



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF
LAND AND EMERGENCY
MANAGEMENT

September 22, 2022

Mr. Joe Briers
President
Southwest Pipe Services
P.O. Box 2187
Alvin, Texas 77512

Dear Mr. Briers:

The Office of Resource Conservation and Recovery (ORCR) of the U.S. Environmental Protection Agency (EPA) grants renewed Approval to Southwest Pipe Services (SPS) to use the decontamination procedures prescribed in the federal regulations at 40 CFR 761.79(c)(3), as limited in this Approval, for an unconventional polychlorinated biphenyl (PCB) contamination source in natural gas pipelines subject to the conditions of the enclosed Approval. This Approval is issued pursuant to Section 6(e)(1) of the Toxic Substances Control Act (TSCA) and § 761.79(h) of the Federal PCB Regulations. This Approval is applicable on a nationwide basis, because SPS intends to use these alternative decontamination procedures in more than one EPA Region. This Approval is effective upon EPA's signature and, except as specified otherwise in Condition 8, expires five (5) years after the date of signature.

According to the renewal application dated May 5, 2022, SPS requests renewed approval to continue using the self-implementing procedures to decontaminate non-porous surfaces in contact with free-flowing mineral oil dielectric fluid (MODEF at levels $\leq 10,000$ ppm, as described in § 761.79(c)(3). There are no self-implementing decontamination procedures explicitly applicable to non-porous surfaces in contact with PCB-contaminated natural gas condensate. However, the preamble to the 1998 PCB Disposal Amendments, where the self-implementing procedures were first added to the regulations, states:

EPA tested several solvents for use in accordance with performance-based decontamination under § 761.79(c)(3) and (c)(4). EPA did not intend its testing to be limiting, but did not test all potential solvents under all potential conditions. EPA only used MODEF as a surface spiking solution for convenience and because it was expected to be one of the most common sources of PCB contamination on surfaces. Testing results indicated that other solvents and other conditions could be acceptable for decontaminating surfaces that are contaminated with PCBs.^a

From SPS's application,

"Pipeline condensate is an organic liquid composed of lighter organics that condense out of natural gas when the gas pressure or temperature is

^a Disposal of Polychlorinated Biphenyls (PCBs) 63 Fed. Reg. 124, p. 35418 (June 29, 1998).

reduced, and/or spent compressor lubricating oil that can sometimes enter the pipeline through leaking compressor seals. The chemical composition of pipeline condensate, while somewhat variable, is often compared with kerosene and/or motor oil. Since kerosene is also an approved PODF [performance-based organic decontamination fluid] and can dissolve the same/similar materials, PODFs are expected to be at least as effective at dissolving pipeline condensate as MODEF.”

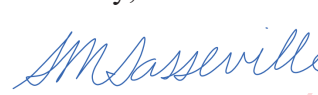
SPS provided published research that compared the use of several organic decontamination fluids on MODEF and pipeline condensate that is characteristically similar to motor oil and/or kerosene.

EPA previously approved Southwest Pipe Services for use of decontamination procedures in an Approval issued on April 6, 2017, which expired on April 6, 2022. SPS submitted its application for renewal to EPA on May 5, 2022. EPA is granting this renewed Approval based upon the Agency’s finding that SPS’s decontamination of natural gas pipeline in contact with PCB-contaminated pipeline condensate, if the condensate is characteristically similar to kerosene and/or motor oil, according to the self-implementing procedures in § 761.79(c)(3), is acceptable. This is because, under the circumstances described in this Approval and based on published research provided in the application, the procedures specified under § 761.79(c)(3) (decontamination of non-porous surfaces in contact with PCB-contaminated MODEF) are equally effective at dissolving pipeline condensate that is characteristically similar to motor oil and/or kerosene as they are at dissolving MODEF. The Agency finds that the use of § 761.79(c)(3) for decontamination of non-porous surfaces in contact with pipeline condensate that is characteristically similar to motor oil and/or kerosene presents no unreasonable risk of injury to health or the environment. SPS is responsible for determining prior to using this Approval that the pipeline condensate is both less than 10,000 ppm PCBs and characteristically similar to motor oil and/or kerosene.

