SB

98

5-0534B
Bradley
3/16/87

Original sponsors: Fahrenkamp, Faiks, Coghill, et al.

IN THE SENATE BY THE RESOURCES COMMITTEE

CS FOR SENATE BILL NO. 98 (Resources)

IN THE LEGISLATURE OF THE STATE OF ALASKA

FIFTEENTH LEGISLATURE - FIRST SESSION

A BILL

For an Act entitled: "An Act relating to the use of water."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. AS 46.03.020(10) is amended to read.

(10) adopt regulations necessary to effectuate the purposes of this chapter, including, by way of example and not limitation, regulations providing for

(A) except as provided in AS 46.03.023, control, prevention, and abatement of air, water, or land or subsurface land pollution;

(B) safeguard standards for petroleum and natural gas pipeline construction, operation, modification, or alteration;

(C) protection of public water supplies by establishing minimum drinking water standards, and standards for the construction, improvement, and maintenance of public water supply systems;

(D) collection and disposal of sewage and industrial waste;

(E) collection and disposal of garbage, refuse, and other discarded solid materials from industrial, commercial, agricultural, and community activities or operations;

(F) [REPEALED

(G)] control of pesticides;

(G) [(H)] such other purposes as may be required for the implementation of the policy declared in AS 46.03.010;

(H) [(I)] handling, transportation, treatment, storage, and disposal of hazardous wastes;

* Sec. 2. AS 46.03 is amended by adding a new section to read:

Sec. 46.03.023. LIMITATION ON POWER OF DEPARTMENT. The department may not establish a water quality criterion for turbidity.

* Sec. 3. AS 46.03.080 is amended to read:

Sec. 46.03.080. QUALITY AND PURITY STANDARDS. After study and public hearings held upon due notice, the department may, except as provided under AS 46.03.023, establish standards of quality and purity or group the designated waters of the state into classes as to minimum quality and purity, or both. The department shall classify waters in accordance with considerations of best usage in the interest of the public. The department may alter and modify classifications after hearing.

* Sec. 4. AS 46.15 is amended by adding a new section to read:

Sec. 46.15.045. SMALL SCALE USE OF WATER. A person may use less than a significant amount of water without a permit unless the commissioner determines under AS 46.15.080(b) that the use of less than a significant amount of water without a permit is not in the public interest. A person using less than a significant amount of water without a permit acquires no water right or priority unless an application is filed and a permit or certificate is issued under AS 46.15.-030 - 46.15.185.

* Sec. 5. AS 46.15.133(f) is amended to read:

(f) The commissioner may, by regulation, designate additional types of appropriations that [WHICH] are exempt from this section and provide simplified procedures for ruling on the applications.

* Sec. 6. AS 46.15.133 is amended by adding a new subsection to read:

(g) An application to appropriate not more than 5,000 gallons of

water a day is exempt from the notice provisions of this section except that the commissioner shall notify the Department of Fish and Game of each application to appropriate water from a stream designated under AS 16.05.870(a). Notwithstanding this subsection, the commissioner may require public notice under this section

(1) on a determination that the total amount of water available in an area is limited considering the number of potential users from the source of the water; or

(2) on request of the municipality in which the area is located.

* Sec. 7. AS 46.15.260 is amended t read:

Sec. 46.15.260. DEFINITIONS. In this chapter, unless the context otherwise requires,

(1) "appropriate" means

(A) to divert, impound, or withdraw a quantity of water from a source of water, for a beneficial use; or

(B) to reserve water under [IN ACCORDANCE WITH] AS 46.15.145;

(2) "appropriation" means

(A) the diversion, impounding, or withdrawal of a quantity of water from a source of water for a beneficial use; or

(B) the reservation of water under [IN ACCORDANCE WITH] AS 46.15.145;

(3) "beneficial use" means a use of water for the benefit of the appropriator, other persons or the public, that is reasonable and consistent with the public interest, including, but not limited to, domestic, agricultural, irrigation, industrial, manufacturing, fish and shellfish processing, navigation and transportation, mining, power, public, sanitary, fish and wildlife, recreational uses, and

maintenance of water quality;

(4) "source of water" means a substantial quantity of water capable of being put to beneficial use;

(5) "water" means all water of the state, surface and subsurface, occurring in a natural state, except mineral and medicinal water;

(6) "commissioner" means the commissioner of natural resources;

(7) "director" means the director of the division of lands, Department of Natural Resources;

(8) "person" includes an individual, partnership, association, public or private corporation, state agency, municipality [POLITICAL SUBDIVISION] of the state, and the United States; [.]

(9) "mineral and medicinal water" means

(A) water of a hot spring or spring with curative properties that [WHICH] has been reserved by the federal government under Public Land Order No. 399; and

(B) geothermal fluid, as [THE TERM IS] defined in AS 41.06.060;

(10) "significant amount of water" means

(A) a use of more than 5,000 gallons of water in a single day from a single source; or

(B) the regular daily or recurring seasonal use of more than 500 gallons of water a day for 10 days or more a year from a single source; or

(C) a water use that may adversely affect the water rights of another appropriator or the public interest.

* Sec. 8. AS 16.05.870(b) - (c), 16.05.880 - 16.05.900 and AS 16.20.070 are repealed.

ALSO (d)

* Sec. 9. The criterion for turbidity established in 18 AAC 70.020(b) is repealed.

IN THE SENATE BY FAHRENKAMP

SENATE CONCURRENT RESOLUTION NO.

