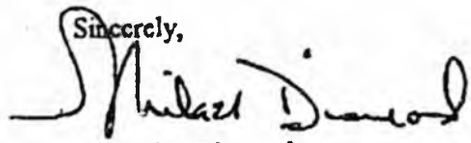
ALASKA LEGISLATURE COMMITTEE FILES 1999-2000 8672
9919 HOUSE LABOR & COMMERCE

Monsanto does not oppose voluntary labeling, since it is already legally permissible – however, we do maintain that any voluntary labeling must follow FDA guidelines, and be entirely truthful and verifiable.

I would be happy to further discuss this matter with you – or assist you in gathering additional information as this measure moves through the legislative process. Please feel free to contact me at (206) 390-9693, via E-mail, michael.j.diamond@monsanto.com.

Sincerely,



Michael J. Diamond
Monsanto State Government Affairs

Kelly Johnston=
- Scott Kral

NFPA
NATIONAL FOOD PROCESSORS ASSOCIATION

August 18, 1997

TO: NFPA STATE ISSUES COMMITTEE

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Connie Campanella	L. Michael Mullen
Nick Pyle	

FROM: Bonnie Tweed, State Legislative Coordinator

SUBJECT: Illinois vs. Ben & Jerry's

1401 New York Ave., NW
Washington, DC 20005
202-639-5900

A legal settlement between the State of Illinois and Ben & Jerry's Homemade Inc. was announced on August 14. Illinois has agreed to allow voluntary "no-rBGH" labeling by natural food companies. Other parties involved in the case included the City of Chicago, Stonyfield Farm and Organic Valley.

The label will read as follows:

> "We oppose Recombinant Bovine Growth Hormone. The family farmers who supply our milk and cream pledge not to treat their cows with rBGH. The FDA has said no significant difference has been shown and no test can now distinguish between milk from rBGH treated and untreated cows."

Some Ben & Jerry products, containing "chunks" that contain dairy ingredients, will be further labeled as follows:

> "Not all suppliers of our ingredients can promise that the milk they use comes from untreated cows."

Background: The federal Food and Drug Administration determined there is no significant difference between dairy products produced from cows administered with rBGH and cows not administered with rBGH. The Illinois Food, Drug and Cosmetic Act (410 Illinois Compiled Statutes 620/1) prohibits manufacturers from labeling products

WASHINGTON, DC
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with false or misleading information. The City of Chicago and the State of Illinois would not allow Ben & Jerry's to add "no-rBGH" labels to their products. According to sources in the Illinois Department of Public Health, the Department considered Ben & Jerry's "no-rBGH" label as misleading to the consumer by insinuating there is a difference. In May 1996, Ben & Jerry's filed a suit in Federal Court against Chicago and Illinois governments to be able to affix a "no-rBST" label on their packages.

If you have any questions, please call me at 202/639-5970.

TOTAL PAGES: 2

THE SECRETARY OF HEALTH AND HUMAN SERVICES
WASHINGTON, D.C. 20201

JAN 21 1999

The Honorable Richard Gephardt
Democratic Leader
Washington, D.C. 20515

Dear Mr. Gephardt:

Thank you for your letter of January 20, 1999 in which you request the most current review of the Food and Drug Administration's (FDA or Agency) data concerning recombinant bovine somatotropin (rbST). The enclosed "Report on the Food and Drug Administration's Review of the Safety of Recombinant Bovine Somatotropin," addresses specific scientific points relating to the safety of rbST. The FDA has carefully examined the safety of the recombinant bovine somatotropin (rbGH) and has determined that the recent report from the Health Canada reviewers did not interpret relevant data correctly. Therefore, FDA has reaffirmed its 1993 finding that milk from cows treated with rbGH is safe for human consumption. Because of its demonstrated safety, FDA does not intend to remove the product from the market.

FDA approved the Monsanto rbGH (also known as recombinant bovine somatotropin (rbST) or Sometribove) product, Posilac, on November 5, 1993 following extensive review of the data to support the safety and effectiveness of the product. FDA approved this drug only after Monsanto provided the Agency with acceptable data demonstrating that their rbGH product is safe and effective.

In recent months, FDA has completed a comprehensive, page by page audit of the human food safety sections of the investigational new animal drug file and master file supporting the rbGH approval, including the 90-day rat oral toxicity study and the report of the antibody response to oral rbGH. Based on this audit, FDA has reaffirmed that rbGH is safe for human consumption.

FDA's determination that food products from cows treated with rbGH are safe for consumers also has been supported by numerous scientific and regulatory bodies including The Joint Food and Agricultural Organization /World Health Organization Expert Committee on Food Additives (JECFA), an international panel of experts in the fields of toxicology and chemistry of animal drug residues that meets to resolve differences in the safety evaluation of animal drugs. In 1992, the JECFA concluded that "the lack of oral activity of rbST and insulin-like growth factor I (IGF-I) and the low level and non-toxic nature of the residues of these compounds, even at exaggerated doses, results in an extremely large margin of safety for humans consuming dairy products from rbST-treated cows." In 1998, JECFA reaffirmed the safety of milk and meat from rbST-treated cows.

I hope that this information is helpful to you. We will provide additional information or assistance if you have concerns to which we can respond. Thank you for your leadership on this important issue.

Sincerely,

Donna E. Shalala

Enclosure

THE FOLLOWING PAGES MAY
NOT FILM LEGIBLY BECAUSE OF
THE POOR QUALITY OF THE ORIGINAL

Settlement Reached in Hormone Labeling Case

Ben and Jerry's, States Agree Food Makers Can Indicate Absence of Added Product

By Beth Berselli
Washington Post Staff Writer

Consumers of Ben & Jerry's ice cream won't have to wonder any longer whether it's made from milk from cows treated with artificial growth hormones.

A settlement announced yesterday between the state of Illinois and a coalition of organic food companies, including the Vermont ice cream maker, means in the future that one glance at the label on a pint of Cherry Garcia or Chunky Monkey will tell you whether its cows are hormone-free.

Under terms of the settlement, manufacturers of ice cream, yogurt and other dairy products that don't use the controversial recombinant Bovine Growth Hormone (rBGH) can say so on their labels. The decision is expected to allow them to distribute these anti-hormone labels nationally, Ben & Jerry's Homemade Inc. officials said. Consumer groups estimate that about 5 percent of dairy farmers inject the hormone into some of their cows.

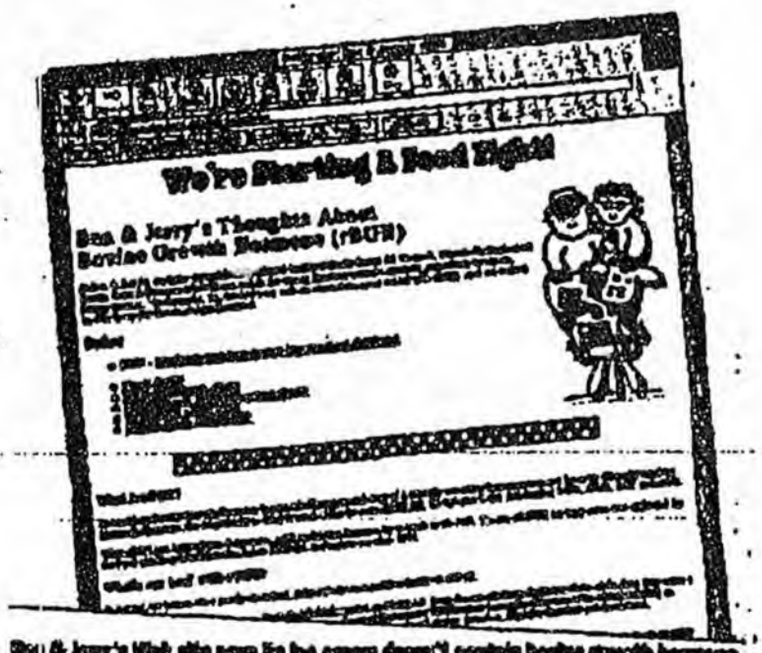
Illinois is one of four states—as well as Hawaii, Nevada and Oklahoma—that have forbidden these labels. Illinois's 1994 decision to do so basically stopped anti-rBGH labeling across the country because it is not feasible for companies such as Ben and Jerry's to label their products differently for individual markets. Dairies haven't typically run into the same problem because their products are mostly distributed locally; several milk producers include anti-hormone labels on their cartons.

In the settlement, the parties agreed on compromise language for the new labels. Ben & Jerry's originally wanted to say their products were "rBGH free," but Illinois officials protested that was impossible to prove and it implied that milk from treated cows was harmful.

The agreed-upon label reads: "We oppose recombinant bovine growth hormone. The family farmers who supply our milk and cream pledge not to treat their cows with rBGH. The FDA has said no significant difference has been shown and no test can now distinguish between milk from rBGH treated and untreated cows."

Additionally, some of Ben & Jerry's products include "chunks"—like the chocolate pieces in Cherry Garcia—that contain small amounts of dairy ingredients. Their labels will include the further statement: "Not all the suppliers of our other ingredients can promise that the milk they use comes from untreated cows."

Ben & Jerry's filed suit last year in federal court against the state of Illinois and the city of Chicago, charging that their prohibition on voluntary anti-hormone labeling violated the company's First Amendment right to inform their customers of their products' content. Chicago officials have agreed to yesterday's settlement.



Ben & Jerry's Web site says its ice cream doesn't contain bovine growth hormone ("a chemically-intensive . . . food supply") and that it wants to say so on its labels.

Joining Ben & Jerry's in the suit were Stonyfield Farm Inc., a New Hampshire ice cream manufacturer; Whole Foods Market Inc. of Austin; and Organic Valley of La Farge, Wis., which sells milk, cheese and butter products. Whole Foods Market owns 19 Fresh Fields stores in the Washington area.

"The use of artificial growth hormones in dairy cows is inconsistent with everything we stand for," said Perry Odak, Ben & Jerry's chief executive. "We're just pleased because now we can tell our customers how the products are made."

Sold by Monsanto Co. of St. Louis, rBGH is produced in the cow's pituitary gland but can be injected as a supplement to increase milk production by as much as 20 percent. It was approved by the Food and Drug Administration in 1993 but has remained controversial as consumers rights activists have questioned its effects on cows and humans.

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http://www.monsanto.com

Confirmation of POSILAC Safety

The safety of POSILAC bovine somatotropin has been thoroughly addressed. The U.S. Food and Drug Administration, World Health Organization, American Medical Association, American Dietetic Association and regulatory agencies in 30 countries agree that the milk from cows supplemented with POSILAC is the same safe, wholesome product as it always has been.

On March 5, 1998, the Food and Agriculture Organization (FAO) of the United Nations released a committee report reconfirming that treating cows with POSILAC to increase milk production is safe. After examining new evidence, the joint FAO-World Health Organization expert committee concluded that "there are no food safety or health concerns related to BST residues in products such as meat and milk from treated animals." (A copy of the FAO news release is attached.)

The Institute of Food Science and Technology (IFST), located in Great Britain, through its Public Affairs and Technical and Legislative Committees, has issued an update to its Position Statement on BST dated June 11, 1998, the summary of which is that " ... the use of bovine somatotropin (BST) to improve milk yield in cows indicates that it carries no harmful effects to humans, to the treated animals or to the environment; the resulting milk and meat is not significantly different from milk and meat from untreated cows, in composition or quality; and in consequence there is no scientific or ethical basis for requiring distinctive labeling of milk or meat from BST treated cows."

Over 2,000 independent scientific studies have been conducted on bovine somatotropin. Regulatory/scientific bodies around the world have concluded that the science supporting bovine somatotropin is complete.

December 15, 1998

NEWS RELEASE

PR 98/17

MILK AND MEAT FROM BST TREATED COWS PRESENTS NO DANGER TO HUMANS SAYS COMMITTEE REPORT RELEASED BY THE UN FOOD AND AGRICULTURE ORGANIZATION

1998

Rome, March 5 -- After examining new evidence, an independent scientific committee has reconfirmed that treating cows with the hormone bovine somatotropins, known as BST, to increase milk production is safe, according to a technical report released today by the UN Food and Agriculture Organization (FAO). The joint FAO- World Health Organization (WHO) committee concluded that "there are no food safety or health concerns related to BST residues in products such as milk and meat from treated animals." The use of BST increases a cow's milk production by 10 to 15 percent.

FOR INFORMATION MEDIA

NOT AN OFFICIAL RECORD

Disagreement over use of BST has complicated trade in dairy products between the United States, where BST is widely used, and the European Union, which has opposed use of the hormone.

The Joint FAO/WHO Expert Committee on Food Additives (JECFA), determines the safety of residues from veterinary drugs in food and establishes acceptable daily intakes (ADIs) and maximum residue limits (MRLs) for certain drugs when they are used on food-producing animals in accordance with good animal husbandry practices.

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Liaison Office for North America
2175 K St., NW, #300
Washington, DC 20437

Telephone:
(202)653-2400

Fax:
(202)653-5760

E-Mail:
FAO-LOWA@field.fao.org

In the area of maximum residue limits (MRL) for BST, the Committee found that available data on the identity and concentration of residues of the veterinary drug in animal tissues provide a wide margin of safety for consumption of residues in food when the drug is used according to good practice in the use of veterinary drugs. The Committee concluded that the presence of drug residues in animal products does not present any health concerns.

In arriving at its conclusions on BST, JECFA considered possible problems such as the chances of an increase in the udder disease, mastitis, in BST-treated cows which could lead to contamination of milk with antibiotics used to treat mastitis. The Committee concluded that the use of BST will not result in a higher risk to human health due to the use of antibiotics to treat mastitis and that the increased potential for drug residues in milk could be managed by practices currently in use by the dairy industry and by following label directions for use.

Another concern the Committee examined involved the risk of insulin-dependent diabetes mellitus (IDDM). Studies have shown that exposure of human new borns to cow's milk increases the risk of IDDM approximately 1.5-fold. The Committee considered whether exposure of new borns to milk from BST-treated cows might further increase this risk. It concluded that, because of its unchanged composition, the milk of BST-treated cows does not represent an additional risk to the development of IDDM.

JECFA, which met at FAO in Rome from 17 to 26 February 1998 to evaluate certain residues of veterinary drugs in food, had originally stated in 1992 that BST-treated animals and animal products do not pose any risks to humans. JECFA is an independent scientific committee whose recommendations to FAO and WHO are relied upon by governments and international organizations on scientific matters such as food additive safety and usage, tolerable levels of contaminants, or residue levels of veterinary drugs in foods.

The Committee's report will now be considered by the Codex Alimentarius Commission. Codex works to harmonize standards used in international trade and to prevent food that is unfit for human consumption from entering commercial channels. It has developed 237 food commodity standards and has established over 40 guidelines and codes for food production and processing.

* * * * * * * * * * * *

The Joint FAO/WHO Expert Committee on Food Additives (JECFA) Summary and Conclusions may be read on FAO's Website at this address:

http://www/fao.org/WAICENT/FAOINFO/ECONOMIC/ESN/jecfa/jecfa.htm

NFPA
The Food Safety People

NATIONAL FOOD PROCESSORS ASSOCIATION

March 15, 1999

MAR 15 1999

The Honorable Norman Rokeberg
Chairman
House Labor and Commerce Committee

Dear Chairman Rokeberg and Committee:

On behalf of the National Food Processors Association (NFPA), I am writing to respectfully express our concern with and opposition to H.B. 110, an Act concerning voluntary labeling of rBST free milk.

NFPA is the principal scientific trade association representing the $430 billion food processing industry. With three laboratory centers, NFPA is the leading authority on food science and safety for the food industry. For more than 90 years, the food industry has relied on NFPA for government and regulatory affairs representation, scientific research, technical services, education, communications, and crisis management.

NFPA member companies produce the incredible variety of foods available at your local grocery store. These include processed and packaged fruits and vegetables, meat and poultry, seafood, cereals, dairy products, drinks, juices, and other specialty items. These products are made using a range of technologies including refrigeration, freezing, canning, dehydration, and aseptic manufacturing.

H.B. 110 is Unnecessary

H.B. 110 attempts to legislate that which is already permitted under FDA's 1994 *Interim Guidance on the Voluntary Labeling of Milk and Milk Products From Cows That Have Not Been Treated With Recombinant Bovine Somatotropin* (attached).

BST is a naturally occurring hormone in all dairy cattle. Synthetic BST is an animal hormone produced through biotechnology which is used to increase milk production in dairy cows. While NFPA members are not producers of milk, they are purchasers of milk and makers of dairy products. The food industry is very supportive of biotechnology and other scientific advancements. All food safety is assured through sound scientific principals, and science tells us that milk derived from BST-treated cows is safe. Current law already enables voluntary labeling of rBST-free milk!

In addition to our belief that H.B. 110 attempts to legislate what is already available to Alaska's milk producers, NFPA strongly questions how this legislation could possibly be enforced. Untreated cows produce milk which is scientifically indistinguishable from supplemented cows and all milk contains trace levels of BST. H.B. 110 makes it a class A misdemeanor to "sell, offer to sell..." mislabeled milk. This bill requires, under threat of criminal sanction, that sellers of milk determine, that which the state is unable to distinguish themselves, the difference between treated and untreated milk.

1350 I Street, NW
Suite 300
Washington, DC 20005
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Furthermore, the bill ignores both the costs of attempted compliance and enforcement for the state, milk marketers and producers. Ultimately, these increased costs will be borne by Alaska's consumers.

NFPA appreciates the opportunity to express our concerns regarding H.B. 110 and respectfully urges you to oppose this legislation for the reasons stated above.

Sincerely,

Scott Riehl
Senior Director, Government Affairs
& Associate Counsel

Centers for Disease Control and Prevention

National Childhood Lead Poisoning Prevention Education Conference

The National Center for Environmental Health (NCEH) of the Centers for Disease Control and Prevention (CDC) and the Agency for Toxic Substances and Disease Registry will convene the following conference cosponsored by the Maternal and Child Health Bureau, Health Resources and Services Administration; National Institute of Environmental Health Sciences, National Institutes of Health; Food and Drug Administration; National Institute of Standards and Technology; Environmental Protection Agency; Department of Housing and Urban Development; Consumer Product Safety Commission; and Department of Defense.

Name: National Childhood Lead Poisoning Prevention Education Conference—Building Better Programs in Lead Education.

Times and dates: 8:30 a.m.–6 p.m., March 9, 1994; 8:30 a.m.–5:30 p.m., March 10, 1994; 8:30 a.m.–11 a.m., March 11, 1994.

Place: Atlanta Renaissance Hotel, 590 West Peachtree Street NW., Atlanta, Georgia 30308.

Status: Open to the public, limited only by the space available.

Purpose: To bring together Federal, State, and local entities involved in lead education to share information on effective education programs, materials, and strategies. The conference will also provide training on planning, implementing, and evaluating educational lead programs.

Matters to be discussed: Conference topics to be discussed include: (1) Conducting needs assessments, (2) developing goals and objectives, (3) planning communication strategies, (4) evaluating programs, (5) reaching varied audiences, (6) risk communications, (7) social marketing, (8) coordinating efforts, (9) public/private sector involvement, (10) assessing effectiveness, and (11) communicating results.

Registration forms are available from the contact person shown below.

Contact person for more information: Niki Kaiser, Childhood Lead Poisoning Prevention Branch, Division of Environmental Hazards and Health Effects (F42), NCEH, CDC, 4770 Buford Highway, NE., Chamblee, Georgia 30341, telephone 404/488–7330.

Dated: February 3, 1994.

Elvin Hilyer,

Associate Director for Policy Coordination, Centers for Disease Control and Prevention (CDC).

[FR Doc. 94–3047 Filed 2–9–94; 8:45 am]

BILLING CODE 4160–18–M

CDC Advisory Committee on the Prevention of HIV Infection; Meeting

In accordance with section 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92–463), the Centers for Disease Control and Prevention (CDC) announces the following committee meeting.

Name: CDC Advisory Committee on the Prevention of HIV Infection.

Times and dates: 8:30 a.m.–5 p.m., February 28, 1994; 8:30 a.m.–3 p.m., March 1, 1994.

Place: Sheraton Century Center Hotel, 2000 Century Boulevard, NE., Atlanta, Georgia 30345.

Status: Open to the public, limited only by the space available.

Purpose: This committee is charged with advising the Director, CDC, regarding objectives, strategies, and priorities for HIV prevention efforts including maintaining surveillance of HIV infection and AIDS, the epidemiologic and laboratory study of HIV and AIDS, information/education and risk reduction activities designed to prevent the spread of HIV infection, and other preventive measures that become available.

Matters to be discussed: The committee will continue to review the reports of the five subcommittees which conducted an external review of CDC's HIV prevention programs. They will also be updated on current HIV prevention activities. Agenda items are subject to change as priorities dictate.

Contact person for more information: Connie Grenoff, Committee Assistant, Office of the Associate Director for HIV/AIDS, CDC, 1600 Clifton Road, NE., Mailstop E–40, Atlanta, Georgia 30333, telephone (404) 639–2916.

Dated: February 3, 1994.

Elvin Hilyer,

Associate Director for Policy Coordination, Centers for Disease Control and Prevention (CDC).

[FR Doc. 94–3046 Filed 2–9–94; 8:45 am]

BILLING CODE 4160–18–M

National Committee on Vital and Health Statistics; Meeting

Pursuant to Public Law 92–463, the National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention (CDC), announces the following committee meeting.

Name: National Committee on Vital and Health Statistics (NCVHS).

Times and dates: 1p.m.–5p.m., March 8, 1994; 8 a.m.–5p.m., March 9, 1994; 9 a.m.–1 p.m., March 10, 1994.

Place: Room 703A–720A, Hubert H. Humphrey Building, 200 Independence Avenue, SW., Washington, DC 20201.

Status: Open.

Purpose: The purpose of this meeting is for the committee to consider reports from each NCVHS subcommittee; to receive reports from offices of the Department of Health and Human Services; to explore information needs for health reform; and to address new business as appropriate.

Contact person for more information: Substantive program information as well as summaries of the meeting and a roster of committee members may be obtained from Gail F. Fisher, Ph.D., Executive Secretary, NCVHS, NCHS, room 1100, Presidential Building, 6525 Belcrest Road, Hyattsville, Maryland 20782, telephone 301/436–7050.

Dated: February 3, 1994.

Elvin Hilyer,

Associate Director for Policy Coordination, Centers for Disease Control and Prevention (CDC).