SPS must comply with all applicable conditions of the Approval and all other applicable provisions in 40 CFR part 761, including § 761.79. A violation of any condition of this Approval or any applicable federal regulations may subject SPS to enforcement action and may be grounds for modification, revocation, or suspension of this Approval. Modification, revocation, or suspension of this Approval may also result from future EPA rulemaking(s) with respect to PCBs, or from new information gathered by SPS and/or EPA.

Please contact Nadja Solis Marcano of my staff by email at solismarcano.nadja@epa.gov, or by phone at (202) 566-0356 if you have any questions pertaining to this Approval.

Sincerely,



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Sonya M. Sasseville, Director
Program Implementation and Information Division

Enclosure

cc: EPA Regional PCB Coordinators

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF)	APPROVAL TO USE
)	
SOUTHWEST PIPE SERVICES)	ALTERNATIVE DECONTAMINATION
)	
P.O. BOX 2187)	METHOD FOR POLYCHLORINATED
)	
ALVIN, TEXAS 77512)	BIPHENYLS (PCBs)

AUTHORITY

This Approval is issued pursuant to Section 6(e)(1) of the Toxic Substances Control Act (TSCA) and 40 CFR § 761.79(h) of the federal Polychlorinated Biphenyls (PCB) regulations.

Failure to comply with the Approval conditions specified herein shall constitute a violation of §§ 761.79(h) and 761.50(a) and may also be a violation of other provisions of the PCB regulations in part 761. A violation of the PCB regulations is a prohibited act under section 15 of TSCA.

SUMMARY AND FINDINGS

Background information and supporting research related to this Approval are included in Appendices I and II.

Southwest Pipe Services Inc. (SPS) of Alvin, Texas, is a service company that offers pipe cleaning, salvage and other related services to natural gas transmission and distribution companies. EPA has carefully assessed SPS's proposed use of the self-implementing decontamination procedures in § 761.79(c)(3) and supporting research for the decontamination of natural gas pipelines in contact with PCB-contaminated pipeline condensate, where the condensate is at concentrations less than or equal to 10,000 ppm PCBs and is characteristically similar to kerosene and/or motor oil. EPA finds that SPS's proposed use of alternative decontamination procedures, in accordance with the conditions of this Approval, based on the validation study provided, would fulfill the requirements of § 761.79(h)(2).^b Thus, pipelines decontaminated pursuant to both § 761.79(c)(3) and the conditions of this Approval would meet the standard for unrestricted use without confirmatory surface measurements. Further, EPA

^b Roy F. Weston, Inc. "Understanding, Modeling and Controlling the Movement of PCB in Natural Gas Systems." Prepared for the Gas Research Institute under Contract 5093-253-2581. June 2000. See Appendix II.

finds that SPS's proposed use of these alternative decontamination procedures, when conducted in accordance with this Approval, presents no unreasonable risk of injury to health or the environment.

This § 761.79(h) Approval is solely for the purpose of alternative decontamination of SPS natural gas pipelines. SPS is responsible for determining that the pipeline condensate is both less than 10,000 ppm PCBs and characteristically similar to motor oil and/or kerosene prior to using this Approval. SPS shall follow all applicable requirements in § 761.79 and part 761.

EFFECTIVE DATE

This Approval is effective upon signature by the Director of the Program Implementation and Information Division (PIID) and shall expire five (5) years after the date of signature, unless otherwise specified in Condition 8.

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- Definitions and Acronyms
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DEFINITIONS AND ACRONYMS

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

“Application” means all data and materials upon which EPA based its decision to approve SPS’s alternative decontamination request (e.g., information submitted to EPA by SPS to define, represent, or describe proposed decontamination procedures). This includes the request for Approval renewal required by § 761.79(h) and such data and materials submitted in relation to the Approval application, as well as SPS’s “PCB Approval Renewal Request” application, dated May 5, 2022, and the “Understanding, Modeling and Controlling the Movement of PCB in Natural Gas Systems” study prepared by SPS for the Gas Research Institute dated June 2000.

