

Regional Citizens' Advisory Council / "Citizens promoting environmentally safe operation of the Alyeska terminal and associated tankers.

 In Anchorage:
 3709 Spenard Road / Suite 100 / Anchorage, Alaska 99503 / (907) 277-7222 / FAX (907) 277-4523

 In Valdez:
 P.O. Box 3089 / 130 South Meals / Suite 202 / Valdez, Alaska 99686 / (907) 834-5000 / FAX (907) 835-5926

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Prince William Sound Aquaculture Corporation EPA Docket Center (EPA/DC) Docket ID No. EPA-HQ-OPA-2006-0090 1200 Pennsylvania Avenue NW Washington, DC 20460

RE: Prince William Sound Regional Citizens' Advisory Council Comments on 40 CFR Parts 110 and 300, National Contingency Plan Subparts A and J

Dear Administrator McCarthy,

The Prince William Sound Regional Citizens' Advisory Council (PWSRCAC or Council) is an independent non-profit corporation whose mission is to promote environmentally safe operation of the Valdez Marine Terminal and associated tankers. Our work is guided by the Oil Pollution Act of 1990 and our contract with Alyeska Pipeline Service Company. PWSRCAC's 18 member organizations are communities in the region affected by the 1989 Exxon Valdez oil spill, as well as commercial fishing, aquaculture, Native, recreation, tourism and environmental groups.

The Environmental Protection Agency (EPA) proposed rule to update Subpart J of the National Contingency Plan is comprehensive and includes substantive technical and scientific analysis. PWSRCAC has reviewed the proposed rule and we submit these comments on behalf of our member organizations.

The enclosed document first presents a series of general comments that frame our major concerns and priorities. We then provide detailed comments and recommendations on technical issues raised in the proposed rule. PWSRCAC appreciate the opportunity to provide EPA with these comments.

Sincerely,

Mark Swanson Executive Director

Jim Herbert Treasurer

Patrick Du Member-at-Large

Amanda Bauer Board President

Idreak Kork

Andrea Korbe Member-at-Large

Thane Miller

Vice President

Bób Shavelson Member-at-Large

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General Comments

Council Position on Dispersant Use in Prince William Sound

PWSRCAC has taken a leading role in researching chemical dispersant efficacy and toxicity in our region. Our chemical dispersants program has been in place since 1997, and through this program we have funded a number of research studies, literature reviews, and technical analyses. In 2006, our Council adopted the following position on dispersant use in the Prince William Sound region:

After years of observing dispersant trials, dispersant effectiveness monitoring, advising and sponsoring independent research regarding chemical dispersant use, it is the position of the Prince William Sound Regional Citizens' Advisory Council (the Council) that dispersants should not be used on Alaska North Slope crude oil spills in the waters of our region. Until such time as chemical dispersant effectiveness is demonstrated in our region and shown to minimize adverse effects on the environment, the Council does not support dispersant use as an oil spill response option. Mechanical recovery and containment of crude oil spilled at sea should remain the primary methodology employed in our region.

PWSRCAC appreciates the Historical Background provided by EPA in the Statutory Authority section of the proposed rule, because it affirms the longstanding preference for mechanical recovery as a primary oil spill response tool, with dispersants as an alternative **only** "if other control measures are judged to be inadequate or infeasible." This is an important concept that still applies today, as mechanically containing and recovering spilled oil is always preferred over other spill treatment options because mechanical recovery is the only option that removes oil from the environment.

While PWSRCAC does not support dispersant use in our region, we understand that chemical dispersants are a secondary response tool that can and have been used both in our region and in other areas of the United States. For as long as dispersants remain as part of the National Response Framework, we advocate for a strong science-based approach to dispersant use guidance and decision-making. Our comments identify several areas where EPA could enhance the proposed rule by clarifying the thresholds or procedures for incorporating scientific data into response planning and operations.

Cautious Approach to Use of Chemical Agents

PWSRCAC applauds EPA for clarifying, through this proposed rule, that the agency has the responsibility and authority under the Clean Water Act not only to establish a Schedule for oil spill treating agents, but also to identify the waters and quantities in which they may be safely used. The National Contingency Plan (NCP) clearly establishes mechanical recovery as the primary and preferred oil spill removal method, and decisions to treat an oil spill with chemicals must be made in a cautious and deliberate manner.

PWSRCAC believes that through the proposed rule, EPA is making it very clear to manufacturers, the response community, and the general public that chemical agents should only be applied to oil spills when there is clear, science-based evidence that these agents will (1) be effective in treating the oil spill such that the adverse impacts of the oil spill will be reduced, and (2) not pose the risk of enhanced toxicity from the treated oil or the agent itself. PWSRCAC strongly supports this cautious approach, and we have identified several areas in the proposed rule where EPA should add clarifying language to reinforce this critical concept.

PWSRCAC also recommends that EPA acknowledge that entities potentially affected by this proposed rule include a broad range of constituents who rely on the health of the marine ecosystem, including commercial fishing, subsistence uses, tourism, recreation, passive uses, and traditional and customary use.

Emphasis on Science-Based Decision-making

PWSRCAC strongly supports EPA's emphasis of science-based decision-making in the proposed rule. We recommend that wherever possible, the Schedule should establish quantitative limits or thresholds for chemical and biological agents. These thresholds will inform both preauthorization planning and On-Scene Coordinator (OSC) decision-making during an incident.

PWSRCAC has supported significant scientific research into dispersants and oil spill treating agents; many of our peer-reviewed studies are cited in the proposed rule. We have cited our comments to the published literature wherever possible, and many of our comments note areas where the proposed rule does not necessarily reflect the prevailing knowledge as captured in scientific publications.

While it is important to ground oil spill response policy and decision-making in science, it is equally important that EPA acknowledge areas where the foundational science contains uncertainties. In the wake of the Deepwater Horizon spill response, there has been significant effort among federal agencies and leading researchers to clarify areas where there is consensus about chemical treating agents (primarily dispersants), and areas where uncertainty prevails. In light of this fact, we encourage EPA to be as transparent as possible about areas where scientific data is sparse or consensus is lacking. In order for the public to have confidence in oil spill response decision-making, there must be clear and plain acknowledgement of scientific uncertainty.

PWSRCAC also recommends that EPA consider and acknowledge the fact that the current rulemaking, like the previous Subpart J regulation, relies upon manufacturerprovided science on both efficacy and toxicity. This creates an inherent conflict of interest, and while EPA is establishing parameters and criteria for these studies, we suggest that the agency go a step further and observe or supervise independent science to verify results of manufacturer studies.

PWSRCAC maintains a dispersants research literature synthesis and database, updated annual, which we recommend as a reference.¹

Toxicity and Sub-chronic Effects of Chemical Agents

Petroleum oil products are a highly complex set of chemicals that consist of a variety of constituent components, many of which are toxic to humans, flora and fauna. Toxic impacts may be acute or chronic, direct or indirect. Chemical or biological agents used

¹http://www.pwsrcac.org/programs/environmentalmonitoring/dispersants/dispersant-literature-reviews/

to treat oil spills may influence the toxicity of oil products and their constituents, and it is critical to compile as much information as possible about potential toxicities before treating agents are applied to a spill. Ongoing studies from the Deepwater Horizon well blowout show that dispersant use during that spill had adverse impacts to respiratory function in both humans and fish (Fu et al., 2015; UAB, 2015).

EPA has traditionally relied upon a limited set of toxicity tests on a few select species to establish toxicity data for oil spill treating agents. Two temperate species have been used as the basis for toxicity evaluations, even for areas like Alaska where these species do not exist. Toxicity testing has been limited to a narrow range of acute effects that may overlook other important mechanisms through which chemical treating agents may cause harm to wildlife and the environment. The proposed changes to Subpart J make some adjustments to the testing approach, but these are not sufficient to inform a complete understanding of toxicity, particularly for sub-chronic effects.

PWSRCAC recommends expanded requirements for toxicity testing to evaluate the full spectrum of potential adverse endocrine, immune, or developmental effects to human populations or the environment. A multi-species, system-level approach is essential to accurately predict both the protective and detrimental effects to both humans and the natural environment from the application of dispersants to accidentally released oil. We recommend that EPA consider how other programs – such as drinking water or food safety – assess potential toxicity to humans and the environment and apply the same rigor to chemical agents. The proposed new focus that addresses endocrine disruptors is an excellent first step.

Emphasis on Preauthorization

The proposed rule heavily emphasizes the preauthorization process. PWSRCAC recognizes that preauthorization planning is important and should be undertaken in a collaborative and scientifically rigorous manner. However, we are concerned that EPA is over-emphasizing preauthorization at the potential expense of case-by-case decision-making. The proposed rule correctly notes that given recent advances in connectivity, it is much easier for OSCs to consult with natural resource trustees and subject matter experts to inform all aspects of oil spill response. Since it is so much easier to convene a discussion in real time, case-by-case decision-making should be feasible for most spills, eliminating the need to prescribe decisions through pre-authorization. Wherever possible, consultation with trustees and scientific experts should be a priority – even in cases where preauthorization is in place.

