

**Oil and Gas Seismic, Well and Lease Data Acquisition****FY2005 Request:****\$320,000****Reference No:****33977****AP/AL:** Appropriation**Project Type:** Planning**Category:** Development**Location:** Statewide**Contact:** Mark Myers**House District:** Statewide (HD 1-40)**Contact Phone:** (907)269-8800**Estimated Project Dates:** 07/01/2004 - 06/30/2005**Brief Summary and Statement of Need:**

Proper management and oversight of oil and gas exploration, leasing and development activities on state lands requires that the Division maintain a degree of technical parity with explorers, lessees and operators. The Division's mission of responsibly managing and encouraging development of the state's petroleum resources requires that it have funding to acquire, analyze, preserve, protect and distribute oil and gas exploration and development data; to maintain the geoscientific and engineering skills and applications necessary to do so and to electronically distribute appropriate technical and lease data to the public to encourage and accelerate additional development of the state's petroleum resources.

<b>Funding:</b>	<b>FY2005</b>	<b>FY2006</b>	<b>FY2007</b>	<b>FY2008</b>	<b>FY2009</b>	<b>FY2010</b>	<b>Total</b>
Gen Fund	\$320,000	\$320,000	\$320,000	\$320,000	\$320,000	\$320,000	\$1,920,000
<b>Total:</b>	<b>\$320,000</b>	<b>\$320,000</b>	<b>\$320,000</b>	<b>\$320,000</b>	<b>\$320,000</b>	<b>\$320,000</b>	<b>\$1,920,000</b>

<input type="checkbox"/> State Match Required	<input type="checkbox"/> One-Time Project	<input type="checkbox"/> Phased - new	<input type="checkbox"/> Phased - underway	<input checked="" type="checkbox"/> On-Going
0% = Minimum State Match % Required		<input type="checkbox"/> Amendment	<input type="checkbox"/> Mental Health Bill	

**Operating & Maintenance Costs:**

	<u>Amount</u>	<u>Staff</u>
Project Development:	0	0
Ongoing Operating:	0	0
<u>One-Time Startup:</u>	0	
<b>Totals:</b>	<b>0</b>	<b>0</b>

**Additional Information / Prior Funding History:**

SLA03/CH82 - \$250,000 (Seismic, Well, and Lease Data Acquisition and Interpretation)

SSSLA02/CH1 - \$155,000 (Seismic Data Acquisition and Interpretation)

SLA01/CH61 - \$138,000 (Seismic Data Acquisition and Interpretation)

SLA93/CH79 - \$450,000 (Seismic Data Acquisition and Evaluation)

**Project Description/Justification:**

**Task 1:** In order to accomplish the Division's mission of maximizing responsible oil and gas development for the benefit of the state's citizens the Division must acquire: (1) exploration data (primarily 2-D and 3-D seismic data); (2) reservoir engineering data for proper allocation of reserves and reservoir performance modeling; (3) staff training to maintain proficiency to industry standards; (4) state-of-the-art hardware and interpretive/analytical software; and (5) data processing and reprocessing services. These data, skills and capabilities are the tools used by the Division to ascertain the hydrocarbon potential of state lands offered for lease, to determine the economic value of unit and participating area proposals submitted by industry, to properly monitor field development and production procedures, to properly quantify and evaluate the extracted resource and to ensure that the State receives its equitable share of resulting revenue.

Petroleum exploration and production companies acquire hundreds of line miles of 2-D seismic data and hundreds of square miles of 3-D seismic data each year as they explore for new prospects, re-survey previously explored areas, and monitor reservoir performance. Although the Division has in place a permit procedure to acquire these data acquired on state land for only the cost of reproduction, there is sometimes the need to acquire data from adjacent federal and private lands. The NPR-A and the OCS portions of the Beaufort Sea, Bristol Bay, and Lower Cook Inlet are such areas. Data in these areas are exempt from State permit stipulations and must be purchased from the operator at market rate (\$3,000 per line mile for 2-D data and \$20,000 per square mile for 3-D data are typical prices). On a case-by-case basis the Division might experience the need for small problem-specific processing applications beyond its in-house capability. For example, analysis of certain attributes or characteristics of 3-D seismic data representing reservoir properties might need to be outsourced to correctly define field limits, to monitor reservoir performance and to properly allocate reserves, production and royalties to the State, other lessors and lessees.

Internal realignment is expected to provide the Division with a much needed second geophysical explorationist in early FY05. While this will not require additional staff it will require additional technical support in the areas of computer hardware, software, software licensing and training.