“Approval” means the content of this document, the conditions within, and the application.

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

“CFR” means the Code of Federal Regulations.

“Day(s)” means a calendar day(s), unless otherwise specified.

“Decontamination” means any removal of PCBs from pipelines.

“Director of PIID” means the Director of the Program Implementation and Information Division (PIID), Office of Resource Conservation and Recovery (ORCR), Office of Land and Emergency Management (OLEM), U.S. EPA, Washington, DC. Mailing address: USEPA Headquarters, 1200 Pennsylvania Avenue, N.W., OLEM/ORCR/PIID, Mail Code: 5303T, Washington, DC 20460. Phone number: (202) 566-1077. Email: ORCRPCBs@epa.gov.

“HQ” means EPA Headquarters.

“MODEF” means mineral oil dielectric fluid.

“Operation” means the decontamination process for natural gas pipelines under this Approval.

“ORCR” means the Office of Resource Conservation and Recovery, within EPA Headquarters.

“PCB” means polychlorinated biphenyls as defined in § 761.3.

“PCB Regulations” are the regulations at 40 CFR part 761.

“PIID” means the Program Implementation and Information Division of the Office of Resource Conservation and Recovery, within EPA Headquarters.

“PODF” means performance-based organic decontamination fluid.

“Pipeline condensate” means the organic liquid composed of lighter organics that condense out of natural gas and/or spent compressor lubricating oil, the chemical composition of which is characteristically similar to kerosene and/or motor oil, for the purposes of this Approval.

“Regional PCB Coordinator” means the contact listed on the following website for the EPA Region in which SPS will be operating: <https://www.epa.gov/pcbs/program-contacts>.

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

CONDITIONS OF APPROVAL

(1) Scope of Approval

In accordance with § 761.79(h)(2), this Approval authorizes SPS to use the decontamination procedures described in this Approval without requiring confirmatory sampling, subject to the conditions below. This Approval may reference additional requirements of part 761 but SPS 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 Approval, the conditions of this Approval shall govern.

(2) Decontamination Procedure

This Approval allows SPS to use the self-implementing decontamination procedures in § 761.79(c)(3) for the decontamination of natural gas pipelines in contact with PCB-contaminated pipeline condensate where the condensate is at concentrations $\leq 10,000$ ppm PCBs and is characteristically similar to kerosene and/or motor oil, as modified below (modifications noted in italics):

Any representative of SPS decontaminating a non-porous surface in contact with free-flowing pipeline condensate at levels $\leq 10,000$ ppm PCBs, where the pipeline condensate is characteristically similar to kerosene and/or motor oil, must do so as follows:

- (i) Drain the free-flowing *pipeline condensate* and allow the residual surfaces to drain for an additional 15 hours.
- (ii) Dispose of drained *pipeline condensate* according to § 761.79(g).
- (iii) Soak the surfaces to be decontaminated in a sufficient amount of clean (containing < 2 ppm PCBs) performance-based organic decontamination fluid (PODF) such that there is a minimum of 800 ml of PODF for each 100 cm² of contaminated or potentially contaminated surface for at least 15 hours at ≥ 20 °C.
- (iv) Approved PODFs for use under this Approval include:
 - (A) Kerosene.
 - (B) Terpene hydrocarbons.
- (v) Drain the PODF from the surfaces.
- (vi) Dispose of the drained PODF in accordance with § 761.79(g).

SPS is responsible for determining and documenting that the pipeline condensate is both less than 10,000 ppm PCBs and characteristically similar to motor oil and/or kerosene prior to using this Approval. The use of diesel fuel or terpene alcohols as a PODF is not covered under this Approval because evidence specific to the performance of diesel fuel or terpene alcohols as a solvent for pipeline condensate was not provided with the application.