The emphasis on preauthorization planning also creates the false impression that oil spill treating agents are regularly or commonly used in the U.S. With the exception of the Deepwater Horizon oil spill, non-mechanical oil spill response methods are still the exception, not the rule. Given how infrequently oil spill treating agents are used, the amount of time and energy devoted to preauthorization planning may be better allocated to establishing a strong mechanism for case-by-case decision-making or other types of oil spill preparedness and planning.

Case-by-case decision-making is important because there are still significant uncertainties about the efficacy and toxicity of oil spill treating agents. Most of the data that is used to inform decision-making is derived from laboratory experiments that are often a poor proxy for real-world performance. Preauthorization plans cannot foresee all possible circumstances during which a spill response may occur, and the effectiveness and toxicity of treating agents is influenced by a complex and nuanced array of inputs. Five years after the Deepwater Horizon spill, there are still significant gaps in knowledge about the effectiveness and toxicity of subsea dispersant use. A recent report by the U.S. Geological Society notes that there is insufficient science to support dispersant use decision-making (Holland-Bartels and Pierce, 2011). We simply do not have reliable science to foresee the short and long-term consequences of oil treating agents; therefore, the precautionary principle must be applied during all incidents, even when they occur within the bounds of preauthorization.

PWSRCAC recommends that EPA refocus the proposed rule to ensure that case-by-case decision-making processes are assured wherever possible, even in areas where oil spill treating agents have been preauthorized. No plan can substitute for professional judgment, real-time data, and local knowledge.

OSC Discretion and Decision-making

The proposed rule represents a significant improvement over the current Subpart J process, which requires that manufacturers of oil spill treating agents provide documentation to the EPA. EPA then reviews the documentation for accuracy and, if complete, publishes to the Schedule. This system relied on the OSC to evaluate the information in the Schedule and to "judge whether and in what quantities a product may be used to control a potential discharge." The proposed changes to Subpart J would assign a more active role to the EPA in reviewing and vetting the information submitted by a manufacturer, and would require EPA to make a determination about whether or not to include a product on the Schedule based on a technical review of the data. This is a major improvement over the current system, and PWSRCAC strongly supports EPA's proposal to take a more active role in reviewing submissions to the Schedule.

However, we are concerned that the proposed rule as written gives the OSC broad discretion to override preauthorization and make exceptions to virtually all components of the proposed rule. While the OSC will presumably have a strong background in pollution response and incident management, this person may not have the scientific or technical background to make decisions that override Subpart J product listings and regional preauthorization planning. The value of preauthorization planning is the fact that subject matter experts and natural resource trustees have a clear role in developing these plans and policies. Similar rigor should be applied to case-by-case decision-making.

The proposed rule as written empowers the OSC to use real-time data to inform decision-making. PWSRCAC supports this idea of science-based decision-making, but cautions that the OSC may not have sufficient independent expertise to interpret and apply such data. Natural resource trustees with local knowledge must have an active role in response decisions regarding chemical or biological agents. The Area Committee (AC) and Subarea Committees (unique to Alaska), State and Federal Trustee Agencies, Tribal entities, and Scientific Support Coordinator (SSC) all play important

advisory roles to inform the OSC about scientific issues related to the use of oil spill treating agents.

PWSRCAC recommends that EPA revise the rule to create clear accountability for the OSC to consult with subject matter experts and trustee agencies. It should also clarify where consultation vs. concurrence is required to override preauthorization plans or make independent decisions about oil spill treating agents.

Unilateral Authority of EPA Administrator

PWSRCAC has strong concerns about the proposed language that would give the EPA Administrator, under Subpart H, unilateral authority to bypass both Subpart J and regional preauthorization plans. As a national political appointee, the EPA Administrator should not be in the position to override consensus decisions or policies developed by local natural resource trustees. This option undermines both Subpart J and the preauthorization planning process. PWSRCAC does not believe that decisions about local application of spill treating agents in Alaska should be made in Washington, D.C. by a single agency head. We therefore recommend removing this provision from the proposed rule. If it is retained, we suggest that the EPA Administrator should be required to obtain concurrence from his or her counterpart within federal trustee agencies – i.e. the NOAA Administrator, DOI Secretary, etc.

PWSRCAC recommends that EPA require that in any case where exceptional decisions are made to use oil spill treating agents – whether that decision originate with the OSC or the EPA Administrator – a transparent public record must explain these decisions and their scientific rationale.

Subsurface Dispersant Use

PWSRCAC has concerns about the manner in which the proposed rule considers subsurface dispersant use as an established approach. PWSRCAC does not believe that there is enough data demonstrating that dispersants add value to subsurface oil spill response. In an area like Prince William Sound, where we do not have exploration and production but do have the potential for a subsea release from a damaged or sunken tanker, we are concerned about the potential for the new Subpart J rule to open the door to preauthorized use of subsurface dispersants in Alaska.

The unprecedented and highly contested use of dispersants during Deepwater Horizon seems to be considered by EPA as justification for expanding dispersant use and encouraging preauthorization for subsea releases, when there is very little science to support subsea dispersant use decision-making. Techniques for measuring effectiveness of subsurface dispersant applications are unproven. Oil that came ashore during the Deepwater Horizon oil spill contained dispersant, indicating that some proportion of the "dispersed" oil actually impacted the shoreline. In fact, a mixture of oil and dispersants continues to make landfall, years after this spill. Non-degraded oil has been documented throughout the Gulf of Mexico environment. All of this casts serious doubts on the efficacy of the subsurface dispersant application during that spill, and certainly points to the need for additional research before subsurface dispersants can be considered a mature spill treatment option. The State-of-Science for Dispersant Use in Arctic Waters working group, a consortium of leading dispersant scientists in which PWSRCAC participates, has expressed uncertainty about the effectiveness of subsea dispersants under some conditions, and about the ability to measure effectiveness for sub-surface applications.

For these reasons, PWSRCAC urges the EPA to remove subsurface dispersant application from Subpart J at this time, and revisit the issue in the future when there is more definitive science to inform the tradeoffs involved in applying dispersants to subsurface oil spills.

Consensus Standards

The proposed rule contains a number of new or changed requirements for efficacy and toxicity testing for chemical and biological agents, with the goal of using standard, repeatable approaches that will make it easier to compare results across products and manufacturers. The State-of-Science for Dispersant Use in Arctic Waters working group is in the process of establishing a consensus opinion about the importance of standardization in dispersant testing and monitoring methods, and they have noted in their deliberations that standard measurement methods are crucial to acceptable data generation.

PWSRCAC advocates for the use of consensus standards where available to ensure consistent methodologies are applied during scientific testing. We are concerned that EPA is proposing to abandon the consensus standard for dispersant effectiveness that has been in place for years and is currently used in 20 countries, including the U.S. We understand that there are advantages and disadvantages of both the existing (swirling flask) and proposed (baffled flask) technique for dispersant effectiveness testing, and we recommend that EPA ensure that, if the standard technique is changed, comparable standards are provided for the baffled flask test. It is most important to ensure that efficacy tests are carried out in a controlled and replicable manner. EPA should ensure that – regardless of the technique - dispersant efficacy tests are conducted by **certified** chemists working in **certified** laboratories using **certified** procedures (ASTM swirling flask test).

PWSRCAC agrees that the development of new consensus standards may be appropriate to inform scientific testing and comparison of oil spill treating agents. We recommend that any new standards adopted in Subpart J meet the following criteria: (1) improve reproducibility of the tests within a laboratory; (2) certified cross validation between laboratories; (3) provide adequate discrimination between agents being tested; and (4) facilitate testing of all necessary variables (such as temperature and salinity) that may influence efficacy or toxicity.

Sinking Agents

The Statutory Authority section of the proposed rule makes note of the historic prohibition of sinking agents, which dates back to 1984. PWSRCAC strongly supports EPA's ban on the use of sinking agents in the proposed rule. However, we are concerned that the rule creates some ambiguity about other agents that may act like sinking agents under certain conditions (such as oil mineral aggregates or clays), and we urge EPA to clarify that *any agent that causes oil to sink to the bottom is considered*

a sinking agent under conditions that may lead to sinking, and is therefore banned from use in U.S. waters.

Reliance on Responsible Party and Manufacturer Science

Throughout the proposed rule, requirements are proposed for testing and monitoring to be conducted by the Responsible Party, (RP) at the time of a spill, or the Chemical Agent manufacturer (for listing agents on the Schedule). PWSRCAC strongly urges the EPA to consider all possible opportunities to require independent science or rigorous peer review of all studies that are conducted by the RP or vendor. When a spill occurs, the RP faces significant civil and criminal liability based on environmental damages, including damages caused by spill treatment decisions. This creates a conflict of interest for assessing potential adverse impacts from treating agents.

Similarly, the product manufacturers and vendors have a financial interest in selling their product, and therefore have a motive to present results that might overestimate potential effectiveness or understate toxicity. We recommend that the EPA consider opportunities to audit or independently vet studies to ensure fairness and transparency.

Detailed Comments on Proposed Rule

Dispersants (40 CFR §110.4)

Summary: EPA proposes to revise this section to link the rule with the new and amended regulatory definitions for Subpart J product categories in 40 CFR §300.5.

Comments

PWSRCAC has provided comments under 40 CFR §300.5.

