



**Sable Offshore Energy Project**  
**Canada-Nova Scotia Benefits Report**  
**2009**

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## Executive Summary

The 2009 Sable Offshore Energy Project (SOEP) Canada Nova Scotia Benefits Report is hereby submitted to the Canada-Nova Scotia Offshore Petroleum Board.

The cumulative Nova Scotia expenditures through December 31, 2009 total \$2,235.0 million or 37.4% of total project expenditures. The cumulative Canadian content of the total project expenditures was 54.3% based on \$5,979.6 million expenditures to date.

The 2009 expenditures in Nova Scotia amounted to \$168.4 million or 44.2% of the total project expenditures. During 2009, ExxonMobil Canada Properties and the Sable Project owners continued to support initiatives aimed at developing and sustaining the natural gas industry in Nova Scotia.

Significant activities during 2009 included the successful completion of an ambitious maintenance campaign at both the onshore and offshore facilities as well as the drilling of the Alma 4A development well. Both of these activities involved a significant expansion of the regular workforce complement during the campaign and major expenditures for additional equipment, goods and services in the local community.

As well, expenditures were made in the areas of community education, research and development, training, technology transfer and support of diversity and inclusion programs. The Sable owners and major contractors invested more than \$3.4 million in training and educational initiatives, bringing the cumulative Project training and education expenditures to more than \$45 million.

## 1.0 Introduction

The **2009 Canada-Nova Scotia Benefits Report** for the Sable Project is hereby submitted to the Canada-Nova Scotia Offshore Petroleum Board (CNSOPB) in accordance with the requirements under Section 2.6 and Condition #9 of the Sable Offshore Energy Project Canada-Nova Scotia Offshore Petroleum Board Benefits Plan Decision Report dated December 3, 1997 (for implementation effective December 30, 1997).

This report addresses Sable Project benefits activities for the period January 1, 2009 to December 31, 2010, and has been prepared and submitted by ExxonMobil Canada Properties (ExxonMobil) as the Sable Project operator.

In preparing this report we encouraged our many vendors to share their experiences and successes as a result of their work on the Sable Project. We have included information on some of these vendors in the text of the report.

Production activities for the Sable Project commenced in late 1999. From startup through 2006 both development and production activities were undertaken. The completion of the Compression Project during the fourth quarter of 2006 marked the conclusion of the development phase of the Sable Project.

## 2.0 Project Update

### 2.1 Operations

The 2009 Canada Nova Scotia Benefits report is the twelfth such annual report submitted to the CNSOPB since project sanction. Operational highlights for the year include:

#### **Safety, Health and Environment (SHE)**

Favourable safety, health and environmental performance continued in 2009. Proactive reporting continued to be encouraged at all Sable project facilities and management systems and programs aimed at sustaining the well established safety culture continued to be applied for all aspects of the business operations.

Contractor safety workshops, structured to communicate expectations and share lessons learned from events locally and globally continued to be a cornerstone of SHE management program. Workshops were held every six months and were well attended by the contracting community. As part of the planning for the maintenance campaign additional emphasis was placed on communicating expectations and standards to the supply community.

The Marine Safety Council continued to play an important part in reinforcing the safety culture in the marine service aspects of the Sable project. The Council helps to further demonstrate the fact that co-operation, shared expertise and shared experience can and does positively influence and enhance safety for those working on our facilities in Atlantic Canada.

## Drilling

In the second quarter, a fourth development well was spudded at the Alma platform. The Alma-4 well was successfully drilled, completed and commissioned by the fourth quarter.

Rowan Company, provided the Mobile Offshore Drilling Unit (MODU) Rig, the RGIII, for the drilling of the Alma-4 well. Rowan hired a significant number of new employees locally to supplement their normal rig crewing, which ultimately consisted of approx. 65% from Nova Scotia.



**Figure 1 – RGIII in operation offshore at the Alma Platform**

In addition to increased employment levels, offshore drilling utilized increased service levels from a number of local vendors and resident oilfield services companies who provided technical support services through their local facilities.

The following local firms provided their services and personnel for the drilling of the Alma-4 well:

- ABB Inc - Automation Goods and Services
- AMEC Black & McDonald – EPC services & Maintenance
- Atlantic Offshore Medical - Medical Services
- Brunel Energy - Staffing and Personnel services
- Cameron Canada (Facility in Dartmouth) – Wellheads
- CHC - Helicopter Services
- Dominion Diving - ROV Services

- Eastpoint Engineering Services - Engineering and Technical Services
- EM & I Stantec - Inspection Services
- Fabcon Canada - Technical Staffing Services
- FI Oilfield (Facility in Dartmouth) - Tubular Running and Bucking Services
- Fugro Jacques Geosurveys - Rig Positioning Geoservices
- GL Industrial - Third Party Inspection Services
- Hercules SLR - Crane & Crane Running Wire Inspections
- HSE Integrated - Safety Consulting, Training & Equipment Rentals
- Import Tool (Facility in Dartmouth) - Liner Hangers, completion equipment & tools
- J Ray McDermott - Standby & Supply Vessels / Shorebase Facilities Management
- Lloyd's Register - Certifying Authority
- Mariner Industries - Large Conductor Pipe Cutting & Welding
- M-I Drilling (Facility in Dartmouth) - Mud materials, completions fluids and related services
- Newalta - Waste Handling Services
- Oceans Ltd - Weather Forecasting Services / Oceanographic Services
- Oland Engineering - Rig Move Surveys - QA QC Consultant Services
- Premiere Executive Suites - Temporary Accommodations/Apartment Rental
- RF Ironworks - Premium Threading & Misc Machine Shop
- Schlumberger (Facility in Dartmouth) – DTH equipment, services, personnel & well stimulation
- Spectrol Energy - Drilling Tubular and Tool Inspection
- Warren LaBrash Consulting - Intervention Specialists
- Wade Company - Reprographic Services



**Figure 2 – The Rowan Gorilla RGIII drilling rig positioned in the Halifax Harbour**

## Production

Over and above normal production, significant additional logistics, personnel and resources were employed in the summer of 2009 for the planning and execution of an ambitious maintenance campaign at both onshore plants and at offshore facilities.



This work was supported by the harsh environment jack-up installation vessel Seajacks 'Kraken'. This 60-bed accommodation unit was used offshore to provide additional accommodations and maintenance support for the increased work force. The Kraken arrived in Halifax Harbour in the spring for commissioning, before heading out to the field. Seajacks hired a number of Nova Scotians to work on board the Kraken in the 2<sup>nd</sup> and 3<sup>rd</sup> quarters of 2009, providing over 17,000 person hours of work.



