

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER
PROGRAM GUIDANCE



Guidance No. W 05-__

Page 1 of 5

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GUIDANCE FOR RESIDUE CRITERIA IMPLEMENTATION
DRAFT REFLECTING PROPOSED RESIDUE CRITERIA
REGULATIONS

- Purpose:** This guidance to Division of Water staff reflects revisions to regulations for residues criteria in 18 AAC 70.020(b) adopted on [DATE]
- Definition of residues** The definition for residues is adopted in 18 AAC 70.900(49):
“Residues” means floating solids, debris, sludge, deposits, foam, scum, or any other material or substance remaining in a water body as a result of direct or nearby human activity.
- Nuisances and objectionable deposits considerations** 18 AAC 70.020(b) Notes for residues criteria:
13. In deciding what constitutes a nuisance or an objectionable deposit, odor or taste, or an undesirable or nuisance species, the department will consider the extent to which the presence of residue
(A) results in complaints from existing users;
(B) is consistent with the intended use of the area as designated in a land use or other resource management plan adopted by a federal, state or local government; or
(C) otherwise impairs or could reasonably be expected to impair existing or designated uses of the water body.
- Implementation of nuisance and objectionable deposits** The residues criteria allow the department to assess the impacts of residues on a site specific basis to determine if they would interfere with the existing uses of the water. The criteria address aesthetic concerns by using the concepts of “nuisance” and “objectionable”. These concepts come from the Environmental Protection Agency (EPA) Water Quality Standards handbook and are common regulatory language in other states. “Nuisance” and “objectionable” are site-specific determinations based on the potential for conflicts with nearby existing water body uses.

Nuisance and undesirable species include both indigenous and nonindigenous species that impact existing aquatic communities or interfere with other uses of the water. Residues may introduce or attract new species that were not part of the natural communities (e.g. invasive nonindigenous species, predator and scavenger

species) by providing a new and abundant food source or dumping live organisms mixed in with wastes. Residues may also result in an increase in the abundance of nuisance or undesirable species that were already present (e.g. algal blooms, starfish, and sea cucumber) by changing the physical or chemical conditions of the sediments. A shift in the overall structure and productivity of the aquatic ecosystem could displace more desirable shellfish communities. Floating residues or residues deposited on the shoreline may attract nuisance and undesirable species that may act as disease vectors (e.g. flies, gulls) or public hazards (e.g. aggressive wildlife) that may interfere with protected water uses such as recreation and seafood processing.

Both floating and settled residues may form an objectionable deposit or constitute a nuisance depending on their characteristics, location relative to other water users, and other factors listed in Note 13.

Note 13(A) Complaints from Existing Users

All complaints should be logged into the Complaint Automated Tracking System (CATS) including all relevant contact information and documentation. A tracking number will be generated by CATS that should be used in all correspondence regarding the complaint.

When deciding what constitutes an objectionable deposit or a nuisance that violates the residue standard, it is appropriate to give more weight to complaints that are based on detailed, factual descriptions and concrete evidence (e.g. dated photos, analytical test results) as well as consider the extent, duration and severity of the impact on the complainant. It is also necessary to keep in mind that aesthetic judgments and values vary widely between individuals and between neighborhoods or communities.

An existing user is any person or organization that has current and direct experience with the water body for one or more of the uses protected by state water quality standards.

Note 13(B) Land Use Plans and Other Resource Management Plans

The State of Alaska has title to submerged land underlying navigable water, with the exception of a few land withdrawals for private and federal lands existing at statehood. The Department of Natural Resources (DNR) has authority to adopt regional land use plans for submerged lands of navigable waters under AS 38.04.065 and AS 38.05.300. Regional land use plans can be found on the DNR Land Use Planning Program website at <http://www.dnr.state.ak.us/mlw/planning>.

Waters in federal parks and refuges existing at statehood are managed by federal agencies. Waters in Glacier Bay National Park Service are managed by the National Park Service. Waters in the Alaska Maritime Wildlife Refuge are managed by the U.S. Fish and Wildlife Service. For other federally managed waters, contact the Bureau of Land Management for applicable land use plans.

The State has deeded some waters to certain municipal governments. In these cases, the municipal planning departments may have an applicable land use plan. Local land use plans and zoning that allows upland land uses that may have an effect on water quality should also be considered.

Other resource management plans that have been adopted by state or federal agencies may also be considered in determining what is objectionable or a nuisance. For Clean Water Act Section 303(d) listed impaired water bodies, water body recovery plans may be developed by DEC as total maximum daily load (TMDL) allocations and approved by EPA. TMDLS for residue impaired waterbodies may have specific requirements regarding the amount and types of residues that may be discharged under permits.