Definitions (40 CFR §300.5)

Summary: EPA proposes revisions to §300.5 that amend the definitions for Bioremediation agents, Burning agents, Chemical agents, Dispersants, Sinking agents, and Sorbents. EPA is proposing to remove the definitions for surface collecting agent and for miscellaneous oil spill control agent (MOSCA).

Comments

PWSRCAC finds that on the whole, these new definitions add clarity. We believe that it is important to clearly define treating agents to make sure that agents included on the Schedule are appropriately categorized and are used as intended. For example, many products currently sold as solidifiers, under the current Schedule, are actually sorbents.

- PWSRCAC recommends that language be added to the definition for each agent and substance clarifying that it is "not likely to cause additional harm, either alone or in combination with oil, to public health or welfare or to the environment."
- PWSRCAC recommends that each definition specifically state whether the substance is, or is not, intended to be removed from the environment.

Bioremediation Agents

Summary: EPA proposes to revise the definition of bioremediation agents.

Comments

PWSRCAC finds that the definitions of "biodegradation" and "bioremediation" oversimplify these processes, which may result in only partial biodegradation or partial bioremediation, which may potentially result in more toxic intermediate products.

PWSRCAC is also concerned about the use of non-indigenous bioremediation agents that could potentially colonize the area where they are released, and we suggest that the definition prohibit the use of biological agents that could result in non-indigenous species colonization, which could have significant ecosystem impacts.

PWSRCAC supports the inclusion of fungi in the definition of biological agents and the use of mycoremediation. Fungi have been found to be effective at degrading the complex PAHs. PWSRCAC has included several references regarding mycoremediation that support our comments.

Recommendations

- PWSRCAC recommends that the definitions of biodegradation and bioremediation be expanded to include the possibility that partial biodegradation or partial bioremediation may occur in the environment, and may potentially result in more toxic intermediate products.
- PWSRCAC recommends that the definition of bioremediation agents include a ban on agents that may result in the colonization of non-indigenous species.
- PWSRCAC supports the inclusion of fungi in the definition of biological agents and the use of mycoremediation.

Burning Agents

Summary: EPA proposes a revised definition of burning agents and is considering including ignition devices in the definition.

PWSRCAC supports the inclusion of ignition devices in this category, and we suggest that EPA develop corresponding requirements to evaluate toxicity associated with combustion products and burn residues. Studies of in-situ burn residues from the Deepwater Horizon spill confirmed that the chemical and physical properties of the oil are changed during in-situ burning (Shigenaka et al., 2015). Therefore, it is equally important to evaluate potential toxicity influences that may result from the use of burning agents to treat oil spills similar to the way in which chemical or biological agents may alter oil properties and influence toxicity.

Recommendations

• PWSRCAC recommends that EPA require toxicity testing of burning agents, of combustion products (smoke plumes), and also of the burn residue that results from application of burning agents to oil slicks.

Chemical Agents

Summary: EPA proposes a revised definition of chemical agents to distinguish them from biological agents and remove agent categories that are being eliminated, prohibited or amended.

Comments

EPA proposes to revise the definition of chemical agents to identify them as being "designed to facilitate the removal of oil." PWSRCAC takes exception with the use of the term "remove." This definition is aspirational and potentially misleading and does not make clear that chemical agents do not **remove oil** and do not necessarily mitigate harm (i.e. recognize that there may be a trade-off of harms).

PWSRCAC does not support the use of sinking agents, including chemical and biological agents that meet other definitions (e.g. solidifier, sorbent, dispersant) but may cause oil to submerge or sink under certain conditions. Inclusion of a definition for sinking agents in the context of other agents that may be put on the Schedule contradicts EPA's stated policy against the use of sinking agents to treat oil spills.

The final rule should make it very clear which chemical agents are intended to be removed from the environment, and which are not.

Recommendations

- PWSRCAC recommends revising the definition of Chemical Agents to clarify that they do not necessarily remove oil from the environment, they treat oil.
- PWSRCAC recommends that sinking agents be removed from the definition of chemical agents.
- PWSRCAC recommends that the definition of Chemical Agents should clearly delineate between agents that are intended to be removed from the environment and those that are not.

Dispersants

Summary: EPA proposes a revised definition of dispersants.

Comments

The proposed definition addresses the process through which dispersants "assist in mitigating the consequences of a discharge." PWSRCAC finds this language to be somewhat leading, and we suggest replacement of this language to communicate that dispersants are intended to modify an oil discharge, but that their mitigation effects are situationally dependent and by no means guaranteed. Later in the proposed rule (page 3394), EPA acknowledges that "applying dispersant to an oil discharge does not result in the physical recovery of oil to the environment." In fact, dispersants treat the oil such that it is no longer available for physical recovery, and the application of dispersants in cases may make it more difficult to recover spilled oil in cases when dispersion is temporary and the oil eventually coalesces and resurfaces (Fingas, 2005).

Recommendations

• PWSRCAC recommends rewording the definition of dispersants to emphasize that they do not necessarily mitigate a discharge.

Sinking Agents

Summary: EPA proposes a revised definition of sinking agents to specify that these agents purposely sink the oil to the bottom of a water body. The new rule would ban the use of sinking agents.

Comments

PWSRCAC supports the inclusion of sinking agents in the list of prohibited agents proposed for §300.910(e). However, we find that the proposed definition of sinking agents does not clearly align with that section, and may potentially create confusion around the use of substances that cause oil to submerge or sink. Any agent applied to an oil slick with the intention of causing the oil to submerge or sink below the surface will render that oil no longer available for mechanical recovery.

Any agent that causes oil to submerge below the water surface in a given waterbody should be characterized as a sinking agent, even treating agents that also qualify for other categories (e.g. dispersants, solidifiers, sorbents). The State-of-Science for Dispersant Use in Arctic Waters working group reached preliminary consensus on the fact that chemical dispersants can facilitate the formation of oil-mineral aggregates (OMA), potentially causing the oil to sink: *"The effect of chemical dispersants to oil in the presence of adequate suspended particulate material and mixing energy will increase the rate of formation of OMA."* While the working group report noted that OMAs will only sink under certain conditions, PWSRCAC is concerned that such scenarios result in a dispersant that functions like a sinking agent.

Recommendations

• PWSRCAC recommends that EPA ban dispersant use under conditions where OMA formation is likely and sinking is possible. We have included a list of references about the potential for OMA formation at the end of this document.

Solidifiers

Summary: EPA proposes to define solidifiers as substances that change oil chemically and cause it to become a cohesive mass intended for collection.

Comments

PWSRCAC does not support the use of solidifiers, as they offer no measurable advantage over sorbents or mechanical recovery. They have limited practicality, may cross-link or react with other substances, and require immediate removal from the environment. There has been very limited effectiveness testing on solidifiers, and few recent studies. PWSRCAC has included in our Reference list a series of reports on solidifiers that support our position.

Recommendations

• PWSRCAC recommends that EPA remove solidifiers from the Schedule.

Sorbents

Summary: EPA proposes to identify sorbents as substances consisting of: (1) natural organic substances (e.g., feathers, cork, peat moss, and cellulose fibers such as bagasse, corncobs, and straw); (2) inorganic/mineral compounds (e.g., volcanic ash, perlite, vermiculite, zeolite, clay); and (3) synthetic compounds (e.g., polypropylene,

polyethylene, polyurethane, polyester). EPA requests comments on whether additional materials should be included in the definition, and also on the inclusion of the phrase "that are generally collected and recovered from the environment," citing the potential for removal of sorbents to cause more harm than good in certain environments. EPA also requests comments about characterizing particulate matter (e.g. clay) as sorbents.

Comments

PWSRCAC supports the proposed definition of sorbent, with the exception of clays and oil mineral aggregates (OMAs), which are intended to be land-based sorbents and should be prohibited for use on water even in cases when the oil/clay or oil/OMA particles are expected to be less dense than water.

Recommendations

- PWSRCAC recommends that EPA clearly require that all sorbent materials must be recovered from the environment, and that sorbent use is not authorized in the event that the sorbents cannot be removed from the environment.
- PWSRCAC supports a ban on the use of particulate sorbents (clay) on water.
- PWSRCAC supports a ban on the use of OMA technologies on water.

Surface Washing Agents

Summary: EPA proposes to revise the term and definition of surface washing agents from singular to plural for consistency with other definitions, and to clarify that these agents are meant to be removed from the environment.

Comments:

PWSRCAC supports the definition of surface washing agents, with the clarification that these agents must be removed from the environment.

Recommendations

• PWSRCAC recommends that EPA clearly require that all surface washing agents must be recovered from the environment.

Authorization of Use (40 CFR §300.910)

Summary: EPA proposes to reorganize and add titles to this section, add several requirements addressing the storage and use of agents, notification of agent use and recovery from the environment, and revise language to clarify established EPA policy regarding the requirement for an OSC to authorize use of any oil spill treating agent.

Comments

Subpart J should include as much specific, quantifiable information and direction as possible to assist Regional Response Teams (RRTs) and ACs with the preauthorization planning process. It is particularly important for EPA to clearly identify cases where treating agent use should not be preauthorized.

- PWSRCAC recommends that EPA clearly delineate conditions under which use should not be preauthorized.
- PWSRCAC recommends that preauthorization plans clearly acknowledge that there may be times or places where use of chemical or biological agents is not

appropriate, even if it is preauthorized. The response decision-making process must take into account all factors that could influence the effectiveness or impacts of chemical or biological agent use.