**Figure 3 – Kraken Installation Vessel - in Halifax Harbour and at the Thebaud Complex**

## 2.2 Offshore Support Services

With the focus being on operational support in 2009, Nova Scotia contractors and service providers have increasingly become key players in ExxonMobil's success. The local industry maintains critical support services utilized by ExxonMobil's ongoing operations, both onshore and offshore.

The following are important support services provided to ongoing operations in 2009:

- aviation services
- catering personnel
- communications services
- courier services
- customs clearance/brokerage
- diving and ROV personnel
- environmental services
- equipment inspection services
- fabrication services

- inland transportation services
- insulation and painting
- local trades personnel (welding, mechanical, electrical, instrumentation, etc.)
- logistics/stevedoring
- maintenance materials and consumables
- marine crews and supply vessels
- medical personnel
- medical services
- safety advisory services
- safety equipment
- safety training services
- scaffolding services
- staffing services
- survey services
- tools and equipment rentals
- valve services
- warehousing
- weather forecasting



**Figure 4 – Maintenance personnel performing duties offshore at Thebaud and onshore at Goldboro**

### 3.0 Economic Impacts

The Sable Project continued to have a significant positive impact on the economy of Nova Scotia. The expenditures breakdown shown below is derived using the *Canada General Standards Board Method*, adopted by the Canada-Nova Scotia Offshore Petroleum Board. In addition to expenditures, three other indicators of economic impact (person hours, headcount and new hires) are also reported.

#### 3.1 Industrial Benefits Reporting

In preparing the 2009 report ExxonMobil reviewed the information provided by the vendors according to the scope of work for the vendor and the guidance available from the Canada General Standards Board (CGSB) reporting guidelines. Depending on the nature and scope of services provided, some vendors were contacted to assess the data provided for the preparation of this report. Data quality assurances methods used in the preparation of previous Benefits Reports were applied in the preparation of the 2009 report.

#### 3.2 Expenditures - Canada General Standards Board (CGSB) Method

The economic impact of expenditures for the Sable Project is identified in the following tables:

**Table 1 – 2009 Expenditures (\$ millions)**

	Nova Scotia	Other Canadian	Foreign	Total
<b>Total Expenditures</b>	\$168.4	\$67.0	\$145.9	\$381.3
<b>% Content</b>	44.2%	17.6%	38.2%	100%

**Table 2 – Expenditures - Historical (\$millions)**

	Nova Scotia	Other Canadian	Foreign	Totals
<b>Cumulative to December 31, 2004</b>	1,532.4	731.5	1,974.6	4,238.5
<b>Percentage of Total</b>	36.1%	17.3%	46.6%	100.0%

<b>Cumulative to December 31, 2005</b>	1,677.0	788.2	2,230.9	4,696.2
<b>Percent of Total</b>	35.7%	16.8%	47.5%	100.0%

<b>Cumulative to December 31, 2006</b>	1,853.9	859.5	2,445.7	5,159.2
<b>Percent of Total</b>	35.9%	16.7%	47.4%	100.0%

<b>Cumulative to December 31, 2007</b>	1,960.6	900.6	2,539.0	5,401.3
<b>Percent of Total</b>	36.3%	16.7%	47.0%	100.0%

<b>Cumulative to December 31, 2008</b>	2,066.6	944.2	2,586.5	5,598.3
<b>Percent of Total</b>	36.9%	16.9%	46.2%	100%

<b>Cumulative to December 31, 2009</b>	2,235.0	1,011.2	2,733.4	5,979.6
<b>Percent of Total</b>	37.4	16.9	45.7	100%

### 3.3 Employment

#### Person Hours

The 2009 total person hours for the Sable Project was 1,473,990. The Nova Scotia component of this total was 1,285,926 or 87.2%. This amounts to 737 full time equivalent employees in 2009. These person hours are broken down as follows:

Nova Scotian	1,285.9 thousand person hours	(87.2%)
Other Canadian	126.2 thousand person hours	(8.6%)
Foreign	61.8 thousand person hours	(4.2%)

Details on cumulative person hours through December 31, 2009 are provided in the Table below. Please see Appendix 1 for a listing of 2009 labour hours by vendor.

**Table 3 – Person Hours - Historical**  
(Millions of Person Hours)

Year Cumulative as of December 31	Nova Scotia	Other Canadian	Foreign	Totals
1998	2.70	1.00	2.91	6.61
% of Cumulative	40.85%	15.13%	44.02%	100%
1999	5.93	1.48	5.25	12.66
% of Cumulative	46.84%	11.69%	41.47%	100%
2000	8.39	1.74	5.36	15.49
% of Cumulative	54.16%	11.23%	34.6%	100%
2001	9.75	1.90	5.49	17.14
% of Cumulative	56.88%	11.09%	32.03%	100%
2002	10.73	2.19	6.04	18.96
% of Cumulative	56.59%	11.55%	31.86%	100%
2003	12.67	2.50	6.83	22.00
% of Cumulative	57.59%	11.36%	31.05%	100%
2004	14.30	2.71	7.46	24.47
% of Cumulative	58.44%	11.07%	30.49%	100%
2005	15.33	2.82	8.57	26.72
% of Cumulative	57.37%	10.55%	32.07%	100%
2006	16.70	3.00	9.18	28.88
% of Cumulative	57.83%	10.39%	31.79%	100%
2007	17.77	3.10	9.23	30.10
% of Cumulative	59.0%	10.3%	30.7%	100%
2008	18.63	3.18	9.23	31.04
% of Cumulative	60.1%	10.2%	29.7%	100%
2009	19.92	3.30	9.29	32.51
% of Cumulative	61.27%	10.16%	28.57%	100%

### Employment Headcount

The estimated Project employment headcount on December 31, 2009 was 342. The Table and Chart below includes those individuals working directly on the Sable Project and those working for major contractors on the specified reporting dates. Of the 342 people working on the Sable Project on December 31, 2009, 320 (93.6) were working in Nova Scotia.

**Table 4 – Estimated Year End Headcount**

Year End	Activity in Nova Scotia	Activity in the Rest of Canada	Total Project Activity
December 31-2001	953	16	1,041
December 31-2002	900	38	1,150
December 31-2003	974	42	1,206
December 31-2004	1,082	40	1,413
December 31-2005	733	32	1,407
December 31-2006	697	33	893
December 31-2007	411	27	438
December 31-2008	336	22	363
December 31-2009	320	11	342

### Residency of New Hires / Secondees

The total number of New Hires/Secondees reported for the Sable Project and its major contractors during 2009 was 426. The table below shows the historic distribution of the Residency of New Hires / Secondees for the Sable Project.

