



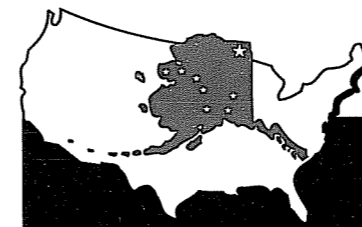
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Resource Review

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ARCO, BP gearing up for new North Slope oil development

ALPINE First wildcat find since 1990

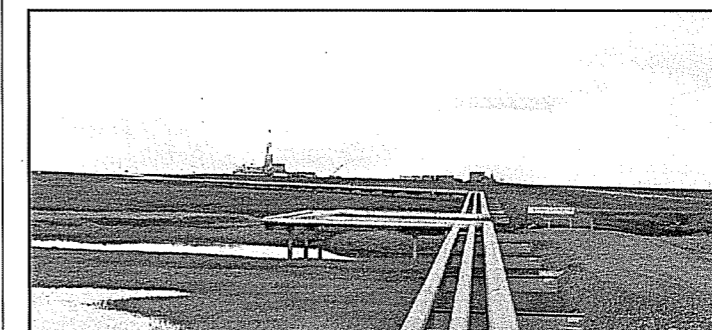
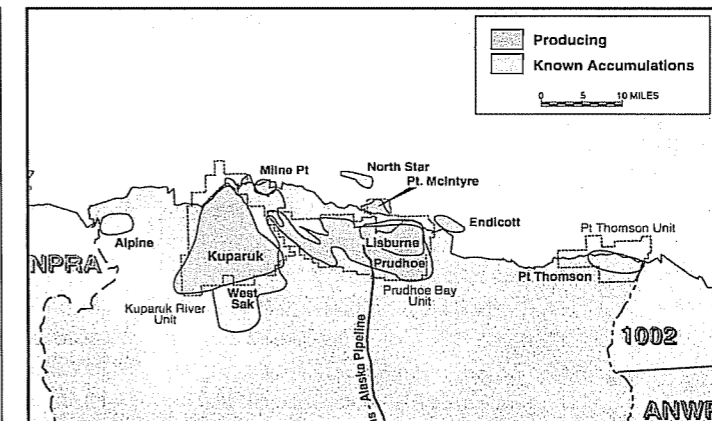
Plans to develop a major new oil field discovery in the western Colville area of Alaska's North Slope 34 miles west of the Kuparuk oil field were announced last month by ARCO Alaska, Inc., Anadarko Petroleum Corp. and Union Texas Petroleum Alaska Corp.

ARCO Alaska and its partners will begin development of the new Alpine oil and gas field late next year with production beginning in early 2000.

Arco Land Manager Dave Sutter and Senior Vice President Frank Brown provided details of the discovery and forthcoming development at the October 31 RDC breakfast meeting.

Sutter said a two-year delineation program revealed that the 10-mile long, 40,000 acre oil field has proven and potential reserves of 250 to 300 million barrels with 800 to a billion barrels of oil in place.

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North Slope Oil Fields		
	Daily production (In thousands of barrels per day)	Recoverable Reserves
Prudhoe Bay	753,000	13.2 billion barrels
Kuparuk	285,000	2.6 billion
Pt. McIntyre	140,000	400 million
Endicott	80,000	600 million
Milne Pt.	48,000	330 million
Niakuk	32,000	60 million
Lisburne	12,000	160 million
ALPINE	60,000	300 million
NORTHSTAR	50,000	145 million

Compiled by RDC

NORTHSTAR Work to start soon

With a green light from its board of directors in London, BP Exploration (Alaska) Inc. is proceeding toward field and facilities construction at its Northstar oil field in early 1997 with startup set for 1999.

"Development funding fulfills the first of our commitments to the Alaskan people when fiscal terms for Northstar were modified in order to make Northstar competitive," said John Morgan, President of BP Exploration (Alaska) Inc. "We remain fully committed to hiring Alaskans and spending money for Northstar in Alaska whenever possible."