[FR Doc. 94–3048 Filed 2–9–94; 8:45 a.m.]

BILLING CODE 4160–18–M

Food and Drug Administration

[Docket No. 94D–0025]

Interim Guidance on the Voluntary Labeling of Milk and Milk Products From Cows That Have Not Been Treated With Recombinant Bovine Somatotropin

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice.

SUMMARY: The Food and Drug Administration (FDA) is publishing interim guidance on the labeling of milk and milk products from cows that have not been treated with recombinant bovine somatotropin. Several States and industry and consumer representatives have requested guidance from FDA on this issue. This interim guidance is intended to respond to those requests.

DATES: Written comments by March 14, 1994.

ADDRESSES: Submit written comments on the interim guidance to the Dockets Management Branch (HFA–305), Food and Drug Administration, rm. 1–23, 12420 Parklawn Dr., Rockville, MD 20857.

FOR FURTHER INFORMATION CONTACT: Shellee A. Davis, Center for Food Safety and Applied Nutrition (HFS–306), Food and Drug Administration, 200 C St. SW., Washington DC 20204, 202–205–4681.

SUPPLEMENTARY INFORMATION: On November 5, 1993, FDA approved a new animal drug application providing for the subcutaneous use of sterile sometribove zinc suspension (recombinant bovine somatotropin (rbST) or a recombinant bovine growth hormone (rbGH)) in lactating dairy cows to increase the production of marketable milk (58 FR 59948, November 12, 1993). FDA approved the product because the agency had determined after a thorough review that rbST is safe and effective for dairy cows, that milk from rbST-treated

cows is safe for human consumption, and that production and use of the product do not have a significant impact on the environment. In addition, the agency found that there was no significant difference between milk from treated and untreated cows and, therefore, concluded that under the Federal Food, Drug, and Cosmetic Act (the act), the agency did not have the authority in this situation to require special labeling for milk from rbST-treated cows. FDA stated, however, that food companies that do not use milk from cows supplemented with rbST may voluntarily inform consumers of this fact in their product labels or labeling, provided that any statements made are truthful and not misleading. Several States and industry and consumer representatives have asked FDA to provide guidance on the labeling of milk and milk products from cows that have not been treated with rbST.

FDA agrees that, with the expiration of the congressional moratorium on the commercial sale of rbST on February 3, 1994, the issuance of guidance would help prevent false or misleading claims regarding rbST. FDA views this document primarily as guidance to the States as they consider the proper regulation of rbST labeling claims. Given the traditional role of the States in overseeing milk production, the agency intends to rely primarily on the enforcement activities of the interested States to ensure that rbST labeling claims are truthful and not misleading. The agency is available to provide assistance to the States.

The guidance presented here reflects FDA's interpretation of the act and may be relevant to States' interpretation of their own similar statutes. This document does not bind FDA or any State, and it does not create or confer any rights, privileges, benefits, or immunities for or on any persons. Furthermore, this document reflects FDA's current views on this matter. FDA may reconsider its position at a later date in light of any comments it receives on this guidance document.

Interested persons may, on or before March 14, 1994, submit to the Dockets Management Branch (address above) written comments on the interim guidance. Two copies of any comments are to be submitted, except that individuals may submit one copy. Comments are to be identified with the docket number found in brackets in the heading of this document. Received comments may be seen in the office above between 9 a.m. and 4 p.m., Monday through Friday.

The text of the interim guidance follows:

Interim Guidance on the Voluntary Labeling of Milk and Milk Products From Cows That Have Not Been Treated With Recombinant Bovine Somatotropin

Appropriate Labeling Statements

At the Federal level, statements about rbST in the labeling of food shipped in interstate commerce would be reviewed under sections 403(a) and 201(n) of the act. Under section 403(a) of the act, a food is misbranded if statements on its label or in its labeling are false or misleading in any particular. Under section 201(n), both the presence and the absence of information are relevant to whether labeling is misleading. That is, labeling may be misleading if it fails to disclose facts that are material in light of representations made about a product or facts that are material with respect to the consequences that may result from use of the product. Thus, certain labeling statements about the use of rbST may be misleading unless they are accompanied by additional information. This guidance is based on the use of the false or misleading standard in the Federal law, which is incorporated in many States' food and drug laws. States may also have additional authorities that are relevant in regulating such claims.

Because of the presence of natural bST in milk, no milk is "bST-free," and a "bST-free" labeling statement would be false. Also, FDA is concerned that the term "rbST free" may imply a compositional difference between milk from treated and untreated cows rather than a difference in the way the milk is produced. Instead, the concept would better be formulated as "from cows not treated with rbST" or in other similar ways. However, even such a statement, which asserts that rbST has not been used in the production of the subject milk, has the potential to be misunderstood by consumers. Without proper context, such statements could be misleading. Such unqualified statements may imply that milk from untreated cows is safer or of higher quality than milk from treated cows. Such an implication would be false and misleading.

FDA believes such misleading implications could best be avoided by the use of accompanying information that puts the statement in a proper context. Proper context could be achieved in a number of different ways. For example, accompanying the statement "from cows not treated with rbST" with the statement that "No significant difference has been shown between milk derived from rbST-treated and non-rbST-treated cows" would put the claim in proper context. Proper context could also be achieved by conveying the firm's reasons (other than safety or quality) for choosing not to use milk from cows treated with rbST, as long as the label is truthful and nonmisleading.

States should evaluate any labeling statement about rbST in the context of the complete label and all labeling for the product, as well as of any advertising for the product. Available data on consumers' perceptions of the label statements could also be used to determine whether a statement is misleading.

Substantiation of Labeling Claims

There is currently no way to differentiate analytically between naturally occurring bST and recombinant bST in milk, nor are there any measurable compositional differences between milk from cows that receive supplemental bST and milk from cows that do not. Therefore, to ensure that claims that milk comes from untreated cows are valid, States could require that firms that use such claims establish a plan and maintain records to substantiate the claims, and make those records available for inspection by regulatory officials. The producer of a product labeled with rbST claims should be able to demonstrate that all milk-derived ingredients in the product are from cows not treated with rbST. Failure to maintain records would make it difficult for a firm to defend itself in the face of circumstantial evidence that it is using rbST or selling milk from treated cows. In some situations (e.g., dairy cooperatives that only process milk from untreated cows), States may decide that affidavits from individual farmers and processors are adequate to document that milk or milk products received by the firm were from untreated cows.

States should consider requiring that firms that use statements indicating that their product is "certified" as not from cows treated with rbST be participants in a third party certification program to verify that the cows have not been injected with rbST. States could seek to ensure that certification programs contain the following elements: Participating dairy herds should consist of animals that have not been supplemented with rbST. The program should be able to track each cow in the herd over time. Milk from non-rbST herds should be kept separate from other milk by a physical segregation, verifiable by a valid paper trail, throughout the transportation and processing steps until the finished milk or dairy product is in final packaged form in a labeled container. The physical handling and recordkeeping provisions of such a program would be necessary not because of any safety concerns about milk from treated cows but to ensure that the labeling of the milk is not false or misleading.

Dated: February 17, 1994.

Michael R. Taylor,

Deputy Commissioner for Policy.

[FR Doc. 94-3214 Filed 2-8-94; 9:27 am]

BILLING CODE 4160-01-F

Indian Health Service

Tribal Management Program for American Indians/Alaska Natives: Grants Application Announcement

AGENCY: Indian Health Service, HHS.

ACTION: Notice of competitive grant applications for tribal management grants for American Indians/Alaska Natives.

SUMMARY: The Indian Health Service (IHS) announces that competitive grant applications are now being accepted for Tribal Management Grants for American

TRYTTEN FARMS

Tract 15 & 22A
P.O. Box 871628
Wasilla, AK 99687-1628

Phone 1-907-373-0340
Fax 1-907-373-1043

March 15, 1999

To Whom It May Concern;

Alaska is well known for its beauty, majestic nature, and clean environment. As an Alaska Dairy farmer, I too, enjoy the clean and healthy environment that Alaska has. Our milk products are free from the pressures of the lower 48 states. Here we do not have to compete with the milk market demand, there is not enough milk! And down there, there is too much, making each farmer having to produce as much milk from each cow as it can. Thus along came BST and the list of hormones and drugs to induce the animal to produce more milk will continue to go on and on!

This is why we support HB 110! Alaska needs to be able to sell its agricultural products in the manner that it is produced. When we farmers work so very hard, and put so much pride in what we produce, there should be a way to put such a label on it as to ensure the consumer that what they are feeding their children is clean and pure. I am sure that if a survey was put out today, this would be an overwhelming response of support!

I thank all that are involved with HB 110, as this is the first recognition for a farmer making a good product, versus a corporate farm factory trying to get every penny it can...from whomever it can get it from.

Craig and I would be happy to help you in any advisory way that we can be to you. Again, thank you for caring!

Respectfully yours,

MAR 15 1999

Craig D. Trytten & Vicki L. Trytten

Alaska State Legislature

REPRESENTATIVE JOHN HARRIS
District 35 - Valdez, Cordova, Whittier, Glennallen, Delta Junction, Tatitlek, Kenny Lake, Paxson, Gakona, Chenega Bay

MEMORANDUM

March 5, 1999

To: Representative Norman Rokeberg, Chair
House Labor and Commerce Committee

From: Representative John Harris

Subject: Request to schedule HB 110

As HB 110 was introduced last week and referred to the Labor and Commerce committee, I am by this memorandum requesting that you schedule it for a committee hearing as soon as your calendar will allow. HB 110 is a consumer protection bill relating to the "pull-date" on milk and to the use of synthetic hormones in milk and meat. A more complete explanation of the bill is included in the attached sponsor statement. If you have questions about this bill or this request, please contact me or a member of my staff. Thank you for your expeditious attention to this request.

Co-Chair: Community and Regional Affairs Committee; Member: Resources, Labor and Commerce, Oil and Gas, Fisheries and Regulation Review
Session: State Capitol, Juneau, Alaska 99801-1182 • Phone: (907) 465-4859 Fax: (907) 465-3799
Interim: P.O. Box 1245, Valdez, Alaska 99686 • Phone (907) 835-2836 Fax: (907) 835-3732

FISCAL NOTE

STATE OF ALASKA
1999 LEGISLATIVE SESSION

BILL NO. HB 110

Revision Date/Time (Note if correction) _____
Dept. Affected DEC
Title Milk and Meat labeling
BRU Division of Environmental Health
Component Food Safety and Sanitation
Sponsor Harris
Requester (H) L&C
Component Serial No. 2343

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
Personal Services	0.0	0.0	0.0	0.0	0.0	0.0
Travel	0.0	0.0	0.0	0.0	0.0	0.0
Contractual	0.0	0.0	0.0	0.0	0.0	0.0
Supplies	0.0	0.0	0.0	0.0	0.0	0.0
Equipment	0.0	0.0	0.0	0.0	0.0	0.0
Land & Structures	0.0	0.0	0.0	0.0	0.0	0.0
Grants & Claims	0.0	0.0	0.0	0.0	0.0	0.0
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL OPERATING	0.0	0.0	0.0	0.0	0.0	0.0
CAPITAL EXPENDITURES	0.0	0.0	0.0	0.0	0.0	0.0
CHANGE IN REVENUES ( )	0.0	0.0	0.0	0.0	0.0	0.0

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts	0.0	0.0	0.0	0.0	0.0	0.0
1003 GF Match	0.0	0.0	0.0	0.0	0.0	0.0
1004 GF	0.0	0.0	0.0	0.0	0.0	0.0
1005 GF/Program Receipts	0.0	0.0	0.0	0.0	0.0	0.0
1037 GF/Mental Health	0.0	0.0	0.0	0.0	0.0	0.0
Other (Specify Type)	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY99) cost: 0.0

POSITIONS

Full-time	0	0	0	0	0	0
Part-time	0	0	0	0	0	0
Temporary	0	0	0	0	0	0

ANALYSIS: *(Attach a separate page if necessary)*

Prepared by Janice Adair, Director
Phone 269-7644
Division Division of Environmental Health
Date/Time 3/10/99 11:39 AM
Approved by Commissioner
Date 3/10/99
Agency Department of Environmental Conservation

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Alaska State Legislature

REPRESENTATIVE JOHN HARRIS

District 35 - Valdez, Cordova, Whittier, Glennallen, Delta Junction, Tatitlek, Kenny Lake, Paxson, Gakona, Chenega Bay

Sponsor Statement

HB 110

"An Act relating to the sale, offer to sell, and labeling of fluid milk, meat, and meat products."

This bill makes two consumer-oriented changes to state statutes that govern the sale of milk and meat.

First, it would require that milk marketed in Alaska be clearly labeled with a "pull date" that is 18 days after the milk was pasteurized. The pull date is the date on which the milk should be removed from the grocers' shelves. Properly cared-for milk should not go sour for about a week after its pull date, the maximum period of time it normally would take a consumer to use the milk after purchase.

Every state has a labeling requirement for fresh milk, generally varying between 12 and 18 days. To bring Alaska consistent with Washington state, from which much of the milk on Alaska supermarket shelves comes, HB 110 proposes an 18 day pull date.

The second part of HB 110 responds to changing consumer interests by allowing more naturally-produced consumer goods, such as milk, meat and meat products, to be labeled as "not induced by synthetic hormones" if such hormones have not been used. Alaskan consumers are becoming increasingly health-conscious about what they are eating, and synthetic hormones used by some milk and meat producers are right up near the top of the list of suspected links to cancer. The consumer should be given a clear choice, but currently has no way of knowing whether milk, meat and meat products contain synthetic hormones.

Co-Chair: Community and Regional Affairs Committee; Member: Resources, Labor and Commerce, Oil and Gas, Fisheries and Regulation Review
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Alaska State Legislature

REPRESENTATIVE JOHN HARRIS

District 35 - Valdez, Cordova, Whittier, Glennallen, Delta Junction, Tatitlek, Kenny Lake, Paxson, Gakona, Chenega Bay

Sectional Analysis

HB 110

"An Act relating to the sale, offer to sell, and labeling of fluid milk, meat, and meat products."

Sec. 1 makes a technical addition to the powers and duties of the commissioner of environmental conservation under the Alaska Food, Drug, and Cosmetic Act (Title 17) to accommodate additions made in section 2.

Sec. 2 adds two new sections to Title 17.

The first (17.20.013) would require that containers for fluid milk offered for sale be stamped with a "pull date" 18 days from the date the milk was pasteurized.

The second new section (17.20.015) would allow the producers of milk, meat, and meat products that have been produced without the use of synthetic hormones to label the product accordingly.

Sec. 3 adds language to the "penalty" section of AS 17.20 to make it a class A misdemeanor to violate any of the provisions added by section 2.

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INTERNATIONAL HEALTH NEWS
Editor/Publisher: Hans R. Larsen Msc ChE

Milk and the Cancer Connection

With complete references for researchers

by Hans R. Larsen, MSc ChE

On January 23, 1998 researchers at the Harvard Medical School released a major study providing conclusive evidence that IGF-1 is a potent risk factor for prostate cancer. Should you be concerned? Yes, you certainly should, particularly if you drink milk produced in the United States.

IGF-1 or insulin-like growth factor 1 is an important hormone which is produced in the liver and body tissues. It is a polypeptide and consists of 70 amino acids linked together. All mammals produce IGF-1 molecules very similar in structure and human and bovine IGF-1 are completely identical. IGF-1 acquired its name because it has insulin-like activity in fat (adipose) tissue and has a structure which is very similar to that of proinsulin. The body's production of IGF-1 is regulated by the human growth hormone and peaks at puberty. IGF-1 production declines with age and is only about half the adult value at the age of 70 years. IGF-1 is a very powerful hormone which has profound effects even though its concentration in the blood serum is only about 200 ng/mL or 0.2 millionth of a gram per milliliter(1-4).

IGF-1 and cancer

IGF-1 is known to stimulate the growth of both normal and cancerous cells(2,5). In 1990 researchers at Stanford University reported that IGF-1 promotes the growth of prostate cells(2). This was followed by the discovery that IGF-1 accelerates the growth of breast cancer cells(6-8). In 1995 researchers at the National Institutes of Health reported that IGF-1 plays a central role in the progression of many childhood cancers and in the growth of tumours in breast cancer, small cell lung cancer, melanoma, and cancers of the pancreas and prostate(9). In September 1997 an international team of researchers reported the first epidemiological evidence that high IGF-1 concentrations are closely linked to an increased risk of prostate cancer(10). Other researchers provided evidence of IGF-1's link to breast and colon cancers(10,11).

The January 1998 report by the Harvard researchers confirmed the link between IGF-1 levels in the blood and the risk of prostate cancer. The effects of IGF-1 concentrations on prostate cancer risk were found to be astoundingly large - much higher than for any other known risk factor. Men having an IGF-1 level between approximately 300 and 500 ng/mL were found to have more than four times the risk of developing prostate cancer than did men with a level between 100 and 185 ng/mL. The detrimental effect of high IGF-1 levels was particularly pronounced in men over 60 years of age. In this age group men with the highest levels of IGF-1 were eight times more likely to develop prostate cancer than men with low levels. The elevated IGF-1 levels were found to be present several years before an actual diagnosis of prostate cancer was made(12).

The evidence of a strong link between cancer risk and a high level of IGF-1 is now indisputable. The question is why do some people have high levels while others do not? Is it all genetically ordained or could it be that diet or some other outside factor influences IGF-1 levels? Dr. Samuel Epstein of the University of Illinois is one scientist who strongly believes so. His 1996 article in the *International Journal of Health Sciences* clearly warned of the danger of high levels of IGF-1 contained in milk from cows injected with synthetic bovine growth hormone (rBGH). He postulated that IGF-1 in rBGH-milk could be a potential

risk factor for breast and gastrointestinal cancers(13).

The milk connection

Bovine growth hormone was first synthesized in the early 1980s using genetic engineering techniques (recombinant DNA biotechnology). Small scale industry- sponsored trials showed that it was effective in increasing milk yields by an average of 14 per cent if injected into cows every two weeks. In 1985 the Food and Drug Administration (FDA) in the United States approved the sale of milk from cows treated with rBGH (also known as BST) in large scale veterinary trials and in 1993 approved commercial sale of milk from rBGH-injected cows(13-16). At the same time the FDA prohibited the special labelling of the milk so as to make it impossible for the consumer to decide whether or not to purchase it(13).

Concerns about the safety of milk from BST-treated cows were raised as early as 1988 by scientists in both England and the United States(14,15,17-22). One of the main concerns is the high levels of IGF-1 found in milk from treated cows; estimates vary from twice as high to 10 times higher than in normal cow's milk(13,14,23). There is also concern that the IGF-1 found in treated milk is much more potent than that found in regular milk because it seems to be bound less firmly to its accompanying proteins(13). The concerns were vigorously attacked by consultants paid by Monsanto, the major manufacturer of rBGH. In an article published in the *Journal of the American Medical Association* in August 1990 the consultants claimed that BST-milk was entirely safe for human consumption(16,24). They pointed out that BST-milk contains no more IGF-1 than does human breast milk - a somewhat curious argument as very few grown-ups continue to drink mother's milk throughout their adult life. They also claimed that IGF-1 would be completely broken down by digestive enzymes and therefore would have no biological activity in humans(16). Other researchers disagree with this claim and have warned that IGF-1 may not be totally digested and that some of it could indeed make its way into the colon and cross the intestinal wall into the bloodstream. This is of special concern in the case of very young infants and people who lack digestive enzymes or suffer from protein-related allergies(13,14,20,22,25).

Researchers at the FDA reported in 1990 that IGF-1 is not destroyed by pasteurization and that pasteurization actually increases its concentration in BST-milk. They also confirmed that undigested protein could indeed cross the intestinal wall in humans and cited tests which showed that oral ingestion of IGF-1 produced a significant increase in the growth of a group of male rats - a finding dismissed earlier by the Monsanto scientists(25). The most important aspect of these experiments is that they show that IGF-1 can indeed enter the blood stream from the intestines - at least in rats.

Unfortunately, essentially all the scientific data used by the FDA in the approval process was provided by the manufacturers of rBGH and much of it has since been questioned by independent scientists. The effect of IGF-1 in rBGH- milk on human health has never actually been tested and in March 1991 researchers at the National Institutes of Health admitted that it was not known whether IGF-1 in milk from treated cows could have a local effect on the esophagus, stomach or intestines(26,27).

Whether IGF-1 in milk is digested and broken down into its constituent amino acids or whether it enters the intestine intact is a crucial factor. No human studies have been done on this, but recent research has shown that a very similar hormone, Epidermal Growth Factor, is protected against digestion when ingested in the presence of casein, a main component of milk(13,23,28). Thus there is a distinct possibility that IGF-1 in milk could also avoid digestion and make its way into the intestine where it could promote colon cancer(13,22). It is also conceivable that it could cross the intestinal wall in sufficient amounts to increase the blood level of IGF-1 significantly and thereby increase the risk of breast and prostate cancers(13,14).

The bottom line

Despite assurances from the FDA and industry-paid consultants there are now just too many serious

questions surrounding the use of milk from cows treated with synthetic growth hormone to allow its continued sale. Bovine growth hormone is banned in Australia, New Zealand and Japan. The European Union has maintained its moratorium on the use of rBGH and milk products from BST- treated cows are not sold in countries within the Union. Canada has also so far resisted pressure from the United States and the biotechnology lobby to approve the use of rBGH commercially. In light of the serious concerns about the safety of human consumption of milk from BST-treated cows consumers must maintain their vigilance to ensure that European and Canadian governments continue to resist the pressure to approve rBGH and that the FDA in the United States moves immediately to ban rBGH-milk or at least allow its labelling so that consumers can protect themselves against the very real cancer risks posed by IGF-1.