**Table 5 – Residency of New Hires**

Quarter	Nova Scotia	Other Canadian	Foreign	Total
2001	400	105	115	620
2002	324	83	684	1091
2003	826	83	204	1113
2004	565	41	198	804
2005	268	28	330	626
2006	577	100	326	1003
2007	99	17	54	170
2008	89	8	0	97
2009	392	30	4	426

### 3.4 Student Employment

Support for co-op and work placement programs continued through 2009. There were 21 placements at ExxonMobil and our contractors during the year that provided work opportunities for students of varied disciplines. Total co-op expenditures for the year were \$252,400.

Cumulative expenditures for the 570 co-op/work placements are provided in the table below.

**Table 6 – Co-op Work Placements**

Year	Number of Placements	Cumulative Placements	Investment	Cumulative Investment
1998	36	36	\$250,000	\$250,000
1999	61	97	\$325,263	\$575,263
2000	58	155	\$334,133	\$909,396
2001	71	226	\$608,394	\$1,517,790
2002	73	299	\$572,932	\$2,090,722
2003	90	389	\$706,539	\$2,797,261
2004	64	453	\$646,345	\$3,443,606
2005	11	464	\$592,985	\$4,036,590
2006	47	511	\$444,120	\$4,480,710
2007	20	531	\$286,387	\$4,767,097
2008	18	549	\$310,240	\$5,077,337
2009	21	570	\$252,400	\$5,329,737

#### Co-op Placements

During the various phases of Sable Project, EMCP and its contractors have supported the employment of university coop students with new and meaningful assignments, whenever business conditions permitted. EMCP uses a rigorous process when recruiting co-op students:

- **6 Months Prior to Term Start:**  
A request for job postings is circulated internally to determine if there is need and appropriate work for co-op students. In cases where there are, job postings are developed and submitted to HR.
- **4 Months Prior to Term Start:**  
Job openings are posted online at [www.exxonmobil.com/careers/canada](http://www.exxonmobil.com/careers/canada) and at the co-op student office. Job postings are typically open approximately 3 - 4 weeks.
- **3 Months Prior to Term Start:**  
Resumes are sorted by school, interview candidates are chosen and interviews are conducted on campus. Decisions are submitted to the school and job selection offers are presented to the students.

#### Engineering Co-op Project Work

During the year ExxonMobil employed 3 co-op students in the Nova Scotia office. The students worked mainly in the reservoir and facilities groups. Students worked with mentors and were challenged in technical areas and with hands on experience when possible. Co-op students

completed work term reports for presentation to peers and ExxonMobil engineering staff. The 2009 engineering co-op student assignments included:

- Calculation and reporting of natural gas liquids pressure cycle information
- Preliminary technical investigations for Venture hose bunkering project
- Investigate opportunities to use multi-phase pumps
- Assist with coordination of capacity enhancement workshop and implementation of action items
- Coordinate implementation of Sable chemical management team
- Coordinate technical modeling work for Venture pigging project
- Investigate improvement opportunities to reduce offshore choke high differential pressures
- Analyze offshore flare volumes

Projects allow students to gain overall knowledge of engineering, economics, and project management and enhance overall knowledge of the oil and gas industry and engineering principles in general. Students are required to submit a technical report on their co-op term experience, to fulfill their educational requirements.

## 4.0 Diversity and Inclusion

Creating and maintaining an all inclusive and diverse workforce has been a priority for ExxonMobil. During 2009, efforts continued to encourage representation of traditionally under-represented groups, namely:

- Aboriginal Persons
- Racially Visible Persons
- Women
- Persons with Physical/Mental Challenges

ExxonMobil does not make assumptions about membership in a traditionally under-represented group. Rather, ExxonMobil encourages “voluntary self-identification” which occurs when individuals identify themselves as members of a traditionally under-represented group on an application/resume and/or proactively to their supervisor/organization, or through other voluntary means.

The following table provides a tally of individuals who identified themselves as a member of a traditionally under-represented group during the period of the Second Quarter of 2001 through the Fourth Quarter of 2009. The table summarizes data from ExxonMobil and our contractors.

**Table 7 – Traditionally Under-represented Groups**

Quarter	Aboriginal Persons	Racially Visible Persons	Women	Persons with Physical/Mental Challenges
2001	32	46	405	14
2002	81	145	370	14
2003	23	77	390	24
2004	7	80	412	14
2005	8	49	332	6
2006	9	36	235	4
2007	5	13	83	4
2008	4	9	61	3
2009	6	11	60	4

## 5.0 Capacity Development

During 2009, capacity development initiatives related to developing and supporting a viable and increasingly sustainable oil and gas industry in Nova Scotia continued to be undertaken. These initiatives have been divided into four core areas:

- Training and Education
- Technology Transfer
- Supplier Development
- Research and Development

*Please note: Items in this Section may also be reported by ExxonMobil and affiliates in other reports.*

### 5.1 Training and Education

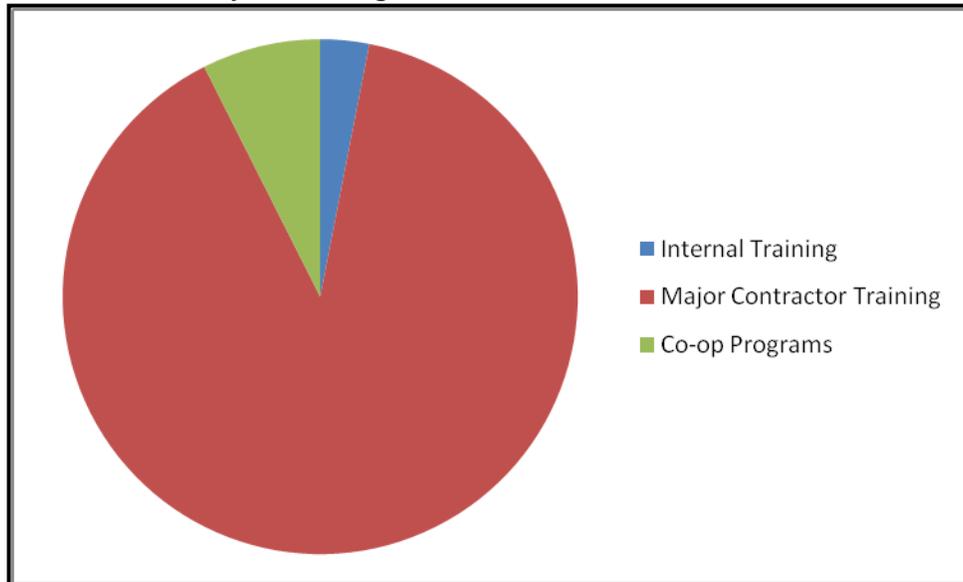
During 2009, emphasis was again placed on relevant skill development in Nova Scotia related to the oil and gas industry. In addition to expenditures made on employee training, investments in community training and educational programs were also made.