(3) Monitoring, Recordkeeping and Reporting Requirements

During the decontamination conducted under this Approval, SPS shall maintain, electronically and/or in a hard copy at their corporate office, a copy of this Approval; personnel training records; the date, location, and quantity of pipeline decontaminated for each site where the Approval is used; and the field notes and/or data used to determine compliance with Condition 2 of this Approval.

Upon expiration of this Approval, or if SPS terminates business, SPS shall electronically submit all aforementioned records to the Director of PIID at least 90 days before expiration of this Approval or termination of business, whichever comes first. Unless specified otherwise, required submissions or correspondence may be submitted electronically to ORCRPCBs@epa.gov.

(4) Notifications and Reports

Notifications or reports required to be mailed to Director of PIID shall be mailed to: Director of PIID, USEPA Headquarters, 1200 Pennsylvania Avenue, N.W., OLEM/ORCR/PIID, Mail Code: 5303T, Washington, DC 20460. For electronic submission to the Director of PIID or ORCR HQ contact, SPS shall email the information to ORCRPCBs@epa.gov. Wherever practical, email is preferable to phone and mail communication, except where otherwise specified.

Phone numbers for EPA Regional PCB Coordinators can be found on the following website: <https://www.epa.gov/pcbs/program-contacts>. The ORCR HQ contact Nadja Solis Marcano can be contacted by email at SolisMarcano.Nadja@epa.gov, or by phone at (202) 566-0356.

(5) Agency Approvals/Permits

No operation may commence until SPS has obtained all required approvals/permits from federal, state and local agencies. SPS is responsible for obtaining such approvals/permits.

(6) Personnel Training

SPS shall ensure that personnel directly involved with the decontamination of pipelines covered by this Approval are familiar with the requirements of this Approval. The training materials shall be kept on site as either an electronic document or physical paper copy, and the materials shall be accessible to all personnel engaged in sampling under this Approval during working hours. The training materials must include standard operating procedures and a copy of this Approval. SPS shall annually train personnel and document training on the following:

- a. The nature of PCB contamination likely to be found in natural gas pipelines and SPS's decontamination procedure as stated in this Approval;
- b. The recordkeeping and reporting requirements identified in Condition 3, and the location of records and retention times;
- c. The handling and/or PCB waste disposal requirements in the PCB regulations for process residuals and other materials generated during the decontamination process as described in § 761.79(g);
- d. The safety, operating, and maintenance procedures in the PCB regulations, with an emphasis on the safe handling of PCB remediation wastes and natural gas condensate; and
- e. SPS's spill prevention and cleanup plan, including the requirements set forth in the PCB Spill Cleanup Policy in 40 CFR part 761, subpart G.

(7) Ownership Transfer

- a. If SPS intends to transfer ownership to a new entity and the transferee intends to operate under the same or similar terms as this Approval, SPS shall notify the Director of PIID, in writing, at least 90 days before transferring ownership. SPS shall also submit to the Director of PIID, at least 90 days before such transfer, a notarized affidavit signed by the transferee that states the transferee is seeking an Approval to use the self-implementing decontamination procedures in § 761.79(c)(3) for the decontamination of natural gas pipelines in contact with PCB-contaminated pipeline condensate where the condensate is at concentrations less than or equal to 10,000 ppm PCBs and is characteristically similar to kerosene and/or motor oil. Failure of SPS to provide 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, EPA may:
 - 1) issue an amended Approval substituting the transferee's company name for SPS's name;
 - 2) require the transferee to apply for a new Approval by either submitting a complete application 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 company 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. The transferee shall not operate under this Approval unless EPA has amended this Approval to allow for such operation or has issued a new Approval to the transferee. The amended or new Approval may include additional and/or revised conditions that may be deemed necessary to apply to the transferee.

(8) Approval Expiration Date

This Approval shall become effective upon signature of the Director of PIID and expire five (5) years from the date of signature, except as otherwise specified in Condition 9.