Alaska State Legislature

REPRESENTATIVE JOHN HARRIS

District 35 - Valdez, Cordova, Whittier, Glennallen, Delta Junction, Tatitlek, Kenny Lake, Paxson, Gakona, Chenega Bay

MEMORANDUM

March 5, 1999

To: Representative Norman Rokeberg, Chair
House Labor and Commerce Committee

From: Representative John Harris

Subject: Request to schedule HB 110

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FISCAL NOTE

STATE OF ALASKA
1999 LEGISLATIVE SESSION

BILL NO. HB 110

Revision Date/Time (Note if correction) _____
Dept. Affected DEC
Title Milk and Meat labeling
BRU Division of Environmental Health
Component Food Safety and Sanitation
Sponsor Harris
Requester (H) L&C
Component Serial No. 2343

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
Personal Services	0.0	0.0	0.0	0.0	0.0	0.0
Travel	0.0	0.0	0.0	0.0	0.0	0.0
Contractual	0.0	0.0	0.0	0.0	0.0	0.0
Supplies	0.0	0.0	0.0	0.0	0.0	0.0
Equipment	0.0	0.0	0.0	0.0	0.0	0.0
Land & Structures	0.0	0.0	0.0	0.0	0.0	0.0
Grants & Claims	0.0	0.0	0.0	0.0	0.0	0.0
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL OPERATING	0.0	0.0	0.0	0.0	0.0	0.0
CAPITAL EXPENDITURES	0.0	0.0	0.0	0.0	0.0	0.0
CHANGE IN REVENUES ( )	0.0	0.0	0.0	0.0	0.0	0.0

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts	0.0	0.0	0.0	0.0	0.0	0.0
1003 GF Match	0.0	0.0	0.0	0.0	0.0	0.0
1004 GF	0.0	0.0	0.0	0.0	0.0	0.0
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1037 GF/Mental Health	0.0	0.0	0.0	0.0	0.0	0.0
Other (Specify Type)	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY99) cost: 0.0

POSITIONS

Full-time	0	0	0	0	0	0
Part-time	0	0	0	0	0	0
Temporary	0	0	0	0	0	0

ANALYSIS: *(Attach a separate page if necessary)*

Prepared by Janice Adair, Director
Phone 269-7644
Division Division of Environmental Health
Date/Time 3/10/99 11:39 AM
Approved by Commissioner
Date 3/10/99
Agency Department of Environmental Conservation

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HB

117

HOUSE COMMITTEE REPORT

(7)

Date Referred to Committee: February 26, 1999 **FURTHER REFERRALS:** **Finance**

Date of Committee Action: May 5, 1999

The LABOR AND COMMERCE Committee considered: **HB 117**

HOUSE BILL NO. 117 **ALASKA SCIENCE & TECHNOLOGY FOUNDATION**

"An Act relating to grant procedures of the Alaska Science and Technology Foundation."

recommends it be replaced with the following committee substitute CSHB 117(L+C) [✓] the same title [ ] a new title

[ ] additional referral to _____ Committee
[ ] attached amendment(s)

ADOPTS: _____ Letter of Intent

ATTACHES NEW FISCAL NOTE(s): (Dept) APPROVES PREVIOUS: (Dept/Date)

[✓] fiscal note(s) DCED, LAW [ ] fiscal note(s) _____

[ ] zero fiscal note(s) _____ [ ] zero fiscal note(s) _____

SIGNING WITH RECOMMENDATIONS	DP	DNP	NR	AM
Rokeby			✓	
		✓		
			✓	
			✓	
			—	
			✓	

CHAIR'S SIGNATURE Rokeby 5-5-99

ALASKA STATE LEGISLATURE
HOUSE LABOR AND COMMERCE COMMITTEE

State Capitol
Juneau, AK 99801-1182
Telephone: (907) 465-4954
Fax: (907) 465-2040

MEMORANDUM

To: Legislative Drafter, HB 117, LS0497\D

From: Janet Seitz, Committee Staff
House Labor & Commerce Committee

Date: May 5, 1999

RE: Committee Changes to HB 117

Please prepare a Labor & Commerce final CS for HB 117 as follows:

Page 2, line 7, delete "shall" and return to "may" . This would return to original language as currently contained in the statute.

Page 2, line 11 after "annual" delete "certified"

Page 2, line 12 after "has occurred" insert "until the obligation is satisfied or ceases to exist."

Page 2, lines 15-25 - Delete Section 3 and Section 4.

With the exception of the last amendment , all were adopted as "conceptual" amendments.

If you have any questions, please contact me at 4954. Thank you.

3/5/99
as amended w/ mw recs & fns
Halcomb then withdrawn

1-LS0497\D

HOUSE BILL NO. 117

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-FIRST LEGISLATURE - FIRST SESSION

BY REPRESENTATIVE BUNDE

Introduced: 2/26/99
Referred: Labor and Commerce, Finance

A BILL

FOR AN ACT ENTITLED

"An Act relating to grant procedures of the Alaska Science and Technology Foundation."

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

* Section 1. AS 37.17.090(b) is amended to read:

(b) Except for grants under AS 37.17.225, grant proposals must be submitted for impartial and competitive peer review for scientific and technical validity by a panel of recognized experts appointed by the board of directors. Members of a peer review panel are entitled to per diem and travel expenses authorized under AS 39.20.180. The identity of members of a peer review panel is confidential until final action is taken by the board on the grant proposal. The board shall consider the recommendations of the panel in deciding whether to award a grant. The board may exempt grants of $5,000 or less from peer review. **The board may appoint board members to perform the peer review of grant proposals under $20,000 if board members are recognized impartial experts in the relevant areas.**

* Sec. 2. AS 37.17.090(g) is amended to read:

(g) As a condition of all grants awarded under AS 37.17.010 - 37.17.110 or 37.17.225, the board of directors shall require that a fair and reasonable return to the foundation, as determined by the board, from the revenue, economic value, or profits derived by the grantee from the grant project be paid into the principal of the endowment, subject to AS 37.07. To secure payment of sums owed to the foundation under a grant agreement, the foundation ~~shall~~ [MAY] take a security interest in or [AND] own patents, copyrights, and other intellectual property that are developed as part of the grant project after the grant is awarded. The foundation shall periodically notify grantees in writing of their repayment obligation under this subsection and shall require grantees to submit annual ~~certified~~ financial statements until repayment has occurred. The foundation shall request the assistance of the attorney general in enforcing the repayment provisions of a grant agreement when other efforts by the foundation have not had satisfactory results.

* Sec. 3. AS 37.17.090(i) is amended to read:

(i) A grant may include money to obtain equipment. The equipment is the property of the foundation. Subject to (l) of this section, at [AT] the termination of the grant, the equipment shall be disposed of at the discretion of the board.

* Sec. 4. AS 37.17.090 is amended by adding a new subsection to read:

(l) Each grant agreement must provide that, if the business of a grantee fails during the grant period or during the repayment period for the grant, and if equipment that was purchased in whole or in part with grant money is sold before or after the failure, the proceeds of the sale, up to an amount that equals the state's share of the original purchase price for the equipment, are state money and shall be paid into the principal of the endowment, subject to AS 37.07.

New Text Underlined [DELETED TEXT BRACKETED]

Talking Points on HB 117

HB 117 makes two changes to ASTF's statute.

Reviews of Projects under $20 K

Lines 12-15 require ASTF to have written peer reviews of projects of small grants under $20 K. Since the February 1999 meeting the Board has filled out three written reviews or staff has found outside reviewers. This amendment would codify existing practice that ASTF pledged to document in response to the 1998 LB&A audit.

Mandates ASTF to hold Intellectual Property

Section 2 lines 7-14 would require ASTF to file security interests in intellectual property or own patents, copyrights, or other intellectual property to be developed by ASTF funding. There would be no discretion by ASTF in implementing this provision with ASTF incurring legal expenses no matter what the size of the project or how small ASTF's role was in the overall project.

ASTF has four concerns about this change.

1. **ASTF already has sufficient authority to require repayments.**

   State law already requires audits for any organization expending over $300 K in a single year. ASTF further requires certified financial statements of fees and revenues during the project and requires an audit when more than $50 K in ASTF funds have been spent. Per the grant agreement, ASTF has authority to require audits for any project and can waive the requirement for smaller projects if there is no reason to believe funds have not been spent as budgeted or fraud is suspected.

   The standard terms and conditions of the Grant Agreement (see attached sections 27-29) which all grantees sign allows ASTF audit and inspection rights for five years to ensure adequate reporting on the repayment obligation and requires that no IP be transferred to a third party without ASTF approval. Section 27 (b) gives ASTF the right to take security interests in IP but this provision is not exercised in smaller projects, is eliminated in non-proprietary. Science projects, and not exercised unless

the expense is justified. The thinking of the ASTF attorney and the Board behind ASTF's tough stance on these standard terms and conditions is to give the state the maximum ability for accountability and then waive the exercise of those tough measures unless ASTF decides they are required. Changing "may" to "shall" in the ASTF statute would remove this discretion from ASTF management.

There are no incidents yet of grantees not cooperating in providing information to assess their obligation or refusal to pay.

The standard repayment provision since the 1995 statute change is 5% of gross revenue up to 1.5 times the amount of the grant. (Science or Knowledge projects do not develop intellectual property so no repayment is required.) There have been a couple of voluntary repayments not owed under the pre-1995 grant agreement that allowed only royalty payments.

In short, there is no problem to solve with this change.

ASTF recognizes that more staff time is required to fully monitor repayment obligations but the issue is staff time not grantee compliance.

2. Changes the Role of ASTF and the Private Sector

The Board and staff of ASTF believes mandating state ownership of intellectual property would discourage most entrepreneurs and business people from working with us.

The draft bill would require entrepreneurs to define and protect the state of ownership of the intellectual property at the start of the process and to distinguish that property from what is developed during the project. Since ASTF funds both pre-patent and post-patent work distinguishing two sets of ownership from pre and post-ASTF funding would create extra expense and additional management issues due to differential ownership.

In many cases ASTF is a smaller portion of a larger project and the ASTF investment necessary to complete financing does not justify ASTF ownership of the technology. We require investors to match our investment with cash and in-kind; if they have to give ownership of the technology to

ASTF as well, the initiative would pass to ASTF from where it needs to be—with the business.

There are many issues in managing intellectual property (IP) such as the status of IP prior to project funding, the expense of filing outside the U.S., exclusive vs. non-exclusive licensing, and protecting with patents versus trade secrets. ASTF reviews the intellectual property plans and expenses of a project but we think it is a real mistake to position the state as holder and implied decision-maker for the intellectual property. Those decisions rightly rest in the private sector.

We think that engaging the private sector in taking more technical risk to address Alaska opportunities is best served by having ASTF in the role of co-financing entrepreneurs rather than the role of government contractor. ASTF is co-financing R&D and the management of that fiduciary responsibility require different risk management than the state would require of vendors selling proven products to the state. Financing research and development is an early stage, higher risk venture and most firms view it as a long-term expense. Requiring ASTF to hold security interests or ownership in the intellectual property R&D moves the issue of administration and implementation from the private sector to government and diffuses responsibility for the success of a project. Why should a business take initiative to develop and protect IP if ASTF owns the IP rights? And since R&D usually takes longer and costs more than originally predicted, when an entrepreneur faces needing more cash or effort to succeed then ASTF ownership provides an additional disincentive to invest further in technology ASTF owns. ASTF is in its proper role when it stays clearly on the fiduciary side of the table holding the project manager responsible for benchmarks and project success rather trying to make management decisions and diffusing responsibility.

According to the State Science and Technology Institute of Columbus Ohio which tracks state technology programs, no other state technology program is known to require the state to own or have security interests in the intellectual property in funded project. Like Alaska, most state programs are aimed at developing the technical capability of the private sector or launching technology-based businesses not in positioning the state to have an ownership position in the assets of technology-based firms.

3. **ASTF having security interests in the IP will discourage investors from financing technology-based firms.**

In most cases, entrepreneurs need to find investors to finance the next stage of their business. Investors want clear title to IP and the prospect of a state ownership of the intellectual capital would complicate the control of assets and clear management. The result would be to discourage next stage investment.

4. **Paying for patents and registering ASTF as a security interest makes mandatory a decision that is only cost effective on a case-by-case assessment.**

Paying for intellectual property protection and security interests is a significant expense that should be made only on a case-by-case basis. If the state were to be mandated to own intellectual property, then the business has few incentives to file for patents or try to file for foreign rights. We want the decision on protecting IP to be a business decision of the project made by the entrepreneur with ASTF and not mandated by the state. ASTF already has a number of hooks to protect its fiduciary interests during the project. These include monitoring performance on established benchmarks to see if further payments are warranted, ownership of all ASTF-funded equipment in ASTF's name until the Board disposes of equipment at the Final Report, and a final 10% hold back of ASTF funds until Board acceptance of Final Report.

In the past two years there have been two projects of sufficient size and risk so ASTF paid the $10-20K legal expenses to register ASTF's security interest in the patents. (These are ASTF side only expenses and do not include the much larger patenting expenses from the entrepreneurs to protect the intellectual property.) By requiring ASTF in every case to register its interest in existing patents and patents to be developed, additional costs would be mandated that in many cases are not justified by the size or stage of the project.

Jamie Kenworthy
Exec. Dir. ASTF
May 4, 1999

Alaska State Legislature

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Sponsor Statement
HB 117

"An Act relating to grant procedures of the Alaska Science and Technology Foundation"

HB 117 is being proposed in response to A Special Report on the Department of Commerce and Economic Development, Alaska Science and Technology Foundation, Grant Procedures; completed by Legislative Budget and Audit (084589-99) and released September 30, 1998.

The purpose of the audit was to determine the adequacy and reasonableness of ASTF grant procedures, both as they applied to grant proposals in general, and to determine if assets purchased with ASTF grant funds are disposed of at the end of the grant in an appropriate manner.

HB 117 forces the ASTF to comply with some of the findings and recommendations of the September 30, 1998 audit. This proposed legislation would allow board members to perform peer reviews of grant proposals under $20,000 by board members if the board members are recognized as impartial experts in the relevant areas. Currently, ASTF only submits grant proposals over $20,000 for peer review from board members.

HB 117 also requires the state to take a security interest in patents, copyrights and other intellectual properties that are developed as part of the grant project. Under this provision the grantees also must submit an annual certified financial statement until repayment (if required by grant provisions) of the grant has occurred (see audit recommendation # 3).

This proposed legislation would help the Alaska Science and Technology Foundation move forward using good business practices. The work that the Foundation does is important to Alaska and its future. However the ASTF is overseeing large amounts of state money and must be accountable. Good business practices will assure a strong future for the Alaska Science and Technology Foundation.

Thank you for your consideration of the legislation. I urge the committee's favorable response.

ASTF should implement procedures to ensure it is receiving all the repayment to which it is entitled. Such procedures could include having ASTF send letters to past grantees reminding them that they agreed to submit repayments when they accepted grant funds, or requiring audited financial statements on a predetermined time frame. The foundation could also take legal action if it believes a noncompliant grantee is receiving profits from which ASTF is entitled to repayment.

Recommendation No. 4

The legislature should consider amending ASTF's peer review statute to reflect the foundation's current practice.

Alaska Statute 37.17.090(b) requires that all grant proposals for over $5,000 must be submitted for impartial and competitive peer review. However, in most cases, the board's current practice is to submit only proposals over $20,000 for such peer review. For grant proposals under $20,000, selected board members serve as peer reviewers. If the board finds that it lacks the expertise required to do an adequate evaluation, the grant proposal is then submitted for the regular peer review process. We believe the current practice is reasonable given the dollar amount of the grants involved. Therefore, we recommend that the legislature consider amending this statute to require peer reviews only for grant proposals over $20,000. In conjunction, we recommend that the board continue to its current practices in relation to small grant proposals.

Recommendation No. 5

ASTF should submit complete and timely conflict-of-interest reports to the Attorney General's (AG) Office.

ASTF is currently submitting the required conflict-of-interest quarterly reports to the AG's office on a semi-annual basis. Thus, ASTF is out of compliance with AS 39.52.260. Late submission of conflict-of-interest reports prevents the AG's office from reviewing the reports within a reasonable time frame. Such timely review is an important aspect of state control procedures designed to guard against harmful conflicts of interest on the part of board or commission members. By not submitting these reports when due, ASTF hinders the ability of the AG to effectively ensure that conflicts of interest have not occurred.

Additionally, the summary information submitted to the AG's office is not as complete as it should be. Thus, the information included in the report is not always sufficient to easily make a determination regarding whether a true conflict situation exists or existed.

We recommend that ASTF implement measures to ensure conflict-of-interest reports are submitted on a quarterly basis, as required by statute. We also recommend that ASTF review reports prior to their submission to ensure that enough information is presented to allow the AG's office to easily ascertain all the pertinent facts regarding the disclosed potential conflict of interest.

Alaska Division of Legislative Audit

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SUMMARY OF: A Special Report on the Department of Commerce and Economic Development, Alaska Science and Technology Foundation, Grant Procedures, September 30, 1998.

PURPOSE OF THE REPORT

In accordance with the provisions of Title 24 of the Alaska Statutes and two special requests by the Legislative Budget and Audit Committee, we reviewed the activities of the Alaska Science and Technology Foundation (ASTF or the foundation). The objectives of our audit were to determine the adequacy and reasonableness of ASTF grant procedures, both as they are applied to grant proposals in general, and as they applied to ASTF grants to Alaska Power Systems, Inc. and Distributed Systems, LLC. Other objectives were to determine if ASTF's contract with a public relations firm is reasonable, and to determine if assets purchased with ASTF grant funds are disposed of at the end of the grant in an appropriate manner. We also reviewed ASTF's actions regarding public testimony received on the $1.5 million grant award to Distributed Solutions, LLC.

REPORT CONCLUSIONS

We note that statutory changes since 1995 have allowed the foundation extraordinarily broad authority to fund a wide variety of grants. We believe that ASTF's overall grant procedures are generally consistent with this broad authority. We also believe the board is committed to funding those projects that have potential to generate beneficial results for Alaskans. We found the foundation's approach to the disposition of equipment purchased with grant funding to be reasonable.

However, we have concerns regarding the manner in which the foundation is monitoring ongoing grants and its lack of enforcement of post-grant reporting requirements. While grant funds are disbursed throughout the grant period, little if any independent verification of information reported to ASTF by grantees is obtained until the final report phase of the project.

The foundation's standard grant agreement requires grantees to submit five annual update reports to ASTF after the grant is closed. Repayment provisions are also applicable to many ASTF grants. However, ASTF efforts to enforce these grant agreement provisions are not sufficient. Efforts to enforce post grant reporting requirements are limited, and no independent verification is required to show whether a past grant recipient owes any repayment to the foundation.

We are also concerned with the foundation's actions in relation to its grant to Distributed Systems, LLC. While it appears the foundation's board took public testimony in deciding on this grant, we believe ASTF overestimated the feasibility of the project when it awarded the grant and it failed to enforce benchmarks or

heed signs that the project's success was doubtful.

The scope of our audit also included a review of ASTF's contract with an Anchorage public relations firm. In our view, state monies should not be used in an effort to influence legislative decisions on funding. Further, we question whether contracting with such a firm is the most efficient manner of reaching potential grantees to solicit interest in the foundation's program.

FINDINGS AND RECOMMENDATIONS

1. ASTF should increase its efforts to monitor large ongoing grants.

2. ASTF should enforce post-grant reporting requirements.

3. ASTF should implement procedures to ensure it is receiving all the repayment to which it is entitled from past grantees.

4. The legislature should consider amending ASTF's peer review statute to reflect the foundation's current practice.

5. ASTF should submit complete and timely conflict-of-interest reports to the Attorney General's (AG) Office.

6. ASTF's board should document the statutory authority for each grant.

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September 30, 1998

Members of the Legislative Budget and Audit Committee:

In accordance with the provisions of Title 24 of the Alaska Statutes, the attached report is submitted for your review.

DEPARTMENT OF COMMERCE AND
ECONOMIC DEVELOPMENT
ALASKA SCIENCE AND
TECHNOLOGY FOUNDATION

September 30, 1998

Audit Control Number

08-4589-99

This audit determined the adequacy and reasonableness of the Alaska Science and Technology Foundation (ASTF) grant procedures, both as they applied to ASTF grant proposals in general, and as they applied to ASTF grants to Alaska Power Systems, Inc. and Distributed Systems, LLC. Other objectives included determining if ASTF's contract with a public relations firm is reasonable, and determining if assets purchased with ASTF grant funds are disposed of at the end of the grant period in an appropriate manner. We also reviewed ASTF's actions regarding public testimony received on the $1.5 million grant awarded to Distributed Solutions, LLC.

The audit was conducted in accordance with generally accepted government auditing standards. Fieldwork procedures utilized in the course of developing the findings and discussion presented in this report are discussed in the Objectives, Scope, and Methodology section.

Pat Davidson, CPA
Legislative Auditor

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OBJECTIVE, SCOPE, AND METHODOLOGY

In accordance with the provisions of Title 24 of the Alaska Statutes and two special requests by the Legislative Budget and Audit Committee, we reviewed the activities of the Alaska Science and Technology Foundation (ASTF or the foundation).

Objectives

The objectives of our audit were:

- To determine the adequacy and reasonableness of ASTF grant procedures, both as they are applied to grant proposals in general, and as they applied to ASTF grants to Alaska Power Systems, Inc. and Distributed Systems, LLC.
- To determine if ASTF's contract with a public relations firm is reasonable.
- To determine if assets purchased with ASTF grant funds are disposed of at the end of the grant in an appropriate manner.
- To determine if ASTF's actions regarding public testimony received on the $1.5 million grant award to Distributed Solutions, LLC were reasonable.

Scope and Methodology

In the course of our audit, we reviewed information from a variety of sources, including the following.

- ASTF's enabling legislation and other applicable Alaska Statutes
- ASTF Administrative Code regulations
- ASTF grant files
- ASTF board of directors meeting minutes
- The ASTF *Grant Information and Forms* booklet

In addition, we interviewed ASTF board members and staff, interested members of the public, and employees of other State agencies. We also attended two ASTF board meetings.

ORGANIZATION AND FUNCTION

The Alaska Science and Technology Foundation (ASTF or the foundation) was created by an act of the 1988 Alaska State Legislature as a public corporation. Currently, the foundation is administratively assigned to the Department of Commerce and Economic Development.

The purposes of the foundation, as defined at AS 37.17, are to promote and enhance "*economic development and technological innovation in Alaska; public health; telecommunications; and sustained growth and development of Alaskan scientific and engineering capabilities.*" The foundation is mandated to accomplish these purposes "*through basic and applied research and the development and commercialization of technology.*" Prior to a 1995 statutory change, this authority focused on research and did not include the development and commercialization of technology as a means of achieving these purposes. This, and other statutory amendments, broadened the type of grants ASTF is permitted to make.