• PWSRCAC recommends that the Schedule explicitly state that chemical or biological agents may only be used for their intended use within a specific category so that, for example, an agent that is listed as a surface washing agent cannot be authorized for use as a dispersant.

Preauthorization Planning §300.910(a)

Summary: EPA proposes to clarify the preauthorization planning process.

Comments

PWSRCAC supports the requirement for a regular review cycle for preauthorization plans to address revisions of the Schedule, and also supports the other parameters identified as triggers for a preauthorization plan review (SONS, new threatened or endangered species, changes to worst case discharge estimates, emergent scientific information, or other major changes). However, we are concerned about the need to balance information currency with the need to have established plans in place so that the public understands current policy. In Alaska, our Dispersant Use Authorization plan has been in flux for over a year, resulting in a situation where there is no clear, established policy.²

The proposed rule also addresses the decision-making process used to develop preauthorization plans. While the concept of preauthorization is rooted in the need to expedite decision-making, its application must carefully consider that each spill is unique and a range of variables may influence the effectiveness of a dispersant. There may be times or places where dispersant use is not appropriate, even if preauthorization is in place.

PWSRCAC supports EPA's proposals to expand consideration of waterbody characteristics, like salinity, in the context of both efficacy testing and preauthorization. PWSRCAC supports this approach, and suggests that Subpart J should provide clear direction to the RRT and OSC to consider not just the waterbody salinity, but other characteristics like circulation patterns, mixing energy, presence of endangered or threatened species, critical habitats, seasonal changes, sediment levels, etc. when authorizing the use of chemical agents. In Alaska, we have developed the following list of criteria to consider before deciding to use dispersants in our marine waters, and we suggest that EPA consider including these in Subpart J guidance.

- **Bathymetry** it is generally recognized that adequate mixing and dilution of dispersants should occur if applied in waters deeper than 10 fathoms (or 60 feet) depth provided there is sufficient energy for mixing. The 10 fathom contour is a standard depth contour line included on National Oceanic and Atmospheric Administration marine charts.
- **Distance from shore** an adequate buffer needs to be established to reduce the chances of applying dispersants to sensitive shorelines/nearshore areas and to

² Annex F to the Alaska Unified Plan was issued as a draft in September 2013 and is not yet finalized. <u>http://alaskarrt.org/Files/ARRT%200il%20Dispersant%20Authorization%20Plan_Draft%209-25-13.pdf</u>

ensure that drifting dispersant and/or dispersed oil mixtures do not adversely affect intertidal and benthic biota.

- Wind and currents areas where there is generally little movement of water would not provide sufficient mixing energy for effective dispersant use. With higher wind speeds (beginning at 12 14 meters per second (26.8 to 31.3 miles per hour)), the benefits of dispersant application start to diminish compared to natural dispersion.
- **Salinity** most dispersants are made for use in saltwater and are not effective in fresh water or waters with a salinity of less than 15 parts per thousand.
- **Temperature** dispersant effectiveness will be affected by ambient water temperatures, with more complete dispersion in warmer waters.
- **Response equipment** the availability and time to mobilize response equipment may affect whether dispersants can be used.
- **Shoreline types** certain shoreline types (e.g., gravel, mixed sand and gravel, coarse-grained sand beaches, and marshes) may trap oil for long periods. The amount of wave energy (e.g., protected inlets vs. high-energy exposed beaches) will also affect oil retention and persistence.
- **Sensitive habitats** certain habitats where biota breed, rear young, feed, or congregate (e.g., eelgrass beds, kelp beds, saltwater marshes, and designated critical habitats for threatened or endangered species) may be adversely affected by oil and/or dispersed oil.
- **Sensitive species including threatened or endangered species** these species may be adversely affected by oil and/or dispersed oil.
- Other areas designated for special use or protection -these areas (e.g., national and state parks, national wildlife refuges, and wildness areas) may be adversely affected by oil and/or dispersed oil.
- **Historic properties** these resources (e.g. archeological and historic resources) may be adversely affected by oil and/or dispersed oil.
- **Human use activities** these activities (e.g., subsistence, fishing, and boating activities) may be adversely affected by oil and/or dispersed oil.
- **Public and private facilities** these facilities (e.g., fish hatcheries, aquaculture and mariculture facilities, public water intakes, and docks) may be adversely affected by oil and/or dispersed oil).

Preauthorization planning should take into account all of the factors that may impact dispersant effectiveness. The State-of-Science for Dispersant Use in Arctic Waters working group reached preliminary consensus on the importance of several factors on dispersant effectiveness, including temperature, persistence of compounds, and weathering and emulsification. Their deliberations emphasize the importance of considering how temperature may influence the physical properties of oil and, in turn, its dispersibility. This group of scientists has also established consensus that the environmental persistence of dispersants is influenced by environmental conditions. It is critical that the decision-making process provide sufficient flexibility, even in cases of preauthorization, to consider how these ephemeral factors may influence the potential effectiveness or toxicity of dispersants or other chemical agents.

We support EPA's suggestion that explicit concurrence, rather than consultation, should be achieved among resource trustees – including states adjacent to the federal waters – for all preauthorization plans. We recommend that the rule explicitly

recognize tribal governments as well, and also require concurrence from potentially impacted tribal entities in accordance with Executive Order 13175.

PWSRCAC also believes that it is important to include not just the RRTs but also the ACs (and, in Alaska, Subarea Committees) in the preauthorization planning process, as the ACs typically cover a smaller geographic area and have more extensive local knowledge.

PWSRCAC supports EPA's proposal to include specific procedures for withdrawal of concurrence of preauthorization plans to allow trustee agencies the flexibility to change their position in the event that conditions change.

PWSRCAC disagrees with EPA's proposal to replace the word "potential" with "likely" in reference to the sources and types of oil that might be spilled. We believe that "potential" is a broader, more conservative term that is appropriate for preauthorization planning. Determination of "likely" spill sources would require a standard methodology for risk categorization in order to ensure standard application across preauthorization plans.

Finally, PWSRCAC encourages EPA to consider that preauthorization planning cannot possibly foresee all potential circumstances, and that whenever possible, decisions about oil spill treating agents should be made at the time of an incident based on the specific incident and best available science. Even if dispersants or oil treating agents are preauthorized in a given location or time, it is prudent to proceed cautiously with their application and to continuously evaluate efficacy and effects. To this end, we suggest that EPA encourage preauthorization plans to require field tests prior to full-scale applications, even in cases where use is preauthorized.

- PWSRCAC recommends that the EPA require that the public be provided with an opportunity to review and comment on preauthorization plans during each review cycle.
- PWSRCAC recommends that preauthorization plans should be required to specify not only geographic designations but also to set threshold limits for waterbody characteristics including salinity, circulation, mixing energy, seasonal changes, sensitive species, sediment load, freshwater plumes, and other factors that could influence the fate, behavior, or impacts of dispersed oil.
- PWSRCAC recommends that the EPA include in the new rule some requirement that preauthorization planning take into account the impact of temperature on oil properties and, thus, their dispersability.
- PWSRCAC recommends that the EPA include in the new rule some requirement that preauthorization planning take into account the persistence of dispersant compounds based on the environmental conditions. Preauthorization is not appropriate during conditions that would favor long-term persistence of dispersant compounds.
- PWSRCAC recommends that the EPA include in the new rule some requirement that preauthorization planning take into account the impact of weathering and emulsification on oil viscosity and, thus, dispersability.

- PWSRCAC recommends that explicit concurrence from resource trustee agencies, state agencies, tribal governments, RRT and AC members should be achieved in developing preauthorization plans.
- PWSRCAC recommends retaining the term "potential" rather than "likely" in the context of the types of oil that might be discharged.
- PWSRCAC recommends that EPA require preauthorization plans to compel field tests, even in preauthorization areas, prior to full scale applications, to ensure efficacy and evaluate toxicity before full scale operations begin.

Use of Agents on Oil Discharges Not Addressed by a Preauthorization Plan §300.910(b)

Summary: EPA proposes to clarify the authorities and responsibilities for use of agents on the Schedule in situations not addressed by a preauthorization plan.

Comments

PWSRCAC supports the requirement that the OSC notify the RRT representatives from the EPA, affected states, and DOC/DOI natural resource trustees as soon as possible. We also support the distinction in the proposed rule that the OSC should go beyond consultation and seek concurrence from trustee agencies whenever an exception is considered. These trustee agencies have critical knowledge and resource stewardship responsibilities that should be incorporated into the decision-making process. We agree with the EPA that modern communication technology should enable rapid collaboration, and that there is no reason that the OSC should need to make unilateral decisions.

Recommendations

• PWSRCAC recommends that OSCs should be required to notify the RRT, EPA, affected states, and trustee agencies as soon as possible when an exception is considered, and that concurrence of all parties should be required prior to making decisions about uses not addressed by a preauthorization plan.

Burning Agents §300.910(c)

Summary: EPA proposes to revise this section to provide greater flexibility to the OSC in authorizing the use of burning agents for in-situ burning.