(9) Approval Continuation and Renewal

If SPS intends to continue to operate beyond the expiration date of this Approval, SPS shall submit a complete Approval renewal application at least 180 days prior to the expiration date of this Approval. If SPS submits this information to EPA at least 180 days prior to the expiration date of this Approval, this Approval continues in force (i.e., does not expire) until EPA either issues an Approval renewal, a conditional Approval renewal, or an Approval denial. If SPS does not submit a complete Approval renewal request to EPA at least 180 days prior to the expiration date of this Approval, this Approval will expire as specified in Condition 8.

A complete Approval renewal application shall be, at a minimum, information that was submitted in previous requests for Approval applications with appropriate modifications or updates based on proposed revisions to the original Approval or prior Approval renewals, which may include operation changes and revised procedures. SPS shall not operate under revised operating conditions until EPA issues SPS an Approval renewal allowing such revised operating conditions.

(10) PCB Spills

In the event SPS believes, or has reason to believe, that a spill (as defined in EPA's PCB Spill Cleanup Policy in §761.123) of PCBs has, or may have, occurred from any activities or devices related to SPS's operations under this Approval:

- a. SPS shall notify the Regional PCB Coordinator and the ORCR HQ contact identified in Condition 4 by phone or email immediately after initial response actions have been taken to ensure the protection of human health and the environment. SPS shall control and clean up any spills of PCBs or other PCB-containing fluids to minimize the consequences of any release that may occur.
- b. SPS shall submit a written report to the appropriate Regional PCB Coordinator and the Director of PIID no later than 15 business days after the spill occurred, that describes the: 1) spill; 2) known or suspected cause(s) of the spill; 3) operations that were being conducted prior to, and during the spill; 4) cleanup actions conducted; and 5) changes in operations that SPS will implement to prevent such spills from occurring in the future.
- c. SPS shall also report PCB spills in accordance with applicable federal, state, and local requirements.


DECISION TO APPROVE SPS'S REQUEST TO USE ALTERNATIVE DECONTAMINATION PROCEDURES

1. Approval under § 761.79(h) to use the decontamination procedures defined in the federal regulations under § 761.79(c)(3), as limited in this Approval, for an unconventional contamination source (pipeline condensate) in natural gas pipelines is hereby granted to Southwest Pipe Services (SPS) of Alvin, Texas, subject to the conditions of this Approval, and consistent with the information included in the application submitted to EPA by SPS. Where there are discrepancies between this document and the application, this document must be followed.
2. EPA finds that SPS's proposal to decontaminate natural gas pipelines in contact with PCB-contaminated pipeline condensate where the condensate is at concentrations less than or equal to 10,000 ppm PCBs and is characteristically similar to kerosene and/or motor oil according to the self-implementing procedures in § 761.79(c)(3) is acceptable because, under the circumstances described in this Approval, the procedures specified under § 761.79(c)(3) (decontamination of non-porous surfaces in contact with PCB-contaminated MODEF) are equally effective at dissolving pipeline condensate that is characteristically similar to motor oil and/or kerosene as they are at dissolving MODEF. Although § 761.79(c)(3) was designed for decontamination of surfaces in contact with MODEF that is contaminated with PCBs, the agency finds that the use of § 761.79(c)(3) for decontamination of surfaces in contact with pipeline condensate that is characteristically similar to motor oil and/or kerosene presents no unreasonable risk of injury to health or the environment.
3. EPA reserves the right to impose additional conditions or revoke this Approval when it has reason to believe that the continued operation of SPS's alternative decontamination process does not adequately meet the applicable decontamination levels, may present an unreasonable risk of injury to health or the environment, new information requires changes to this Approval, and/or the EPA issues new regulations or standards that impact conditions of this Approval.
4. EPA will make reasonable efforts, taking into account the nature of the risk, to provide reasonable advance notice to SPS and to provide the opportunity for SPS to comment on any modifications or termination of the Approval. EPA may require SPS to immediately suspend operations while EPA is deciding whether to impose Approval modifications or to terminate this Approval.
5. Any departure from the conditions of this Approval or the terms expressed in the application must receive prior written authorization from the Director of PIID.
6. SPS shall be responsible for the actions of its employees and contractors when those actions are within the scope of implementing the alternative decontamination procedures described in this Approval. SPS shall assume full responsibility for compliance with this Approval and all applicable federal, state, and local requirements including, but not limited to, any spill, pollutant release, incident, or other reporting requirements.
7. EPA reserves the right for its employees or agents to inspect SPS's decontamination operations covered by this Approval at any location and at any reasonable time.
8. Violations of any applicable regulations or conditions 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 §§ 761.79 and 761.50(a) and may also be a violation of other provisions of part 761. A violation of the PCB regulations is a prohibited act under Section 15 of TSCA.