At the same time the foundation was created, the legislature established a separate fund. This Alaska Science and Technology Endowment (endowment) is held and invested by the Alaska Permanent Fund Corporation. It is not part of the Permanent Fund, however. Grants approved by the foundation's board of

directors are funded with income from the endowment. ASTF's budget was $7.7 million for grants and $1.3 million for operations for FY 98, according to its 1997 annual report.

The foundation is administered by a nine-member board of directors. The governor appoints each member to a four-year term. Two of the members must be renowned scientists or engineers residing in Alaska, one of whom is employed by the University of Alaska. Two other members must be scientists or engineers who are not Alaska residents and who are recognized contributors in their field. Four members must be public members, two of which have a recognized expertise in resource development, manufacturing, finance, telecommunications, or public health. The final member shall be a State of Alaska departmental or agency employee not from the University of Alaska.

Alaska Science and Technology Foundation Board Members
Ronald A. Duncan, Chairman Anchorage *Public Member with Telecommunications Expertise*
Dr. Christina B. Behr-Andres, Ph.D. University of Alaska Fairbanks *Scientist or Engineer/University*
Mr. John Hargesheimer Fairbanks *Scientist or Engineer*
Dr. Phillip R. Mundy, Ph.D. Lake Oswego, Oregon *Non-Alaskan Scientist*
Dr. George Kozmetsky Austin, Texas *Non-Alaskan Scientist*
Dr. John W. Gerster, M.D. Anchorage *Public Member with Public Health Expertise*
Mr. Richard Stutz Anchorage *Public Member with Finance Expertise*
Mr. Mead Treadwell Anchorage *Public Member with Finance Expertise*
Lt. Governor Fran Ulmer Juneau *State of Alaska*

The ASTF board of directors employs an executive director. Staff are hired by the director and currently consist of a grants administrator, a technology administrator, an office manager, and an administrative assistant. The board also contracts for services with two to three circuit riders. Circuit riders provide grantees with technical and business development assistance. Circuit riders also review proposed business plans and grantee reports.

ASTF makes the following types of grants. The following descriptions are based on information from the *Grant Information and Forms* booklet published by ASTF.

- Knowledge Projects. Knowledge projects undertake basic and applied research and development activities. The purpose of these projects is to develop knowledge that directly addresses a particular Alaskan problem or opportunity, and involve the recipients of that knowledge in its acceptance and use. Knowledge projects usually involve researchers, industry managers, or natural resource managers. Since knowledge projects aim at public dissemination of that knowledge, proposals are usually not granted confidential status as are technical or proprietary projects. Since January 1995, ASTF has funded 57 knowledge based projects at a total cost of $12.6 million. See Appendix A for a listing of these projects.

- Technology Projects. These are projects that develop and commercialize technology. They will be defined at one of three stages described below. Both the technological as well as the commercialization aspects of these projects are critical and will have parallel benchmarks defined in the grant agreement. Most technology projects are proprietary in nature and are subject to grant repayment provisions if the project is a financial success.

  Stage I – Proof of Concept/Market Analysis Stage. Proposed projects at this stage must result in proving the concept of an idea and perform sufficient marketing analysis to justify further

investment in the project. At the end of Stage I, project managers should be able to show how the project team will be able to finance and carry out next-stage prototype development, or how they will interest next-stage investors and product developers.

Stage II – Prototype/Prefeasibility Business Plan Stage. Projects funded at this stage should result in a working prototype and a preliminary business plan.

Stage III – Commercialized Technology/Business Plan. Technology commercialization projects should conclude with the first successful deployment (beta test) necessary to demonstrate the technical and economic feasibility of the technology. The final commercialization benchmark for projects at this stage is a fundable business plan for startup ventures or a license or joint venture agreement with an existing firm to deploy the technology.

Since January 1995, ASTF has funded 70 technology projects at a total cost of $13.7 million. See Appendix B for a listing and description of these projects.

- Teacher Grants. Direct grants to teachers for up to $5,000 are available for innovative projects that promote the understanding of science, math, or statistics in grades kindergarten through 12. Additional funding is made available to allow teachers who receive these grants to present their projects at an annual teacher conference. Alaska Statute 37.17.420(a)(4) requires ASTF to *"act in an advocacy role for . . . science education important to the state that might otherwise be overlooked."* In addition, AS 37.17.420(a)(9) requires the foundation to *"promote science education and training for young scientists and engineers to pursue careers in the state and the Arctic."* ASTF believes these grants are justified under AS 37.17.420. From the beginning of 1995 to the present, 143 teacher grants totaling $946,000 have been awarded. See Appendix C for a listing of these teacher grants.

- Internet Connectivity Grants. The foundation has awarded grants to school districts to purchase hardware and wiring to connect the schools' computers to the Internet. These funds may not be used to purchase computers or for other costs. Citing the same authority it applies to teacher grants, ASTF believes Internet grants are justified under AS 37.17.420(a)(4) and (9). The foundation began offering these grants in 1996 and has awarded 44 school districts $4.5 million to date for these projects. See Appendix D for a listing of these grants.

- Small Business Innovations Research (SBIR) Bridging Grants. Federal SBIR projects often involve two or more phases. A phase may be completed before the next phase funding is received. Thus, projects may be without funding for a period of months. The purpose of the bridge grant is to help projects over these voids. Successful Phase I recipients of federal SBIR programs are eligible to apply for an ASTF bridging grant if the project meets ASTF criteria. To date, three bridge grants totaling $165,000 have been approved by ASTF. Two of these grants, totaling $105,000, have been approved since January of 1995. They are listed in Appendix E.

ASTF also administers the Business Industrial Development Corporation (BIDCO) assistance program. Our audit focused on the basic ASTF grant program. We did not review the foundation's handling of the BIDCO program.

REPORT CONCLUSIONS

As stated in the Objectives, Scope, and Methodology section of this report, this audit focused on the Alaska Science and Technology Foundation's (ASTF or the foundation) grant procedures. We note that statutory changes since 1995 have allowed the foundation extraordinarily broad authority to fund a wide

variety of grants. We believe that ASTF's overall grant procedures are generally consistent with this broad authority. Finally, we believe the board is committed to funding those projects that have potential to generate beneficial results for Alaskans.

However, we have concerns regarding the manner in which the foundation is monitoring ongoing grants and its lack of enforcement of post-grant reporting requirements. We are also concerned with the foundation's actions in relation to its grant to Distributed Systems, LLC. While it appears the foundation's board took public testimony in deciding on this grant, we believe ASTF overestimated the feasibility of the project when it awarded the grant and it failed to enforce benchmarks or heed signs that the project's success was doubtful.

The scope of our audit also included a review of ASTF's contract with an Anchorage public relations firm. We do not believe such a use of public funds is appropriate.

Our detail conclusions follow.

Statutory changes gave ASTF extraordinarily broad grant authority

In a 1994 audit report, we noted that ASTF was operating outside its statutory authority by soliciting and funding technology projects. At that time, ASTF had the authority to grant funds for basic and applied research. In 1995, statutory changes were made to allow grants for technology projects. This specifically included grants for the development and commercialization of technology. In 1996, ASTF was authorized to make grants for a new Business Industrial Development Corporation (BIDCO) program. This program was designed primarily to provide *"risk capital and management assistance for businesses"* throughout the State. In addition to grants from a new BIDCO fund, ASTF was authorized to expend up to $2,000,000 of endowment income for BIDCO purposes. The net result of these statutory changes is that ASTF now has extraordinarily broad authority to fund a wide variety of grants.

ASTF has increased its emphasis on economic development over the course of its ten-year existence. It requires that a feasible business plan be included in all technology project proposals. It has also funded several projects targeted purely at the promotion of economic development within the State. The Manufacturing Extension Partnership Center project is an example of such a grant. This $600,000 grant is targeted at economic development of the forest products industry and has little or no research or technology associated with it. The stated purpose of this grant is to promote the forest products industry by providing businesses with free or low-cost business assessments, establishing lumber grading within the State, and facilitating joint business ventures. It is also to provide low-cost technical assistance for production and marketing, and to establish a forest products business center. ASTF believes projects such as this are within the foundation's authority found in AS 37.17.010(a)(1)(D). This statute states that the foundation is to promote and enhance *"sustained growth and development of Alaskan scientific and engineering capabilities."* However, we believe that there is little if any connection between this grant and the growth or development of scientific and engineering capabilities. Although ASTF has declined to identify it as such, this $600,000 grant may fall under the broad umbrella of *"management assistance for businesses"* allowed under the BIDCO program. See Recommendation No. 6.

Although this grant authority is very broad, in most cases it appears there is a potential benefit to the State in the grants approved by ASTF. However, we did note a few grants where such potential for benefit is limited. While these were generally older grants for under $20,000, a grant to the Alaska Resource Alliance is a more recent grant with which we are concerned. The alliance is a group of Alaskan companies active in the oil industry. These companies have banded together with the intention of supplying oil exploration, development, and production operations to instate and world markets. A $20,000 grant was requested and approved to fund the formation of a for-profit corporation, to prepare a business plan, and to electronically

connect each participant to an Internet web page through which its supplies or services can be purchased. It is our belief that the companies associated with the Alliance are well able to finance such a project without state assistance. In our opinion, the formation of this for-profit corporation is not of significant benefit to the State.

As stated above, we believe most ASTF grants are of potential benefit to the State. However, we note that ASTF's expanded authority now permits the it to grant monies for research, technology, and even "*management assistance.*" Traditional, basic economic development projects may be funded, rather than focusing on research and technology. Such grants blur the line between ASTF and other economic development vehicles in state government, such as the Alaska Industrial Development and Export Authority and the Department of Commerce and Economic Development. The legislature may wish to reevaluate the role of the foundation from time to time to prevent an unnecessary duplication of agency missions.

ASTF's grant approval process is generally adequate

ASTF grant procedures are described in the *Grant Information and Forms* booklet published by the foundation. The application process begins with the submission of a pre-proposal which briefly describes what the proposed project would be expected to accomplish. ASTF's technology administrator reviews the pre-proposal and either invites the applicant to submit a full proposal, or informs the applicant of how the project does not meet ASTF requirements.

Full proposals for projects requesting grant funds greater than $20,000 are submitted to a peer review panel of recognized experts. This peer review process is an important mechanism for providing the board with independent expert opinion on the merits of proposed projects. In addition, proposals for technology development undergo a business review by a circuit rider to determine the commercialization potential of the project. Summarized peer review and business plan evaluations are given to board members for their review as they consider proposed projects. Board members serve as peer reviewers for grants under $20,000. By not submitting proposals requesting between $5,000 and $20,000 to peer review, the board violates AS 37.17.090(b). This statute requires peer review for all proposals over $5,000. Although an independent peer review is not conducted for these grants, given the dollar value associated with these projects, the current board procedures appear reasonable. We believe that the statute should be amended to reflect the board's current procedures. See Recommendation No. 4.

Select board members are given the full project proposal and full peer review evaluations prior to the board meeting when the proposal is to be voted on. The selection of which member is to review a particular proposal is based on considerations such as the member's area of expertise and availability. These members report to the full board on the proposal. Other members receive only a summary of the proposal and peer review reports. This summary is prepared by ASTF staff.

Time is allotted at all board meetings to hear public testimony on any grant proposal. In our review of 38 grant files, public testimony was offered on only one grant proposal. The foundation advertises all meetings and makes a meeting agenda available to anyone who requests it.

In many instances, applicants whose proposals are to be considered attend board meetings. Board members often question the applicant. If the proposal is not approved in its current form, the board often advises the applicant on what can be done to make the proposal acceptable.

Often, projects are approved contingent on modification of some aspect of the proposal. Each grant includes benchmarks that are used to measure the project's progress and success. Benchmarks are unique to each grant and are the aspect of the proposal most likely to be modified in the approval process. ASTF's

grants administrator is responsible for ensuring these modifications are made. Grant agreements are reviewed and signed by the executive director.

Overall, procedures for approving new grants appear reasonable.

ASTF grant monitoring is weak

Although ASTF has commissioned three management reviews over the last few years, we still noted several deficiencies in ASTF's grant monitoring process. While grant funds are disbursed throughout the grant period, little if any independent verification of information reported to ASTF by grantees is obtained until the final report phase of the project.

Once a grant agreement is signed, an initial grant payment is made. This payment is often as much as 50% of the total grant amount. Subsequent payments are scheduled to follow due dates for progress and financial reports. Enforcement of reporting requirements is limited almost exclusively to the withholding of subsequent payments until progress and financial reports are received and reviewed. Either the grant administrator or a circuit rider performs this review. Unless grantee reports indicate that there are problems with the project, no other monitoring efforts are generally employed. As long as the grantee is submitting reports that indicate benchmarks and budgets are being met, subsequent payments are generally forthcoming with no additional oversight until the final report is issued.

The final grant distribution, which is usually 10% of the total grant amount, is withheld until the final report is approved. An audit or some sort of agreed-upon review procedure is generally required at the end of the grant project and in some instances an on-site visit is conducted at that time. However, by the time these independent reviews generally occur, 90% of the grant funds for the project have been disbursed.

If a grantee is not submitting reports or if ASTF becomes aware that progress is not being made toward the project benchmarks, ASTF staff or circuit riders contact the grantee to try to determine what problems exist and to offer any assistance possible. If progress is still not made, the grant is deemed to be in default. After default status is established, circuit riders again try to work with the grantee to correct the deficiencies that lead to the default. If the problems with the grant are still not corrected, it is terminated. However, ASTF appears slow to pursue the default/termination process.

During our audit, we reviewed all funded grants that ASTF has terminated since its inception. We found ASTF actions in relation to these grants to generally be reasonable. However, as stated above, we noted that ASTF appeared slow to terminate grants. In one instance, the last progress report on a grant was received three years prior to the date the project was terminated.

In addition, we found one instance in which progress reports were being received, but it was clear that the grantee was not working toward the objectives described in the grant agreement. A $26,000 disbursement was made after a circuit rider report questioned whether the grant should be terminated. A total of $122,000 was disbursed for the grant, and ASTF has not made any effort to recover these funds even though the final audit of the project contained a disclaimer of opinion because the grantee refused to give their auditors access to financial records relating to the grant funds.

We believe that these problems are a direct result of the foundation's weak monitoring controls over ongoing grants. We note that the grants administrator is responsible for drafting the grant agreements, negotiating grant modifications, and monitoring ongoing and closed grants. These responsibilities appear very demanding and this concentration of responsibility may contribute to this weakness. See Recommendation No. 1.

Procedures for closing grants are generally reasonable

Final progress reports, including requests for equipment disposition are reviewed by the grant administrator or circuit riders. On occasion, site visits are conducted at the end of the grant period. Based on these reviews, a project summary is drafted and recommendations to the board are made regarding whether the final report should be accepted, whether the final payment should be disbursed, whether the equipment disposition request should be approved, and in rare instances, whether a bonus should be awarded.

In addition, a financial audit or an agreed-upon review procedure performed by a CPA is required at the end of the project for grants over $20,000. These requirements are at the board's discretion for grants under $20,000.

Once the board approves the final report and the CPA review or audit, the final payment is disbursed and the grant is considered closed.

We found ASTF's approach to the disposition of equipment purchased with grant funding to be reasonable. In most instances, ASTF gives title to equipment purchased with grant funds to the grantee after successful completion of the project. In the case of terminated grants, ASTF takes possession of such equipment if it is practical to do so. ASTF then donates the equipment to another research institution such as the University of Alaska.

Post-grant requirements are not enforced

ASTF's relationship with its grantees does not simply terminate after the grant is finished. The foundation's standard grant agreement requires grantees to submit five annual update reports to ASTF after the grant is closed. Additionally, if the grant is proprietary in nature, the grantee is required to reimburse ASTF based upon the profits received as a result of the project's success.

However, ASTF efforts to enforce these grant agreement provisions are not sufficient. On an annual basis, the grant administrator sends out a letter to past grant recipients asking for an update report. These letters are written in a very informal manner. They simply ask the grantee to send in an update. They do not refer to the fact that these updates are required, and no action is taken if the update is not forthcoming. See Recommendation No. 2.

No independent verification is required to show whether a past grant recipient owes any repayment to the foundation. To date, ASTF has received approximately $100,000 in repayment from seven grantees. Of this total, $89,000 has been received from a single grantee. We note that prior to a 1995 statute change, the foundation was entitled to repayment from royalty income only. While several projects resulted in some type of income for the grantee, very few produced royalty income. Thus, ASTF was entitled to few repayments from pre-1995 grants and monitoring for repayment provisions was not as important as it is now.

Since the 1995 statutory change, however, the foundation is entitled to repayment from all sources of income relating to technology developed in ASTF funded projects. Therefore, it is incumbent on the board to implement procedures to ensure that ASTF is receiving all the repayment to which it is entitled. See Recommendation No. 3.

Alaska Power Systems (APS) and Distributed Systems, LLC (DS) granted $1.83 million

Since 1992, ASTF has awarded two grants to APS and one grant to APS' wholly-owned limited liability company, DS. For a number of years, APS provided and maintained power generation systems for a

variety of entities including some small, rural Alaskan communities. DS was established to conduct product development research for APS, but only after APS was experiencing significant financial difficulty. Each grant is briefly discussed below.

In 1993, ASTF approved an award to APS for $249,438. This project is titled Village-scale Hydro/Diesel Generation System (the Hydro/Diesel Project). As presented in the grant proposal project description, this project was to develop an innovative hydro/diesel power generation system to be used in the village of Akutan on the Aleutian chain. Existing available technology was to be adapted and transferred to this new application.

In 1994, ASTF awarded APS a second grant of $81,167 for a project titled Remote Control and Monitoring for Multiple Diesel Generation (the Remote Monitoring Project). This project was to involve the development of technology necessary for simple automated control of multiple paralleled diesel generating systems in rural Alaska, including improving remote monitoring, troubleshooting, and reprogramming.

In 1997, ASTF awarded DS a $1.5 million grant over the ardent objections of some members of the public. The project title is IED 2000/GenMan/Application Software (the IED 2000 Project). The project was to develop technology capable of monitoring and controlling power generation systems from remote locations. To date, $700,000 has been disbursed for this project, which is reportedly ongoing. In deciding whether to fund this proposal, the board had to consider the project's strengths and its weaknesses. On one hand, the project appeared to have the potential to bring high paying technology jobs and capital to the State. It also had potential to provide lower-cost power generation to rural Alaska. On the other hand, the cost of the grant was very high, the company had a history of delays on earlier grants, and the company's financial position was shaky. We acknowledge that this was not a clear and easy decision, however, for reasons outlined in the following sections, we are concerned with the board's actions in relation to this grant.

Unresolved questions on earlier APS grants existed when current grant was approved

The $1.5 million IED 2000 project is among the largest ever approved by the foundation. Given the size of the project, we believe the board was obliged to exercise extreme care in approving this grant. This included an obligation to establish confidence in the grantee's ability to meet its projected goals. From its two prior grants, APS had an established track record of grant performance available for ASTF to consider when determining funding for the IED 2000 project. In reviewing these prior grants, several issues of concern came to our attention.

- An ASTF circuit rider questioned the disposition of equipment purchased with grant funds from the Hydro/Diesel Project prior to the board's approval of that project's final report. ASTF did not adequately pursue answers to these questions before accepting the final Hydro/Diesel Project report or before the two subsequent grants to the company and its subsidiary were made.

- We noted several areas of concern in our review of the Remote Monitoring Project.

    1. It was originally scheduled for completion within six months. In actuality, it took approximately 26 months for the foundation to receive the final project report. This indicates that APS had trouble meeting the deadlines it established.

    2. As part of the final review for this project, an ASTF circuit rider examined the final report submitted by APS. This report stated that APS had applied for five patents. We have only been able to verify that three were applied for. Two of these patents have been granted and one is pending. No explanation regarding the other two patents was ever obtained by ASTF. This

indicates a lack of oversight on ASTF's part.

3. We also noted statements in the final Remote Monitoring Project report regarding fuel efficiencies achieved using technology developed during the project. Based on a study commissioned by the Division of Energy regarding power systems using this technology, these statements appear overly optimistic. ASTF did not obtain any independent verification of this reported information. We believe such verification should have been obtained, not only because it was necessary to adequately assess this project, but also because the IED 2000 project was, to some degree, an extension of this project. It would seem prudent for the board to obtain full assurance that the results of this project were favorable before it approved funding for the IED 2000 project.

- At the time the IED 2000 Project was approved, the third annual post-grant report for the Hydro/Diesel Project was approximately eight months overdue. Also, the first annual report on that project, dated April 11, 1995 states, in part,

  Akutan has a powerhouse that has over the past 12 months generated 338,176-Kilowatt hours of electricity from the combination of hydro and diesel consuming 11,900 gallons of diesel.

  However, Division of Energy records show that from April 1994 through April 1995, 366,613-Kilowatt hours of electricity were generated using 31,229 gallons of diesel. ASTF did consider fuel efficiencies when drafting incentives in the repayment provisions of the grant agreement. However, we note that efficiency incentives are of no consequence if the technology is not sound. As in other instances mentioned above, ASTF did not verify information reported to it by the grantee. We believe that such verification is essential for accurate assessment of projects previously funded, and so that knowledgeable decisions regarding future grants can be made. See Recommendation No. 1.

Current DS grant awarded despite ASTF's awareness of potential problems

When the IED 2000 grant award was approved, the board believed that the project had great potential to create a high technology export industry within the State. It appears that potential may still exist. However, the board was also aware of many potential obstacles to achieving this success.

- The board voted to fund the IED 2000 grant on September 5, 1997, contingent on grant agreement negotiations. A follow-up teleconference meeting was held on September 26, 1997 to discuss two modifications to the grant agreement provisions approved at the prior meeting. In addition to the negative input received in the months leading up to these meetings, the board heard significant negative public testimony regarding funding this project at each of these meetings. Much of this testimony, as well as a significant amount of correspondence, was received from individuals who had direct dealings with APS. In addition, members of the rural power industry cautioned the board about the project. This is particularly significant given the fact that although the board provides time for public testimony at all its meetings, it is extremely rare that such testimony is offered. The board took the testimony offered, but approved the IED 2000 grant despite the ardent objections it heard.

- The board was aware that APS was in serious financial difficulty. In fact, it appears that DS was established, at least in part, to protect assets from APS creditors. ASTF included language in the grant agreement stipulating that grant funds were not to be used to pay APS debt.