Comments

PWSRCAC does not oppose the use of burning agents to enhance in-situ burning of a spill; however, we believe that it is important to ensure that any burning agent applied to an oil slick be fully combustible, and that the potential toxicities of the burning agent alone, the combusted oil slick (smoke), and the burn residue be considered in the decision-making process.

Recommendations

• PWSRCAC recommends that EPA require toxicity and efficacy testing for burning agents that are listed in Subpart J to inform decision-making about burning agent use based on effectiveness of the agent in igniting a slick under a range of conditions and the potential toxicity of the burning agent itself and combustion byproducts (smoke and residue).

Exceptions §300.910(d)

Summary: EPA proposes to clarify the intent of the exception provision, which gives the OSC authority to authorize the use of products not on the Schedule in order to prevent or substantially reduce a threat to human life.

Comments

PWSRCAC has significant concerns about the unilateral decision-making authority that this provision would grant the OSC. We do not agree with the EPA's hypothetical example of the type of situation where a chemical agent not on the Schedule would be justified for use to mitigate a threat to human life. The proposed rule suggests that a spill of highly flammable petroleum products in harbors or near inhabited areas may justify the use of a product not on the Schedule if the agent would, "in the OSC's professional judgment...effectively and expeditiously mitigate the threat to human life." PWSRCAC is not aware of any instances where chemical or biological treating agents (with the exception of firefighting foam, which we do not believe are included in Subpart J) have been used on highly flammable product in a confined space, and we do not believe that OSCs would necessarily have an appropriate background in chemistry to make such decisions.

PWSRCAC supports the requirement for concurrence from the RRT for continued use of a substance not on the Schedule, although we suggest that the time period could be shortened from 48 to 24 hours or less. When an oil spill occurs, the RRT members with natural resource trustee roles will be engaged almost immediately and should have a role in decision-making as soon as possible.

Recommendations

- PWSRCAC recommends that EPA withdraw the exception for purpose of mitigating threats to human life, unless the agency can provide a more realistic example of a situation where such an exception would clearly protect human life.
- PWSRCAC recommends that the OSC be required to seek concurrence from the RRT for continued use of a substance not on the Schedule within 24 hours or less.

Prohibited Agents §300.910(e)

Summary: EPA proposes to clarify that the prohibition of sinking agents applies to all agents that act as sinking agents when mixed with oil and to certain other agents with specific toxic components.

Comments

PWSRCAC strongly supports the prohibition of the use of nonylphenols (NP). Given the significant adverse impacts of NPs cited in the proposed rule, PWSRCAC does not believe that cost considerations should justify the continued use of products containing these harmful agents to treat oil spills. We also support a broader prohibition on agents that contain endocrine disrupting compounds (EDC). However, we have some concerns about the techniques that would be used to do this type of testing. In addition to the presence of endocrine disrupting compounds or prohibited agents in dispersants themselves, PWSRCAC is also concerned that EPA ensure that the byproducts of dispersed oil do not contain such substances. Many toxic compounds found in oil (e.g. PAH) require metabolic activation to express toxicity. These are further metabolized to less active forms which are excreted. Microbial degradation may take slightly different metabolic routes. In either case the metabolites may enter the water column where they may exert toxic effects either directly or indirectly.

PWSRCAC strongly opposes the use of sinking agents and believe that the list of prohibited agents should include any agents with the potential to cause oil to sink based on the receiving environment.

Recommendations

- PWSRCAC recommends that EPA ban from the Schedule any agents containing nonylphenols or endocrine disrupting compounds.
- PWSRCAC recommends that EPA also ensure agents included on the Schedule will not cause oil to degrade in a manner such that its byproducts contain any prohibited substances. We request that EPA provide additional information about the types of tests or analyses that could be applied to make these types of determinations.
- PWSRCAC recommends that EPA include sinking agents in the list of prohibited agents, with the acknowledgement that agents may act as sinking agents depending upon the location, timing, and waterbody where the spill occurs.

Storage and Use of Agents §300.910(f)

Summary: EPA proposes to add language to require the OSC to authorize use of agents only when they have been stored under conditions specified in the Schedule by the submitter.

Comments

PWSRCAC disagrees with EPA's proposal to require owners or operators that store chemical or biological agents to ensure that they do not degrade into more toxic byproducts once the manufacturer's expiration date has passed. The purpose of an expiration date is to ensure product safety and integrity. Once the expiration date has passed, the product should be disposed.

Recommendations

• PWSRCAC recommends that EPA require that expired chemical agents should be disposed.

Supplemental Testing, Monitoring, and Information §300.910(g)

Summary: EPA proposes to revise this section to provide greater flexibility to the RRTs to require supplemental toxicity and efficacy testing.

Comments

PWSRCAC supports EPA's removal of the qualifier "when developing preauthorization plans" to provide greater flexibility for RRTs to require supplementary toxicity and efficacy testing data about an agent even when preauthorization plans are not being developed. We also support EPA's proposal to give the RRT authority to request that

the OSC require the RP to conduct additional monitoring of a product use during a discharge to support operational decision-making.

PWSRCAC supports EPA's proposal to include "ecosystem" along with area and sitespecific concerns that may be considered in evaluating toxicity, although we believe that EPA should provide additional information and examples about methodologies that can be used to evaluate ecosystem impacts. Certainly the current approach, where toxicity data is derived from a narrow range of tests on two temperate species, does not sufficiently inform the full range of potential toxicities from chemical agents, particularly in cold water regions.

Recommendations

- PWSRCAC recommends expanding the requirements for supplemental testing and monitoring to allow RRTs to request additional efficacy and toxicity testing during a discharge or at any time.
- PWSRCAC recommends including ecosystem-level toxicity effects as a required component of toxicity testing.
- PWSRCAC recommends a full EPA Tier 1 endocrine disruptor screening of the dispersed oil water accommodated fraction for any dispersant-oil combination that has not previously been screened.

Recovery of Agents from the Environment §300.910(h)

Summary: EPA proposes to add this section, requiring that the RP, with OSC oversight, remove from the environment any solidifiers, sorbents and surface washing agents used to treat an oil spill.

Comments

PWSRCAC supports EPA's proposal to specify the agent categories where substances are intended to be removed from the environment following their use (solidifiers, sorbents, and surface washing agents). PWSRCAC agrees with EPA that the RP should have ultimate responsibility for removal of these products, with oversight from the OSC. However, we suggest that that EPA create requirements that ensure that authorization of use for these substances be contingent upon the development of a feasible removal plan based on the specific incident. We also suggest that EPA establish some penalty for failure to remove these substances from the environment following their use.

- PWSRCAC recommends that the Schedule clearly delineate which agents are intended to be removed from the environment following their use (solidifiers, sorbents, and surface washing agents).
- PWSRCAC recommends that authorization of use for of these agents should be contingent upon the development of a feasible removal plan based on the specific incident.
- PWSRCAC recommends that the RP should be assessed a penalty in the event that an agent is not recovered from the environment.

Reporting of Agent Use §300.910(i)

Summary: EPA proposes to add this section, requiring that the OSC report to the RRT certain information about the use of a chemical or biological agent within 30 days of completion of use or, alternately, at some interval agreed upon by the RRT. EPA is also requesting comments on whether notification of the public should also be included in the reporting requirement.

Comments

PWSRCAC supports the 30-day reporting standard, and we strongly support EPA's proposal to include public notification as part of the 30-day notification requirement.

Recommendations

- PWSRCAC recommends that EPA establish a 30-day reporting requirement for the OSC to report to the RRT in the event of a chemical or biological agent use.
- PWSRCAC recommends that public notification should be a required component of this notification.

Monitoring the Use of Dispersants (40 CFR §300.913)

Summary: EPA proposes to add a new requirement for the RP to conduct efficacy and ecological effects monitoring for subsurface applications and for surface applications for spills over 100,000 gallons and for applications that exceed 96 hours in duration.

Comments

PWSRCAC believes that strong monitoring protocols should be in place to ensure efficacy and evaluate ecological impacts of dispersant use. PWSRCAC agrees with EPA that comprehensive monitoring is essential to "determine the overall effectiveness of dispersants and should transcend from the initial dispersant application to include the transport and environmental effects of the dispersant and dispersed oil in the water column." However, we are concerned that existing monitoring methods may not have the capability to achieve this expectation. For all monitoring programs, baseline samples should be required for the area of proposed application before any application of dispersants

The State-of-Science for Dispersant Use in Arctic Waters working group identified a number of outstanding issues and questions associated with dispersant monitoring that should be weighed in this rulemaking. These include the difficulties in estimating mass balance of dispersed oil during at-sea applications, and the fact that monitoring by visual observation and fluorimeters provide only relative estimates of dispersant application effectiveness. Although actual field application of dispersants has occurred only a handful of times in the U.S., there have been consistent challenges in measuring field effectiveness with available monitoring techniques and technologies.

PWSRCAC believes that it is EPA's responsibility to create realistic expectations for OSCs and the public about the capabilities and limitations of dispersant monitoring technologies. It is critical that monitoring data be presented in the context of technological limits and scientific uncertainty. Given that the largest field application of dispersants in U.S. waters occurred during the Deepwater Horizon well blowout, we encourage EPA to make public the full record of To dispersant efficacy monitoring

results and raw data from all monitoring activities conducted during this response. Data from particle size analysis and fluorescence measurements of oil droplet size distributions at the wellhead during dispersant application and during times when no dispersants were applied would provide valuable information both for OSCs and for the public in understanding the potential efficacy of dispersants.