IN THE LEGISLATURE OF THE STATE OF ALASKA

FIFTEENTH LEGISLATURE - FIRST SESSION

Relating to the state's water quality criterion for turbidity.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS the legislature finds that the state water quality criterion for turbidity has unreasonably interfered with reasonable economic opportunities for resource development in the state; and

WHEREAS the legislature determines that there is no reasonable relationship between the economic and social costs of retention of the turbidity criterion and the benefits obtained from its retention; and

WHEREAS the legislature is considering the repeal of the existing water quality criterion for turbidity but wishes to comply with the requirements of sec. 303 of the Clean Water Act (33 U.S.C. 1313); and

WHEREAS the legislature intends to exhaust all reasonable efforts to have its revised water quality standards, without the turbidity criterion, approved by the Administrator of the Environmental Protection Agency;

BE IT RESOLVED by the Alaska State Legislature that the Governor is respectfully requested to direct the commissioner of environmental conservation to present revised water quality standards that do not contain a criterion for turbidity to the Administrator of the Environmental Protection Agency for approval under sec. 303(c) of the Clean Water Act; and be it

FURTHER RESOLVED that the Governor is also requested to direct the commissioner of environmental conservation to present to the administrator with the revised standards a detailed explanation of the adequacy of the revised standards in the protection of the public health and welfare, the

enhancement of the quality of water, and the achievement of the purposes of the Clean Water Act notwithstanding the absence of a turbidity criterion; and be it

FURTHER RESOLVED that if the administrator fails to approve the revised water quality standards submitted by the commissioner of environmental conservation, the Governor is respectfully requested to direct the commissioner of environmental conservation and the attorney general to request a variance under sec. 302 of the Clean Water Act from the applicable federal water quality standard that the administrator uses to justify the rejection of the request for approval.

IN THE SENATE BY FAHRENKAMP

SENATE JOINT RESOLUTION NO.

IN THE LEGISLATURE OF THE STATE OF ALASKA

FIFTEENTH LEGISLATURE - FIRST SESSION

Relating to the requirement that a state have a water quality criterion for turbidity to comply with the Clean Water Act.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS the legislature finds that the state water quality criterion for turbidity has unreasonably interfered with reasonable economic opportunities for resource development in the state; and

WHEREAS the legislature determines that there is no reasonable relationship between the economic and social costs of retention of the turbidity criterion and the benefits obtained from its retention; and

WHEREAS the legislature is considering the repeal of the existing water quality criterion for turbidity but wishes to comply with the requirements of sec. 303 of the Clean Water Act (33 U.S.C. 1313); and

WHEREAS the legislature intends to exhaust all reasonable efforts to have its revised water quality standards, without the turbidity criterion, approved by the Administrator of the Environmental Protection Agency;

BE IT RESOLVED by the Alaska State Legislature that the members of the Alaska delegation in Congress are respectfully requested to seek legislation that would waive or eliminate any requirement that a state's water quality plan under sec. 303(c) of the Clean Water Act have a turbidity criterion.

COPIES of this resolution shall be sent to the Honorable Ted Stevens and the Honorable Frank Murkowski, U.S. Senators, and the Honorable Don Young, U.S. Representative, members of the Alaska delegation in Congress.

Alaska State Legislature

Senate Resources Committee

Box V
Juneau, Alaska 99811
(907) 465-4907

MEMORANDUM

TO: Senate Resource Committee Members

FROM: Resource Committee Staff RG

RE: CS SB 98; An Act relating to the Use of Water.

DATE: March 23, 1987

Today your packets contain the following items:

1) CS SB 98, the March 16, 1987 version brought before the committee on this date. The two resolutions also presented by Senator Fahrenkamp are included.

2) Senator Fahrenkamp's sponsor memo of March 16, 1987.

3) Legislative Council's sectional analysis

4) DNR's fiscal note.

5) Existing Alaska Statutes governing Fish and Games water quality authority.

6) DEC's 18 AAC 70.020; Turbidity Regulations.

7) Pages 404 through 407 of EPA's "red book."

8) Fairbanks Daily News-Miner article, March 19, 1987.

9) Anchorage Daily News article, March 11, 1986.

Staff is prepared to give a brief demonstration of turbidity, using an actual sample taken from a placer mine settling pond in the fall of 1986.

Alaska State Legislature

Official Business

M E M O R A N D U M

P.O. BOX V
State Capitol
Juneau, Alaska 99811

TO: S nator Jack Coghill/Members of the Resources Committee

FROM: Senator Bettye Fahrenkamp
Representative Mike Miller

DATE: March 16, 1987

RE: Analysis of Committee Substitute for SB 98/HB 109

Because turbidity is the major water quality problem faced by developers of natural resources, especially placer miners, we are proposing to repeal the State's turbidity standard set forth in 18 AAC 70-20(b). The standard for suspended solids would remain. The question is whether getting rid of turbidity would cause EPA to step in and require the State's water quality management plan to include such a standard. Section 303(c) of the Clean Water Act and the regulations promulgated pursuant to Section 303 (40 CFR § 131) answer this question.

Water quality standards consist of two parts: water uses and criteria. Water uses are such things as drinking, swimming, and fishing. Criteria are specific numbers describing the amount of pollutant load a body of water can have for a particular use. The relationship between them is described in 40 CFR 131.11(a) which provides as follows:

> "(a) Inclusion of pollutants. (1) States must adopt those water quality criteria that protect the designated use. Such criteria must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use. For waters with multiple use designations, the criteria shall support the most sensitive use."

The test then for determining whether turbidity can be repealed is whether it will interfere with any of the designated uses such as for drinking water, fishing, swimming, and the like. For the answer to that question, we turn to the so-called "Red Book" or the "Quality Criteria for Water." At page 404, that book shows that suspended solids and turbidity are a <u>combined</u> criteria. We have attached four pages from the Red Book on this subject for your reference.