- At its September 26 meeting, the board was made aware that a key member of the development team

was leaving the company. Retention of this person, as well as other key employees was one of several grant benchmarks. Thus, ASTF was aware that grant agreement benchmarks had been violated even before the agreement was signed. By the time the grant agreement was signed, ASTF was aware that this member of the development team was leaving, at least in part, due to nonpayment of salary.

- Review of the IED 2000 grant file indicated that the technology development was taking place in California prior to the signing of the grant agreement. DS did move these operations to Alaska, but it is not clear exactly when. We note that DS moved all its operations back to California in February or March 1998. The board apparently believed that even if DS developed the technology for the IED 2000 system in California, it would return to Alaska for actual production.

  In addition to the initial grant payment of $500,000, ASTF disbursed another $200,000 to DS after it moved its operations back to California. According to AS 37.17.090(h) the board is required to give preference to Alaskan applicants. The statute also stipulates that the board award only grants that benefit Alaska. According to the foundation's mission statement, all projects must bring direct and significant benefits to Alaskans. As DS' ties to the state diminished, the chances that the project would benefit Alaska decreased substantially. We believe it was incumbent on the board to take this into consideration.

- In response to the negative indications the board had been receiving regarding this project, ASTF commissioned an independent engineer's report on the IED 2000 technology. The engineer's report indicated that the IED 2000 power generation control system was viable and had potential for success. However, the report also contained indications that the project might not be as beneficial to the State as ASTF might have hoped. Although IED 2000 was being designed to provide a range of functions not available in existing power generation control systems, the report also noted that each individual function or some combinations of the functions included in the IED 2000 system were currently available from systems produced by other manufacturers. Many companies in this market sector were conducting significant research and development on similar projects. Thus, competition was strong, and timeliness was of the essence. As discussed above, APS had performed slowly with the Remote Monitoring grant. The technology, or a variation of it, was sure to be developed and made available in Alaskan markets in the near future. If another company beat DS to market with similar technology, DS' potential success would be severely hampered.

Given all the above mentioned indications that the IED 2000 project might be troublesome, it appears that the board should have been wary of approving this project.

ASTF board chairman disclosed potential conflicts of interest with APS/DS

In July 1997, ASTF's board chairman, who is also the president of an Anchorage-based telecommunications company, disclosed that APS and his company shared office space in two villages and that APS owed that company $20,000 for phone services, some of which was past due. His company's annual revenues are approximately $200 million, and the ASTF board chairman owns 3% of its stock. He also disclosed that he is a personal friend of APS/DS' principal owner. The board substantially followed state procedures in determining that the disclosed facts did not constitute a conflict of interest for the board chair. Those procedures included voting on whether the disclosed information constitutes a conflict and submitting a report to the Attorney General's (AG) Office regarding all disclosed potential conflicts. See Recommendation No. 5.

According to another member of the board, all were satisfied that no true conflict existed. The board apparently believed there was no potential for the board chairman to benefit directly from the project. The

appearance of conflict was also reportedly considered. In determining whether the appearance of conflict of interest was significant enough to exclude the chairman from the decision-making process on the IED 2000 grant, board members considered the fact that he was one of the members most knowledgeable in the area of the technology applicable to the grant.

Usual grant approval procedures require review of peer review recommendations and staff reports. In this case, in addition to those processes, significant board involvement occurred. Prior to the board's approval of the grant award for the IED 2000 project, two board members, including the board chairman, spent time reviewing the project. One member reviewed the technology development work being done by the company, and the other reviewed the company's business plan. These members recommended that the grant amount be increased from $950,000 to $1,500,000, although peer reviewers did not indicate the project was underfunded. Based on their review, these two members believed that the $1,500,000 was needed if the project was to be a success. Such involvement in the project by board members is controversial. Close scrutiny by board members leads to more informed decisions. However, there is a danger that board members may lose their objectivity if they become too involved in the project.

Standard grant repayment provisions enhanced for the IED 2000 grant

In modifying the grant agreement, the board negotiated terms that have potential to increase the benefit of the grant to the State.

To its credit, ASTF combined repayment provisions from prior grants into the current grant agreement. Both grants to APS were made before the 1995 statutory changes discussed earlier in this section. Under the old statutes, repayment provisions were based only on royalty income received by the grantee as a result of technology developed with ASTF funds. Because neither grant project generated royalty income, repayment requirements did not apply.

In drafting the provisions of the IED 2000 grant agreement, however, ASTF included repayment provisions that covered not only the current grant funds, but also the two earlier APS grant monies. According to the agreement, if DS maintains an Alaska presence, its repayment obligation will be 1.5 times the total grant proceeds from all three grants. Thus, the repayment provision totals $2,745,908, subject to credits earned if IED 2000 systems are installed in Alaska and shown to reduce the cost of power generation within the State. If Alaska presence is not maintained according to the original grant agreement, DS repayment provisions increase to five times the grant amount, up to $7,500,000. However, all repayment provisions are moot if the project is not a success, or if those provisions are not enforced. See Recommendation No. 3.

Benchmarks modified but still not met

Many benchmarks contained in the original IED 2000 grant agreement have not been met, yet funding for the project continued until May 1998. For example:

- Key technical and financial personnel were to be committed to the IED 2000 project during the first two years of the grant. Currently, one year into the project, only two of these key personnel, the company's owner and a financial consultant, are still associated with the project. The person most involved in actual development of the project had resigned before the grant agreement was signed. In January 1998, ASTF became aware that other key personnel, including the grant manager, had left the company. Their actual departure dates are not clear.

  The agreement stipulates that if any of these individuals left, ASTF could determine at its discretion if equivalent talent was committed to the project. In all these cases, ASTF determined that equivalent talent was available for the project. It should be noted, however, that time was supposedly of the

essence for the project's success. Changing personnel under these circumstances was an obvious impediment for timely completion of the project.

- Monthly financial statements based on generally accepted accounting principles, and annual audit reports for both DS and APS were to be submitted. These requirements have never been met. In lieu of monthly financial statements, ASTF was provided with a checkbook register printout. This register showed payments to APS that were reportedly to cover personnel costs. However, ASTF did not obtain supporting documentation to determine if these expenditures were proper. No audits for either company have been provided. See Recommendation No. 1.

- A beta test of the system was to be performed demonstrating system capabilities in terms of several functions. The actual beta test, performed in March 1998, included only one function.

Disbursements were made through May 1998. Further disbursements have been held pending DS compliance with grant agreement stipulations, as outlined in a May 1998 amendment to the grant agreement. DS reportedly has potential customers for its product outside the United States. However, whether any sales will actually occur remains to be seen. Even if the company becomes a success, there are few indications that Alaskans will benefit from the funding ASTF has contributed to the project.

Based on the preceding aspects of grants to APS and DS, it appears that ASTF poorly handled the IED 2000 grant. Not only did ASTF overestimate the feasibility of the project when it approved the grant, it also failed to enforce benchmarks or heed signs that the project's success was increasingly doubtful.

ASTF's public relations (PR) contract of questionable value to the State

We are concerned that certain functions provided to ASTF by a public relations firm on contract to the foundation are inappropriate for a state agency. Specifically, we do not believe state monies should be used in an effort to influence legislative decisions on funding. Further, we question whether contracting with such a firm is the most efficient manner of reaching potential grantees to solicit interest in the foundation's program.

ASTF currently has an Anchorage public relations firm under contract. The three-year contract, signed June 16, 1996, is for $110,000 per year. Additionally, a $50,000 amendment was signed in 1997 that requires the firm to produce a series of television spots for the foundation.

Tasks required by the initial contract include issuing press releases and monthly news faxes, one-on-one media briefings, advertising and promoting teacher conferences and an ASTF lecture series, issuance of the annual report, and Internet web site enhancement and support.

The stated goal of the contract is:

> *To increase awareness and understanding of ASTF's role in growing and diversifying Alaska's economy among the general public, media, community and business leaders, and* ***Legislators.*** *[Emphasis added.]*

ASTF's executive director stated that the foundation required such a firm on contract for the following reasons.

1. To get the attention of industry leaders so they would think of ASTF when they are considering doing projects. To inform people that ASTF is ready to "*do projects.*"

2. To get the attention of *"opinion leaders"* because they have the ear of the legislature. He spoke of fears that the ASTF endowment could be *"raided."* Opinion leaders are also important because they can influence the attitude of Alaskans as a whole. By promoting a *"we can produce it here"* attitude, the foundation furthers its mission to sustain growth and development of Alaskan scientific and engineering capabilities. Capability is fueled by attitude.

3. A public relations firm can more effectively *"get the word out"* regarding ASTF projects and programs. Foundation staff do not have the expertise or time to do what the public relations firm does.

We realize that a small agency such as ASTF may wish to use a contractual public relations service to generate interest in its program with the intent of attracting additional proposals for projects. However, this does not appear to be what the contract in question is primarily designed to do. Indeed, if attracting new proposals was the primary reason for the contract, we believe it is a highly inefficient means of accomplishing this task. We are concerned that the thrusts of many of the services performed under this contract are tantamount to an attempt to protect ASTF's funding base. We do not believe such actions are appropriate for a state agency.

FINDINGS AND RECOMMENDATIONS

Recommendation No. 1

ASTF should increase its efforts to monitor large ongoing grants.

Monitoring of ongoing ASTF grants generally consists of a staff or circuit rider review of progress and financial reports submitted by the grantees. These reviews are performed to ensure that reports show that benchmarks and budgets are being met. However, independent verification of reported information is rarely obtained until the final report is submitted. Supporting documentation of reported financial or project information is generally not requested. Site visits are usually conducted only when there is a clear indication that problems exist or toward the end of a project.

Under current procedures, few if any measures are taken to ensure that the reported information is accurate until the final report is submitted. At the final report stage, agreed-upon review procedures or an audit by a CPA is required in most instances. While these measures appear adequate for smaller grants, we believe more stringent monitoring for larger ASTF grants is warranted. Payments are made on many grants over an extended period of time. Ongoing verification that reported information is accurate is necessary to ensure that ASTF grant funds are being expended properly. Such monitoring need not be burdensome for the grantee. It could simply consist of more on-site visits or the submission of supporting documentation for reported expenditures for review by ASTF staff. In some cases, periodic audits may be warranted. This would allow ASTF to better identify potential problems before the bulk of funding for a project has been disbursed.

We note that the grants administrator is responsible for drafting the grant agreements, negotiating grant modifications, and monitoring ongoing and closed grants. These responsibilities appear very demanding and this concentration of responsibility may contribute to the weakness in the monitoring function that we note in this recommendation and to the weaknesses we note in Recommendation Nos. 2 and 3.

Recommendation No. 2

ASTF should enforce post-grant reporting requirements.

Article IV section 22 of the standard ASTF grant agreement states:

> *During the Term of this Agreement and for a period of five (5) years thereafter, the Grantee shall provide ASTF with a detailed written report within forty-five (45) days after the end of each calendar year summarizing the Grantee's post-Project efforts, including, without limitation:*
>
> a. *Its efforts and plans to Commercialize the Technology and Intellectual Property.*
>
> b. *Its efforts and plans to otherwise use, disclose or disseminate the Technology or Intellectual Property, such as publishing articles, lecturing, and distributing materials related to the Technology or Intellectual Property.*

Currently, the grant administrator sends a letter out annually requesting update information. The letter makes no reference to the above mentioned grant agreement clause. It does not convey any sense of urgency or authority, and in many instances grant recipients ignore it.

No follow-up action is taken when former grantees do not submit these annual reports. In at least one instance, ASTF made a subsequent grant to a company that was not current with post-grant reporting requirements associated with prior ASTF funded projects.

Without the post-grant information required by the grant agreement, the foundation is not able to accurately assess the effect of these projects on the Alaskan economy. It is unable to track how effective the grants it has made have been. Consequently, it is difficult, if not impossible, for ASTF to do any meaningful self-assessment as to the types of projects it has funded in the past or should fund in the future. Therefore, we recommend that ASTF take a more proactive approach to enforcing post-grant reporting requirements. This could include reminding past grant recipients that they are contractually obliged to submit these reports.

Recommendation No. 3

ASTF should implement procedures to ensure it is receiving all the repayment to which it is entitled from past grantees.

No enforcement mechanism is in place to ensure that the foundation is receiving the repayment to which it is entitled. Under AS 37.17.090(g), ASTF is required to obtain a fair and reasonable return from the revenue, economic value, or profits derived by the grantee from ASTF sponsored projects. ASTF's standard grant agreement requires the grantee to pay the foundation 5% of any profits up to 1.5 times the original grant amount so long as the grantee remains in Alaska. If the grantee moves out of the State, the provisions double to 10% of income up to three times the grant amount. Such provisions are applied to proprietary grants only and are subject to modification at the board's discretion. Repayment provisions are not applied to knowledge projects because no economic gain is expected to be received by the grantee.

However, ASTF takes no actions to ensure that past grantees are meeting the repayment provisions they agreed to or that repayments are adequate. Past grantees are essentially on an honor system when it comes to repayment. ASTF takes no measures to seek out past grantees beyond those described in Recommendation No. 2, nor does it require independent verification to ensure that the repayments it does receive are adequate.

ASTF should implement procedures to ensure it is receiving all the repayment to which it is entitled. Such procedures could include having ASTF send letters to past grantees reminding them that they agreed to

submit repayments when they accepted grant funds, or requiring audited financial statements on a predetermined time frame. The foundation could also take legal action if it believes a noncompliant grantee is receiving profits from which ASTF is entitled to repayment.

Recommendation No. 4

The legislature should consider amending ASTF's peer review statute to reflect the foundation's current practice.

Alaska Statute 37.17.090(b) requires that all grant proposals for over $5,000 must be submitted for impartial and competitive peer review. However, in most cases, the board's current practice is to submit only proposals over $20,000 for such peer review. For grant proposals under $20,000, selected board members serve as peer reviewers. If the board finds that it lacks the expertise required to do an adequate evaluation, the grant proposal is then submitted for the regular peer review process. We believe the current practice is reasonable given the dollar amount of the grants involved. Therefore, we recommend that the legislature consider amending this statute to require peer reviews only for grant proposals over $20,000. In conjunction, we recommend that the board continue to its current practices in relation to small grant proposals.

Recommendation No. 5

ASTF should submit complete and timely conflict-of-interest reports to the Attorney General's (AG) Office.

ASTF is currently submitting the required conflict-of-interest quarterly reports to the AG's office on a semi-annual basis. Thus, ASTF is out of compliance with AS 39.52.260. Late submission of conflict-of-interest reports prevents the AG's office from reviewing the reports within a reasonable time frame. Such timely review is an important aspect of state control procedures designed to guard against harmful conflicts of interest on the part of board or commission members. By not submitting these reports when due, ASTF hinders the ability of the AG to effectively ensure that conflicts of interest have not occurred.

Additionally, the summary information submitted to the AG's office is not as complete as it should be. Thus, the information included in the report is not always sufficient to easily make a determination regarding whether a true conflict situation exists or existed.

We recommend that ASTF implement measures to ensure conflict-of-interest reports are submitted on a quarterly basis, as required by statute. We also recommend that ASTF review reports prior to their submission to ensure that enough information is presented to allow the AG's office to easily ascertain all the pertinent facts regarding the disclosed potential conflict of interest.

Recommendation No. 6

ASTF's board should document the statutory authority for each grant.

The foundation appears to be operating under the assumption that any grant that promotes the purposes of the foundation as defined under AS 37.17.010 is appropriate. That is to say, any grant that promotes and/or enhances "*economic development and technological innovation in Alaska; public health; telecommunications; and sustained growth and development of Alaskan scientific and engineering capabilities*" is appropriate. There does not appear to be acknowledgement of the constraint that such purposes are to be accomplished either "*through basic and applied research and the development and*

commercialization of technology" or through means specified in other sections of ASTF's statute.

On several occasions during the course of our audit, ASTF staff were unable to tell us what statute allowed them to approve a particular grant. The grant for the Manufacturing Extension Partnership Center discussed in the Report Conclusions is an example. It appears that this grant may be appropriate under AS 37.17.225. However, the foundation is limited to spending no more than $2 million in endowment income for grants approved under this statute and this grant alone was $600,000. If ASTF does not determine what statute allows a particular grant, it is unable to ensure compliance with requirements such as this. Therefore, we recommend that clear statutory authority be documented for all ASTF grants.

APPENDICES

Information provided directly by the
Alaska Science and Technology Foundation

APPENDIX A

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Funded from January 1995 through September 1998

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Yukon River Salmon Project Project # 97-1-067S Grant Manager: Albrecht, Dan Start Date: 05/08/1997 End Date: 12/31/1998 TECHNICAL AREA: FISHERIES ASTF FUNDS AWARDED: $24,914 MATCHING FUNDS: $27,814	Develop new markets for local Yukon River salmon processors and expand consumer recognition of Yukon River salmon products through telemarketing, direct sample shipments to chefs, distributors, food service operators, and distribution of promotional materials and trade show participation. The test marketing and market information developed will be shared by the Yukon River salmon processors.
Stunning, Bleeding, & Transferring Hatchery-harvested Chum Salmon for Maximum Quality Project # 97-1-058 Grant Manager: Amend, Donald Start Date: 07/07/1997 End Date: 02/01/1998 TECHNICAL AREA: FISHERIES ASTF FUNDS AWARDED: $76,400 MATCHING FUNDS: $441,150	The focus of this project is to further develop and refine the process of stunning and bleeding live salmon in order to improve quality while maintaining or improving throughput of fish in the process. The South Southeast Region Agriculture Association will build on earlier ASTF-funded research and development work performed in 1995-96 in this new project. The project will use hatchery-raised chum salmon harvested in terminal areas during the project and the intermediate products will be evaluated by reprocessors using the fish to produce market-ready products. The desired outcome for the project will be an improved intermediate product that can be produced as efficiently or more so by salmon processors and Alaskan hatcheries. These accomplishments would enhance the value of a significant Alaskan natural resource by improving processing methods which in turn would improve economic returns for all facets of the State's salmon industry. The findings of the project will be shared with the rest of the Alaskan salmon industry by the Project Managers.
Seismic Microzonation of Anchorage Project # 97-3-1312 Grant Manager: Biswas, Niren Start Date: 05/01/1998 End Date: 05/31/2002 TECHNICAL AREA: ARCTIC STUDIES ASTF FUNDS AWARDED: $668,654 MATCHING FUNDS: $771,836	This is a continuation of a previous project #91-2-125 Seismic microzonation: Greater Anchorage Area. In the first project an 18-station strong motion network was installed and is operating. Results included improved identification of the potential earthquake zones, delineation of soil classes and site factors and development of computer algorithms for responses. In this project, more seismic information will be collected and the latest subsurface geology data will be integrated to produce a detailed series of hazard maps of the Anchorage bowl. These will be used by design engineers and building officials to design and build structures appropriate to the characteristics of the location. An advisory board of technical, private sector, and public sector professionals oversee the work for usefulness and validity. This work will provide the information required to design and build structures appropriate to the locale. Buildings will be designed to match the local hazards, not be over- or under-designed. The information will be compiled and stored with the Municipality of Anchorage, which will maintain the data base and continue to operate the instrument system

	beyond the end of the task. Emergency response planners will be better informed so improved response approaches will be developed and implemented. The project outcomes include cost savings for building design and site characterization, as well as minimization of damage, injuries, and disruptions from future earthquakes.
Kachemak Bay Shellfish Nursery Culture Research Project Project # 96-4-071 Grant Manager: Bradley, Mark Start Date: 12/30/1996 End Date: 01/31/1999 TECHNICAL AREA: FISHERIES ASTF FUNDS AWARDED: $68,158 MATCHING FUNDS: $131,372	Design, test, and evaluate shellfish nursery equipment and procedures appropriate to the Alaskan environment to convert hatchery-produced shellfish seed to an acceptable size for stocking on Alaskan aquatic farms. One of the primary goals of the project is to determine how long it will take to grow hatchery-produced oyster seed to a size suitable for stocking on aquatic farms. Demonstrate that large oyster seed can be produced in Alaskan nurseries in one growing season. Project will complement the shellfish hatchery that will be built as a component of the Mariculture Technical Center. Information gained from this project will benefit Alaska by developing and testing the technology required to produce a stable source of large high-quality oyster spat for stocking of Alaskan farms. Nursery culture techniques developed could also be used in future projects to facilitate restoration of indigenous bivalve populations on oil-spill impacted beaches or to provide new species for use by Alaska shellfish growers for product diversification.
Evaluation of Water and Wastewater Practices in Selected Villages in the Yukon-Kuskokwim Delta and Bristol Bay Regions of Alaska Project # 96-2-0212 Grant Manager: Campbell, Ann Start Date: 05/07/1996 End Date: 09/30/1996 TECHNICAL AREA: SANITATION ASTF FUNDS AWARDED: $45,688 MATCHING FUNDS: $7,262	This project finishes out the Evaluation of Residential Compost technology project of Dr. Olofsson. This project will evaluate, in concert with local communities, existing information pertinent to water and wastewater practices and their possible long-term improvement in the villages of Kwigillingok, Nunapitikuk, Kaliganek, and Manokotok. If successful, it will lead to a long-term implementation project for improvement of local sanitation practices in those communities. Rural sanitation practices in Alaska are one of the leading health and community development problems statewide. Developing better sanitation practices using new and existing technologies will lead to better living conditions and improved community health in the rural villages of Alaska.
Sanitation Master Planning for Rural Alaskan Villages-Kipnuk & Kigillingok Project # 97-2-100 Grant Manager: Campbell, Ann Start Date: 12/31/1997 End Date: 08/01/2001 TECHNICAL AREA: SANITATION ASTF FUNDS AWARDED: $455,240	The tangible results of this project include a report of community process and model; an analysis of lifestyle elements impacting village sanitation systems; a development contract for villages to model in forming relationships with agencies outside of the village; engineering and costs reports for modular systems constructed during the project; a catalog of modular systems for use in other rural villages; decision tree tools for future use in other rural villages; a model business plan for operation of village "utility" systems; and, an analysis of critical project successes and failures. Ultimate success for this project would be achieved when the villages of Kipnuk and Kwigillingok have taken a proactive stance in the development, implementation, and ownership of a new water and wastewater system for their villages. Ultimate success will require regulatory agencies, principally, the State of Alaska, Department of