PWSRCAC agrees with EPA that field monitoring provides critical amplifying information to supplement laboratory test data regarding dispersant effectiveness and environmental effects. It is important that as dispersant science continues to evolve, field and laboratory data are collated to understand the transferability of lab results to the real world.

PWSRCAC supports EPA's suggestion that monitoring requirements should include thresholds for application based on the quantity of dispersants used within a given timeframe. The EPA has a duty under the Clean Water Act to prevent the dumping of harmful chemicals into the environment, and there should be thresholds for automatically ceasing dispersant application to ensure that this line is not crossed.

Dispersant monitoring data is of high interest to the public, and should be made available immediately and in raw form for public review.

Recommendations

- PWSRCAC recommends that the EPA require dispersant monitoring data to include an acknowledgement of technological limits and scientific uncertainty, to better inform OSC decision-making and ecological risk assessment.
- PWSRCAC recommends that EPA require dispersant monitoring to include preapplication monitoring of biological resources.
- PWSRCAC urges EPA to release (or compel the USCG to release) the results of dispersant efficacy monitoring during the Deepwater Horizon oil spill to clarify the effectiveness of that application and to provide an example of the type of information and analysis that can be derived from existing monitoring technologies and protocols.
- PWSRCAC recommends that EPA create a standard process for collecting field data from dispersant applications for the purpose of validating and amplifying information collected in the laboratory. In this way, information from past dispersant applications may be drawn upon to inform future use, along with laboratory test data.
- PWSRCAC recommends that EPA establish conservative thresholds for maximum dispersant application volumes over time.
- PWSRCAC recommends that EPA require dispersant monitoring results to be made available immediately to the public.

Dispersant Application

Summary: EPA proposes to require the RP to document its product choice and selection rationale based on the oil type, flow rate, discharge location, and efficacy/toxicity data. It also requires specific documentation of the dispersant application including rates, volumes, application methods, equipment, etc.

Comments

The parameters that are to be considered for dispersant application listed in the proposed rule are very focused on a well blowout or similar continuous release. In areas like Prince William Sound where spill risks are primarily derived from vessels and facilities, dispersant application parameters may be different. The rule should consider all potential spill sources and types, not just well blowouts.

PWSRCAC also has concerns with EPA's suggestion to rely on the RP to provide estimates of well blowout flow rates or spill volumes as the basis of dispersant application dosing. There is a long history of Responsible Parties underestimating or obscuring spill volume estimates. These numbers should be derived by independent government agencies or academia.

The State-of-Science for Dispersant Use in Arctic Waters working group reached preliminary consensus on the major limiting factors for effective dispersion, which include: high viscosity from the initial oil or as a result of weathering or lower temperatures; emulsification; dispersant formulation; dose rate; mixing energy; water salinity; and potential for dilution. These parameters should be explicitly listed in the Schedule.

Recommendations

- PWSRCAC recommends that EPA expand the discussion of dispersant application parameters to address vessel-source spills, which are the primary marine oil spill risk in many regions of the U.S.
- PWSRCAC recommends that spill volume estimates should be developed by government or academia, not by the RP.
- PWSRCAC recommends that the EPA include the following parameters specifically in the documentation requirement to rationalize dispersant use: oil viscosity, emulsification, dispersant formulation, dose rate, mixing energy, water salinity, and potential for dilution.

Water Column Sampling

Summary: EPA proposes to require the RP to collect background water column samples in areas not affected by the discharge, and also in the dispersed oil plume. The EPA proposes specific analytic parameters (droplet size distribution, fluorometry, fluorescent signatures, dissolved oxygen, total petroleum hydrocarbons, carbon dioxide, methane, heavy metals, turbidity, water temperature, pH, and conductivity).

Comments

PWSRCAC found a number of areas where the water column sampling requirements and recommended methods require clarification to ensure scientific and technical accuracy. EPA should clarify that only aromatic constituents of crude oil fluoresce at visible and near ultraviolet wave lengths, and that fluorescent properties, especially emission maximum and fluorescent intensity, both tend to increase with the number of aromatic rings, and number of non-carbon (nitrogen, oxygen, or sulfur) in the compound. This means that the least abundant oil constituents contribute most significantly to any fluorometer reading. The polar aromatic compounds, which contribute the most fluorescence, are also more soluble in seawater than corresponding aromatic hydrocarbons and thus are more likely to dissolve away from the dispersed oil droplets into the seawater phase. EPA should clarify that while droplet size measurement is important, droplet size measuring instruments also needed to include fluorometers or similar instruments to ensure that the droplets they are measuring are indeed oil. It is also critical to acknowledge that the physical environment of fluorescent compounds can dramatically alter the observed fluorescence. Increased polarity from sources such as salinity, pH, and hydrophobicity from the presence of surfactants such as those found in dispersants, all influence the intensity of the observed fluorescence.

To avoid confusion EPA should clarify that the fluorometers currently used to monitor fluoresence *in-situ* use either filters or narrow bandpass lamps to excite samples at specific wavelengths and broad wavelength filters to allow emissions at a number of wavelengths. The most common output from an in-water instrument is a signal, which is not oil specific and is only an approximate indication of oil in the water. The discussion of "fluoresence signatures" requires instruments which can measure fluorescence across a number of wavelengths that have traditionally been found in the laboratory. However, recent advances in miniaturization or electronics; including diode array detectors, have allowed development of smaller, more durable instruments which can be used on vessels and even subsurface arrays. It should also be noted that most dispersants show a fluorescent signal as well.

The discussion of water column sampling for total petroleum hydrocarbons (TPH) does not specify a standard method, but there are several available (as listed with the references at the end of this document). EPA should specify one or more standard methods for measuring TPH.

PWSRCAC supports the inclusion of heavy metals as an analytic parameter for water column sampling. We also support the inclusion of turbidity testing, and suggest that this data should be directly considered in evaluating the potential for treating agents to act as sinking agents. In cases where high turbidity may cause treated oil to sink, the use of agents should not be authorized.

- PWSRCAC recommends that EPA clarify that while droplet size measurement is important for water column sampling, droplet size measuring instruments also needed to include fluorometers or similar instruments to ensure that the droplets they are measuring are indeed oil.
- PWSRCAC recommends that EPA clarify the inability of in-water fluorometers to distinguish oil signals and the relevance to water column sampling.
- PWSRCAC recommends that EPA specify that a standard method must be used for TPH measurements in water column samples.
- PWSRCAC recommends the inclusion of heavy metals in water column sampling parameters.
- PWSRCAC recommends including turbidity testing in water column analysis, and using the data to analyze the potential for treating agents to act as sinking agents. In cases where high turbidity may cause treated oil to sink, the use of agents should not be authorized.

Oil Distribution Analyses

Summary: EPA proposes that the RP (with OSC consultation) characterize the dispersant effectiveness and oil distribution to inform sampling locations.

Comments

The proposed rule requires that decision-making about how and where to sample the water column to estimate dispersant effectiveness should be derived from predictive models about dispersed oil movement and distribution. However, there are few proven methods for doing this. The State-of-Science for Dispersant Use in Arctic Waters working group reached preliminary consensus on the fact that it is difficult to anticipate the physical transport of dispersed oil, and that extrapolation of lab and tank tests on physical transport and chemical behaviour of oil to the field is complex.

Recommendations

• PWSRCAC recommends that the EPA acknowledge that the available methods for anticipating the movement of dispersed oil plumes are limited and may complicate the monitoring process. Sampling and monitoring programs should acknowledge uncertainties about where an oil plume may go or how it may behave.

Ecological Characterization

Summary: EPA proposes that the RP (with OSC consultation) characterize ecological receptors, their habitats, and exposure pathways, including sensitive life stages, transient or migratory species, breeding activities, and threatened or endangered species that may be exposed to oil, dispersed oil, and dispersant. The EPA and OSC would be required to use this information to inform acute toxicity monitoring and consideration of ecotoxicity benchmarks (EB).

Comments

PWSRCAC agrees with EPA that ecological characterization is important to evaluating exposure pathways for various receptors, but we believe that this should be done by independent scientists, and not by the RP because of an obvious conflict of interest with the natural resource damage assessment (NRDA) process.

Marine ecosystems vary significantly across the U.S., and ecotoxicity assessment in Arctic and subarctic regions cannot be assessed with the same parameters that would be applied to temperate marine ecosystems. We suggest that sensitive receptors and toxicity thresholds should be developed at the local/regional level by trustee agencies based on the marine ecosystem, food web, abundance of primary and secondary producers, and other factors that influence ecotoxicity.

Rather than relying on the RP and OSC to develop *ad hoc* ecological characterizations and toxicity thresholds concurrent with the spill response, ecological monitoring plans should be developed by the AC and RRTs during the planning process and implemented as appropriate in the event that treating agents are applied.

• PWSRCAC recommends that EPA require AC and RRTs to characterize ecological receptors at risk and establish thresholds that are specific to their region, rather than relying on the RP, who has an obvious conflict of interest.