As you can see, the only place where turbidity is a substantive concern is with drinking water and then, only "where the water enters the distribution system." Beyond that, the importance of turbidity is described thus at page 405:

> "Turbid water interferes with recreational use and aesthetic enjoyment of water. Turbid waters can be dangerous for swimming, especially if diving facilities are provided, because of the possibility of unseen submerged hazards and the difficulty in locating swimmers in danger of drowning. The less the turbid the water, the more desirable it becomes for swimming and other water contact sports. Other recreational pursuits such as boating and fishing will be adequately protected by suspended solids criteria developed for protection of fish and other aquatic life." (emphasis added)

In short then, turbidity is basically an aesthetic standard, important to health only where drinking water enters the distribution system, and not in the stream itself. These reasons should not be sufficient to cause EPA to overreact to repeal of turbidity as a water quality criteria under the Alaska Water Quality Standards.

Accordingly, the proposed changes to the first three sections of SB 98 would prohibit DEC from establishing a water quality criterion for turbidity and repeals the turbidity standard in the regulations (p. 5, lines 1-2). The accompanying resolution requests that the Commissioner revise the water quality plan without turbidity, present it to EPA and argue the points made above. This would occur in accordance with the procedure laid out in 40 CFR § 131.21 and Section 303 of the Act. The procedure provides that the state would submit a revised plan to EPA's Regional Administrator who would notify the state of approval within 60 days or within 90 days if the revisions are disapproved. Subsection (c) of § 131.21 provides:

> "A state water quality standard remains in effect even though disapproved by EPA until the state revises it or EPA promulgates a rule that supersedes the state water quality standard."

If EPA disapproves the proposed plan change and, in effect, maintains an effluent limitation on turbidity in permits issued to the miners, it would clearly be a water quality related effluent limitation established under § 302(a) of the Act. Thus,

it would appear appropriate for the State to act in behalf of the placer miners impacted to request a variance under § 302(b) of the Act, which provides as follows:

> "If a person affected by such limitation demonstrates at such hearing that (whether or not such technology or other alternative control strategies are available). There is no reasonable relationship between the economic and social costs and the benefits to be obtained (including attainment of the objective of this chapter), such limitation shall not become effective and the administrator shall adjust such limitation as it applies to such a person."

Finally, if all else fails, you could seek a change in the Clean Water Act either through the authorizing or appropriations process to prevent application of the turbidity standard in Alaska.

The Committee substitute adds a new section on p. 4, lines 28-29, to repeal AS 16.05.870(b)-(d) and AS 16.05.880 (attached), and removes references to them elsewhere in the statutes. This law traces its origin to statehood long prior to the passage of comprehensive federal and state pollution control laws in the 1970s. In creating the Department of Environmental Conservation (DEC) in 1971, the Legislature provided that DEC was responsible for the protection of the State's air and water. AS 16.10.010 affords basically the same protection as AS 16.05.870, and more appropriately places regulatory authority with DEC. Indeed, AS 16.05.870 and AS 16.05.880 should have been deleted from the Alaska Statutes as part of Code revision when DEC's enabling legislation was passed. Both the public interest -- and the waters noted in the statute -- are adequately protected by the Clean Water Act and DEC's laws.

Protection of water quality to enhance fish and other aquatic life is a prime objective of the Clean Water Act, as well as the DEC. State requirements which either conflict with the Clean Water Act or are duplicative should be eliminated. Such additional state laws pose an unnecessary cost of State government and an unneeded regulatory burden on Alaskans at a time when we need to unshackle the private sector and broaden Alaska's economic base.

On p. 2, line 29, the Committee substitute changes from 1000 to 5000 as the number of gallons of water per day that is exempt from notice provisions. This change is supported by DNR.

STATE OF ALASKA
THE LEGISLATURE

POUCH Y STATE CAPITOL
JUNEAU ALASKA 99811
907 465 3800

LEGISLATIVE AFFAIRS AGENCY

M E M O R A N D U M March 20, 1987

SUBJECT: Use of water
[3/16/87 draft of CSSB 98(Resources)]

TO: Senator Jack Coghill
Chairman, Senate Resources Committee

FROM: Richard A. Bradley
Legislative Counsel

Bruce Geraghty has requested a sectional analysis of the above described bill.

As a preliminary matter, note that a sectional analysis or summary of a bill should not be considered an authoritative interpretation of the bill and the bill itself is the best statement of its contents. If you would like an interpretation of the bill as it may apply to a particular set of circumstances, please advise.

There are two aspects to this bill. The first relates to the power of the commissioner of environmental conservation to establish a "water quality criterion for turbidity;" see bill sections 1 - 3 and 8 - 9. The second relates to the "small scale use of water"; see bill sections 4 - 7

The sectional analysis requested will analyze the sections of the bill in these two aspects.

I. Water quality criterion for turbidity.

Section 1 of the bill amends AS 46.03.020(10). The section states the "powers of the department (of environmental conservation)". The amendment to the section limits the authority of the department to adopt regulations relating to the "control, prevention, and abatement of air, water, or land or subsurface land pollution." The section providing the limitation only relates, of course, to the "water quality criterion for turbidity."

Section 2 of the bill establishes the limitation. It provides that the department of environmental conservation may not establish a water quality criterion for turbidity.

Section 3 of the bill amends AS 46.03.080. The section relates to water quality and purity standards and establishes the limitation on the authority of the department relating to the water quality criterion for turbidity.