MATCHING FUNDS: $15,287,309	Environmental Conservation, and the U.S. Public Health Service, to actively include the villages in the design and implementation of village water and wastewater systems. Expected outcomes over the next five to ten years are: empowerment of rural villages in sanitation decision-making, implementation and operation; technology transfer to a broad range of rural communities; and regulatory agency buy-in to this new regulatory approach.
Research Design: Effects of Total Dissolved Solids on Aquatic Life Project # 98-1-012S Project Manager: Campbell, McKie Start Date: 04/17/1998 End Date: 06/30/1998 TECHNICAL AREA: MINING ASTF FUNDS AWARDED: $13,200 MATCHING FUNDS: $39,940	This knowledge project is to develop a design for researching the effects of Total Dissolved Solids (TDS) on fish and other aquatic life that is acceptable to all stakeholders including both the regulators as well as the industry participants. The Project Co-applicants and team consists of representatives of AKDEC, AKDF&G, and the Council of Alaska Producers, a mining industry consortium of hard rock mining companies that have interests in Alaska. Once this phase is completed and an acceptable research design has been developed, additional funding will be sought to perform and interpret the research regarding TDS' effect on aquatic life. Project success will provide a mutually agreed research design for this topic as well as a model for how to approach other politically sensitive topics in a low-key scientific manner. Project success would provide an acceptable research design for determining the effects of TDS on fish and other aquatic life forms and suitable levels for establishing regulations for the State that could be implemented and interpreted in a future project.
Rural Sanitation Manual (Transferred from Pickett/95-3-105S) Project # 96-3-059S Project Manager: Carnegie, John Start Date: 08/19/1996 End Date: 05/31/1997 TECHNICAL AREA: SANITATION ASTF FUNDS AWARDED: $14,209 MATCHING FUNDS: $4,394	Develop a manual that describes an array of sanitation strategies appropriate for household and community application in rural Alaska. The Project will consist of the research, design, writing, and production necessary to create and disseminate to a wide audience. The manual will include a description, evaluation, cost and sources for household technologies for safely disposing of sewage. The project will involve rural sanitation experts, health officials, village health aids, and others. Fifteen thousand copies of the 8.5"x11" booklet of up to 49 pages will be printed for distribution as well as load the product into an electronic format for computer networks. This manual will contribute significantly to closing critical communication gaps and empower everyone concerned not only with new hope, but with real, practical tools to make rural Alaska a healthier, happier place to live.
Alaska Technology Transfer Center Project # 97-3-124 Project Manager: Christy, Charles Start Date: 09/10/1997 End Date: 10/31/2000 TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $230,289	The Alaska Technology Transfer Center (ATTC) provides Alaskan small businesses with technology research and information searches to evaluate the technical feasibility of ideas and assists in refining and developing ideas into viable businesses. ATTC has access to federally developed technologies and links Alaskan businesses to federal labs to further the technology base in Alaska. A major component of this project is assisting Alaskan businesses in obtaining grant funding through the national Small Business Innovative Research (SBIR) program, from background information searches through proposal writing assistance. Through one-on-one counseling and seminars ATTCs goal is to increase the success rate of SBIR grant funding in Alaska and to stimulate economic development and diversification of the Alaskan economy. ATTCs assistance will help leverage existing efforts to apply science and

MATCHING FUNDS: $153,526	technology for the benefit of Alaskan businesses. This project fills a niche in economic development for the state by fostering the growth of technology-based companies which typically results in high paying technical jobs and new employment opportunities.
Evaluation of Residential Composting Toilets in Remote Alaska (Report for Oloffson Grant 92-2-083) Project # 92-3-083 Project Manager: Craciun, Jean Start Date: 11/14/1994 End Date: 05/31/1994 TECHNICAL AREA: ENVIRONMENTAL ASTF FUNDS AWARDED: $47,925 MATCHING FUNDS: $1,925	The goal of these research activities was to identify and assess non-technical barriers to the acceptance and correction of composting toilets in rural Alaskan households. Qualitative research activities were designed to focus on the "people side" of rural sanitation, including an assessment of the perceptions of key informants and stakeholders familiar with sanitation issues, as well as the experience of rural residents. Qualitative data was collected through in-depth interviews, site visits to four rural Alaskan communities, and focus groups with rural residents. Based on findings from this research, strategies to address barriers to the acceptance and proper use of composting toilets are presented.
Alaska White Spruce Dimensional Lumber Visual Grading Rule Project # 95-1-002S Project Manager: Curtis, Kevin Start Date: 03/20/1995 End Date: 04/01/1996 TECHNICAL AREA: FORESTRY ASTF FUNDS AWARDED: $24,900 MATCHING FUNDS: $1,750	This project will result in the development of a visual grading standard for Alaska white spruce dimension lumber. Successful completion could potentially lead to import annual substitution of approximately 100 million board feet of dimension lumber. Although there is a large variation in the purchase price of dimension lumber across the state, even conservative estimates of $700 per thousand board feet results in a significant amount of money remaining in-state through import substitution in the dimension lumber market. The visual grading standard, or source document, created by this project will serve as the basis for establishing a voluntary trade association that will maintain quality standards and enable Alaska white spruce to be specified for construction projects according to established and accepted standards.
Growing Alaska's Economy Symposium Project # 97-1-011S Project Manager: DeMarco, Patricia Start Date: 03/07/1997 End Date: 06/01/1997 TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $13,453 MATCHING FUNDS: $10,000	The Anchorage Economic Development Corporation (AEDC) and the Alaska Science and Technology Foundation cosponsored the first conference in a series "Growing Alaska's Economy" in 1996. The first conference placed a focus on technology and innovation while the second symposium addresses the global marketplace. With a shared mission of promoting growth and diversity in the economy of the state, AEDC and ASTF co-sponsors this symposium to collaborate with Alaskan businesses in creating a sustainable base for the economy of the state.

Geology Guidebook of Anchorage Project # 97-2-090S Project Manager: Dilley, Lorie Start Date: 06/27/1997 End Date: 04/01/1999 TECHNICAL AREA: ENVIRONMENTAL ASTF FUNDS AWARDED: $14,110 MATCHING FUNDS: $23,590	This project will partially fund the production, publishing, and marketing of an easy-to-use guidebook on the geological processes and history of the Anchorage area. Various localities which demonstrate important geologic topics around Anchorage will be identified, described, and explained, including relevant processes, landforms, and hazards involved. The guidebook produced by this project should be a useful tool for city and private planners, developers, engineers, geologists and students on the geology of Anchorage.
Health Promotion Program Project # 94-4-128S Project Manager: Domnick, Joan Start Date: 03/20/1995 End Date: 10/31/1995 TECHNICAL AREA: HEALTH ASTF FUNDS AWARDED $24,949 MATCHING FUNDS: $45,053	This project will design, implement, and evaluate an innovative smoking cessation program using distance delivery technology combined with smoking cessation aids. Project will use a RATNet long-distance delivery system available to all parts of Alaska and will evaluate success of program based upon results achieved in three rural communities. The evaluation will provide the necessary information to support a full-scale implementation of Healthlink as a means of providing continuing education and health promotion. Project results will be used to support institutionalization of distance-delivered community health promotion and continuing education for community-based workers. The principals include a number of native corporation and native health associations as well as the state Department of Health & Social Services.
Fireweed Rock Glacier Research, Ph. II Project #97-2-087S Project Manager: Elconin, Roger Start Date: 07/02/1997 End Date: 10/31/1998 TECHNICAL AREA: ENVIRONMENTAL ASTF FUNDS AWARDED: $18,725 MATCHING FUNDS: $8,045	This project will advance exploration techniques for mountain permafrost. Geophysical measurements will be conducted on a flowing mountain permafrost landform, a rock glacier. The findings from this project should result in the development of a powerful diagnostic tool that can be applied to other rock glaciers and earthflows. This will benefit cold regions engineers and scientists in their investigations of mountain permafrost and related phenomena.
Alaska Health On-line Project # 97-4-153 Project Manager: Garrison, Steve Start Date: 09/10/1998 End Date: 09/30/2001 TECHNICAL AREA: HEALTH	This research explores an innovative and cost-effective way of training teachers. AK Health Online permits teachers to retrieve health materials (HealthHELP) from the Internet, communicate with fellow teachers and use an Internet student "portfolio" to monitor students' success in health education. In this study rural and urban teachers will be arranged in three groups. Each group receives a different training regime. A primary measure for checking research hypotheses will be analyzing data about health factors in participating communities; these reports will assess the impact of AK Health Online, and are to be provided especially for this project by the state of Alaska, Dept. of Health and Social Services. A secondary measure of testing research hypotheses will be data collected

ASTF FUNDS AWARDED: $139,115 MATCHING FUNDS: $234,109	about teacher frequency of use of HealthHELP.
ISCORD '97--Showcase of Alaska Cold Regions Technology Project # 96-3-067S Project Manager: Gill, James Start Date: 12/06/1996 End Date: 07/31/1997 TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $20,000 MATCHING FUNDS: $13,000	This project will sponsor presenters and students at the 1997 International Symposium of Cold Region Development (ISCORD) to be held in Anchorage in May 1997. Conference proceedings will be prepared and distributed to all conference attendees in CD ROM form and ASTF will have Home Page ready proceedings to unload to ASTF's Home Page. Planning and preparation support for organizing exhibitors and sponsors for symposium that will showcase Alaskan technology businesses.
Estimating Wildlife Population Levels with DNA Techniques Project # 97-1-009S Project Manager: Groves, Pamela Start Date: 04/17/1997 End Date: 12/01/1998 TECHNICAL AREA: AGRICULTURE ASTF FUNDS AWARDED: $19,981 MATCHING FUNDS: $27,396	This project will develop a technique of counting wild animal populations without the need to capture and handle live specimens. DNA analysis of fecal samples will be used to identify the specific animal that left the deposit, and accepted statistical methods would be applied to conduct population estimations. This innovative identification technique could save significant amounts of wildlife management funds and provide a method of wildlife management that is safer both for the subject animals and for the people associated with live capture.
Inundation Mapping for Tsunami Hazard Mitigation Project # 97-1-002 Project Manager: Hansen, Roger Start Date: 09/08/1998 End Date: 01/31/2001 TECHNICAL AREA: HEALTH ASTF FUNDS AWARDED: $60,000 MATCHING FUNDS: $327,911	As part of a Federal/State Tsunami Hazard Mitigation initiative, a team has been assembled of university, state, and federal employees in seismology, oceanography, geographical mapping, and emergency response/hazard mitigation has been assembled for an interdisciplinary approach to evaluating and mapping the inundation and flooding of Alaska coastlines following large coastal earthquakes and landslides that generate tsunamis. The model will serve to predict the extent of tsunami water wave runup (flooding) along Alaska shores. This basic information is particularly valuable for tsunami warning and prediction and is critical for evacuation of populated areas and marine facilities. People in towns and ports on the shores of the Gulf of Alaska and Cook Inlet and the Aleutians subject to tsunami inundation will be the primary users of the information developed in this project.
Influence of Early Stand Density	Naturally generated clearcut harvest areas in Southeast Alaska will be

Management on Tree Form Growth and Habitat Development in **Southeast Alaska Forests** Project # 97-2-112 Project Manager: Harris, Richard Start Date: 03/12/1998 End Date: 03/31/2009 TECHNICAL AREA: FORESTRY ASTF FUNDS AWARDED: $204,385 MATCHING FUNDS: $263,690	thinned to five different density levels with and without control of competing shrubs. Tree growth and stem quality will be measured and observed for a decade and beyond. A companion study will observe if natural regeneration can be facilitated by delaying the development of competing undesirable plant species. In addition, the plots will be evaluated for combinations of vegetation and stand density management in terms of the degree to which habitat for blacktail deer and other wildlife is enhanced. The project is scheduled to take twelve years. In the first year precommercial thinning and brush treatments will take place. The subsequent eleven years will involve detailed analysis of the results. Sitka spruce and western hemlock timber provide the backbone of much of southeast Alaska's economic activity. This project will provide managers of forest land in southeast Alaska with information relating to the effects of regeneration density on future yields and quality of spruce/hemlock timber, and to determine the role of shrubs and herbs in yield of thinned stands, development of ungulate habitat, and recruitment of natural regeneration on newly harvested sites. The project will provide an analysis of general responses of young Sitka spruce/western hemlock forests to intensive manipulation in their first two decades. Differences in coniferous and non-coniferous cover are extreme with the natural range of Sitka spruce in Alaska. Observations elsewhere indicate that overstocking, species composition, and domination by brush or herbs will have a strong effect on stand growth and habitat for a decade or more.
Pratt Museum Internet Connectivity Project Project # 98-2-100 Project Manager: Hawfield, Michael Start Date: 08/18/1998 End Date: TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $32,528 MATCHING FUNDS: $34,416	The primary goal of this project is to connect the Pratt Museum to the Internet so that Alaska citizens and interested persons worldwide will have access to the programs, projects and resources of the Museum. Three additional goals facilitate this. Thus, a second goal of the project is to provide significantly broadened, efficient communication between the Pratt Museum and other science centers and museums within Alaska and outside the state. A third goal of the project is to connect Museum visitors to certain Internet resources in the context of Museum interactive exhibitions. The fourth goal of the project is to connect all Museum offices to the Internet and internal communications network in order to enhance the capabilities and efficiencies of program and support staff. The project includes the purchase and installation of routing and switching hardware. The installation of data lines, the formatting of an interactive web site, staff training, and the expense of publishing the web site.
Cooperative Studies on the Effect of Suction Dredge Operations Related to Turbidity & **Arsenic Mobility on the Forty-mile River** Project # 98-1-079S Project Manager: Henning, Mitch Start Date: 07/27/1998 End Date: 01/31/1999 TECHNICAL AREA: MINING ASTF FUNDS AWARDED: $18,000	In collaboration with the Alaska Department of Natural Resources, the U.S. Geological Survey and the U.S. Environmental Protection Agency, this project will provide basic understanding of the effects of modern suction dredging on the water quality in the Forty Mile River. Questions existed about the magnitude of changes in turbidity and arsenic concentration downstream from mining operations.

MATCHING FUNDS: $61,200	
Aurora BIDCO Project # 97-1-054 Project Manager: Hoffman, David Start Date: 06/18/1997 End Date: 06/30/2009 TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $3,000,000 MATCHING FUNDS: $3,000,000	BIDCOs are private-sector financial institutions intended to promote economic growth. They differ from banks in that they are permitted to make equity investments in growing business as well as to loan money. Also, they are designed to provide more technical assistance and management consulting services to client businesses than banks are able to provide. In 1992 the Alaska Legislature passed the Alaska BIDCO Act, which was essentially the same as the Michigan statute. In 1996 the Legislature authorized ASTF to provide a $3 million loan to an Alaska BIDCO if a new BIDCO could raise $3 million in private-sector investment. After issuing a Request for Proposals in 1996, ASTF selected the proposal submitted by Alaska Growth Capital, which was based on a commitment for $3 million in capitalization from Arctic Slope Regional Corporation. The loan was structured so that it could gradually be converted to a grant over a number of years if the BIDCO succeeded in becoming a permanent financial institution that significantly contributed to the Alaskan economy. The mission of the BIDCO is to provide financing and technical assistance to growing Alaskan businesses. AGC will not normally finance start-up businesses. AGC will provide commercial financing based on the growth potential of the business. AGC is especially interested in financing resource-related and technology-oriented businesses which produce a product. AGC can either make equity investments, conventional loans or hybrid loans which involve a relatively low fixed interest rate plus a percentage of either sales or net profits. AGC has an initial capitalization of $6 million and intends to provide approximately $2 million per year in financing to Alaskan businesses.
Anesthesia of Pacific Salmon for Harvest and Spawning by Application of Superchilled Water Project # 96-1-011S Project Manager: Hovda, Joar Start Date: 04/01/1996 End Date: 10/31/1996 TECHNICAL AREA: FISHERIES ASTF FUNDS AWARDED: $20,000 MATCHING FUNDS: $17,000	The focus of this project is to examine the feasibility of using superchilled water as a means of anesthetizing salmon during processing. A processing line will be fabricated that will include a chilling unit, conveyor belt, and bleed tank for use in processing cost recovery fish by Prince William Sound Agriculture Center during their 1996 season. The processed fish and eggs will be assessed for quality and the economics of the process will be analyzed for comparative efficiencies. The results of this demonstration project will be useful in comparing this technique with existing anesthesia methods such as electroanesthesia or CO2 as a practical and economical method of anesthetizing fish in commercial scale processing operations.
Evaluation of Helical Anchor System Project # 97-1-005 Project Manager: Kinney, Thomas Start Date: 05/27/1997 End Date: 07/15/1999 TECHNICAL AREA: ARCTIC STUDIES	Alaska Foundation Technology has marketed helical piers for foundations over soft soils since 1990; the design and installation procedures for this use are well established. It is probable that the same pier system would work well in permafrost, but no information confirming this is available. The piers could be used on buildings for which stabilization is currently considered not economically feasible, and they could reduce costs on some new construction. This study will determine if the technology is economically viable, make revisions in the hardware design and installation techniques where applicable, and develop design and installation guidelines for use by engineers and contractors working in permafrost.

ASTF FUNDS AWARDED: $167,602 MATCHING FUNDS: $149,693	A successful outcome will entail the helical pier system proving effective in permafrost and offering builders a lower cost alternative--for at least some aspects of construction on permafrost--than is presently available. If the system is effective, the project will produce design and installation guidelines for use by engineers and contractors working in permafrost.
Development of a Geographical Information System Data Base to Predict Human/Bear Conflicts **in Anchorage** Project # 98-1-078S Project Manager: Kleckner, Christopher Start Date: 05/18/1998 End Date: 12/31/1999 TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $19,846 MATCHING FUNDS: $21,221	The development of a Geographic Information System (GIS) database of the seasonal habitat preference of black bear in the Anchorage area is a pertinent key to the prediction of high-risk areas and reduction of human/bear conflicts. Alaska Department of Fish and Game has estimated a total of 250 black and 60 brown bears in the Anchorage area. Development of this database provides many benefits. The information can be used to predict areas where a great potential for human/bear conflicts exists and plan accordingly to reduce this potential. Secondary, a reduction of human/bear conflicts will require less man hours and equipment to deal with problem bears as well as reducing medical costs to those injured. The database will be constructed from data compiled over the next two years from the seasonal distribution and habitat of the Anchorage black bear study. The information will be taken from 15 radio-collared black bears.
Canola Research and Demonstration Project # 96-2-018S Project Manager: Knopp, Paul Start Date: 06/06/1996 End Date: 12/31/1996 TECHNICAL AREA: AGRICULTURE ASTF FUNDS AWARDED: $12,000 MATCHING FUNDS: $46,421	Six farmer cooperators will each grow 24 acres of canola in the Delta Junction area to provide field-scale tests needed to increase the local knowledge on the costs and management requirements of producing canola. This study involves production demonstrations, economic feasibility, seed quality analyses, and seed for initial operation of an oilseed crusher in interior Alaska. Demonstration of the crop viability will stimulate interest and financial support for an oilseed industry in Alaska.
Resource and Market Feasibility Study of the Development of a Surf Clam Industry in Coastal Alaska Project # 94-2-041 Project Manager: Kopplin, William Start Date: 06/12/1995 End Date: 03/31/1996 TECHNICAL AREA: FISHERIES ASTF FUNDS AWARDED: $85,653 MATCHING FUNDS: $236,364	The project will first survey the stock of surf clams and cockles in the coastal regions of the Gulf of Alaska and the Bering Sea and will harvest small quantities for use as samples for identified markets in Japan and Spain. If the survey reveals a population that could sustain commercial harvest and market feedback warrants the effort, this research project may provide the basis for a niche industry using a nonutilized renewable resource that will both expand the economy and create new employment opportunities for Alaskans.