A Reservoir Engineer position was recently added to the organization, completing the skill set needed to properly manage the state's petroleum properties. Among the major responsibilities of this position are determination and verification of tract allocations at various times throughout field life and monitoring reservoir and field development and production performance through complex reservoir simulation models. Engineering studies have become increasingly important for protecting the State's revenues as the State has become more involved with land co-owners (ASRC at Alpine, the MMS at Northstar and Cosmopolitan, the BLM and CIRI in several Kenai Peninsula fields). Proper support of this position will require acquisition of additional engineering data and information, purchase and licensing of as-yet-identified computers and engineering applications, and training in the use of those applications.

**Task 2:** In recent years the Division has converted analog hardcopy geophysical and well log data to suitable digital format for input to our interpretive software, for permanent archival purposes and, in some cases, for eventual public distribution through a yet-to-be implemented web-interface. However, substantial quantities of confidential and non-confidential interpreted and analyzed information in the form of maps, cross-sections and well logs derived from the data remain preserved only in hard-copy form and must also be converted to digital form before they deteriorate beyond recovery. Through optical scanning processes these data are converted to longer-lasting CD or DVD media compatible with our data processing capabilities and suitable for electronic transfer once that capability is attained. Continued progress in this effort will require outsourcing the project to a contractor for about six months or employment of a student intern for one year.

**Task 3:** The Division recently acquired the large one-Terabyte single hard disk array with Redundant Array of Independent Disks (RAID) capability as approved in FY04 and, due primarily to the large quantity of seismic data added to the database, quickly filled it to near capacity. A unique feature of this component is simplified system maintenance whereby a failed disk can be "hot-swapped" with a functional disk without shutting down the system and network or losing data. Consequently, user accessibility is reliable, data recovery is faster and system backup problems are substantially mitigated. However, as the Division becomes involved in the full-field, reservoir simulation modeling required for initial and interim tract allocations and reallocations at the Alpine, Northstar and Cosmopolitan Units, substantial additional disk space will be required. The State will also benefit if the Division can better model the reservoir at Point Thomson field if development of that field becomes problematic. As the result, the Division will need to add a one-Terabyte RAID disk to add to the existing expandable array.

**Task 4:** Purchase hardware, software and consultant services to design and implement electronic security measures necessary to protect confidential geological, geophysical and engineering databases in accordance with the State of Alaska Online Security Policy. The Division is the repository of hundreds of millions of dollars worth of industry-owned exploration, development, production, financial and planning data that must, under law, be maintained as confidential and isolated from public disclosure. As the Division moves into the web-based environment for distribution of non-confidential data to the public and increasing transfer of confidential data and information between cooperating agencies, the risk of disclosure increases. Reliable security procedures are essential to protect the State's reputation and to avoid litigation.

**Task 5:** Development of a more robust lease sale database is needed to support a more efficient and effective oil and gas lease sale program. As currently implemented the leasing database does not lend itself to post-sale statistical and financial analyses whereby sale results can be analyzed and historical trends determined and studied in order to improve the leasing program. This task, too, will require a small investment in hardware and software necessary to support the student intern employed to edit and input the comprehensive lease sale databases.

**Task 6:** Development of a comprehensive GIS database of non-confidential oil and gas infrastructure suitable for web-based disclosure to and use by the public. A commonly voiced complaint by companies wishing to take advantage

of Alaska's oil and gas opportunities is the lack of information about the type, location and availability of development and production facilities – all of which have significant commercial interest to the newcomer. Such a database in GIS format and available through the division website would provide infrastructure information essential for informed participation in oil and gas exploration and development in the state.

**Why is this Project Needed Now:**

- ? Accelerated capitalization of the state's petroleum resources by providing web-based land, lease, exploration, development and production information to companies interested seeking entrée to Alaska's petroleum sector.
- ? To ensure equitable resource and revenue shares from production co-owned by State, Native and private entities.
- ? To maintain technical and professional parity with industry in an information-transfer environment, while properly protecting confidential industry data and information archived by the Division.
- ? To expand the Division's capability in the important area of reservoir engineering, particularly as initial, interim and final tract allocations become due from several producing units.
- ? For continued protection against litigious matters and for negotiation leverage in matters arising from Department and Division decisions regarding oil and gas resource management programs.

**Specific Spending Detail:**

Line Item Expenditures:

1000 Personal Services:	\$0
2000 Travel Travel & per diem for training, conferences	\$22,000
3000 Contractual Services Data purchases, analog-to-digital data conversion, licensing fees, training registration fees, 2 student interns	\$198,000
4000 Supplies	\$0
5000 Equipment: Additional one-terabyte hard disk, PCs with peripherals and software	\$100,000

**Project Support:**

This program is likely to be supported by virtually all agencies dependent upon oil and gas revenue, oil and gas producers and supporting industries and associations.

**Project Opposition:**

None anticipated.