Section 8 of the bill establishes some repealers. The section repeals AS 16.05.870(b) - (c). In my view, the repealer should have also deleted AS 16.05.870(d). Those subsections provide:

> (b) If a person or governmental agency desires to construct a hydraulic project, or use, divert, obstruct, pollute, or change the natural flow or bed of a specified river, lake, or stream, or to use wheeled, tracked, or excavating equipment or log-dragging equipment in the bed of a specified river, lake, or stream, the person or governmental agency shall notify the commissioner of this intention before the beginning of the construction or use.
>
> (c) The commissioner shall acknowledge receiving the notice by return first class mail. If the commissioner determines that the following information is required, the letter of acknowledgement shall require the person or governmental agency to submit to the commissioner:
>
> > (1) full plans and specifications of the proposed construction or work;
> >
> > (2) complete plans and specifications for the proper protection of fish and game in connection with the construction or work, or in connection with the use; and
> >
> > (3) the approximate date the construction, work, or use will begin.
>
> (d) The commissioner shall approve the proposed construction, work, or use in writing unless the commissioner finds the plans and specifications insufficient for the proper protection of fish and game. Upon a finding that the plans and specifications are insufficient for the proper protection of fish and game, the

commissioner shall notify the person or governmental agency which submitted the plans and specifications of that finding by first class mail. The person or governmental agency may, within 90 days of receiving the notice, initiate a hearing under AS 44.62.370. The hearing is subject to AS 44.62.330 44.62.630.

Also proposed for repeal are AS 16.05.880 - 16.05.900; the sections provide:

Sec. 16.05.880. CONSTRUCTION WITHOUT APPROVAL PROHIBITED. If a person or governmental agency begins construction on a work or project or use for which notice is required by AS 16.05.870 without first providing plans and specifications subject to the approval of the commissioner for the proper protection of fish and game, and without first having obtained written approval of the commissioner as to the adequacy of the plans and specifications submitted for the protection of fish and game, the person or agency is guilty of a misdemeanor. If a person or governmental agency is convicted of violating AS 16.05.870 - 16.05.895 or continues a use, work or project without fully complying with AS 16.05.870 16.05.895, the use, work, or project is a public nuisance and is subject to abatement. The cost of restoring a specified river, lake, or stream to its original condition shall be borne by the violator and shall be in addition to the penalty imposed by the court.

Sec. 16.05.890. EXEMPTION FOR EMERGENCY SITUATIONS. In an emergency arising from weather or stream flow conditions, the department, through its authorized representatives, shall issue oral permits to a riparian owner for removing obstructions or for repairing existing structures without the necessity of submitting prepared plans and specifications as required by AS 16.05.870.

Sec. 16.05.895. PENALTY FOR CAUSING MATERIAL DAMAGE. If a person or governmental agency fails to notify the commissioner of any construction or use that causes material damage to the spawning beds or prevents or interferes with the migration of anadromous fish, or by neglect or noncompliance with plans and specifications required and approved by the commissioner causes material damage to the spawning beds or prevents or interferes with the migration of anadromous fish, the person

or governmental agency shall be guilty of a misdemeanor.

Sec. 16.05.900. PENALTY FOR VIOLATIONS. (a) A person who violates AS 16.05.870 - 16.05.895 is guilty of a class A misdemeanor.

(b) The court shall transmit the proceeds of all fines to the proper state officer for deposit in the general fund of the state.

The section also repeals AS 16.20.070; it provides:

Sec. 16.20.070. RELATIONSHIP TO OTHER LAWS. AS 16.20.050 and 16.20.060 do not affect AS 16.05.870 - 16.05.890.

Section 9 of the bill repeals the existing provision of the regulations of the Department of Environmental Conservation relating to the "criterion for turbidity" in 18 AAC 70.020(b).

II. Small scale use of water.

The responsibilities in this section belong to the commissioner of natural resources.

Section 4 of the bill adds a new Sec. 46.15.045; the section provides that a person may use less than a "significant amount of water" without a (water use) permit from the commissioner of natural resources -- unless the commissioner determines that such a use in "not in the public interest." As the last sentence of the section provides, no priority of use arises until an application is filed. See art. VIII, section 13, Alaska Constitution.

Section 5 of the bill amends AS 46.15.133(f); it adds "additional" to the authorization to the commissioner regarding the types of appropriations (of water) that are exempt from the notice requirements of the section.

Section 6 of the bill adds a new subsection (g) to AS 46.15.133. It provides that an application to appropriate not more than 5,000 gallons of water a day is exempt from the notice requirements of the section -- with two exceptions stated in the section.

Section 7 of the bill amends AS 46.15.260, a definitions section. Apart from some technical corrections to the law,

the substantive content of the section consists of its definition of a "significant amount of water."

If I may be of further assistance, please advise.

RAB:mkr
m10/026

STATE OF ALASKA 1987 LEGISLATIVE SESSION
FISCAL NOTE

REQUEST:

Bill Version: CS for SB 98 (3/16/87)
Publish Date:

Revision Date: 3/16/87
Title: An Act relating to use of water

Agency Affected: Dept. of Natural Resources
BRU: Div. of Land & Water Mgmt.

Sponsor: Fahrenkamp, Faiks, et. al.
Requestor: Senate Resources

Components:

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-
CAPITAL	-0-	-0-	-0-	-0-	-0-	-0-
REVENUE	-0-	-0-	-0-	-0-	-0-	-0-

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL	-0-	-0-	-0-	-0-	-0-	-0-

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary)

With regard to the CS, dated 3/16/87, for SB 98, there are no anticipated additional staff or funding requirements.

Prepared by: Lawrence Z. Ostrovsky
Phone: 465-2500
Division: Special Assistant, Commissioner's Office
Date: 3/17/87

Approved by Commissioner: Judith M. Brady
Date: 3/13/87
Agency: Dept. of Natural Resources

Distribution (by preparer):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)
Senate Secretary

(4)

The water quality criteria, when used in combination with the water use designation, constitute the water quality standard for a particular water body. The water quality standards regulate human activities which result in alterations to waters within the jurisdiction of the state.