Training and education investments for 2009 are summarized in the tables and chart below:

**Table 8 – Training and Education Investments**

<b>(Including Co-op/Work Placement Programs, Community Training and Education Investments)</b>	
<b>Description of Training</b>	<b>2009 Total</b>
Internal Training	\$103,899
Major Contractor Training	\$3,037,582
Co-op Programs	\$252,400
<b>2009 Totals</b>	<b>\$3,393,881</b>

**Summary of Training and Education Investments – 2009**



In 2009, over \$3.3 million was spent on Training and Education. Cumulatively, in excess of \$45.8 million has been invested in Training and Education. The following table shows the history of training and education investments.

**Table 9 – Training and Education Investments Historical**

<b>(Including Co-op/Work Placement Programs, Community Training and Education Investments)</b>		
<b>Year</b>	<b>Investment</b>	<b>Cumulative</b>
1998	\$7,027,316	\$7,027,316
1999	\$5,635,294	\$12,662,610
2000	\$3,296,130	\$15,958,740
2001	\$5,440,177	\$21,398,917
2002	\$4,071,942	\$25,470,859
2003	\$3,881,650	\$29,352,509
2004	\$3,260,635	\$32,613,144
2005	\$3,047,550	\$35,660,694
2006	\$3,836,040	\$39,496,734
2007	\$1,405,177	\$40,901,911
2008	\$1,515,871	\$42,417,782
2009	\$3,393,881	\$45,811,663

In addition to direct training and education activities undertaken by ExxonMobil and our major contractors, ExxonMobil and the Sable owners supported a number of other initiatives that assist and/or recognize the existing education and training infrastructure in Nova Scotia.

### **Techsploration**

The goal of Techsploration is to increase the number of women working in science, trades, technical and technology related occupations by assisting young women from diverse backgrounds to explore a wide range of career options in these fields.

Over the past ten years, Techsploration has been supported by ExxonMobil, other Sable Projects owners and some of the Sable project contractor / suppliers in the form of monetary support as well as mentors. The program has grown significantly from its original group of eight participating schools, to twenty-four schools throughout the province.

In participating schools, small groups of girls are assigned careers to research and role models to assist in their efforts. These Techsplorers have an opportunity to visit work sites and eventually to present their findings to the rest of the student body, boys and girls alike, in service of a broader goal to educate and break stereotypes.

The 2009 Techsplorers Event was a highlight of the Techsploration Program and was held at the Nova Scotia Community College - Strait Area Campus, in Port Hawkesbury on April 16 & 17. The Techsplorers Event brings together all the participants of Techsploration, including role models, girls on school teams, Techsplorer Alumnae, teachers, sponsors and invited guests to share in the excitement of the program.

The schools at the 2009 Techsplorers event included Dr. JH Gillis Regional High, East Antigonish Academy, Guysborough Academy, SAERC (Strait Area Education Recreation Centre), Pictou Academy, Springhill High School, St. Agnes Jr. High School, and Waycobah First Nation Secondary School.

Techsplorers spent a full day visiting the Goldboro Gas Plant where they learned about EM, engineering, and went on a site tour of the plant. A co-op student from ExxonMobil helped coordinate the event and attended the wrap up event in Port Hawkesbury.



**Figure 5 – Techsplorers from East Antigonish Academy at the Goldboro Gas Plant**

During 2009 ExxonMobil and Imperial Oil contributed \$25,000 in funding to support Techsploration in Nova Scotia. More information on Techsploration is available at <http://www.techsploration.ca/>.

## **5.2 Technology Transfer and Local Supplier Capacity**

Transfer of technology to the local supply community has occurred over the past number of years since project sanction as the Sable project evolved through development and production. Historically, local engineering, consulting and construction related firms have been the principle beneficiaries of this transfer as these local firms have enhanced their in-house expertise and knowledge.

As the project matures through the production phase and as local firms gather more and more expertise, opportunities related to technology transfer are expected to diminish. In 2009, over \$161,000 was reported as new technology transfer. To date this technology transfer has had an estimated value in excess of \$31 million to the supply community.

The discussion below highlights a key success in the area of technology transfer that was identified in 2009 through the work performed by AMEC Black & McDonald (ABM).

### **Technology Transfer related to Field Operations Study**

The work scope was to provide assessment of the operability of the Sable process facilities under various circumstances.

The study scope required development of a set of 'HySYS Process' models to represent the Sable Satellite Platforms, Thebaud Process Platform, Compression Platform and Goldboro Gas Plant. The models were used to assess the processing capability at various flow rates and pressures for Natural Gas and Hydrocarbon Liquids in the field late life periods.

The assessment was conducted by ABM to provide a more accurate representation of system operation to determine the requirement for and benefit of:

- New equipment (Pumps & Compressors)
- Revised operating parameters
- Upgraded equipment such as rotors for the Main Compressor

The study required Senior Rotating Equipment & Process modeling support. The AMEC Paragon office in Houston was able to provide an expert in Gas Plant design, operation and analysis to assist local process staff in conducting the study.

Due to the ability of AMEC Black & McDonald to obtain the specific expertise required, ABM was able to conduct the study using local staff and was able to gain knowledge and experience in conducting such analysis. Subsequent revisions and updates to the study were conducted with increasing scope performed by AMEC Black & McDonald and with less dependence on the remote support.

### **Engineering Services Summary**

In 2009, required engineering and technical support services were primarily provided by AMEC Black and MacDonald (ABM) and Accent Engineering Consultants.

#### **AMEC Black and MacDonald**

ABM continued as the Engineering, Procurement and Construction Management (EPCM) Contractor to ExxonMobil, responsible for the majority of engineering, procurement, construction and maintenance services for the Sable facilities.

#### **Accent Engineering**

Accent Engineering provided the Engineering Design, Materials Procurement and Fabrication Management for the new accommodations structure at Thebaud.