Kodiak Launch Complex Project # 96-4-077 Project Manager: Ladner, Pat Start Date: 10/03/1997 End Date: 12/31/1998 TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $5,000,000 MATCHING FUNDS: $23,000,000	The Kodiak Launch Complex (KLC) will be located on Narrow Cape, Kodiak Island, on 3100 acres of state-owned land and serve as a dual-use launch facility able to capture customers from both the private and government sectors. The KLC will be the first commercial spaceport in the U.S. and will provide facilities needed to support a rocket launch complex capable of launching up to 8,000-pound payloads (satellites) into low earth polar orbit. The facilities consist of a Launch Control and Management Center, Payload Processing Facility, Integration and Processing Facility, an Integrated Spacecraft Assembly and Transfer Facility, and a Launch Pad. The launch facility is expected to add new dimension to the Alaska economy. Building the facility will temporarily increase Kodiak's construction employment by more than 50%, and the facility operations is expected to generate 50 to 140 jobs, depending on the number of launches per year. In addition to increasing the Kodiak payroll, tourism would likely increase, and the presence of the facility could create research opportunities for University of Alaska scientists.
Thermal Exploration for Energy Project # 95-3-095S Project Manger: Lappi, David Start Date: 11/14/1995 End Date: 04/30/1996 TECHNICAL AREA: ENERGY ASTF FUNDS AWARDED: $20,000 MATCHING FUNDS: $23,500	Develop a new satellite-based exploration tool which will allow screening of unexplored areas of Alaska. Many subsurface energy resources can be located by their surface thermal anomalies. Develop a new image processing and interpretation technique which uses the data from the little-used nighttime passes of the Landsat satellite to identify thermal anomalies. The project consist of three main areas, which are data acquisition and correction, image processing and image interpretation. This project will assist rural Alaska in developing its own locally produced energy supply, and reduce the high cost of importing diesel fuel by ocean tanker, river barge or aircraft, and the associated environmental risks from fuel spillage during shipment, transfer, and storage.
Yukon Kuskokwim Delta Telecommunications Forum and Development Project Project # 97-4-150S Project Manger: Leonard, Martin Start Date: 01/13/1998 End Date: 09/30/1998 TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $20,000 MATCHING FUNDS: $25,250	The focus of this Yukon-Kuskokwim-Delta regional development effort will be on developing strong ties and dialogue between: telecommunications providers; community development, municipal and tribal specialist; state and federal telecommunications agencies; and regional education, health care and human service organizations. The dialogue and dissemination of information will be facilitated through a two-day regional conference and the production of multimedia resources to be delivered to the region, statewide, and on a national/international level.
A Demonstration of the use of Electrocoagulation for Solid Waste Recovery in the Seafood **Industry**	A pilot project to determine the viability of using electrocoagulation technology as a method of recovering solids in seafood processing plant wastewater streams. The undertaking is a combined effort of the Pacific NW Pollution Prevention Research Center, UniSea, Inc., and the Alaska Department of Environmental Conservation to reduce waste and pollution

Project # 95-3-098S Project Manager: Leviten, David Start Date: 10/02/1995 End Date: 06/01/1996 TECHNICAL AREA: FISHERIES ASTF FUNDS AWARDED: $13,423 MATCHING FUNDS: $18,530	in the seafood industry by greater utilization of the resource during the processing procedure. The demonstration will take place in the UniSea, Inc., plant located in Dutch Harbor during fall and winter of 1995-1996. If the desired outcome is achieved, Alaska will benefit in several ways from this project. All information learned will be disseminated throughout the industry in Alaska and other locations as well. The state's aquatic resources will be better utilized and industrial pollution will be reduced at the same time.
Constructed Wetlands for Seasonal Wastwater Treatment Project # 98-2-088S Project Manager; Maddux, Dave Start Date: 08/18/1998 End Date: TECHNICAL AREA: ENVIRONMENTAL ASTF FUNDS AWARDED: $19,700 MATCHING FUNDS: $21,310	Build a constructed wetland for seasonal secondary treatment of sewage wastewater from a summer camp. .
Metallogenesis & Position of Nonvisible Refractory Gold in Interior Alaska Lode Deposits Project # 95-1-028S Project Manager: McCoy, Daniel Start Date: 10/02/1995 End Date: 11/30/1997 TECHNICAL AREA: MINING ASTF FUNDS AWARDED: $19,960 MATCHING FUNDS: $62,500	This project will use spectroscopic methods to evaluate the position of nonvisible refractory gold in Alaska lode deposits and determine best methods for recovering it from ore. The project also categorizes the ore mineralogy and geochemistry of recoverable deposits. Refractory gold is trapped within other minerals. Only a small portion can be visibly detected, as in arsenopyrite. The rest is not visible even with high-powered microscopes despite high assay values. This project will attempt to develop techniques for finding and recovering cost-effectively these gold deposits in Alaska. If successful, this project will provide the mining industry with new tools for refractory gold discovery and extraction.
Deadhorse Runway Instrumentation Project Project # 97-2-094S Project Manger: Meese, Debra Start Date: 04/20/1998	The project will install sensors to monitor the performance of the rehabilitated Deadhorse Airfield. Monitoring efforts on the new asphalt pavement will include using temperature sensors and strain gauges in addition to other measured distresses such as cracking and rutting. Additionally, an airport design group wants to monitor the heat produced by the lights buried in the runway to determine if there is any permafrost thaw beneath the fill. Through an Educational Partnership Agreement with Ilisagvik College in Barrow, students will work with Cold Regions

End Date: 09/30/1998 TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $20,000 MATCHING FUNDS: $45,000	Research & Engineering Laboratory (CRREL) researchers to install subsurface and pavement temperature sensors and pavement strain gauges to monitor the project. The students will remotely monitor the runway data from Barrow and will be assisted by CRREL researchers and Ilisagvik faculty in data collection and analysis.
River Thaw Bulb--Water Supply Development Project # 96-3-063S Project Manager: Meltzer, Andrew Start Date: 11/01/1996 End Date: 05/01/1999 TECHNICAL AREA: SANITATION ASTF FUNDS AWARDED: $20,000 MATCHING FUNDS: $79,620	This project will demonstrate the applicability of surface-calibrated earth electrical resistivity measurements to define subsurface river thaw bulb dimensions. The project will also construct a prototype high-density-polyethylene, curved well casing which will be connected to an existing water treatment plant. Electrical resistivity is an established geophysical exploration method. Measurements are typically calibrated with a drilled hole rather than from the surface. Measurements are typically adjusted to account for the effect of a single resistivity measurement being used to measure mixed resistivity from layers of different subsurface materials or temperatures. This project, however, will use known local soil formations for resistivity calibration from the surface. Resistivity of known local soil formations will be taken during late winter when the seasonal active layer is mostly frozen. The resistivity of thawed soil below the river will be very different from the frozen resistivity of similar soils.
U.S.-Japan Cooperative Project to Evaluate Testing Methods for Assessing Quality of **Alaskan Pollock Surimi** Project # 96-3-062S Project Manager: Mitchell, Christopher Start Date: 08/29/1996 End Date: 06/01/1997 TECHNICAL AREA: FISHERIES ASTF FUNDS AWARDED: $10,000 MATCHING FUNDS: $0	A joint effort of Japanese & U.S. food scientists to evaluate the two conflicting methods currently used in the industry for establishing the quality of pollock surimi. The desired outcome would be a set of testing methods that would fairly evaluate product quality and would be accepted by both the manufacturers of surimi as well as the Japanese buyers and consumers of surimi. This set of testing methods would then be the standard for the Codex Ailimentarius being developed to reguiate international trade of foodstuff including surimi. The desired outcome for this project would benefit Alaska by enhancing the value of the substantial amounts of surimi manufactured in Alaska each year and sold in Japan and around the world.
Syringe Exchange for Hepatitis Project # 96-3-056 Project Manager: Nenzel, Andrea Start Date: 09/10/1996 End Date: 12/31/1999 TECHNICAL AREA: HEALTH ASTF FUNDS AWARDED: $77,076	The Alaskan AIDS Assistance Association (AAAA) will be conducting a syringe exchange program at two different locations. One location will be in Spenard, the other in downtown Anchorage/Mt. View. This syringe exchange program will be part of a clinical trial conducted by the University of Alaska Anchorage (UAA) that will be funded by the National Institute on Drug Abuse. The outcome measure will be Hepatitis B Virus incidence, which will be monitored through serological testing of participants. The cohort will include 600 current needle users and 550 former needle users. If this project is successful, the Surgeon General of the U.S. will use the results of this study to lift the ban on the use of federal funds for needle exchange. The Surgeon General will be able to do this because the gold

MATCHING FUNDS: $68,640	standard of scientific evidence will have been met, that of a randomized prospective clinical trial.
NetDay Alaska 2000 Project # 97-1-006S Project Manager: Newell, Mark Start Date: 03/19/1997 End Date: 06/01/1999 TECHNICAL AREA: INTERNET ASTF FUNDS AWARDED: $54,895 MATCHING FUNDS: $155,200	This knowledge project is to establish an Alaska statewide office for NetDay Alaska 2000. The NetDay Alaska 2000 office will coordinate the statewide activity to participate in a national effort to wire K - 12 schools throughout the state using community volunteer labor, and with minimal materials costs. This wiring will enable the schools to get on the Internet and/or network their computers throughout the school for class projects and shared use of resources, such as accessing CD-Roms and laser printers. This infrastructure in the schools will push the demand end of the Internet for more band width and educate the students in the process.
Alaska InvestNet Project # 97-1-010 Project Manager: Northrip, Charles Start Date: 09/11/1998 End Date: 01/31/2002 TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $271,553 MATCHING FUNDS: $450,386	A three year, four month effort to build a statewide capital network for investors and entrepreneurs. A means of assisting Alaska businesses in accessing the capital needed for new and innovative ventures. The project will concentrate on building an investor base of individuals capable of investing in Alaska businesses and on setting standards and making assistance available to assure entrepreneurs enrolled in the network are ready for negotiations with serious investors.
Depuration of Paralytic Shellfish Poisoning (PSP) from Geoduck Clams Project # 97-1-008 Project Manager: Painter, Rodger Start Date: 04/25/1997 End Date: 07/31/1998 TECHNICAL AREA: FISHERIES ASTF FUNDS AWARDED: $49,872 MATCHING FUNDS: $77,470 **Depuration of Paralytic Shellfish Poisoning (PSP) from Geoduck Clams (Continued)**	The project will test the feasibility of cleansing geoduck clams harvested in Alaska dive fisheries of PSP by "depurating" toxic geoducks in oyster farming gear. The cleansing process would more than double the value of the geoducks to be sold on the live market. The project will result in the development of procedures for depuration operations, background disease testing for most of Alaska's commercial-scale geoduckbed, market analysis for live geoducks, and business plan for a commercial-scale geoduck depuration business. The project would involve intensive testing of geoducks for PSP by National Marine Fisheries Service and Alaska Department of Environmental Conservation. Project addresses the biggest obstacle encountered in efforts to develop Alaska's vast bivalue resources by using low-cost methods to cleanse geoduck clams of PSP. ADEC will work with the project team in testing the feasibility of the relay method of PSP toxin reduction and development of operating procedures for commercial-scale operations. ADEC would be testing the samples at the Palmer lab, assembling PSP data for Alaska geoduck fisheries, review the National Shellfish Sanitation Program for requirements for commercial operations, development of guidelines for a "sentinel" system to provide early indications of PSP, and review the final results. If successful, this project will significantly increase the value of one of Alaska's existing shellfish resources.
Corrosion Workshop Developn nt for	This project will develop, conduct, and evaluate a corrosion workshop for

Russian Nuclear Power Plant Personnel Project # 97-1-079 Project Manager: Perrigo, Lyle Start Date: 07/09/1997 End Date: 09/30/1998 TECHNICAL AREA: ENERGY ASTF FUNDS AWARDED: $44,299 MATCHING FUNDS: $86,395	selected personnel from the northeastern Siberia Bilibino Nuclear Power Plant. This prototype workshop will be held in Anchorage, then be refined and offered as a technical service to the staffs of other Russian nuclear reactors. U.S. Department of Energy personnel will assist in identifying specific sites where future workshops will be conducted. If successful, this project will establish a new knowledge-base business in Alaska and decrease the possibilities of nuclear accidents in reactors adjacent to Alaska.
Alaska Sealife Center Internet Connectivity Project Project # 97-4-143 Project Manager: Pfeiffenberger, Jim Start Date: 12/31/1997 End Date: 04/30/1999 TECHNICAL AREA: FISHERIES ASTF FUNDS AWARDED: $52,380 MATCHING FUNDS: $52,699	The project will include the purchase of equipment for the installation of a functioning dedicated internet connection into the Alaska SeaLife Center and the use of that connection to reach students, scientists, teachers, and citizens both within Alaska and beyond. The Alaska SeaLife Center (ASLC) Internet Connectivity Project is designed to provide Alaskans with access to the knowledge and capabilities of ASLC. They plan to provide "cutting edge" marine research in a laboratory setting to Alaska. The information provided will be of great interest to Alaskans and others who have a stake in the health of North Pacific marine ecosystems. ASLC plans to establish a World Wide Web site for use by students, teachers, support information for researchers, and general information about the ASLC facility for the general public.
Rural Sanitation Manual Project # 95-3-105S Project Manager: Pickett, Anna Start Date: 10/18/1995 End Date: 10/01/1996 TECHNICAL AREA: SANITATION ASTF FUNDS AWARDED: $1,423 MATCHING FUNDS: $0	Develop a manual that describes an array of sanitation strategies appropriate for household and community application in rural Alaska. The Project will consist of the research, design, writing, and production necessary to create and disseminate to a wide audience. The manual will include a description, evaluation, cost and sources for household technologies for safely disposing of sewage. The project will involve rural sanitation experts, health officials, village health aids, and others. Fifteen thousand copies of the 8.5"x11" booklet of up to 49 pages will be printed for distribution as well as load the product into an electronic format for computer networks. This manual will contribute significantly to closing critical communication gaps and empower everyone concerned not only with new hope, but with real, practical tools to make rural Alaska a healthier, happier place to live.
Application of New Technologies to Detect Dinoflagellates that Produce Saxitoxin Project # 98-2-086S Project Manager: Plumley, Gerald Start Date: 05/29/1998	This project will take part in the beta-level testing of a new DNA-based technology that shows great promise in the rapid, unambiguous identification of the toxic dinoflagellates (i.e., Alexandrium spp.) that are generally regarded to be the major source of paralytic shellfish poisoning (PSP) toxins (i.e., saxitoxins) in Alaska. The goal for this project is to position themselves so that they can implement the DNA and shellfish monitoring programs quickly, as volunteer groups begin their monitoring programs around the state under the auspices of ASTF. The final report for this project will include a detailed project plan for follow-on activities.

End Date: 11/01/1998 TECHNICAL AREA: FISHERIES ASTF FUNDS AWARDED: $19,839 MATCHING FUNDS: $4,160	
Performance Evaluation for Modified Vacuum Sewer System Components in Arctic Environments Project # 97-4-148 Project Manger: Reich, Richard Start Date: 05/28/1998 End Date: 09/30/1998 TECHNICAL AREA: ARCTIC STUDIES ASTF FUNDS AWARDED: $150,000 MATCHING FUNDS: $58,062	This project will be a performance evaluation for modified vacuum sewer system components in Arctic environments. The proposed system will ultimately be constructed in four of the North Slope Borough villages. The system will modify the current vacuum sewer system used in warmer climates to allow for operations in Arctic environments. The system will incorporate direct-bury piping and standard plumbing fixtures within the home. This design will depend on the modified vacuum system's transition from gravity to vacuum, either with a vacuum pit buried in the frozen soil or a vacuum sump surface mounted on the user's dwelling. Numerous operating variations will be simulated and tested to provide sufficient data on each valve's performance. The project provides a means to develop the vacuum sewer technology that provides reliable performance and low operating costs in an arctic environment will benefit the bush communities of Alaska, now and in the future. Vacuum sewer technology has advanced tremendously in the past decade, as evidenced by installations in warmer climates and even by the PHS in Alaska. The proposed technological advancement with this project to bury the collection system in permafrost and provide water-flush toilets is but another step forward.
Alaska Earthworks Fish/Timber Composting Pilot Project Project # 97-1-068 Project Manager: Rinehart, Roberta Start Date: 09/24/1997 End Date: 09/15/1998 TECHNICAL AREA: FISHERIES ASTF FUNDS AWARDED: $137,531 MATCHING FUNDS: $26,666	This pilot project is a demonstration of composting a combination of fish waste and wood waste to produce nutrient-rich soil additive products. Once the demonstration project has been successfully completed, there are plans in place with funding, to establish a business-based on the developed products that would then be sold in various markets. The business would be based in Sitka and would provide fifteen full-time jobs once fully operational. The outcome of this project would include the latest composting technology being demonstrated in the State, and this would be shared with other interested parties in the State. It will be the basis for a new Alaska-based business that will provide full-time employment for fifteen persons once the business is fully operational. Finally, it will produce a salable product from what is now a waste product that is currently an environmental problem for the timber and fish hatchery industry.
Arctic Research Vessel Design Project # 95-1-019S Project Manager: Royer, Thomas Start Date: 06/30/1995 End Date: 09/15/1995 TECHNICAL AREA: SCIENTIFIC RESEARCH	To continue the design of an Arctic research vessel into its next stages. The project involves the preparation and presentation of materials on the vessel for the National Research Council which will evaluate the vessel for federal funding sources. The Arctic Research Vessel is of vital interest to the state of Alaska. It will be a state-of-the art ice breaker devoted to oceanographic research in the Arctic Ocean and Bering Sea. It will be used to investigate scientific questions of Arctic pollution, global climate change, ocean circulation, resource development, fisheries, and Arctic transportation. It will provide a platform for the University of Alaska scientists to work and would attract similar world class scientists to this region. When built, the operations of this vessel will be supported primarily by the federal

ASTF FUNDS AWARDED: $19,109 MATCHING FUNDS: $40,891	government and will create new jobs in Alaska for the next three or four decades.
North Pacific Volcano Center (NPVLC) Project # 98-1-003S Project Manger: Salo, Judith Start Date: 03/10/1998 End Date 10/01/1998 TECHNICAL AREA: SCIENTIFIC RESEARCH ASTF FUNDS AWARDED: $5,450 MATCHING FUNDS: $7,610	The project will enable the North Pacific Volcano Learning Center to create a web site and maintain it during the development phase. This is a necessary step in the Internet Connectivity for science museums and learning centers in Alaska. This is phase 1 of a multiple phase project which will lead them to a more sophisticated electronic outreach plan for the Center. As a result of this project, the NPVLC will have a basic, but useful foundation for their eventual electronic outreach program.
Preventing Sudden Death in Iditarod Sled Dogs Project # 94-4-117 Project Manger: Schmidt, Karin Start Date: 06/13/1995 End Date: 06/30/1999 TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $71,200 MATCHING FUNDS: $40,200	Develop techniques to identify dogs at increased risk of sudden cardiac death during the Iditarod and measures to prevent injury or death to the dogs as a result of sudden cardiac failure. Outcome of the research will be the determination of the normal EKG in sled dogs, and the ability to detect, by pre-race EKG examination. dogs at increased risk of sudden death during the race. Reducing the number of dogs dying suddenly during the Iditarod Trail sled dog race, and other long distance sled dog races will increase support for the races and demonstrate proper care for the dogs. Sled dog racing has a significant economic impact on the tourism industry in Alaska, as well as other sectors of the Alaska economy. Reducing or eliminating sled dog deaths will favorably impact owners' responsibilities to their dogs, public perception of the races, and result in enhanced tourism opportunities statewide as support for the Iditarod and other sled dog races benefits from the prevention of animal fatalities during the race.
Alaska Challenger Learning Center Project # 96-2-025S Project Manager: Scott, Kathleen Start Date: 05/15/1996 End Date: 04/30/1997 TECHNICAL AREA: SCIENTIFIC RESEARCH ASTF FUNDS AWARDED: $5,000 MATCHING FUNDS: $30,000	The Alaska Challenger Learning Center provides its users, students of all ages, with the opportunity to investigate and apply science and math technologies through space flight simulation. The Kenai proposal develops use of the center by creating an electronic classroom in order to allow distance delivery of applied uses through modern audio and video teleconferencing removing the obstacle of distance barriers for all Alaskans. This phase of the project will refine the technology applications for distance delivery.
Southwest Alaska Technology Planning	The Southwest Alaska Municipal Conference (SWAMC) represents the

Project Project # 97-3-125S Project manager: Stadum, Mary Start Date: 08/22/1997 End Date: 06/30/1998 TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $20,000 MATCHING FUNDS: $6,500	communities in the Bristol Bay, Kodiak Island, the Alaska Peninsula, the Aleutian Chain and the Pribilof Islands. The goal of this project is to stimulate telecommunications planning in Southwest communities so that the needs of schools, libraries, businesses, nonprofits, utilities, and local governments are integrated. Residents of the Southwest region will be directly involved throughout the project as they will be the end beneficiaries of the knowledge and planning efforts. The final product will be a technology directory that clearly outlines the technology needs and planning process stages, as well as, technology expertise and abilities of Southwest communities. The work performed by SWAMC will serve as an example to other regions of the state, on how to integrate school technology plans with community needs in order to maximize long term technology and economic development planning.
Improved Analytical Techniques for Contaminated Soil in Alaska Project # 95-3-111 Project Manger: White, Daniel Start Date: 11/13/1996 End Date: 06/30/1999 TECHNICAL AREA: ENVIRONMENTAL ASTF FUNDS AWARDED: $107,553 MATCHING FUNDS: $51,650	The Alaska Department of Environmental Conservation (ADEC) currently specifies an extraction and analysis procedure for soil contamination that cannot distinguish between natural organic material (NOM) and true soil contamination. It is believed that soil is being remediated throughout Alaska when it is not necessary, adding millions of dollars to remediation costs. This project proposes to develop a pyrolysis-gas chromatography/mass spectrometry (GC/MS) procedure which can probe soils to determine how much of the soil's NOM will be recorded as "contamination" in standard ADEC analysis. The method developed will supplement the ADEC methods and allow regulators to set accurate and obtainable clean-up goals, which could mean millions of dollars in savings to private industry and governmental organizations throughout Alaska.
Manufacturing Extension Partnership Center Project # 96-4-070 Project Manger: Witten, Lynn Start Date: 03/07/1997 End Date: 03/31/2000 TECHNICAL AREA: FORESTRY ASTF FUNDS AWARDED: $600,000 MATCHING FUNDS: $600,000	Establish a Manufacturing Extension Partnership Center to provide technical assistance to small- and medium-sized manufacturers. ASTF will cost share on activities in the forest products industry through grading services for Alaskan wood. Assistance will be available in production technology, marketing, and business practices. Year two and three of the grant are contingent on satisfactory performance by INC of prior year deliverables. A Forest Products Advisory Committee will be instrumental in defining group activities and review annual deliverables for the MEP Center work in this sector. In the first year of the MEP Center, ASTF will work with AHIRC, the SBDC, Alaska Regional Development organizations, including the Anchorage Economic Development Corporation, and industry groups in the seafood processing and energy supply sectors. Services will be marketed and provided to the entire manufacturing sector, and the INC will work with any interested manufacturer. Working with the local partnership, technical assistance, including firm competitiveness assessments, will be offered to organizations.
Software Industry Development Project # 95-2-077S	This project will examine the strengths and weaknesses of Alaska's software industry, and determine the merits of forming a software association. If interest is established, private and public sector partners will be brought together for a "software sector workshop/conference."

Project Manager: Wolf, Greg Start Date: 10/03/1995 End Date: 04/30/1996 TECHNICAL AREA: SOF ASTF FUNDS AWARDED: $20,000 MATCHING FUNDS: $8,570	Articles of incorporation and bylaws of the Alaska Software Association will be drafted, then distributed at the workshop/conference. The project will evaluate the statewide impact of development of the software technology sector which will include measurements based on job creation and financial impact. The project will also develop a preliminary strategic plan based on information determined during the project, industry input, conference feedback and the economic impact.
Testing the Use of Alaskan Fish Bonemeal as a Nutrient Source that will Stimulate the Growth of Microbics in Bioremediation Applications Project # 95-2-069S Project Manager: Woolard, Craig Start Date: 07/08/1995 End Date: 07/01/1996 TECHNICAL AREA: FISHERIES ASTF FUNDS AWARDED: $20,000 MATCHING FUNDS: $21,195	The focus of this project is the testing of the use of Alaskan fish bone meal as a supplemental nutrient source for the growth of microbe in bioremediation applications. Bonemeal represents a significant by-product of the Alaskan fishing industry whose value could be increased if this use could be documented and markets developed over time. If the desired outcome is achieved, the results of this project could lay the foundation for use of bonemeal as a supplemental nutrient source for microbe in bioremediation applications. The salutary impacts would include new uses for this industry by-product and its use in aiding the cleanup of contaminated sites located in Alaska.
Evaluation of Helical Piers for Use in Frozen Ground Project # 98-2-0942 Project Manager: Zubeck, Hannele Start Date: 05/21/1998 End Date: 06/30/2000 TECHNICAL AREA: ARCTIC RESEARCH ASTF FUNDS AWARDED: $149,999 MATCHING FUNDS: $303,732	This project is intended to present adequate information for practicing engineers to design helical foundations for frozen ground applications by identifying the relationship between loading and soil creep. Existing theories of piling in frozen ground will be identified and tested in the laboratory. Finite element analysis will be used to verify or modify existing theories as well as to understand the soil-pier interaction mechanisms. The design and installation procedures for soft soils are well established. No design procedures exist for frozen ground, which slows down the adaptation of helical piers for frozen ground applications. The piers could be used economically to restore sinking buildings and to support now construction. This study will develop, design, and installation guidelines for froze. ground applications for use by engineers and contractors.