(4) TURBIDITY (not applicable for groundwaters)	(5) TEMPERATURE	(6) DISSOLVED INORGANIC SUBSTANCES
Shall not exceed 5 NTU above natural conditions when the natural turbidity is 50 NTU or less, and not have more than10% increase in turbidity when the natural condition is more than 50 NTU, not to exceed a maximum increase of 25 NTU	Shall not exceed 15° C.	Total dissolved solids (TDS) from all sources shall not exceed 500 mg/l. Neither chlorides nor sulfates shall exceed 200 mg/l.
Shall not cause detrimental effects on indicated use	Shall not exceed 30° C.	TDS shall not exceed 1,000 mg/l. Sodium absorption ratio less than 2.5, sodium percentage less than 60%, residual carbonate less than 1.25 mg/l, and boron less than 0.3 mg/l. (See Note 7)
Shall not exceed 25 NTU above natural condition level. For all lake waters, shall not exceed 5 NTU over natural conditions.	Shall not exceed 20°C at any time. The following maximum temperature shall not be exceeded, where applicable: Migration routes 15°C Spawning areas 13°C Rearing areas 15°C Egg & Fry incubation 13°C For all other waters, the weekly average temperature shall not exceed site specific requirements needed to preserve normal species diversity or to prevent appearance of nuisance organisms.	Total dissolved solids shall not exceed a maximum of 1,500 mg/l including natural conditions. Increase in TDS shall not exceed one-third of the concentration of the natural condition of the body of water.
Shall not cause detrimental effects on established water supply treatment levels.	Shall not exceed 25°C.	No amounts above natural conditions which can cause corrosion, scaling, or process problems.
Shall not exceed 5 NTU above natural conditions when the natural turbidity is 50 NTU or less, and not have more than 10% increase in turbidity when the natural condition is more than 50 NTU, not to exceed a maximum increase of 15 NTU. Shall not exceed 5 NTU over natural conditions for all lake waters.	Shall not exceed 30° C.	Not applicable
Shall not exceed 10 NTU over natural conditions when natural turbidity is 50 NTU or less, and not have more than 20% increase in turbidity when the natural condition is more than 50 NTU, not to exceed a maximum increase of 50 NTU. For all lake waters turbidity shall not exceed 5 NTU over natural conditions.	Not applicable	Not applicable
Shall not exceed 25 NTU above natural condition level. For all lake waters, shall not exceed 5 NTU over natural conditions.	Shall not exceed 20°C at any time. The following maximum temperature shall not be exceeded where applicable: Migration routes 15° C Spawning areas 13° C Rearing areas 15° C Egg & Fry incubation 13° C For all other waters the weekly average temperature shall not exceed site specific requirements needed to preserve normal species diversity or to prevent appearance of nuisance organisms.	Total dissolved solids shall not exceed a maximum of 1,500 mg/l including natural conditions. Increase in TDS shall not exceed one-third of the concentration of the natural condition of the body of water.

(6)

SOLIDS (SUSPENDED, SETTLEABLE) AND TURBIDITY

CRITERIA:

Freshwater fish and other aquatic life:

Settleable and suspended solids should not reduce the depth of the compensation point for photosythetic activity by more then 10 percent from the seasonably established norm for aquatic life.

INTRODUCTION

The term "suspended and settleable solids" is descriptive of the organic and inorganic particulate matter in water. The equivalent terminology used for solids in Standard Methods (APHA, 1971) is total suspended matter for suspended solids, settleable matter for settleable solids, volatile suspended matter for volatile solids and fixed suspended matter for fixed suspended solids. The term "solids" is used in this discussion because of its more common use in the water pollution control literature.

RATIONALE:

Suspended solids and turbidity are important parameters in both municipal and industrial water supply practices. Finished drinking waters have a maximum limit of 1 turbidity unit where the water enters the distribution system. This limit is based on health considerations as it relates to effective chlorine disinfection. Suspended matter provides areas where micro-organisms do not come into contact with the chlorine disinfectant (NAS, 1974). The ability of common water treatment processes (i.e., coagulation, sedimentation, filtration and chlorination) to remove suspended matter to achieve acceptable

final turbidities is a function of the composition of the material as well as its concentration. Because of the variability of such removal efficiency, it is not possible to delineate a general raw water criterion for these uses.

Turbid water interferes with recreational use and aesthetic enjoyment of water. Turbid waters can be dangerous for swimming, especially if diving facilities are provided because of the possibility of unseen submerged hazards and the difficulty in locating swimmers in danger of drowning (NAS, 1974). The less turbid the water the more desirable it becomes for swimming and other water contact sports. Other recreational pursuits such as boating and fishing will be adequately protected by suspended solids criteria developed for protection of fish and other aquatic life.

Fish and other aquatic life requirements concerning suspended solids can be divided into those whose effect occurs in the water column and those whose effect occurs following sedimentation to the bottom of the water body. Noted effects are similar for both fresh and marine waters.

The effects of suspended solids on fish have been reviewed by the European Inland Fisheries Advisory Commission (EIFAC, 1965). This review identified four effects on the fish and fish food populations, namely:

> "(1) by acting directly on the fish swimming in water in which solids are suspended, and either killing them or reducing their growth rate, resistance to disease, etc.;
>
> (2) by preventing the successful development of fish eggs and larvae;
>
> (3) by modifying natural movements and migrations of fish;
>
> (4) by reducing the abundance of food available to the fish; . . ."

mit

Settleable materials which blanket the bottom of water bodies damage the invertebrate populations, block gravel spawning beds, and if organic, remove dissolved oxygen from overlying waters (EIFAC, 1965; Edberg and Hofsten, 1973). In a study downstream from the discharge of a rock quarry where inert suspended solids were increased to 80 mg/l, the density of macroinvertebrates decreased by 60 percent while in areas of sediment accumulation benthic invertebrate populations also decreased by 60 percent regardless of the suspended solid concentrations (Gammon, 1970). Similar effects have been reported downstream from an area which was intensively logged. Major increases in stream suspended solids (25 ppm turbidity upstream vs. 390 ppm downstream) caused smothering of bottom invertebrates reducing organism density to only 7.3 per square foot versus 25.5 per square foot upstream (Tebo, 1955).