Northstar is projected to cost more than \$430 million, a \$50 million increase over initial estimates. The project will have a \$1 billion impact on Alaska's economy, between direct spending in-state and tax and royalty payments. Development will generate a peak of more than

(Continued to page 4)

RDC conference features Alaska, national, international expertise

By Robert B. Stiles
Program Committee Chair

The continued prosperity of Alaska will be determined by the success of Alaska's private sector in dynamic competitive interconnected global markets. Numerous issues, both within and outside of the control or influence of the private sector, will determine the degree of success achieved. These issues include: the evolving "state of play" in Pacific Rim capital markets; market perceptions of Alaska and Alaska's perception of itself in these markets; emerging and leading edge technologies; infrastructure development; transportation; and State economic development and regulatory policies.

The primary objectives of the RDC's 17th Annual Conference are to provide attendees insight into these issues and an assessment of Alaska's competitive position.

In pursuit of these objectives, RDC has lined up an impressive list of speakers from the private and public sector.

The international and national speakers include: Frank Ingrassia, Partner, Goldman Sachs & Company, New York; Mark Suwyn, CEO, Louisiana Pacific Corp., Portland, Oregon; Jeff L. Jeter, Manager, International Division, Dames & Moore, London, England; James E. Bass, Managing Partner-Asia, Gibson, Dunn & Crutcher, Hong Kong; Tom Dow, Vice President, Princess Tours, Seattle, WA; and Tim Geiken, United Parcel Services, San Ramon, CA.

Local speakers include: Richard Strutz, President, National Bank of Alaska; ohn Key, General Manager, Red Dog Operations, Cominco Alaska; Harry Noah, The Noah Group; John Morgan, President, BP Exploration (Alaska) Inc.; John Rense, Chief Operating Officer, NANA Regional Corporation; Ken Vassar, Wohlforth, Argetsinger, Johnson & Brecht; former governor Walter J. Hickel, Bill Deaver, Sea-Land Service; Scott Thompson, Alaska Power Systems; Jerry DeFrancisco, President AT&T Alascom, Ron Duncan, President, GCI; and Frank Kelty, Mayor of Unalaska & General Manager, Alyeska Seafoods.

Public sector speakers include: Governor Tony Knowles; Jamie



Kenworthy, Executive Director, Alaska Science & Technology Foundation; and John Olson, Deputy Director of AIDEA.

The last half of the second day of the two-day conference focuses on political and environmental risk.

The Friday Keynote Luncheon speaker will be Bill Horn from the Washington office of Birch, Horton, Bittner & Cherot. Mr. Horn's evaluation of the results of the November elections, "How Washington May Deal With Alaska in 1997," will aid all attendees in evaluating short term political risk and opportunity.

The Friday afternoon sessions will focus on risk to the environment and the costs associated with various level of risk reduction as a basis for establishing environmental policy and regulation. The private sector speakers include: Michael Gough of the CATO Institute, Washington, DC; Dr. Les Williams, Foster Wheeler Environmental Corporation, Seattle, WA; and Dr. Frank Vertucci, ENSR Corporation, Fort Collins, CO. The public sector speakers include: Commissioner Michele Brown of the Alaska Department of Environmental Conservation and Randy Smith of Region X, EPA, Seattle, WA.

RDC's 17th Annual Conference, "Sharpening Alaska's Competitive Edge: Competing for Capital in a Global Economy" is a must attend for anyone interested in being an active participant in the future of Alaska. The conference will be held Nov. 21-22 at the Hotel Captain Cook.

Resource Review is the official monthly publication of the Resource Development Council (RDC), Alaska's largest privately funded nonprofit economic development organization working to develop Alaska's natural resources in an orderly manner and to create a broad-based, diversified economy while protecting and enhancing the environment.