### **Construction and Maintenance Support Services**

In addition to providing the EPCM work above, AMEC Black & Macdonald also coordinated and supplied the labour and subcontractor requirements for the work throughout 2009 on all offshore and onshore facilities. ABM reported over 400,000 person hours of work performed on the Sable Project in 2009. ABM provided the supervision and trades labour for a major maintenance campaign during a planned shutdown of the Sable facilities in August. A number of local companies provided local personnel and services during the shutdown including the following:

- Mulgrave engineering - vessel repairs onshore and offshore
- Newalta - waste material disposal including Mercury
- BJ services - N2 purging, leak testing and bolt tensioning, onshore and offshore
- Partners construction - pipe work fabrication, tools supply, port-a-cabin supply
- boilermakers and pipefitting trades (Goldboro)

- AB mechanical - boilermaker and pipefitting trades, port-a-cabins, tools (Point Tupper)
- Aluma - scaffold and trades supplies
- Parker Aluma - painters, insulators and materials
- ABB – automation controls designs and technical support personnel
- OTS - supply of supervision
- Eastpoint Engineering - supply of construction supervision
- Brunel - supply of supervision
- Survival Systems - provider of safety training packages
- HSE - supplier of safety coordinators
- Marener Industries – provider of large structural fabrications
- RKO - structural fabrications
- Black and Macdonald - pipe fabrication
- Hydraulic systems - supplier of compressors, dehumidifiers and large vacuum pumps

For the successful completion of the maintenance campaign and shutdown, ABM relied on the support of local trades union personnel. In early 2009, ABM and local trades unions leadership met in advance to plan the shutdown with regards to safety, manpower, trades mix and support needed. Union and ABM leadership acknowledged a positive relationship and mutual support of efforts required for the shutdown.

During the shutdown in August, ABM had in excess of 300 trades personnel mobilized between onshore and offshore facilities. ABM and ExxonMobil provided safety training including "Boot Camp" training for all trades personnel and advanced training in confined space rescue as necessary. ABM and trades personnel executed the work both onshore and offshore in a safe manner for a successful outcome without incident. A major catalyst in ensuring this happened was the union leadership's support to ABM.

## **6.0 Research and Development Initiatives**

Throughout 2009, ExxonMobil together with its partners (Shell Canada, Imperial Oil Resources, Pengrowth Energy Trust and Mosbacher Operating) and its contractors continued to support research and development (R&D) initiatives in Nova Scotia.

An R&D Plan has been approved by the CNSOPB as per Condition 4 of the Benefits Plan Decision Report. Under this plan, ExxonMobil and the Sable owners have committed to R&D expenditures in Nova Scotia of at least \$300,000 per year and an aggregate of \$3,000,000 over the five-year period of 2008 - 2012 inclusive.

In addition to the initiatives considered to be R&D under the terms of the five-year plan, the Sable owners and the contracting community have historically supported broader R&D activities in Nova Scotia. During 2009 these R&D activities amounted to \$931,600, bringing the cumulative research and development expenditures by the owners and contractors to in excess of \$26.7 million since 1998.

Please see the table below for historic research and development initiatives reported. We have also included information on some of the activities undertaken in 2009 that are included in the 2009 total expenditure of \$931,600. This amount includes expenditures by some of the Sable Contractors.

**Table 10 – Research and Development Initiatives**  
**Historical**

<b>Year</b>	<b>Investment</b>	<b>Cumulative</b>
1995	\$121,500	\$121,500
1996	\$146,000	\$267,500
1997	\$3,888,373	\$4,155,873
1998	\$5,758,207	\$9,914,080
1999	\$2,813,428	\$12,727,508
2000	\$4,690,139	\$17,417,647
2001	\$2,564,786	\$19,982,433
2002	\$2,068,169	\$22,050,602
2003	\$666,385	\$22,716,987
2004	\$277,000	\$22,993,987
2005	\$628,127	\$23,622,114
2006	\$458,113	\$24,080,227
2007	\$782,333	\$24,862,560
2008	\$925,881	\$25,788,441
2009	\$931,600	\$26,720,041

### **6.1 Petroleum Research Atlantic Canada (PRAC)**

During 2009 the EMCP and Shell Canada supported research and development initiatives through Petroleum Research Atlantic Canada (PRAC). PRAC is a not-for-profit, member-based organization formed by industry, government and academia. Governed by a nine-member Board of Directors (the majority from industry), PRAC's members include upstream producers and explorers, universities and colleges involved in petroleum research, and federal and provincial government departments and agencies.

PRAC issues Calls for Proposals in focused areas as directed by the Research Advisory Committee, and provides research funding to successful applicants. PRAC also provides Transfer-to-Usability (TTU) grants to help bridge the gap between applied research and commercialization, and facilitate multi-partner Joint Industry Projects (JIPs) to address specific member needs.

Since 1999, PRAC has awarded over \$4.5M in direct funding to projects with a total value exceeding \$25M. Additionally, PRAC undertakes a broad range of communications activities to assist with research identification, planning and dissemination of research project results.

PRAC's objectives are:

- To raise awareness of petroleum-related R&D activities in Atlantic Canada
- To build capacity and scale in oil and gas R&D, thereby adding significant value to Atlantic Canada
- To promote the activities and contributions of its membership

- To act as a catalyst in establishing research priorities, leveraging opportunities and providing ongoing support to current research programs
- To provide a neutral forum for discussion that helps identify research opportunities for Atlantic Canada

In 2009, PRAC announced approved funding for two Research Proposals Calls. The theme focus of Call 9 was Asset Integrity and the theme focus of Call 10 was Offshore Environmental Technologies. In Nova Scotia, Dalhousie University was included in three of the funding approvals announced.

## **6.2 Pengrowth Energy Trust - Nova Scotia Energy Programs**

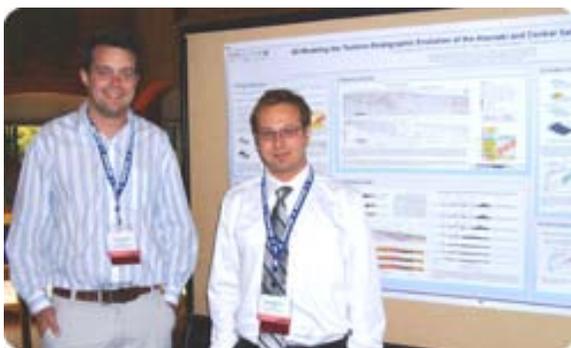
The Pengrowth Nova Scotia Energy Scholarship Program and Innovation Grant Program provides resources to ensure the success of future oil and gas industry leaders. Established in March 2005, the \$2 million program is a partnership between Pengrowth Corporation, one of the Sable Project owners and the Province of Nova Scotia, through contributions of \$2 million and \$1 million respectively. Since its inception, the scholarship has provided more than \$500,000 to 77 students in the form of university and trade scholarships, innovation grants and funding of the Professorship in Petroleum Financial Management at Saint Mary's University.