APPENDIX B

Technology Projects
Funded from January 1995 through September 1998

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Remote Sensing Technology for Mining Applications	$396,390	53
Stage 2 – Full Scale Double Diffusion Preservation Treatment	$320,000	54
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Automated Data Optimization and Characterization System	$20,000	54
Paralytic Shellfish Monitoring Program	$49,048	55
Repulsive Mode, Passive Magnetic Bearings	$55,768	55
GPS/INS Survey System Study	$20,000	55
Natural History Products Project	$16,500	56
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Color-enhanced Chum Salmon Blocks Stabilized with Antioxidants	$178,100	56
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BIDCO Administrative Plan	$8,223	68
Demonstration of a New Decanter Surimi Process	$150,000	69
Chinook Manufacturing Jager Project	$200,000	69
Seasoning Softwoods and Hardwoods	$164,910	69
Alaskan Ecotechnology for Commercial Lingonberry Production	$20,000	70
Ecotechnology for Commercial Lingonberry Production	$75,645	70
Nomad Shelter Arctic Ger	$46,700	70
IEB 2000/GenMan/Application Software	$1,500,000	71
Innovative Method of Marine Magnetic Compass Adjust. & Comp.	$18,696	71
Tidal Power Generation Prototype	$200,000	71
Birch Bark Manufacturing Technology	$202,808	72
Total Bone Removal System	$45,000	72
Total Bone Removal for Salmon	$519,164	72
Leading Edge Exhaust Collector Systems	$176,513	73
Digital Mapping System (DMS)	$180,000	73
Reverse Engineering	$240,924	73
Research & Development of Birch Sap Beverages	$19,835	74
Catch Data Uploading in Bristol Bay	$29,866	74

Natural Convection Dry Kiln	$21,797	74
Chunk/Flake Style Pink Salmon Meat Packed in Retortable	$435,000	75

Enhancing Value & Market Potential for Hatchery Chum Salmon Harvested in Terminal Areas Project # 95-1-005 Project Manager: Amend, Donald Start Date: 08/01/1995 End Date: 12/31/1995 TECHNICAL AREA: FISHERIES ASTF FUNDS AWARDED: $18,815 MATCHING FUNDS: $23,668	The focus of this project is to adapt several anesthesia techniques to the processing of chum salmon harvested in terminal areas. The fish processed using the different techniques will then be delivered to several different secondary processors for their evaluation of the intermediary product as a base ingredient for various smoked fish products. Benefits to Alaskans if the desired outcome is achieved would be the enhancement of the value of a historically low value salmon species by improving its quality for use in different food products. The techniques used to improve the quality of the salmon may be adopted by other salmon processors throughout the state to add value to an important renewable resource and improve revenues received by Alaskans working in the state's salmon industry.
StratEnergy Development to Successfully Combat Farmed Salmon and to Distribute & Market Value-added Wild Salmon Products Project # 97-1-003 Project Manager: Anderson, Susan Start Date: 09/08/1998 End Date: 01/31/1999 TECHNICAL AREA: FISHERIES ASTF FUNDS AWARDED: $185,750 MATCHING FUNDS: $321,670	Develop the marketing strategies required to allow "wild" Alaska salmon products to successfully compete with farmed salmon products in the domestic market place. This will be accomplished through extensive marketing research projects at the consumer and grocery trade level. Five alliance members of the project will also create quality standards to ensure a consistent finished product. The project represents a new approach to answer key marketing questions for the Alaskan salmon industry, and provide a model that can be duplicated once it has been successfully demonstrated in the next phase of development. When completed, this project will provide the necessary tools for the alliance to develop and market value-added "wild" Alaska salmon products. It may also be a model for other firms to combat the pressure of the farmed salmon business which is expanding rapidly. This will return manufacturing and processing jobs to Alaska, and stronger [illegible] exports from the state.
StratEnergy Implementation of Phase I Research Project Project # 97-3-1372 Project Manager: Anderson, Susan Start Date: 09/08/1998 End Date: 01/31/1999	This project implements the marketing strategies that were developed in the first project completed in December 1997. The Alaska Salmon Alliance members, with the guidance of an experienced marketing professional, are undertaking four different marketing strategies to develop new markets for their Alaskan seafood products in domestic markets. The desired outcome would be the establishment of successful market connections for Alliance members' seafood products and the expansion of the Salmon Alliance and the expansion of similar organizations in Alaska. A successful outcome for this project would be proven strategies for marketing Alaskan seafood products in the United States that could be

TECHNICAL AREA: FISHERIES ASTF FUNDS AWARDED: $185,750 MATCHING FUNDS: $321,670	expanded and replicated by Alaskan seafood companies.

The Development, Manufacturing and Commercialization of Traction Enhancing Articles of Manufacture Project # 98-1-069 Project Manager: Cook, Mike Start Date: 06/24/1998 End Date: 07/31/1999 TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $200,058 MATCHING FUNDS: $168,674	This project proposes to develop, manufacture, and commercialize "Traction Enhancing Articles of Manufacture," an invention involving new flexible material that surpasses any prior art in its ability to increase traction on hard packed snow and ice. This traction device can be incorporated into many different applications creating numerous marketable products that increase the safety of individuals as they relate to arctic environments. The project will design, engineer, and construct the manufacturing machinery and develop the process for commercializing the products. This project has the potential for producing numerous products that will enhance the safety of the general populous in its interaction with the environment; namely, hard packed snow and ice. Recipients such as the elderly and handicapped will especially benefit from the incorporation of this technology. Since most of the potential products address the peculiar needs associated with winter conditions, Alaska becomes an optimal place to manufacture and market these products. The manufacturing and marketing process will create numerous jobs and generate revenues that will have a positive impact on Alaska's economy.
Fisheries Catch Data Project Project # 97-1-075 Project Manager: Cotter, Larry Start Date: 10/21/1997 End Date: 10/01/1998 TECHNICAL AREA: FISHERIES ASTF FUNDS AWARDED: $140,000 MATCHING FUNDS: $372,000	The focus of this project is to develop software that will facilitate the collection, organization, dissemination, and use of harvest and production data from the commercial fishing industry. The software will be used by both fishery managers and individual operators to make crucial decisions pertaining to their use of harvest quotas, and bycatch and prohibited species catch limits. Additionally, the software will provide an opportunity for harvest and production data to be integrated in a manner that will facilitate inventory control and operations oversight. If successful, the new software will provide more accurate, timely, and sophisticated information than is currently available for this purpose. The need for the same kind of information is present in many different fisheries worldwide. This provides a substantial opportunity for future sales growth for the software product being developed. The successful outcome of this project will be the basis for a new Alaska-based business that is two-thirds owned by Alaskan Community Development Quota corporations and should provide quality employment opportunities for Alaskans as the business develops.

Recycled Glass Processing Plant Project # 98-1-070 Project Manager: Dean, John Start Date: 04/21/1998 End Date: 05/31/1999 TECHNICAL AREA: ENVIRONMENT ASTF FUNDS AWARDED: $266,000	The focus of this major technology project is to design and fabricate a processing plant to recycle glass to produce a sandblasting material. The product will be test marketed by a local distributor as an import substitution for blasting sand. As a part of this demonstration project, Anchorage Refuse will collect glass from commercial clients and deliver it to the recycling facility. The desired outcome for this project would be the establishment of a glass recycling facility that would be self-supporting from its operations, as well as a business based on the sale of the unique and strategically sized plant to interested parties located in similar-sized communities. Alaska stands to benefit in several ways if this project is successful in achieving its desired outcomes. Anchorage would have a glass recycling

MATCHING FUNDS: $235,600	that would reduce the bulk going into the landfill, and the blasting material that would be produced would be an import substitution. Finally, the recycling plant designed and fabricated for the demonstration project may be the basis for a new business supplying similar units for use in other communities.
Alaska Resource Alliance, an Electronically Integrated Supplier Project # 97-1-012S Project Manager: DeMarco, Patricia Start Date: 03/07/1997 End Date: 03/31/1998 TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $20,000 MATCHING FUNDS: $27,500	The Alaska Resource Alliance is an informal group of companies which supply equipment, materials, and services to the oil industry. This group project funds the formation of a for profit corporation of an appropriate structure, the electronic interconnection of the participants, and a marketing plan for the Sakhalin Island development projects. The for profit corporation (Alaska Resource Alliance, or AkRA), will act as an integrated supplier to oil exploration, development, and production operations both in Alaska and in such off-shore markets, specifically Sakhalin Island.
Remote Sensing Technology for Mining Applications Project # 98-3-101 Project Manager: Ellis, John Start Date: 09/09/1998 End Date: 09/30/1999 TECHNICAL AREA: MINING ASTF FUNDS AWARDED: $396,390 MATCHING FUNDS: $292,817	We will acquire and process remote sensing data to be applied to mining applications. With the help of the mining industry experts, we will evaluate each data application for its value in mining. The technology will be applied to an active mine site, used to develop a Geographical Information System, and the results of the project will be published in CD media.
Stage 2 – Full Scale Double Diffusion Preservation Treatment Project # 95-4-126 Project Manager: Garber, Bart Start Date: End Date: TECHNICAL AREA: FORESTRY ASTF FUNDS AWARDED: $320,000 MATCHING FUNDS: $547,914	The funding requested in this stage II proposal will be used to expand a full scale double-diffusion treatment plant for Alaska white spruce dimension lumber and other wood products that is currently under development. This proposal and included project are follow up to ASTF Grants Nos. 91-1-049 *Preservative Treating Alaska White Spruce and* 92-4-237S *Modified Double Diffusion Preservative Treatment.*
Chemical and Biological Upgrading and Desulfurization of Petroleum Feedstocks Project # 98-2-083	This Stage 2 project will develop and optimize a Conversion/Extraction Desulfurization (CED) process that converts sulfur compounds in Alaska transportation fuels into polar compounds that are amenable to solvent extraction and biotreatment. Market research and a prefeasibility business

Project Manager: Gore, Walter Start Date: 07/22/1998 End Date: 05/31/2000 TECHNICAL AREA: ENERGY ASTF FUNDS AWARDED: $403,000 MATCHING FUNDS: $849,735	plan will be completed on the commercial potential of the CED process in Alaska and in other parts of the world. If successful, this process will provide a cost-effective method of producing desulfurized fuels and other products from Alaska crude oil in compliance with increasingly stringent environmental regulations. Petro Star intends to commercialize this technology in Alaska and license it to other companies throughout the world.
Automated Data Optimization and Characterization System Project # 98-1-076S Project Manger: Heaps, Kenneth Start Date: 04/29/1998 End Date: 03/01/1999 TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $20,000 MATCHING FUNDS: $57,171	This project will develop an Automated Data Characterization and Optimization System—an integrated software Environment to manage inspection data to maintain the integrity of pressure vessels, tanks and pipelines in Alaska's petroleum industry. This innovative product will be designed to efficiently manage data from a wide variety of Automated Nondestructive Evaluation (NDE) systems while allowing comparisons between past, present, and future inspections acquired over the lifetime of a system. Use of this technology will allow correlation and data interpretation between data sets acquired utilizing a variety of inspection techniques, thereby allowing producers to reduce inspection costs, while maintaining or increasing levels of environmental safety for critical facilities.
Repulsive Mode, Passive Magnetic Bearings Project # 95-1-031 Project Manager: Imlach, Joseph Start Date: 01/05/1996 End Date: 12/31/1996 TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $55,768 MATCHING FUNDS: $91,010	Develop and test the design methodology, and produce proof-of-concept prototypes for passive magnetic bearings systems. These bearings will use the repulsive force of permanent magnets to provide support for two classes of rotating machinery. The result will be a proven design of a new type of bearing which will facilitate the improvement and/or the development of several types of machinery. Passive magnetic bearing systems will provide highly efficient and cost-effective alternatives to conventional magnetic bearings which require an electronic control system. The immediate end products that would benefit from this technology are canned motor pumps and flywheel energy storage systems.
GPS/INS Survey System Study Project # 95-2-039S Project Manager: Jones, Steven Start Date: 11/27/1995 End Date: 05/31/1996 TECHNICAL AREA: ENERGY ASTF FUNDS AWARDED: $20,000	Develop detailed specifications for suitable Global Positioning System/Inertial Navigation System for surveying, with emphasis on Bureau of Land Management requirements. Although this integrated technology has been developed for military use, no civilian GPS/INS survey system has been proposed by any manufacturer. This research will include investigation of available GPS, INS, and GPS/INS hardware and technology, as well as existing technical papers on the subject matter. The results of this research will enable the production of a prototype and provide the basis for system development.

MATCHING FUNDS: $20,000	

Natural History Products Project Project # 95-1-032S Project Manager: Jordan, Susan Start Date: 05/03/1995 End Date: 06/30/1996 TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $16,500 MATCHING FUNDS: $5,525	Students (grades 6-8) who have studied natural history of Southeast Alaska as part of science classes, including field studies, will develop and market products related to their natural history research efforts such as trail guide kits, multimedia programs and note cards. Project success will be twofold: 1) development of a model for transferring research into self-sustaining programs at the middle school level, and 2) increased awareness of the natural history of Southeast Alaska. Through the development of marketable products for tourists, which reflect local natural history and culture, the students will be addressing economic, environmental, and educational issues associated with tourism and conservation of natural resources.
EPA Pesticide-Repellent Registration Project # 98-1-010S Project Manager: Keller, Barbara Start Date: 03/13/1998 End Date: 07/01/1999 TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $20,000 MATCHING FUNDS: $46,464	McNeil River Enterprises, Inc. has developed a formulation of a bear/animal repellent pepper spray which requires chemical testing for EPA registration. This project assists with the costs associated with the testing and will lead to registration with the EPA and place this Alaskan company in the forefront of the industry with it being the first to comply with EPA requirements and standards for mandatory EPA registration.
Color-enhanced Chum Salmon Blocks Stabilized with Antioxidants Project # 97-1-056 Project Manager: Kelley, John Start Date: 07/08/1997 End Date: 12/01/1998 TECHNICAL AREA: FISHERIES ASTF FUNDS AWARDED: $178,100 MATCHING FUNDS: $317,903	The focus of this project is to enhance the value of pale-meated, dark-skinned Alaskan Chum salmon by coloring the flesh and improving overall quality by processing the fish more efficiently. The project addresses a problem that occurs with a large percentage of hatchery-reared pinks and chums that are harvested in terminal areas in the Southeast and Southcentral Alaskan regions. If the research and development efforts are successful, the results would provide substantial economic gains for the Alaskan seafood industry since it would improve market acceptance and valuation of significant quantities of salmon that currently have little attractiveness in coexisting markets. This outcome would in turn improve the processor's willingness to purchase these pale-meated fish from the hatcheries and fishers. The potential benefits for the Alaskan economy if the desired project outcome is attained would be increased market valuation of a key fish resource. This development would have immediate salutary effects throughout the levels of the salmon industry from the harvesting sector through the market channels since the increased demand would improve economic well-being for all levels of this slumping industry.
Pinbone Removal Device Design & Evaluation Project # 97-1-052S	Design, construct and test one of three possible methods for commercial fish pinbone removal. Test and evaluate the devices to determine the practical suitability for use in the development of a working prototype. The model will be demonstrated to the seafood processing industry attracting partners for future development.

Project Manager: Kozycki, Lawrence Start Date: 05/19/1997 End Date: 01/15/1998 TECHNICAL AREA: UNCLASSIFIED ASTF FUNDS AWARDED: $20,000 MATCHING FUNDS: $26,358	
Demonstration of Coal Diesel Technology Using Low Rank Coal Water Fuel Project # 96-2-055 Project Manager: Krier, Greg Start Date: 10/15/1997 End Date: TECHNICAL AREA: ENERGY ASTF FUNDS AWARDED: $3,800,000 MATCHING FUNDS: $43,800,000	Advance the "Low Rank Coal Water Fuel" (LRCWF) technology which produces a premium fuel from the vast Alaska low-sulfur coal reserves. The LRCWF hydrothermal process will be scaled-up to 30-to-1, with a 6-ton per hour coal processing plant installed at the University of Alaska Fairbanks. Funds will be used to design and construct the new coal processing plant in 1998. The coal will be hot-water dried and mixed with additional water to create a liquid fuel that can be used in a diesel engine. The project includes the installation of a 9.6 MW coal diesel plant at the UAF power plant site as part of the demonstration project. The new plant would then be operated to produce a premium coal slurry fuel (LRCWF) for a three-year period (1999-2001) using funds from the U.S. Department of Energy and other stakeholders. As a result of this demonstration project, the economics of producing LRCWF will be determined. If LRCWF can be produced and shipped for a cost as currently estimated, LRCWF from tidewater reserves can be very competitive against heavy fuel oil sold to Pacific Rim economies. If successful, the demonstration will also show that electricity can be reliably produced by diesel engines using coal at 6-10 cents per kilowatt. A tidewater LRCWF plant with a primary export market could supply coastal Alaska villages economically with this diesel grade fuel. The Alaska Low-Rank Coal Water Fuel Demonstration Project at the University of Alaska Fairbanks is the first step leading to commercial development of an LRCWF industry in Alaska. The Beluga coal field near Cook Inlet is a potential location for the development of a processing plant.
Evaluation of Field Screening Methods Project # 97-2-091S Project Manager: Leety, Jeffrey Start Date: 08/11/1997 End Date: 09/30/1998 TECHNICAL AREA: ENVIRONMENT ASTF FUNDS AWARDED: $19,227 MATCHING FUNDS: $49,979	This project will cofund an Alaska Department of Environmental conservation project to assess reliable and practical methods of screening low volatile hydrocarbons in soil. The results of this project will provide remediators of petroleum spills improved methods of screening for heavier, less volatile hydrocarbons than existing methods now can accomplish. This should eliminate the costly re-excavation of contaminated sites that frequently is required when currently used screening methods fail to adequately detect the occurrence of these hydrocarbons. It should result in more efficient and cost-effective remediation of many petroleum spills in Alaska and elsewhere.
Stage 2 Development of a Line of Affordable, Tasty, Convenient Alaska Pink Salmon Meals Project # 95-4-1182	This stage 2 project will accomplish the steps necessary for commercialization of a prototype value-added pink salmon meal. The project will result in 1) FDA-approved, consumer-preferred taste choices, 2) quantitated food ingredient formulas and manufacturing systems, 3) consumer purchase frequency and price sensitivity, and 4) marketing strategies and authoritative sales projections.

Project Manager: Lowell, Russell Start Date: 06/28/1996 End Date: 06/15/1999 TECHNICAL AREA: FISHERIES ASTF FUNDS AWARDED: $125,000 MATCHING FUNDS: $203,060	The benefits to Alaska as a result of this project are revitalizing sales and improving the growth opportunities in Alaska's salmon industry, especially for the pink salmon hatcheries, fishers, and processors; increased salmon processing employment. The U.S. market exposure of a fish meal made with Alaska pink salmon will improve consumer potential for the purchase of traditional or new Alaska seafoods products, especially all species of salmon, and increase fish taxes and spendable personal income.
Wild Boar/Domestic Hog Cross Project # 97-1-001 Project Manager: Maloney, Denise Start Date: 03/03/1997 End Date: 10/31/1998 TECHNICAL AREA: AGRICULTURE ASTF FUNDS AWARDED: $39,967 MATCHING FUNDS: $155,311	Research the marketability within Alaska of specialty meat from a wild boar/domestic hog cross. By developing this cross, the availability of local pork year-round is possible. Many of the domestic breeders do not breed for winter litters due to the colder temperatures. This results in a reduced supply of local meat production and retail outlets are forced to ship greater quantities from other states. This project includes a marketing analysis to determine who will purchase the hog cross at what price, a controlled tracking of costs to raise the hog cross to butcher weight, available processing facilities, regulations on state inspections, and developing a prefeasibility business plan. The availability of a fresher, leaner meat supply in the local markets would be of benefit to the purchaser, and would benefit an Alaskan business rather than having to ship product into the state. Successful results in supplying the local markets will benefit an area of the state that could use diversification of the economic base, and create new jobs.
Spruce Pole Furniture Project Project # 95-2-085 Project Manager: Manthei, John Start Date: 03/25/1996 End Date: 08/31/1996 TECHNICAL AREA: FORESTRY ASTF FUNDS AWARDED: $20,000 MATCHING FUNDS: $328,720	This project will transform fire-killed Alaska spruce trees into quality, rustic pole furniture. The project will use an underutilized Alaska resource into a final product and explore entering a wider market with a manufactured product through the development of a transition plan. The spruce pole furniture project will provide tangible, measurable benefits to Alaska and its residents by establishing a manufacturing industry in Interior Alaska; creating jobs; creating a model for other firms in Alaska; and adding value to an underutilized natural resource. Examples of spruce pole furniture prototypes to be designed, developed and tested include stools, chairs, love seats, couches, ottomans, beds, tables, outdoor furniture, and children's furniture.
Water Purification & Arsenic Removal Project Project # 95-1-0112 Project Manager: McClintock, William Start Date: 03/09/1995 End Date: 05/15/1996 TECHNICAL AREA: ENVIRONMENT	Develop a production prototype for a residential water purification and arsenic removal system from a successful engineering prototype and patent. Perform market research and formulate a business plan to market water purification and arsenic removal systems for residential and small pubic water systems, large industrial systems, and licensing for major water utilities. Prospect for a client-financed field test pilot plant Arsenic in residential and public wells is a serious problem in several parts of Alaska. Arsenic in mining effluent has been a major barrier in the development or continuation of several important mines in Alaska. This project's patented technology could result in both an effective arsenic removal device for residential wells and a large-scale system of