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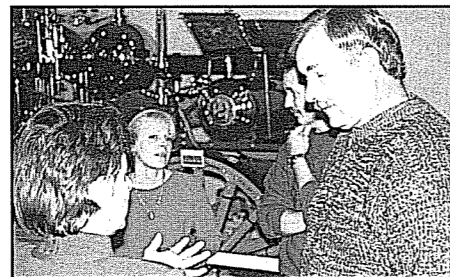
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Carl Portman



At the Valdez museum, newly-elected Mayor Dave Cobb discusses local concerns with RDC's Becky Gay, City Clerk Sheri Caples and city councilman Jim Shirrell. At right, RDC board members Frank Brown, Ken Peavyhouse and Don Follows enjoy a tour of the Valdez Fisheries Development Hatchery. See more photos of RDC's community outreach trip to Glennallen and Valdez on page 7.



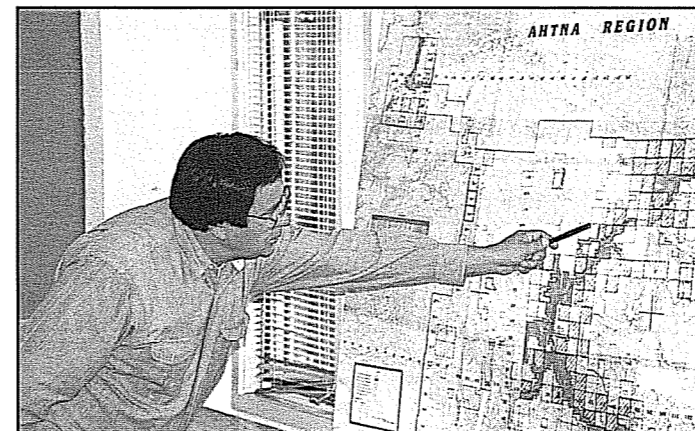
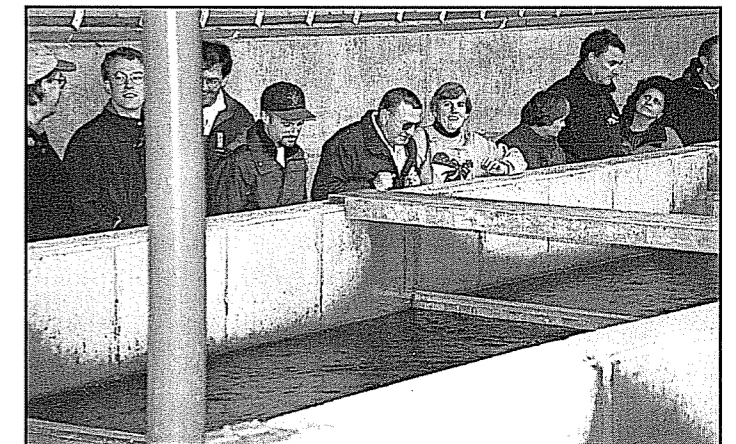
RDC board members and staff pose at an overlook of the trans-Alaska Pipeline Marine Terminal in Valdez. At right, Gary Gottberg, Plant Manager of the Solomon Gulch hydro-plant in Valdez, guides RDC members through the facility, operated by Copper Valley Electric Association. Special guest Rosalie Abbott, foreground, accompanied her father, Mike.