When settleable solids block gravel spawning beds which contain eggs, high mortalities result although there is evidence that some species of salmonids will not spawn in such areas (EIFAC, 1965).

It has been postulated that silt attached to the eggs prevents sufficient exchange of oxygen and carbon dioxide between the egg and the overlying water. The important variables are particle size, stream velocity and degree of turbulence (EIFAC, 1965).

Deposition of organic materials to the bottom sediments can cause imbalances in stream biota by increasing bottom animal density, principally worm populations, and diversity is reduced as pollution sensitive forms disappear (Mackenthun, 1973). Algae likewise flourish in such nutrient rich areas although forms may become less desirable (Tarzwell and Gaufin, 1953).

Plankton and inorganic suspended materials reduce light penetration into the water body reducing the depth of the photic zone. This reduces primary production and decreases fish food. The NAS committee recommended that the depth of light penetration not be reduced by more than 10 percent (NAS, 1974). Additionally, the near surface waters are heated because of the greater heat absorbency of the particulate material which tends to stabilize the water column and prevents vertical mixing (NAS, 1974). Such mixing reductions decrease the dispersion of dissolved oxygen and nutrients to lower portions of the water body.

One partially offsetting benefit of suspended inorganic material in water is the sorption of organic materials such as pesticides. Following this sorption process subsequent sedimentation may remove these materials from the water column into the sediments (NAS, 1974).

Identifiable effects of suspended solids on irrigation use of water include the formation of crusts on top of the soil which inhibits water infiltration, plant emergence and impedes soil aeration; the formation of films on plant leaves which blocks sunlight and impedes photosynthesis and which may reduce the marketability of some leafy crops like lettuce; and finally the adverse effect on irrigation reservoir capacity, delivery canals and other distribution equipment (NAS, 1974).

The criteria for freshwater fish and other aquatic life is essentially that proposed by the N.A.S. and the Great Lakes Water Quality Board.

The Back

New version of water quality bill offered

By SAM BISHOP
News-Miner Bureau

JUNEAU—For the fourth time in two years, a bill affecting the state's water quality regulations has been gutted and new language inserted by sponsors.

The latest version would eliminate the state's turbidity standard for water leaving a placer mine or other project. It would also prevent the Alaska Department of Fish and Game from reviewing plans before people go mining.

The legislation was introduced earlier this session as HB 109 in the House by Rep. Mike Miller, R-North Pole, and as SB 98 in the Senate by Sen. Bettye Fahrenkamp, D-Fairbanks.

Both Miller and Fahrenkamp said they felt the latest version, released this week, cuts to the heart of the issue.

"This bill, no matter what we do, is going to cause an uproar. So we might as well really do something," Miller said.

"Instead of beating around the bush, we decided to go after the real problem," Fahrenkamp said.

Dennis Kelso, commissioner of environmental conservation, said Wednesday he had just received the amended bill, so he refrained from specific comments. The attorney general's office has not reviewed the revised bill either.

Kelso said the state's objective is to find a solution that is both legally acceptable under the federal Clean Water Act and acceptable to miners. Whether Miller and Fahrenkamp's bill is the right vehicle hasn't been decided, he said.

Gone from the bill is language from past years that said the state could not require cleaner water to be discharged downstream from a mine than was received upstream. State officials said that was official policy, but still objected to the idea because it could limit enforcement efforts.

Also missing is language inserted this year that said the turbidity standards for water leaving mines and other projects should reflect a range of values, except where the water is used immediately downstream for drinking.

Placer gold miners remove water from a stream, use it to wash gold-bearing gravels through sluices or jigs and return it to the creek. State standards for placer mining and other industries control both the amount of larger dirt grains added to the water (settlable solids) and the degree of murkiness caused by fine material (turbidity).

Techniques have been found that meet the turbidity standard under some conditions, but the majority of miners north of the Alaska Range have problems with the high clay content of soils. Once dissolved, the clay is difficult to separate from the water.

Whether the federal Clean Water Act requires a turbidity standard will likely be a central part of the debate over the latest version of the water quality bill.

In a memo outlining arguments in support of repealing the turbidity standard, Miller and Fahrenkamp quote from the EPA's guidelines, which says "fishing will be adequately protected by suspended solids criteria . . .

"Turbidity is basically an aesthetic standard, important to health only where drinking water enters the distribution system, and not ... the stream itself. These reasons should not be sufficient to cause EPA to overreact to repeal of turbidity as a water quality criteria," the memo from Miller and Fahrenkamp states.

But Gail Gatton, director of the Alaska Environmental Lobby, told the Senate Resources Committee this week that even slight increases in stream turbidity cut down the amount of light in streams, reducing growth of water plants and therefore the availability of food for fish. She quoted from an EPA publication.

She said she was "reasonably certain" that the bill would conflict with the Clean Water Act.

Gatton said she was also surprised at the provisions in the bill that would cut out ADFG's authority to review mining plans and limit damage to fish habitat.

"The fishing community—they should be coming unglued about it," Gatton said.

Give Alaska miners realistic regulations

tim bradner

If ever there were a political and environmental issue that should see the dawn of common sense and compromise, it is the ongoing fuss over state water quality regulation of placer mining.

Now, here is a relatively small, seasonal industry that has seen a renaissance in recent years with higher gold prices. Placer mining contributes about 2,200 jobs and $160 million yearly to the state's economy. It's no Prudhoe Bay, but jobs immune from sliding oil prices are worth an effort to preserve.