Immediate Reporting

Summary: EPA proposes requiring that the RP immediately report to the OSC any deviation of more than 10 percent of the hourly subsurface dispersant use rate. EPA is considering whether a similar requirement should apply to surface applications. EPA also proposes to require the immediate reporting of ecological receptors.

Comments

PWSRCAC supports the concept that there should be a threshold for reporting deviations from the planned application rates; however, as noted previously, we do not support subsurface dispersant application.

PWSRCAC strongly supports a requirement for immediate reporting in the case of deviations of more then 10 percent for surface applications. However, we recommend that the EPA clarify through this rule that DOR is an approximate measurement based on very rough estimates of the volume of oil that is being treated by the dispersant; operationalizing this requirement may prove challenging. All such reports should also be made public.

Recommendations

- PWSRCAC recommends that EPA require reporting of any deviations in dispersant applications of more than 10 percent of intended dosage, with an acknowledgement of the margin of error involved in estimating dosage rates based on uncertainties about slick volume.
- PWSRCAC recommends that all reports be simultaneously made public.

Daily Reporting

Summary: EPA proposes daily reporting of sampling and data analyses (within 24 hours of collection) to inform operational decision-making, with an allowance for analytical methods requiring additional time to take no more than 5 days, unless authorized by the OSC.

Comments

PWSRCAC supports the 24-hour timeframe for data analysis to inform operational decision-making. However, we are concerned that existing sampling and analytical methods may not provide complete or accurate information. PWSRCAC requests that the EPA identify suggested methods or models that can accurately estimate the "daily transport of dispersed and non-dispersed oil" with sufficient accuracy to inform the coordination and scheduling of monitoring activities, as proposed in this section of the draft rule. As with other provisions, we believe that all reporting should be made public immediately and without censorship.

Recommendations

• PWSRCAC recommends that EPA require 24-hour turnaround for sampling data, and that this information be simultaneously made public.

• PWSRCAC recommends that EPA identify suggested methods or models that can accurately estimate the "daily transport of dispersed and non-dispersed oil" with sufficient accuracy to inform the coordination and scheduling of monitoring activities.

Data Requirements (40 CFR §300.915)

Summary: EPA proposes to revise and reorganize this section to include new testing and listing requirements for specific product categories.

General Product Information (40 CFR §300.915(a))

Summary: EPA proposes adding this section to consolidate general testing and listing requirements for all product categories. The general information requirements include: submitter, general product, supplier, product storage, product use, environmental fate, physical/chemical properties and formulation; microorganism information; NWQS contaminants, certification that the product does not include prohibited agents; testing laboratory information; laboratory testing data and reports; production capacity; and performance capabilities/benefits.

Comments

PWSRCAC supports the requirements for general product information, but we believe that the rule should provide additional specificity about the standards that must be used to derive some of the required information, such as physical and chemical properties, water quality contaminant levels, and environmental fate. All of this information should be made available to the public. Wherever possible, we believe that EPA should establish threshold limits above or below which agents do not qualify for listing on the Schedule.

PWSRCAC also notes EPA's choice of language to describe the requirements in this section of the proposed rule. Page 3381 describes the submission requirements as including "any other data or certification informing the product's performance capabilities or environmental benefits." PWSRCAC finds the use of the term "benefits" to be somewhat leading, and contradictory of the general precautionary approach that EPA takes elsewhere in the rule. The benefits of a treating agent will depend upon a number of factors. We suggest that it would be more accurate to request information about "potential benefits and drawbacks," which would more accurately inform decision-making.

- PWSRCAC recommends that the standards by which physical and chemical properties are determined should be specified in the EPA rule.
- PWSRCAC recommends that the standards by which NWQS contaminants are measured should be specified in the EPA rule.
- PWSRCAC recommends that the standards by which environmental fate information is determined should be specified in the EPA rule.
- PWSRCAC recommends that the EPA rule require that accredited laboratories must use standard methods and materials and list all materials and methods in their submitted reports.
- PWSRCAC recommends that all of this information be made publicly available for products that are listed on the Schedule.

- PWSRCAC recommends that EPA establish thresholds that can be used to screen agents and prevent agents that contain persistently bioaccumulating or environmentally persistent products from being included on the Schedule.
- PWSRCAC recommends that EPA ensure that the final rule discusses "benefits and drawbacks" together, rather than presuming a product will be beneficial under all circumstances.

Dispersant Testing and Listing Requirements (40 CFR §300.915(b))

Summary: EPA proposes new toxicity and efficacy testing requirements, limitations for use, and requirements for listing dispersants to the Schedule.

Comments

PWSRCAC supports the proposed requirement to conduct testing at two temperatures but suggest that an internationally accepted standard should be noted and listed with the supplied data. PWSRCAC understands that EPA considered limiting dispersant authorization based on oil type and temperature but ultimately dismissed this approach. While we understand EPA's concerns about specifying limits for dispersant use based on temperature and oil type, we disagree with EPA's conclusion that it makes sense to authorize only products that are effective on both types of oil at both temperatures. We believe that it is prudent to be as specific as possible within the Schedule about conditions in which a dispersant may or may not be effective. The waters of the U.S. span a range of conditions. This is of particular concern to us because dispersants are less effective under cold or arctic conditions than in temperate waters.

PWSRCAC agrees with the conclusion that dispersants have lower effectiveness in low salinity water. PWSRCAC suggests that a minimum salinity be specified for application and suggest that this number be 20 ppt. Similarly, there should be temperature limits below which dispersants are not effective; PWSRCAC suggests that this should be 10°C. Both of these thresholds are supported by published literature.

PWSRCAC supports a complete ban on the use of dispersants in freshwater without exception, and we support a ban on subsurface dispersant use until the underlying science and state of practices is more mature.

- PWSRCAC recommends conducting dispersant effectiveness and toxicity tests at two temperatures using an internationally accepted standard (see reference list at end of this document).
- PWSRCAC recommends that dispersant authorization should specify a temperature range for effectiveness, so that it would be possible to include a dispersant on the Schedule with the intent that it be used in one temperature range but not another (i.e. some dispersants may be used in temperate but not cold waters).
- PWSRCAC recommends that a minimum salinity threshold of 20 ppt and a minimum temperature of 10°C be established to prevent dispersant use in low salinity or low temperature environments, where they will not be effective. Both of these thresholds are supported by published literature (see Reference list under Dispersant Effectiveness at end of this document).

• PWSRCAC recommends a complete ban on subsurface dispersant use.

Surface Washing Agent Testing and Listing Requirements (40 CFR §300.915(c))

Summary: EPA proposes new toxicity and efficacy testing requirements, limitations for use, and requirements for listing surface washing agents to the Schedule.

Comments

PWSRCAC supports the use of the Environment Canada surface washing agent test. This test has been used by several agencies for many years and a very large database on product effectiveness exists. This test also has a high reliability.

PWSRCAC suggests that EPA should require toxicity testing of surface washing agent and oil combinations to determine whether the addition of surface washing agents may enhance or alter toxicity of the oil.

Recommendations

- PWSRCAC recommends using the Environment Canada surface washing agent test.
- PWSRCAC recommends that EPA require toxicity testing of surface washing agent treated oil.

Bioremediation Agent Testing and Listing Requirements (40 CFR §300.915(d))

Summary: EPA proposes new toxicity and efficacy testing requirements, limitations for use, and requirements for listing bioremediation agents to the Schedule.

Comments

PWSRCAC suggests that standard methods be used to analyze biodegradation products. The oxygenated products of biodegradation are often such that they may not be captured by gas chromatography methods and may require other methods of analysis.

PWSRCAC believes that toxicity tests with oil bioremediation-oil mixtures should be carried out to ensure that there is no combined toxicity of the oil-agent mixtures. We have included several references on bioremediation agents at the end of this document that we recommend EPA review in finalizing this rule.

Recommendations

- PWSRCAC recommends that EPA require the use of standard methods to analyze biodegradation products, and that the methods used are appropriate for measuring all byproducts.
- PWSRCAC recommends that toxicity tests with bioremediation agent-oil mixtures should be carried out to ensure that there is no combined toxicity of the oil-agent mixtures.

Solidifier Testing and Listing Requirements (40 CFR §300.915(e))

Summary: EPA proposes new toxicity and efficacy testing requirements, limitations for use, and requirements for listing solidifiers to the Schedule.

Comments

PWSRCAC has concerns about the use of solidifiers to treat oil spills. Many of the products on the market are actually sorbents, albeit polymeric adsorbents that draws the oil inside the mass. EPA must clearly delineate between solidifiers and sorbents.

PWSRCAC is also concerned that the use of oil spill solidifiers precludes the use of other mechanical countermeasures. Boom and skimmers are meant to deal with liquid oil. Once a solidifier is applied to the slick, it becomes too heavy and viscous for mechanical recovery, eliminating this option. Oil that is treated with a solidifier must still be removed from the environment, and this process is time critical to avoid the potential for the solidified oil to increase in density and sink.

Recommendations

• PWSRCAC recommends that EPA remove solidifiers from the Schedule, and that the definitions of solidifiers and sorbents clearly delineate their differences.

Confidential Business Information (40 CFR §300.950)

Summary: EPA proposes to revise and clarify the allowable confidential business information (CBI) claims in a submission package.