RDC board visits Valdez, Glennallen

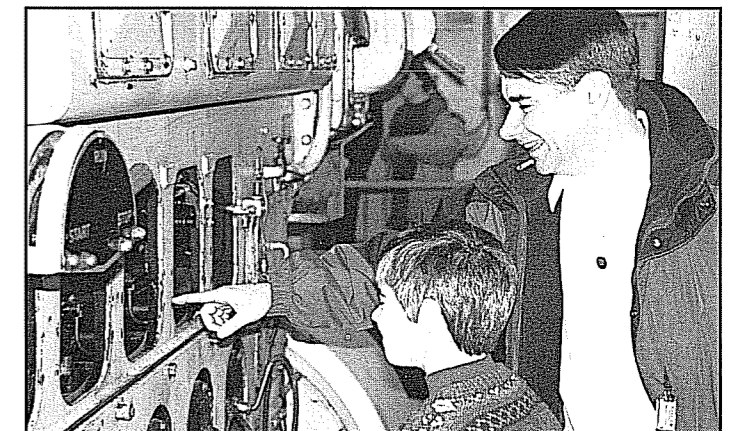
A contingent of RDC board members and staff visited Glennallen and Valdez last month in a community outreach trip to hear local concerns, meet with local members and tour industrial plants, power generating stations, a fish hatchery, marine terminals and the Valdez historic museum.



Valdez Mayor Dave Cobb, center, briefs RDC Vice President Allen Bingham, Beverly Bingham, and RDC Executive Committee member Frank Brown on the operations of the Valdez Fisheries Development Hatchery. At right, board members, spouses and staff tour the rearing pens.



Roy Ewan, President of Ahtna, Inc., points to land and resource holdings of the Glennallen-based Native regional corporation. At right, RDC board member David Hughes and his son Corey view power generators at the Copper Valley Electric Association plant in Glennallen.



West Sak production on horizon

(Continued from page 5)

the North Slope. As a result, West Sak oil is harder and more expensive to pump. In addition, West Sak oil is held in sandstone that contains clay. The clay tends to plug up the pores in the sandstone through which the oil moves to the well, and the sand can quickly ruin pumps that push the oil up the well.

West Sak oil is like a thick milkshake, in comparison to Kuparuk and Prudhoe crudes, which flow like water in the reservoir.

The oil in the sweet spot is thinner than in the rest of West Sak because it is deeper and hotter. The rock in the formation also contains less clay.

Cost reductions made possible by new technology was a key factor in ARCO's decision to move forward with phased-development of West Sak. ARCO says its cost of putting in a new well has dropped by a third since 1991. The ability to drill diagonally and sink more wells from a single small gravel drilling pad, combined with the availability of pipelines and other infrastructure built for the Kuparuk field, helped in building a more positive case for development.

ARCO expects to begin production from the sweet spot late next year. In 1998, the company expects to have 25 producing wells pumping an average of 300 barrels a day for a total output of 7,500 barrels per day. Up to 250 wells could be producing a total of 60,000 barrels per day by 2009.

OPA '90 amendments land on President Clinton's desk

Important amendments to the Oil Pollution Act of 1990 (OPA '90) are contained in legislation recently sent to President Bill Clinton for his signature.

The amendments set the general amount of financial responsibility certification at \$10 million for facilities in state waters and \$35 million for facilities in federal waters, with a provision allowing those amounts to scale upward to \$150 million, based on the risk posed by the quality and quantity of oil involved.

The amendments also include a de-minimis provision which exempts those facilities that have a worse case oil spill discharge potential of 1,000 barrels of oil or less.

Cynthia Quarterman, the Director of the U.S. Minerals Management Service, discussed OPA '90 and other issues at a Resource Development Council breakfast forum in Anchorage last month.

The amendments to OPA '90 also limit the definition of an offshore facility.

Earlier rulemaking to implement OPA '90 would have not only increased the financial responsibility requirement from \$35 million to \$150 million per facility, but also expanded the requirement from outer continental shelf waters to all the navigable waters of the United States.

Since the Interior Department said navigable

waters must be interpreted to include wetlands, most of Alaska's land mass would have fallen under the broad definition of offshore facility. Combined with the lack of a de minimis clause, the law would have required almost anyone storing or moving fuel in Alaska to demonstrate \$150 million in financial responsibility.

In theory, someone towing 40 gallons of fuel in a sled behind a snowmachine would have been required to meet the law, as well as every Bush village and school with a fuel storage tank. Meeting the financial responsibility requirements would have been impossible for most Alaska businesses and communities.