Also, larger mining concerns that someday could make more substantial contributions to Alaska employment watch how the state treats placer miners as a kind of barometer of how they may be treated.

The problem is that water quality standards set by the state Department of Environmental Conservation and enforced, under terms of the federal Clean Water Act, by the Environmental Protection Agency, are almost impossible for placer miners to meet. A 1984 study by Shannon and Wilson Inc., commissioned by DEC, says as much: "Alaska water quality standards regarding turbidity are not attainable by any demonstrated or widely used mining practice ... attainable levels are at least two orders of magnitude above current standards."

Miners argue the standards are appropriate for municipal water treatment plants but not generally applied across vast stretches of Alaska. If they are really enforced, the effect will be to shut down this industry.

This is a shame, because it clouds real progress that DEC and other state agencies are making in working with placer miners, particularly in the innovative and successful new technology grant program, aimed at improving water quality and gold recovery. But if new technology can't approach the standards, it is of uncertain value.

If there's blame to be laid for this public policy quagmire, it can be spread in many directions. Miners themselves helped precipitate the situation through the practices of a few sloppy operators that soured relations for all placer miners with the public and agencies. But the agencies deserve some poor marks for first not enforcing water quality laws, then apparently over-reacting in setting and enforcing standards that may be unrealistic.

This is bad government, for many reasons. First, impossible standards breed selective enforcement. Agencies say they want a "big stick" to go after bad operators, but laws that are universal should be universally and fairly enforced. Secondly, the system encourages distrust and noncooperation, rather than confidence and good relations, between miners and the regulators. For example, DEC and EPA don't have resources to monitor all mining operations. They rely largely on miners to do sampling themselves, then supply the data. But because the standards can't be met, fines and penalties are the result. This sets

See Page J-10, BRADNER

BRADNER: Miners need realistic water standards

Continued from Page J-1

up an incentive, in the future, for fiddling with the data. A solution is realistic standards and a trustful relationship on both sides.

But worst is that environmental rules that appear to have little basis in sound policy or good science can result, in the long run, in the undermining of public confidence in the agency and its procedures.

Alaska's regulations are modeled on municipal drinking water standards and techniques of measurement in urban water treatment plants, and are impractical when applied generally across Alaska. Most streams or rivers, in their natural state, would meet the standard.

The most difficult is the "turbidity" limit, a measurement of cloudiness of water. The Yukon River and its tributaries would measure 10 to 20 times the limit required of miners. The bizarre outcome of this is that most placer operators are required to put water back into a stream cleaner than when they took it out. The federal EPA has no turbidity requirement. It is a state standard.

The state's other standard is a limit on "settleable solids" or the amount of large soil particles in water coming from a settling pond. This standard is strict, but it might be attainable, some miners say. But combined with turbidity, it is impossible.

Last year, the EPA proposed a more flexible limit for settleable solids that miners felt they could meet. But the state adopted a very tight, inflexible standard. EPA was then required, under the Clean Water Act, to revise its own limit to match the state.

There ought to be room for negotiation and reasonable compromise in this. If state requirements are more strict than EPA's, there should be a good reason. A gripe by the miners, quite legitimate, is that the reasons for this tightening never have been spelled out. The change was made without a public hearing process, which is the procedure that requires agencies to lay out their reasoning and factual basis before the public, to allow critical scrutiny and the presentation of conflicting evidence.

And, what's the purpose? To protect fish downstream? Fair enough, but the fact that the Yukon River, which doesn't meet the turbidity standard, supports great fish populations would seem to undercut this reason.

If Gov. Sheffield wants to facilitate resolution to environmental problems facing miners, as he says he does, this is a good place to start. Unlike many issues caught in the web of state-federal relationships, this one is almost entirely under his control.

Miners would like a somewhat more flexible system like that proposed by EPA. The state's current standards, particularly turbidity, should be goals toward which industry, with improving technology, could work. Miners have proposed a "blue ribbon" task force of agency heads, scientists, miners, environmental groups and other affected parties, to look at this.

The governor should consider it. It isn't often that a complex, controversial policy issue can be resolved like this one could be. But a solution will take the kind of cooperation and clear thinking that can only come through communication and trust.

□ Tim Bradner writes for an Alaska economic reporting service.

ALASKA STATE LEGISLATURE
HOUSE OF REPRESENTATIVES
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March 23, 1987

MEMORANDUM

TO: Representative Mike Miller

ATTN: Gene Therriault

FROM: Karen Oakley
Legislative Analyst

RE: Number of Placer Mines with NPDES Permits on Salmon Streams
Research Request 87.210

You asked us to find out how many Alaska placer mines with National Pollutant Discharge Elimination System (NPDES) permits are located on streams that have been specified by Alaska Department of Fish and Game (ADF&G) regulation as important for the spawning, rearing or migration of anadromous fish pursuant to AS 16.05.870.[1] The ADF&G maintains a catalog of all specified anadromous streams, and any person proposing to use, divert, obstruct, pollute or change the natural flow or bed of such a stream is required to submit plans to the ADF&G and receive approval prior to commencing any such work. The letter from the ADF&G approving plans for work in a specified anadromous stream is called a Fish Habitat Permit. Any conditions attached to a Fish Habitat Permit are designed to prevent interference with migration or to protect spawning and rearing habitats.

The NPDES permits, which are issued by the U. S. Environmental Protection Agency (EPA), are designed to protect water quality by regulating the quality of effluent discharged into streams. Currently, 368 Alaska placer mines have NPDES permits. Of these 368 mines, 131 are located on specified anadromous streams.

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[1]Anadromous fish are those fish that spend part of their lives in the ocean and return to freshwater to reproduce. In Alaska, anadromous species include all five species of Pacific salmon and certain whitefishes.