Comments

PWSRCAC does not support the characterization of Confidential Business Information (CBI) for products listed on the Schedule. We believe that EPA's duty under the Clean Water Act requires full disclosure of all information about the chemical formulation of agents listed in the Schedule. There must be full public disclosure of the components of oil treating agents as well as their precise formulations in order to assess potential exposure and toxicity.

In Alaska, much of our population relies on the marine environment for subsistence foods. In the event that oil spill treating agents are released in areas that are used for subsistence, all information about oil spill treating agents and the byproducts of treated oil must be fully available for public review and evaluation.

Recommendations

• PWSRCAC recommends that EPA reject any applications to the Product Schedule that characterize information as CBI, with no exceptions.

Addition of a Product to the Schedule (40 CFR §300.955)

Summary: EPA proposes to consolidate and reorganize information about the process of getting a product on the Schedule.

Changes to a Listed Product (40 CFR §300.955(e))

Summary: EPA proposes new regulatory text regarding notification of changes to a listed product.

Comments

PWSRCAC supports the proposal to require notification of EPA within 30 days of any changes to general product information, and the automatic triggers (i.e. changes to chemical compounds or concentrations) that would require retesting of the product.

We suggest that EPA expand this requirement to provide the RRT with the authority to request retesting of any product following a field application where the product is ineffective or determined to have adverse impacts.

Recommendations

- PWSRCAC recommends that EPA adopt the requirement for notification of changes to a listed product within 30 days.
- PWSRCAC recommends adding a provision that gives the RRT authority to request retesting of any product following a field application.

Transitioning Listed Products from the Current Schedule to the New Schedule (40 CFR §300.955(f))

Summary: EPA proposes new regulatory requirements for transitioning production on the current Schedule to the new Schedule.

Comments

PWSRCAC supports EPA's approach to requiring all products to undergo evaluation under the new process, and the development of a transition process to facilitate this.

Recommendations

• PWSRCAC recommends implementation of the transition process as proposed.

Removal of a Product from the Schedule (40 CFR §300.970)

Summary: EPA proposes to add basis for removal of products from the Schedule, EPA notification of decision, and appeals process

Comments

PWSRCAC supports EPA's proposed basis for removing products from the Schedule. We also suggest that members of the public should be provided with an opportunity to request removal of a product from the Schedule.

Recommendations

• PWSRCAC recommends that EPA implement this proposal with the addition of a provision that allows members of the public to petition the EPA for removal of a product from the Schedule.

Requirements for Product Testing Protocols and Summary Test Data (Appendix C to Part 300)

Summary: EPA proposes to revise Appendix C to contain testing protocols and summary test data requirements for standard efficacy and toxicity tests.

Comments

PWSRCAC is concerned that many of the proposed methods do not use established standards. In fact in some cases, inappropriate methods are proposed when there are standards already in existence by well-known standardization agencies such as ASTM, ANSI, ISO, etc.

It is important that EPA clearly distinguish between screening tests, that are meant to compare treating agents based on relative measurements, and tests that are meant to simulate or predict the performance of treating agents in the field. The testing required for the Schedule falls into the first category, and it is critical for OSCs, RRTs, trustee agencies and the public to understand this difference. Data resulting from these tests may be useful in comparing products, but may not be sufficient to predict performance in a particular situation.

The State-of-Science for Dispersant Use in Arctic Waters working group reached preliminary consensus on the differences between lab test methods and field results for dispersant effectiveness testing, noting: "Dispersant effectiveness varies between lab test methods and is not expected to represent field results. These tests are used for screening of dispersants and oils, conducting physical studies, developing new dispersants, or broadly informing field effectiveness potential."

Recommendations

- PWSRCAC encourages the use of consensus standards where available.
- PWSRCAC recommends that the EPA explicitly describe the utility and limits of screening tests, particularly as they relate to potential field applications. Screening tests are not predictive of field performance and test values provide relative, not absolute, measurements.

Dispersant Baffled Flask Efficacy Test (BFT)

Summary: EPA is proposing a change from the swirling flask to the baffled flask dispersant effectiveness test protocol.

Comments

PWSRCAC is concerned that EPA is proposing a non-standard method for efficacy testing when there is already a standard test that is used in the U.S. and around the world (ASTM F2059-06 (2012) Standard Test Method for Laboratory Oil Spill Dispersant Effectiveness Using the Swirling Flask). The ASTM swirling flask test has been in use for 20 years, is well accepted in peer-reviewed chemistry journals, and there are numerous laboratories that are proficient in its application.

PWSRCAC does not believe that colorimetric methods are appropriate, and a review of the professional literature confirms that there are other standard methods in place that are widely used and accepted among chemists (Drozdova et al., 2014; Fingas et al., 2004; Wang et al., 2014; Bowman et al., 2014; Fabbri et al., 2010; Sauer and Boehm, 2005). We recommend the use of TPH methods rather than the colorimetric (UV adsorption) method proposed. The UV method is confounded by the fact that oil consists of an array of components that each react to light differently, and it cannot reliably distinguish components of oil vs. dispersed oil. We have included a list of standards that apply to TPH analysis at the end of this document.

PWSRCAC believes it is most important to ensure that efficacy tests are carried out in a controlled and replicable manner. In this case, EPA should focus their effort on ensuring that dispersant efficacy tests are conducted by **certified** chemists working in **certified** laboratories using **certified** procedures (ASTM swirling flask test).

Recommendations

- PWSRCAC recommends TPH methods rather than colorimetric (UV adsorption) methods.
- PWSRCAC recommends that EPA ensure that all dispersant efficacy testing adhere to the principle of "3 C's": tests are conducted by **certified** chemists working in **certified** laboratories using **certified** procedures.

Dispersant Toxicity Testing

Summary: EPA proposes changes to dispersant toxicity testing.

Comments

PWSRCAC supports the proposal to require toxicity testing for the dispersant alone and for dispersed oil on both test oils. It is critical that toxicity testing be as comprehensive as possible, and adequately consider short- and long-term impacts. The State-of-Science for Dispersant Use in Arctic Waters working group noted that acute toxicity testing may miss some delayed mortality and other adverse ecological impacts: *"Data from standard acute LC50 and EC50 tests can miss delayed mortality and may also miss other adverse ecologically important endpoints that are expressed over a longer period of time."*

PWSRCAC also remains concerned that analysis of toxicological impacts should not rely on a single species, but should take into consideration indirect ecosystem-level and trophic effects of dispersed oil. Both crude oil and dispersants are complex mixtures -- oil contains many constituents which have not been well characterized chemically or toxicologically. Dispersants may contain constituents that are not routinely measured in standard toxicology analyses. Many long-term consequences of short-term exposures such as endocrine disruption, reproductive failures, and developmental disorders, are not detected by the short-term tests required in this Proposed Rule.

PWSRCAC also supports the addition of toxicity testing focused on evaluating potential human health impacts of dispersants and dispersed oil, in order to protect the health and safety of responders and the public. A suite of human toxicity tests that evaluate all potential exposure routes to responders and the public – e.g. inhalation, skin irritation, etc. – should be submitted as part of the documentation for dispersants listed in the Schedule.

Because it is impossible for toxicity testing to foresee all long-term adverse health impacts to humans and the environment, we believe that it is critical to conduct rigorous long-term monitoring of species exposed to dispersants and dispersed oil. Information from long-term monitoring should then feed back into the toxicity testing to help understand the impact of unexpected toxic components or byproducts.

PWSRCAC appreciates EPA's consideration that longer chronic toxicity tests are needed, but we are concerned that the proposed approaches are still not adequate to test for long term, possible multi-generational, effects from short term exposures to dispersed oil. We suggest inclusion of Tier 1 screening for endocrine disrupting compounds as an example of the type of analysis necessary to assess the complex sublethal effects that may be caused by exposure to dispersed oil fractions.

Recommendations

- PWSRCAC recommends that wherever practicable, dispersant toxicity test species should either be indigenous to the spill area or have been shown to be appropriate surrogates for species from the area.
- PWSRCAC recommends that dispersants should undergo toxicity testing that specifically examines potential human toxicity through all potential routes of exposure for responders and the public.
- PWSRCAC recommends that toxicity testing be required for both dispersed oil and dispersants.
- PWSRCAC recommends that a full EPA EDSTAC Tier 1 screening be required for all dispersants and the water accommodated fraction of all test oils before products are approved for listing on the Schedule.

Standard Acute Toxicity Test for Bioremediation Agents, Surface Washing Agents, Herding Agents, and Solidifiers

Comments

PWSRCAC is concerned about the use of non-indigenous or genetically engineered bioremediation agents that may colonize areas where they are being applied. We are also concerned about the potential for toxicity from the partial degradation products of bioremediation.

Recommendations

- PWSRCAC recommends that EPA prohibit the use of non-indigenous or genetically engineered bioremediation agents that may colonize areas where they are being applied.
- PWSRCAC recommends that oil samples from shore areas subject to bioremediation be tested periodically for the production of toxic partial degradation products.

Reference List

PWSRCAC provides the following list of references, organized by topic area, which are cited either as individual publications or by topic area within our comments. We recommend that EPA thoroughly review this literature in finalizing the rule, to ensure that all policy reflects the best and most recent peer-reviewed scientific literature.

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