9/22/2022

Date

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Sonya M. Sasseville, Director
Program Implementation and Information Division

APPENDIX I

COMPANY BACKGROUND

Southwest Pipe Services Inc. (SPS) of Alvin, Texas, is a service company that offers pipe cleaning, salvage, and other related services to natural gas transmission and distribution companies. Due to integrity issues, many SPS customers are removing old segments of natural gas pipe, the internal surface of which may have residual PCB contamination from contact with residual pipeline condensate. In order for SPS to decontaminate pipelines that were contaminated with PCBs from pipeline condensate, SPS must do confirmation sampling in accordance with 40 CFR § 761.79(b)(3)(i)(A). SPS does not wish to use confirmation sampling procedures because the required sampling site selection methodology is difficult to use on natural gas pipelines. Instead of using confirmation sampling under § 761.79(b)(3)(i)(A), SPS requests to follow the self-implementing decontamination procedures in § 761.79(c)(3), which do not require confirmation sampling. Because the natural gas pipelines are contaminated with pipeline condensate rather than mineral oil dielectric fluid, as listed in the self-implementing procedures, SPS must seek an Approval. SPS requests an Approval that would allow use of existing decontamination procedures that are otherwise only allowed to be used for surfaces contaminated by a specific type of PCB contaminated fluid (i.e., MODEF); SPS's decontamination process, as described in their application, would follow the procedures listed in § 761.79(c)(3).

EPA previously approved Southwest Pipe Services for the use of decontamination procedures in an Approval issued on April 6, 2017, which expired on April 6, 2022. SPS submitted its application for renewal dated May 5, 2022, requesting a self-implementing decontamination Approval pursuant to § 761.79(h)(2). SPS requested to use the self-implementing decontamination procedures in § 761.79(c)(3) for natural gas pipelines contaminated with pipeline condensate which is characteristically similar to kerosene and/or motor oil rather than MODEF. The regulations at § 761.79(h) allow EPA to approve alternative decontamination procedures, provided that the alternative procedures possess no unreasonable risk of injury to health or the environment. The self-implementing procedures at § 761.79(c)(3) are only approved for non-porous surfaces in contact with free-flowing MODEF at levels $\leq 10,000$ ppm PCBs. However, the preamble to the 1998 PCB Disposal Amendments, where the self-implementing procedures were first added to the regulations, states:

EPA tested several solvents for use in accordance with performance-based decontamination under § 761.79(c)(3) and (c)(4). EPA did not intend its testing to be limiting, but did not test all potential solvents under all potential conditions. EPA only used MODEF as a surface spiking solution for convenience and because it was expected to be one of the most common sources of PCB contamination on surfaces. Testing results indicated that other solvents and other conditions could be acceptable for decontaminating surfaces that are contaminated with PCBs.

Based on SPS's application, the pipeline condensate is expected to behave similarly to kerosene and/or motor oil, depending on its composition. Kerosene is an approved PODF, and chemically will dissolve

kerosene. From the research conducted by the Gas Research Institute, the PODFs studied (kerosene and terpenes) dissolved motor oil at similar rates and to similar extents as MODEF^c.