Northstar action begins in '97

(Continued from page 5)

looking at a considerable amount of work in the next couple of years. Northstar will be the first project for the steel fabricators. There are two other oil industry projects that may also involve in-state module construction, BP's Badami and the "MIX" gas project, an expansion of the ARCO-operated gas plant at Prudhoe Bay.

Badami and the MIX projects, if they get the green light, are likely to fall within the same time frame as Northstar and Alpine.

New mining development may also send more work to Alaska contractors involved in the new in-state module fabrication industry.

Northstar shines bright

- 145 million barrels recoverable
- 50,000 barrels per day production
- \$1 billion economic impact
- \$430 million in royalties and taxes to state, \$37 million in supplemental royalties
- \$31 million in taxes to North Slope Borough
- \$260 million to federal government
- First buried subsea pipeline in Alaskan Beaufort
- Ushers in new era of in-state module fabrication



Thoughts from the President by Scott Thorson

Americans want balance in Tongass

It wasn't surprising the U.S. Forest Service received more than 22,000 comments on proposed revisions to the Tongass Land Management Plan, second only to the responses submitted on a spotted owl plan for 19 forests in several western states. The Tongass comments, however, underscored just how misinformed Americans are on logging in the forest.

Most offering comments on the revised land management plan said they want the federal government to strike a balance between logging and other forest uses. Just under half said they favored management practices to sustain multiple forest use, balancing logging with protection of natural resources. Those residents said the Forest Service needs to give greater consideration to tourism, recreation and fishing, claiming the proposed plan puts too much emphasis on logging.

Contrary to public perception, the mix between timber harvests and resource protection under the existing Tongass plan is already weighted heavily in favor of non-logging uses. Two-thirds of the old growth, commercial forest is closed to cutting, preserved for other uses, while one-third has been reserved for timber production on a 100-year rotation basis. Of the one-third reserved for logging, 400,000 acres have been cut since industrial logging began in 1954. Many of these harvest zones have produced healthy second growth stands that are almost impossible to differentiate from non-harvest areas.

Ironically, the proposed revisions would crank the screws down even tighter on logging by adding 500,000 additional acres to existing no-cut zones. It also withdraws more land for fish habitat protection by increasing buffers along anadromous fish streams. The revisions would reduce the land base available for timber harvest by 30 percent and shrink the annual harvest ceiling. Yet the battle cry of many — including those in Congress who endorse the anti-logging platform of powerful environmental interests — is balance, a fair mix between logging and resource protection. But in reality, the mix already leaves the lion's share of the forest for non-development uses. And new plans like the one at hand continue to assault the timber industry by demanding more withdrawals from a land base reserved specifically for logging.

Unfortunately, the public hasn't a clue. Americans get their information on these hot resource issues from slick outdoor magazines or a national press which emphasizes sensational sound-bites and quotes which are all too often

misleading or plain wrong. Rarely is the issue put in perspective or the whole story told, as with the Tongass.

Meanwhile, hundreds of Alaskans have lost their jobs and hundreds more will lose their livelihoods this winter when Ketchikan Pulp Company (KPC) closes its mill at Ward Cove. Many of these long-time Alaskans feel they are the victims of the massive misinformation campaign that has generated images across America of a devastated rainforest. Many are bitter because they believe they have been sacrificed for a cause environmentalists created to motivate well-meaning Americans to donate money to save the Tongass.

First the Alaska Pulp mill in Sitka was a target, as well as its long-term timber supply contract with the Forest Service. Critical components of the overall forest plan, including essential economic fairness clauses, were then attacked and wiped cleaned through the Tongass Timber Reform Act of 1990 (TTRA). With the Sitka mill and its contract out of the picture and unilateral changes made to the KPC long-term contract through TTRA, the Ketchikan mill became the new target. And timber operators elsewhere in the forest have been in a tailspin from countless lawsuits and administrative appeals aiming to stop timber sales in areas reserved for logging.