Of the 131 mines with NPDES permits on anadromous streams, the number that may also require a Fish Habitat Permit is not currently known, because not all operators have completed their plan of operations. When plans are completed, the ADF&G will review them and determine whether a Fish Habitat Permit is needed. Depending upon the type of operation proposed, no permit may be needed. For example, an operation that employed complete recyling of mining water would not generally require a permit.

I hope this information is useful. Please let me know if we can provide any further information.

ALASKA DEPARTMENT OF FISH AND GAME TESTIMONY
ON 3/16/87 CSSB 98
(AN ACT RELATING TO THE USE OF WATER)
BEFORE THE ALASKA SENATE RESOURCES COMMITTEE

MARCH 23, 1987

Mr. Chairman, my name is Norman Cohen, Deputy Commissioner, Department of Fish and Game. I wish to testify on behalf of the department regarding the March 16 CS for SB 98. This bill has important implications for salmon fishing in Alaska.

The department has serious concern over Section 8 of the bill which repeals essential provisions in the Department of Fish and Game's Title 16 authority (AS 16.05.870(b)-(c) and 16.05.880-900). The 16.05.870 provisions have, since statehood, given definition to the Commissioner's broader statutory responsibility to manage, protect, maintain, improve, and extend the fish resources of the state. These are the only state statutes on the books which directly protect the habitat of salmon and other anadromous fish. They require the submittal of plans and specifications for certain activities in freshwater bodies important for anadromous fish and for the proper protection of fish in connection with such activities. The array of activities covered by this statute is much broader than either SB 98 or the March 16 memorandum from Senator Fahrenkamp and Representative Miller to this committee suggest. The statute says that if a person or governmental agency desires to construct a hydraulic project, or use, divert, obstruct, pollute, or change the natural flow or bed of a specified river, lake, or stream, or use wheeled, tracked, or excavating equipment or log-dragging equipment in the bed of a specified river, lake, or stream, they shall notify the Commissioner of Fish and Game beforehand. Clearly, pollution is but one of a variety of activities covered by this law. Although you have heard claims that this reference to pollution duplicates DEC's water quality standards, I can

assure you that it does not. Neither department can afford redundancy in permitting activities. We do what our biologists do best; we document for DEC the biological effects of pollution on fish propagation, and we rely on DEC to implement its water quality standards.

It is essential that the agency possessing the state's fisheries expertise be responsible for AS 16.05.870 if it is to be carried out effectively. It is, for example, imperative that ADF&G biologists be intimately involved in a determination of whether or not the use of wheeled or tracked equipment will destroy a valuable salmon spawning bed. It is often necessary for us to tap the experience of experts within our Commercial or Sport Fisheries divisions in the sampling of stream gravels for the presence of salmon eggs. Similarly, the best technical talent in our department may be needed in determining if and how a proposed stream diversion is likely to affect the historical migration, spawning, and rearing habits of salmon. The knowledge of these same experts may be brought to bear on the development of performance standards that must be stipulated in permit approvals so that these essential life processes can be sustained. It is this expertise which allows ADF&G to provide assistance to applicants in their identification of alternative construction methods, locations, materials, or timing of project implementation. Section 8 of SB 98 would repeal our department's authority to require the application of best management practices or other permit conditions for the protection of salmon and other anadromous fishery resources during such activities as stream channelization, road crossings, gravel washing operations, water withdrawals and diversions for industrial activities, hydro-electric projects, and in-stream material extractions.

You'll notice on Page 3 of your memorandum from Senator Fahrenkamp and Representative Miller, a reference to AS 16.10.010 and a conclusion that it provides basically the same protection as AS 16.05.870, the provision that I just discussed. The

"10-10" provision, as we often refer to it, is an artifact from pre-statehood days, and although it has been amended since then, it creates an enigma. It appears to partially duplicate our .870 authority, yet in practice it does not. The reason is that although it exists in ADF&G's Title 16 statutes, it is to be administered by the Department of Environmental Conservation. That department does not have the fisheries expertise to effectively carry out "10-10," and they have deferred to us for the overall protection of the state's anadromous fisheries. The result is that only one anadromous fish protection permit is required for an applicant. I should also add that there are provisions in AS 16.05.870 that are not contained in AS 16.15.010. If the Legislature does anything with the statutes I have mentioned, we would encourage you to designate ADF&G as the agency responsible for AS 16.10.010. We strongly encourage you to omit Section 8 of the March 16 CS for SB 98.

The Department of Fish and Game's inability to carry out AS 16.05.070 would be detrimental to the state's commercial fishing industry, tourism industry, sportfishing public, subsistence users, and the general public service sector that is supported by expenditures from these user groups. We're talking about protecting the very wellspring of a world class renewable natural resource, one that we are all counting on to make its contribution to the economy of our state. In terms of commercial salmon fishing alone, the statewide ex-vessel value in 1986 was $404 million.

As a footnote, I would like to share some actual numbers regarding the implementation of our fish habitat protection statues. In FY 86, we conducted 1,255 Title 16 reviews of activities in fish bearing waters. These activities relate to transportation systems, utilities, hydroelectric projects, material removal, and other types of development. Of the 1,255 reviews, 835 resulted in the issuance of a permit, 407 did not require permits, and only 13 were denied. Of the 835 permits,

85 percent were for activities in waters important for anadromous fish. Not a single permit condition or permit denial was elevated by the applicant above the regional level for reconsideration at the Director or Commissioner level. We turned these applications around in an average of 22 days, and 79 percent were reviewed within 30 days. Most of the remaining 21 percent were tied to other agencies' authorizations that have longer review periods. Sixty four percent of the time we were able to conduct on-the-ground site examinations before issuing a permit. Mr. Chairman and committee members - our department believes that to be creditable record and we share your frustration at claims to the contrary.

We appreciate the opportunity to testify and will try to answer any questions that you may have.