Based on the findings from the Gas Research Institute report, EPA finds that SPS's proposal to decontaminate natural gas pipelines in contact with PCB-contaminated pipeline condensate which is characteristically similar to kerosene and/or motor oil according to the self-implementing procedures in § 761.79(c)(3) is acceptable because, under the circumstances described in this Approval, the procedures specified under § 761.79(c)(3) (decontamination of non-porous surfaces in contact with PCB-contaminated MODEF) are equally effective at dissolving pipeline condensate as they are at dissolving MODEF. Although § 761.79(c)(3) was designed for decontamination of surfaces in contact with MODEF, the agency finds that the use of § 761.79(c)(3) for decontamination of surfaces in contact with pipeline condensate presents no unreasonable risk of injury to health or the environment.

^c Roy F. Weston, Inc. "Understanding, Modeling and Controlling the Movement of PCB in Natural Gas Systems." Prepared for the Gas Research Institute under Contract 5093-253-2581. June 2000.

APPENDIX II

SUPPORTING INFORMATION

From SPS's application:

"Pipeline condensate is an organic liquid composed of lighter organics that condense out of natural gas when the gas pressure or temperature is reduced, and/or spent compressor lubricating oil that can sometimes enter the pipeline through leaking compressor seals. The chemical composition of pipeline condensate, while somewhat variable, is often compared with kerosene and/or motor oil. Since kerosene is also an approved PODF and can dissolve the same/similar materials, PODFs are expected to be at least as effective at dissolving pipeline condensate as MODEF."

SPS's application also highlighted the relevant conclusions from the Gas Research Institute report^d:

Conclusions from the study that support this specific proposal include the following:

- "Terpene-based solvents... have better solvency than the conventional hydrocarbon-based solvents such as hexane, octane, etc. Preliminary laboratory testing... supports the use of terpenes for PCB removal from pipelines" (p. 4-11)
- "Among those solvents [typically considered for PCB decontamination] ... terpenes have better solvency than hydrocarbons and are environmentally acceptable. ...the observed PCB solubility in the terpenes is better than the predicted solubility." (p. 4-17)
- "Ethyl acetate and terpenes are considered to be the two (2) best solvents [for desorbing PCB-containing oils and greases] for most solid surfaces." (p. 4-18)
- The calculated solubility of PCBs in terpenes exceeds 5% for PCB homologs up to heptachlorobiphenyl, i.e. Aroclors 1260 and below. (Figure 4-5)
- Terpenes have the highest solvent efficiency of any of the solvents tested for any of the solid surfaces tested. (Table 4-7)
- Terpenes are the fastest acting solvents for lubricants and greases, are faster acting on mineral oil than other PODFs like kerosene and are equally effective on mineral oil and other lubricants like motor oil and petroleum jelly (Table 4-8, emphasis added).

^d Roy F. Weston, Inc. "Understanding, Modeling and Controlling the Movement of PCB in Natural Gas Systems." Prepared for the Gas Research Institute under Contract 5093-253-2581. June 2000.

Table 4-8. Dissolution of lubricants and valve greases by various organic solvents.

Solvent	Mineral Oil	Motor Oil SAE-30	Petroleum Jelly	Hydrocarbon Based Grease (Lubriseal)	Silicone Based Grease (Corning)	Valve Grease I	Valve Grease II	Valve Grease III	Valve Grease IV
Isooctane	++	+	+	ND	PD	ND	ND	ND	ND
Kerosene	++	++	+	PD	PD	ND	ND	ND	ND
Methanol	ND	ND	ND	ND	ND	PD, C	ND	ND	ND
Acetone	ND	ND	ND	ND	ND	MD, C	PD, C	PD, C	PD, C
Ethyl Acetate	C	C	C	ND	C	MD, C	PD, C	PD, C	PD, C
MIBK	++	++	C	ND	ND	ND	PD, C	PD, C	PD, C
Toluene	+++	++	ND	ND	C	D	MD, C	MD, C	MD
Methylene Chloride	+++	+++	C	ND	PD	C	C	C	PD, C
Terpenes	+++	+++	+++	+	C	ND	MD, C	PD	MD

‡ ND: Do not desolve; PD: Partly desolved; MD: Mostly desolved; D: Dissolved; C: Form colloid
 +, ++, +++ represent the rate of desolution, where +++ is the fastest and + is the slowest.