Note 13(C) Impairments to Existing or Designated Uses

The severity or duration of impacts resulting from a residue discharge may be considered when evaluating whether the residue impairs the uses of a waterbody. Some residues may be relatively ephemeral, i.e. have only short term effects. Ephemeral residues may not significantly impair a designated uses that is not in active use at the time of discharge. For example, foam might not be considered an impairment of the drinking water use, if the waterbody is not currently being used as a drinking water source. The foam could reasonably be expected to dissipate within a short time after discharge, leaving the waterbody suitable for future drinking water uses. However, ongoing foam discharge could be considered an impairment if it negatively impacted an established drinking water source.

For aquatic life uses, impairments would include any substance or condition that would cause acute or chronic adverse effects to the structure or productivity of the aquatic community. Assessment of the effects of residues applies to the function of the water body ecosystem as opposed to small scale impacts on individual organisms. EPA has suggested the criteria should protect the smallest portion of the affected water body which can be considered an integrated ecosystem.

There are exceptions to this aquatic community guideline when considering adverse effects to threatened and endangered species under the Endangered Species Act or to essential fish habitat protected under the Magnuson-Stevens Act. In these cases, residue criteria should consider adverse effects to individuals or small numbers of organisms as necessary to meet the requirements of these laws.

Regulation of other effects associated with residues

It is recognized that residues may have a number of effects that may be regulated by more appropriate criteria. Toxics leached from residues are regulated through the criteria for toxic and other deleterious substances. Residues that cause a film, sheen or discoloration are regulated by criteria for petroleum, hydrocarbons, oils and grease, and criteria for color.

Quantitative or

Numerous scientific studies have documented various effects of residues on

qualitative thresholds for compliance

established aquatic communities and species. These following studies may be used to evaluate thresholds for compliance and impairment decisions.

- Environmental Impacts of Residues on the Aquatic Environment, May 2004, Dasher, et al., Alaska Department of Environmental Conservation.
- Marine Environmental Assessment Report: The Effects of Seafood Waste Discharges on the Benthic Environment at Ketchikan, Alaska, June 2004, Germano & Associates. Prepared for Tetra Tech, Inc., Mountlake Terrace, Washington.
- Final Decision: Department of Environmental Conservation Adjudication in the Matter of EPA General Permits AK-G70-1000 and AK-G70-000, May 2002.

Additional site specific studies may be necessary to determine appropriate compliance thresholds at the discretion of the Department.

Mixing zones and zones of deposit for residues may be authorized in a permit, certification or short-term variance in accordance with the conditions in 18 AAC 70.210 and .240-.270. Compliance provisions for mixing zones and zones of deposit for residue criteria can be found in NPDES general permit AK-G52-0000 for seafood processing facilities, and NPDES general permits AK-G70-1000 (“post-1985”) and AK-G70-0000 (“pre-1985”) for log transfer facilities. These general permits regulate the large majority of the residue discharges in Alaska. Individual permits issued for some discharges generally apply the same principals with site specific variations.

Methods for measuring compliance with residue criteria

Biological surveys evaluating species presence, condition and population estimates within a water body may be used to establish biological baselines or to evaluate impacts of residues to the productivity and diversity of established aquatic communities.

Sediment coring or bioassay studies done either in situ or as laboratory studies may be used to evaluate the impacts of residues on a particular species or aquatic community. Physical impacts such as depth of deposits or substrate characteristics that result in adverse impacts to the established aquatic community may be considered compliance issues for an objectionable deposit. However, toxic effects of residue materials should be evaluated for compliance with the toxic substances criteria.

Permits may contain specific methods for measuring compliance with permit terms and conditions for residue.

Other methods may also be approved by the Department.

Application:

Residues can accumulate upon surface, within water column, on bottom or upon adjoining shorelines. If residues are discharged in such a manner that they contact or impact the use of waters of the state, then they are subject to the water quality

standards. Discharge of residues that are not in contact with a water body may require a solid waste disposal permit.

Residue criteria may be used to set limits or conditions for mixing zones or zones of deposits in wastewater discharge permits, certifications or short-term variances. Residue criteria are also used in impaired water body listing decisions under Section 303(d) of the Clean Water Act and in evaluating total maximum daily load (TMDL) allocations.

Residue implementation guidance may include memos, letters, permits and other documents regarding log transfer facilities, seafood processing facilities, unpermitted disposal of residue in surface waters, and procedures for water body listing and TMDLs.

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Division of Water

Date