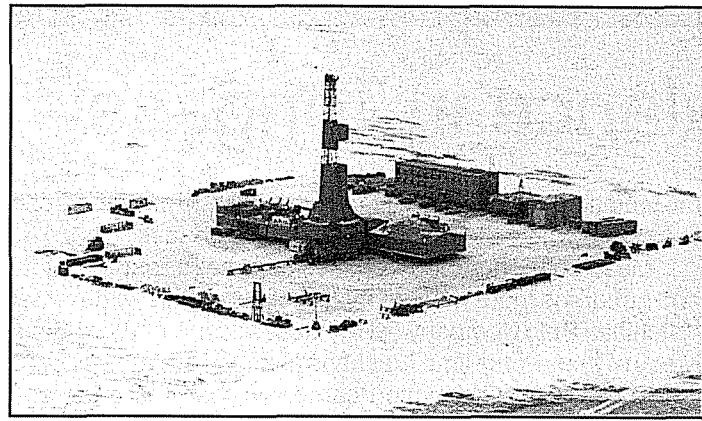
The hard-working men and women in the timber industry, along with their families, are victims of environmental politics and deception. They have been sacrificed for cheap and easy environmental votes cast by Lower 48 politicians seeking the favor of powerful environmental groups and their constituents.

Environmentally, the Tongass is doing well. Salmon stocks are healthy with record harvests in nine of the past 13 years. Deer populations are at an all-time high.

No one knows or loves the forest and all it has to offer better than those men and women who have carved a life for themselves working in the cold, misty woods of Southeast Alaska. They work hard — rain, snow or sun — with a deep respect for the land to harvest a renewable resource used widely by a public that has lost track with the basic fundamental that everything used in society comes from a natural resource.

Environmentalists will no doubt work overtime to convince the public they really don't oppose logging, they only want to ensure balance and sustainability. Balance and sustainability, however, have already been achieved. The timber industry can sustain itself without ever having to harvest outside the dedicated timber base. Actions show their true intentions are to manage the Tongass as a national park.

Alpine: First Native-owned mineral estate since passage of ANCSA



Alpine is the first wildcat oil discovery on the North Slope since 1990 when Conoco discovered the Badami field. Oil in the Alpine reservoir is a higher quality crude than that produced at Prudhoe.

(Continued from page 1)

The Alpine field is a significant oil accumulation for Alaska and one of the largest fields found in the U.S. this decade. Pending issuance of local, state and federal permits, field construction and development will begin in one year with initial production of 30,000 barrels of oil per day in early 2000, increasing to 60,000 in 2001.

Field development is expected to cost \$800 million.

ARCO Alaska, as operator, has proposed a two-drill site with 100 to 150 wells with total surface development encompassing about 85 acres. The field would have its own stand-alone facilities. Oil would move to market through an elevated, 34-mile, 16-20 inch pipeline connecting the Alpine field to the Trans-Alaska Pipeline via the Kuparuk Pipeline.

"Alpine development is possible because we've been successful in reducing expected development cost

by more than 30% compared to other North Slope fields," said ARCO Alaska President Ken Thompson.

Only three miles of gravel road, connecting the two drill sites, are planned. Access during operation of the field would be provided by small plane and helicopter. Ice roads, constructed during winter, will be used to move construction equipment, production facilities and drilling rigs to the site.

The Alpine field, located eight miles north of the village of Nuiqsut, is the first North Slope oil discovery on a Native-owned mineral estate since passage of the Alaska Native Claims Settlement Act in 1971. The surface estate is jointly owned by the state and by Kuukpik Corporation, a Native village corporation in which current and former Nuiqsut residents are shareholders. The mineral interest is owned by the State of Alaska and by Arctic Slope Regional Corporation (ASRC). Both

Kuukpik and ASRC will realize revenue and benefit from Alpine oil production.

ARCO Alaska submitted a pipeline right-of-way application to the State of Alaska in mid-September. The company will soon submit necessary permit applications to the North Slope Borough, the U.S. Army Corps of Engineers and other state and federal agencies.