### **Pengrowth - Nova Scotia Professorship in Petroleum Financial Management**

Two professors from the Sobey School of Business at Saint Mary's University will be taking a lead role in boosting the development of the province's oil and gas industry. Drs. Sean Cleary and Greg MacKinnon, both of whom are professors of Finance, Information Systems and Management Science, have been named Pengrowth Nova Scotia Professors in Petroleum Financial Management. They have received \$600,000 to carry out their work from 2008 to 2011 as researchers on a variety of petroleum related projects. The Province of Nova Scotia and Pengrowth Energy have provided the funding for the professorship roles.

### **Pengrowth - Nova Scotia Petroleum Innovation Grant Program**

Up to four Pengrowth-Nova Scotia Petroleum Innovation Grants are rewarded each year. The research grants, valued at \$15,000 over two years, are awarded to Nova Scotia students pursuing energy-related studies at the masters degree level.



Clarke Campbell and Cody MacDonald, Innovation Grant Winners - presenting Research at the 2009 CORE Conference at the Halifax World Trade & Convention Centre.

**Figure 6 – Pengrowth Innovation Grant Winners**

### **Pengrowth - Nova Scotia Energy Scholarship Program**

The program awards scholarships and research grants to Nova Scotia students pursuing undergraduate degrees or college-level trades and technology programs at Nova Scotia Community College. The scholarships are awarded to students pursuing careers in the energy sector.

At least 10 scholarships, valued at \$10,000 each (\$2,500 renewable over four years), are awarded annually to students pursuing energy related studies at a university. One additional university scholarship is designated each year for a member of a First Nation or visible minority. The program also offers at least four non-renewable \$2,500 scholarships for first-year students pursuing energy related trades and technology programs at the Nova Scotia Community College.

In 2009, 18 students were chosen to receive Pengrowth-Nova Scotia Energy Scholarships. A Pengrowth-Nova Scotia Energy Scholarship web page has recently been created to provide scholars and Innovation Grant recipients a secure forum for community networking and volunteer opportunities. It will connect students with employers, other scholarship winners, events within the community and non-profit organizations. It will also give students the opportunity to share success stories and words of wisdom.

## **6.3 Imperial Oil Foundation**

### **St. Francis Xavier University (StFX)**

A \$200,000 investment over a four-year period from the Imperial Oil Foundation allows St. Francis Xavier University (StFX) to enhance and expand the science outreach program on campus and in schools throughout northeastern Nova Scotia. Funding for the program, which began in 2008, continued in 2009.

The investment enables teachers to provide hands-on learning opportunities with confidence, and foster new real-world experiences for participating undergraduates at StFX who will themselves go on to become scientists and science educators. In-school outreach includes the use of science education kits in Nova Scotia elementary schools, as well as in-school presentations of science fundamentals by StFX faculty and senior students. On-campus outreach consists of continuing and expanding StFX's existing X-Chem Outreach program of summer science camps for children, and the offering of upgrading and training for science teachers.

Between the months of May and June 2009, the Program was able to reach 2,269 young people through 61 workshops offered to grades Primary to Twelve in both the Chignecto Regional and Strait Regional school boards.

### **Dalhousie University**

The Imperial Oil Foundation also invested \$400,000 over four years with Dalhousie University to support the expansion of the Math Circles initiative. The purpose of the Math Circles program is to foster interest in mathematics among high school students and expose them to mathematics beyond the high school curriculum. Math Circles began six years ago as an initiative put together by grad students in the Department of Mathematics and Statistics. The idea is open Dalhousie's doors to HRM high school math students several times a year, at no cost to them, and have professors and graduate students lead them through interactive activities that demonstrate the real-world application of advanced math concepts, from game theory to cryptology.

#### 6.4 Characterization and Dispersion of Produced Water Discharged from Offshore Platforms on the Scotian Shelf

The Centre for Offshore Oil, Gas and Energy Research (COOGER) in the Department of Fisheries and Oceans (DFO), in partnership with ExxonMobil, conducted a collaborative research program in summer 2009 to characterize the composition and dispersion of produced water discharged from the Venture/Thebaud offshore production facilities on the Scotian Shelf. This program also supported COOGER's ongoing work on identifying a unique microbiological tracer within PW streams to assist with plume tracking.

The purpose of this program was to characterize produced water samples recovered from offshore facilities located on the Scotian Shelf and to validate a numerical plume dispersion model developed for risk assessment.



Samples of “fresh processed” produced water from the discharge line were collected from the Venture and Thebaud platforms for chemical characterization and laboratory studies on their potential to induce biological effects.

For field validation of the dispersion model, samples were collected at sea at varying distances from the point of discharge from the Venture platform.

Corresponding microbiological analysis was also done with “fresh” and “aged” aerated produced water samples in laboratory dilution studies designed to monitor changes in the potential for produced water to elicit biological responses as its components become modified in the ocean environment as a result of natural physio-chemical reaction processes.

Scientific deliverables from this study could contribute to improved environmental monitoring protocols and an enhanced capability to evaluate the risk of produced water discharges at sea in Atlantic Canada with predictive numerical models.

Figure 7 - COOGER personnel with SBE 25 Portable CTD offshore Atlantic Canada

## 6.5 Study of Selected Plant and Invertebrate Communities Sable Island – 2009

The study of 'Selected Plant and Invertebrate Communities on Sable Island' in summer of 2009, was sponsored by the Sable owners. The primary objective of this study was to contribute to making stewardship of Sable Island maximally effective by acquiring new and accurate information on the island's flora, fauna, and ecology. A pioneering study on vegetation was first undertaken in 1899 as part of an assessment of "Facts Relating to the Economic Value or Agricultural Character of the Soils" and subsequent specific studies on flora and fauna have occurred sporadically over the last 50 or so years in the ever-changing environment of Sable Island. The study involved:

- Additional search for plant species new to the island
- Survey of pollinators and pollination ecology
- Survey of invertebrates associated with the wild horse population.
- Vegetation sampling in and around the various horse-enclosures to assess changes in floristic composition where the impacts of horse activity have been removed.



**Figure 8 - Grass-pink orchid is one of six orchid species found on Sable Island.**



**Figure 9 - Family band of Sable Island horses, now the only terrestrial mammals on the Island.**

The results of this research program will highlight areas of concern for conservation and management of particular species and/or habitats on Sable, and will contribute to the baseline information used in monitoring the overall environmental health of Sable Island.

