of Automotive Engineers (SAE) and American Petroleum Institute (API) specifications. By this process, the PCB contaminated waste oil collected is treated and reused as a lubricant, a fuel or an asphalt extender. The recycle/reuse of

the PCB contaminated used oil after treatment through Safety-Kleen's re-refining system is an effective technique that benefits the society and the environment through the minimization of PCB waste materials requiring ultimate disposal and through the beneficial reuse of a valuable resource, oil.