Those applications will be based on a review of previous Colville area studies dating back 50 years and by five years of highly-focused environmental and technical study in the Colville area. The environmental studies, which have cost \$4 million, guided conceptual development of the field, allowing engineers and environmental experts to locate drill sites, roads and facilities in areas where they will have minimal impact on wildlife, water fowl, or the subsistence lifestyle practiced by Nuiqsut residents. ARCO is also including a comprehensive mitigation plan in its permit application to the Corps.

Plans for fabrication and installation of necessary production facilities are still being developed.

"If an Alaska-based

company, or a consortium of Alaska-based companies, can construct and install quality facilities on time and at competitive cost, they will be built in Alaska," Thompson noted. "We challenge Alaska fabricators to rise to the task."

Alpine field development could create as many as 850 construction and development drilling jobs and pump hundreds of millions of dollars in direct project expenditures into the Alaska economy. The State of Alaska and the North Slope Borough will share approximately \$1 billion in taxes and royalties from Alpine.

At the RDC breakfast, ARCO's Brown noted that a cooperative, positive relationship between industry and the State encouraged ARCO in moving forward with Alpine. Brown expressed confidence the State will carry through with the positive, productive relationship as ARCO works to bring the new field on line. He emphasized that Alpine will show others interested in doing business in Alaska that the state is indeed open for business.

Brown is a member of the RDC Executive Committee.

Alpine Highlights

- First North Slope wildcat discovery since 1990
- First North Slope discovery on Native land
- 250 - 300 million barrels
- 60,000 barrels per day
- Approximately \$1 billion state, local revenues
- 850 construction/development jobs
- 50 long-term operation jobs
- Cost competitive Alaska fabrication

ARCO to tap giant West Sak

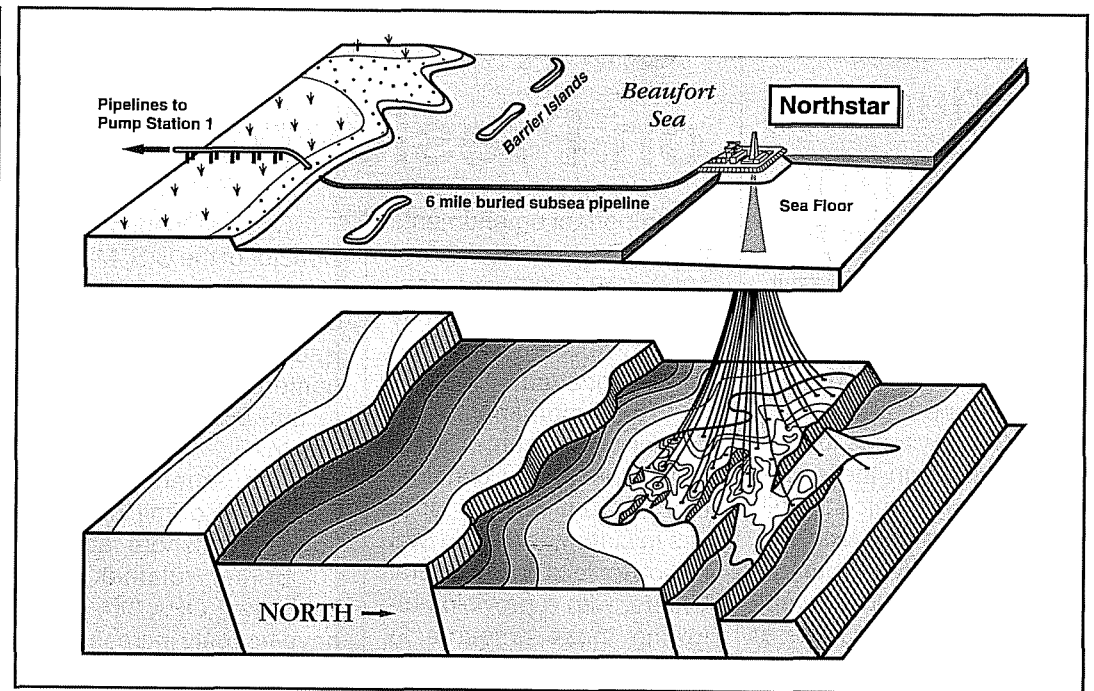
In addition to new, upcoming oil field development at BP's Northstar and ARCO's Alpine prospect, ARCO recently announced it will tap a promising formation in the giant 16 billion barrel West Sak reservoir.