## **6.6 Development of Helicopter and Rig Abandonment Suits**

During 2009 ExxonMobil and the Sable owners supported on going research and development initiatives aimed at continuous improvement of helicopter passenger and rig abandonment suits for use in the offshore area. Work was also initiated to assess potential helicopter egress issues that could arise as a result of the innovations in suit design.

In addition to EMCP and the Sable owners, Helly Hansen Canada Limited and Survival Systems Training Limited supported the research in collaboration with Dalhousie University.

## **7.0 Community Education and Participation**

ExxonMobil and its employees have a proud history of community involvement. Wherever we operate, we try to strengthen local communities by donating time, talent or money to many organizations that provide much-needed services or that contribute to the cultural fabric of our communities. In Nova Scotia, 2009 was another busy year for community investment by ExxonMobil, Sable and their employees. Here are some of the highlights

### **President's Safety Award - Employees in the community**

The President's Safety Award recognizes and celebrates those employees who exercise safety leadership in the workplace. The award recognizes up to two winners each month – individuals or work groups, employees or contractors – who have exceeded expectations in the areas of safety, health, environment and security.

In 2009, ExxonMobil began further recognizing these efforts by bestowing gifts of \$1,000 to a qualifying local not-for-profit educational or health care institution chosen by the award winners.

ExxonMobil also encourages employees to contribute to their communities through the Volunteer Involvement Program (VIP). Through this program, employees may be able to avail of funding for an eligible organization with which they have volunteered at least 20 hours.

Volunteer service, activities and projects should be consistent with the company's pledge to be a good corporate citizen and support important societal goals including education, health and human services, and the environment.

### **Youth and the Sciences**

With assistance from ExxonMobil, two NS organizations dedicated to promoting science are reaching out to groups of young people typically underrepresented in science, engineering and technology (SET).

*SuperNOVA*, a program offered through Dalhousie University promotes science, engineering and technology to girls and First Nation, African Canadian and low-income youth. Through summer camps, classroom workshops and after school and weekend clubs, SuperNOVA provides these groups with hands-on and memorable experiences in science, engineering and technology.

The program is tailored to the specific needs of each audience to ensure a positive and lasting experience. This means providing positive female mentors to female participants, connecting indigenous knowledge with Western science in First Nation programming, and bringing science to communities such as African Nova Scotian to reduce potential barriers about SET.

*Youth Experiences in Science* has made great strides in promoting science to Nova Scotia's young aboriginals. The organization has worked to establish a science fair region that includes all provincial aboriginal communities. The next step is to help students and educators identify those characteristics that will help make their projects competitive at the national level.

*Youth Experiences in Science* also hopes to increase the number of African Canadian students in grades 6 to 9 participating in science projects by showing them that science can be both fun and practical.

### **United Way**

ExxonMobil and its employees continued its strong record as a leader in community giving, achieving outstanding results during a time when the economy is causing extra challenges for those in need in our community.

Thanks to the efforts of employees--combined with the company match of employee giving and fund-raising--the United Way in Nova Scotia will receive a grand total of \$88,838 from the 2009 campaign.

Campaign highlights included a solid increase in giving by offshore employees, as well as continued strong participation by employees at Founders Square employees and the onshore plants.

### **IWK Child Safety Link**

In 2009, ExxonMobil provided funding to the IWK Children's Hospital Child Safety Link (CSL) program to develop a children's Fall Prevention Strategy. The purpose of the program is to reduce the incidence and severity of injuries to children and youth.

The development of the strategy included a comprehensive review of current strategies used around the world, consultations with stakeholders, and reviews of best practices.

ExxonMobil is now supporting the development, implementation and evaluation of an awareness campaign to get the message about the program out to young people and the other relevant stakeholders. ExxonMobil is proud to continue its partnership with the IWK into 2010.

### **CAPP Energy in Action**

ExxonMobil employees participated in the Canadian Association of Petroleum Producers Energy In Action (EIA) events. During the EIA events, employees in Halifax partnered with schools in their respective areas to plant trees and flowers in schoolyards.

Energy in Action is an opportunity for oil and gas company employees to work with participate in one-day educational sessions and environmental renewal projects in oil and gas communities across Canada.

### **Junior Achievement - Staying in School Pays**

ExxonMobil supports Junior Achievement's the 'Economics of Staying in School' (ESIS) program. ESIS encourages junior high school and high school students to consider their future goals and how staying in school can help them reach those goals.

### **Bursaries**

Top students graduating from the seven high schools in Guysborough, Antigonish and Richmond counties are awarded bursaries each year from the Sable owners to help them with postsecondary education. A total of 20 bursaries were awarded under this program in 2009.

### **Feed Nova Scotia**

Food banks throughout Nova Scotia continue to receive the support of ExxonMobil and its employees. In both provinces, the company provides support to the coordinating organizations that work to alleviate hunger by the efficient distribution of food-to-food banks.

ExxonMobil continues to support FEED NOVA SCOTIA, the food collection and distribution center for approximately 150 food banks and meal programs which serve at least 38,000 Nova Scotians each month. FEED NOVA SCOTIA is also dedicated to finding long-term solutions to poverty and chronic hunger that will reduce the need for food banks in Nova Scotia.

ExxonMobil also supports both the St. Mary's and Guysborough food banks in Nova Scotia.

### **Techsploration**

ExxonMobil and its employees are long-standing supporters of Techsploration, a unique Nova Scotia success story. Techsploration is a program that enables girls in junior high and high school to explore non-traditional careers in the skilled trades and sciences. Techsploration continues to grow and delivery its programs across the province, with notable successes in First Nations Communities. (Further referenced in Section 5.1 Training and Education)

### **Discovery Centre**

Nova Scotia's Discovery Centre is on a mission – to show children and youth that science is fun! The centre does this by using hands-on exhibits, live demonstrations, public programs, and educational workshops. By presenting science and technology in an entertaining environment, Discovery Centre hopes to stimulate interest in science and technology for all Nova Scotians.

### **Phoenix Youth Programs**

At risk and homeless youth in the Halifax area continue to receive support through Phoenix Youth and the programs it offers. ExxonMobil is pleased to provide support to Phoenix Youth the carry out this important work.

### **Neptune Theatre**

ExxonMobil continues to support Neptune Theatre and in 2009 was the presenting sponsor of High School Musical. The company also sponsored a pre-concert reception for community stakeholders and theatre representatives. The company also supports Neptune's Pre-Professional program for young people interested in further developing their performance skills. This program targets dance, movement, musical theatre and modern acting techniques.

### **Symphony Nova Scotia**

ExxonMobil is a supporter of the Adopt-a-Musician program, which connects musicians with students and teachers in Grades 4 and 5. The students then create and perform their own music at a final concert.