Known as the "sweet spot," the formation in the core area of the West Sak oil field looks easier to develop than the rest of the field, ARCO engineers report. The sweet spot may hold up to 500 million barrels of recoverable crude, which would make it the fourth largest field in Alaska after Prudhoe Bay and Kuparuk. In comparison, ARCO's new Alpine field contains between 250 to 300 million barrels of recoverable reserves while Northstar holds about 145 million barrels.

The sweet spot has about 3 billion barrels of oil in place, about one-fifth of the oil in West Sak's reservoir. ARCO is projecting a startup for production in late 1997 with peak production of 60,000 barrels per day in 12 years.

ARCO has been working on West Sak for years and has spent more than \$200 million since the early 1980s trying to find a way to bring it into production. West Sak crude is thicker than Prudhoe or Kuparuk oil and is also colder because it is much closer to the surface and the layer of permafrost which blankets

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BP focuses on Northstar

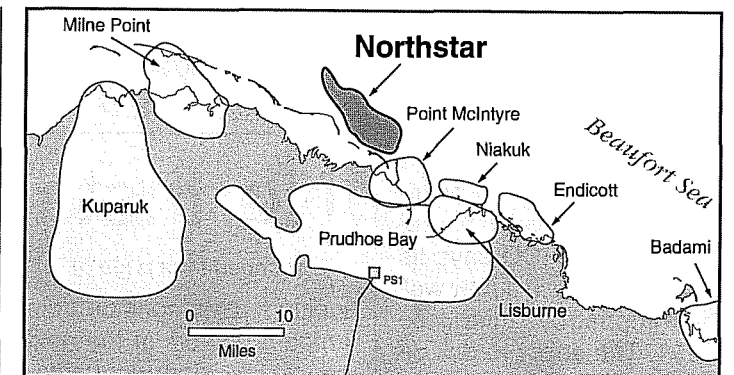
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500 construction jobs in Alaska, as well as 50 permanent jobs throughout the field's life.

Northstar is believed to contain about 145 million barrels of recoverable oil.

"The board vote is an important milestone in the process of bringing Northstar into production," Morgan said. "It has only been possible because of the cooperation and leadership of the Knowles administration and the Alaska Legislature and the hard work and innovation of many BP employees and contractors."

BP and North Star Terminal and Stevedore Company recently finalized terms of a land-use agreement for acreage in the area of the Port of Anchorage, ensuring that Northstar's oil-processing modules will be the first sealift-scale oil field facilities



ever built in Alaska.

Modules will be fabricated and assembled in the Anchorage area by Veco Construction Inc. and Alaska Petroleum Contractors Inc. and installed on the North Slope by Veco.

Pipeline insulation and pre-fabrication work will be performed in Fairbanks. Pipeline installation will be performed by Houston Contracting Corporation, a subsidiary of Arctic Slope Regional Corporation. Alaska Interstate Construction will provide gravel island work.

Both will utilize union labor hired out of Fairbanks union halls.

The Northstar oil field, located offshore about six miles northwest of Prudhoe Bay, will be developed from a 5-acre gravel island. Oil will be transported to shore through a buried, subsea pipeline. Production is expected to peak at 50,000 barrels a day.

With Northstar and the recent Alpine oil field discovery announced by ARCO, Alaska steel fabricators are

(Continued to page 6)