### **Kiwanis**

The Nova Scotia Kiwanis Music Festival encourages and supports music performance and education for thousands of young musicians in Nova Scotia.

### **Granville Green Outdoor Concert**

ExxonMobil was pleased to support a series of free, Sunday afternoon concerts held throughout the summer in Port Hawkesbury, NS. These waterfront concerts continue to be a great stage for local musicians and continue to attract both tourists and local fans. .

### **Festival Antigonish**

Since the Sable project began, ExxonMobil has been sponsoring Festival Antigonish, which attracts more than 10,000 people each summer. The festival is a must-do event in the area and provides a venue for local performers to showcase their talents and work experience for local support crews.

### **Mulgrave Road Theatre**

The stories of the people of Guysborough and the surrounding area get spread to audiences through the talents of the Mulgrave Road Theatre Group. ExxonMobil is happy to support this important cultural tradition.

## 7.1 Protecting special places

ExxonMobil's ongoing support to the Nature Conservancy of Canada (NCC) projects throughout Atlantic Canada is helping the NCC in its work to protect areas of biological diversity for the benefit of future generations. In 2009, ExxonMobil provided \$40,000 to NCC to help it protect two areas of ecological significance in Nova Scotia, at Port Joli and Bayers Island (details provided in separate articles below).

ExxonMobil continued to support the Nova Scotia Nature Trust for the St. Mary's River Conservation Project in Guysborough County. Through acquisition and conservation easements, the Nova Scotia Nature Trust identifies and protects places of unique environmental value in Nova Scotia

ExxonMobil is pleased to join with the Nature Trust and the Nature Conservancy of Canada to protect the ecological integrity of Nova Scotia for the enjoyment of future generations.

### Protection of Coastal Habitat in Port Joli, Nova Scotia.

Port Joli is located approximately 170 kilometres from Halifax. According to NCC, Port Joli Harbour has a rich natural and cultural history with Mi'kmaq use dating back 1,200 years. Port Joli is renowned for its wildlife habitat, particularly for migratory waterfowl. The area contains sandy beaches, eel grass flats, inter-tidal mudflats, small islands and coastal forests.

NCC has already purchased 136 acres along the undeveloped western shoreline of the National Port Joli Migratory Bird Sanctuary. Funding from ExxonMobil in 2009 allowed NCC to acquire an additional 341 acres.



**Figure 10 - Great Blue Heron; Shorebirds at Port Joli**  
(photos by Andy Dean)

### **Protection of Bayers Island in Musquodoboit Harbour**

Another area of focus for NCC in 2009 was Bayers Island, located approximately 30 km east of Halifax in Musquodoboit Harbour. The 79-acre island is the third of the area's three islands to be protected through the efforts of NCC. Musquodoboit Harbour is a stopping point for migratory birds including Canada Geese, Green Winged Teal and American Black Ducks, and the island's forest area is home to osprey, bald eagles and Great Blue Heron.



**Figure 11 – Photo of Bayers Island**  
(photo by NCC)

### **St. Mary's River Conservation Legacy Campaign**

The St. Mary's River Conservation Legacy Campaign is supported in partnership with the Nova Scotia Nature Trust. In 2009 ExxonMobil supported the protection of another area along the St. Mary's River near Sherbrooke, helping to preserve an area that supports a bald eagle feeding site and over 1,000 meters of shoreline on the main branch of the St. Mary's River. The support by ExxonMobil builds on previous successes, including the protection in 2006 of 36 hectares of land, and the 2008 protection of a 90-hectare stretch along the St. Mary's River known as the Hemlock Falls Conservation Lands. This makes a total of 400 acres of protected land along the St. Mary's River to date.



**Figure 12 – Photos of St. Mary's River**  
(photos by Len Wagg and Jeff Amos)

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## Appendix 1

### Sable Project Person Hours 2009

(Contractor Reporting)

CONTRACTOR	NS	OC	FOR
AMEC Black & MacDonald	437,321	7,128	178
J Ray McDermott (Secunda Marine Services)	126,263	44,770	0
CHC Helicopters	66,686	28,101	0
Rowan	54,867	4,416	18,804
EM&I Stantec	47,663	5,042	24,510
Offshore Logistics	44,047	0	0
Hercules	42,473	0	0
Northern Transportation Co. Ltd.	29,685	3,780	0
ACCENT Engineering Consultants	22,976	0	0
Seajacks	17,592	8,652	10,728
Dominion Diving	16,260	696	0
Newalta Industrial Services	13,175	0	0
Schlumberger	9,978	14,745	0
Cooper Cameron	7,713	0	0
FI Oilfield	7,491.00	0.00	0.00
Land & Sea	6,884	0	0
Helly Hansen Ltd.	6,681	0	0
Import Tool	6,017	2,816	1,680
Offshore Technical Services Ltd.	5,256	168	0
M-I DRILLING FLUIDS CANADA	5,148	2,016	360
Facility Innovations Ltd.	4,845	100	0
Lloyd's Register	4,159	113	950
Weatherford	3,896.80	394.90	0.00
ABB Inc.	3,627	330	112
HSE Integrated	2,129	0	0
Fugro Jacques	1,108	387	0
W. Labrash	767	0	0
Maxxam Analytics	465	0	0
SGS Canada	392	36	0
Goodall Rubber	364	526	526

## Appendix 2

### 2009 Research and Development Investments

#### 2009 Research and Development Investments (by ExxonMobil and Sable Partners)

Recipient	Program Description	Investor
Petroleum Research Atlantic Canada (PRAC)	Petroleum Research Atlantic Canada (PRAC)	ExxonMobil Canada
St. Mary's University	The Pengrowth-Nova Scotia Professorship in Petroleum Financial Management	Shell Canada
Dalhousie University	Imperial Oil Foundation	Pengrowth
St. Francis Xavier University	Imperial Oil Science Outreach Program	Imperial Oil Ltd.
COOGER	Characterization and Dispersion of Produced Water Discharged from Offshore Platforms	ExxonMobil Canada
Survival Systems et al	Development of Helicopter and Rig Abandonment Suits	ExxonMobil Canada
Nova Scotia Students	The Pengrowth - Nova Scotia Scholarships	Pengrowth
Sable Island Preservation Trust	Study of Selected Plant and Invertebrate Communities Sable Island	ExxonMobil Canada and Partners
Nova Scotia University Students	The Pengrowth-Nova Scotia Innovation Grant	Pengrowth
Nova Scotia High School Students	Student Bursaries	ExxonMobil Canada