

## **ExxonMobil Canada Properties**

### **Sable Offshore Energy Project**

#### **2012 Canada-Nova Scotia Benefits Report**



**Submitted to the**

**Canada-Nova Scotia Offshore Petroleum Board**

**March 31, 2013**

Cover Photo - Goldboro Gas Plant - Goldboro, Nova Scotia

<b>Executive Summary</b> .....	<b>3</b>
<b>1.0 Introduction</b> .....	<b>4</b>
<b>2.0 Project Update</b> .....	<b>5</b>
<b>3.0 Economic Impacts</b> .....	<b>9</b>
<b>4.0 Diversity and Inclusion</b> .....	<b>14</b>
<b>5.0 Capacity Development</b> .....	<b>16</b>
<b>6.0 Research and Development Initiatives</b> .....	<b>22</b>
<b>7.0 Community Education and Participation</b> .....	<b>27</b>
<b>APPENDICES</b> .....	<b>33</b>

List of Tables

Table 1 – Supply Community Services .....	5
Table 2 - 2012 Expenditures .....	9
Table 3 - Cumulative Expenditures .....	9
Table 4 - 2012 Person Hours .....	10
Table 5 - Person Hours - Cumulative .....	11
Table 6 - Year End Headcount.....	11
Table 7 - Residency of New Hires .....	12
Table 8 - Co-op Work Placements.....	13
Table 9 - Traditionally Under-represented Groups .....	14
Table 10 - Training and Education Expenditures .....	16
Table 11 - Training and Education Expenditures – Cumulative .....	16
Table 12 - Research and Development Initiatives Historical .....	22

Appendices

- Appendix 1 - 2011 Sable Project Person Hours
- Appendix 2 - 2011 Research and Development Investments

## **Executive Summary**

ExxonMobil Canada Properties (EMCP) as the operator of the Sable Offshore Energy Project (SOEP) is submitting the 2012 Canada - Nova Scotia Benefits Report to the Canada-Nova Scotia Offshore Petroleum Board (CNSOPB). The report is submitted 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 and addresses Sable Project benefits activities for the period January 1, 2012 to December 31, 2012.

Total project related expenditures in Nova Scotia during this period were \$146.6 million or 52.9% of the overall project expenditures for the year. EMCP and the Sable Project owners continued to support initiatives aimed at developing and sustaining the natural gas industry in Nova Scotia.

This report provides information on the cumulative SOEP expenditures since project sanction in 1998. The cumulative expenditures in Nova Scotia over this period total \$2,494.0 million or 38.7% of the overall project expenditures.

Expenditures and initiatives were carried out in areas of community support, education and training, research and development, technology transfer and support of diversity and inclusion programs.

## 1.0 Introduction

EMCP has prepared this 2012 SOEP Canada-Nova Scotia Benefits Report for submission to the CNSOPB as required by Condition 9 of the Sable Offshore Energy Project Benefits Plan Decision Report issued in 1997. The report includes economic impact data arising from producing operations conducted in 2012 as well as cumulative data compiled since project sanction in 1998.

The following SOEP facilities were operated by EMCP in 2012 and are included in the scope of this report:

### Offshore Facilities

- Thebaud Central Processing Platform
- Venture Platform
- North Triumph Platform
- Alma Platform
- South Venture
- Export and Inter-field Pipelines

### Onshore Facilities

- Goldboro Gas Plant
- Point Tupper Fractionation Plant
- Interconnecting NGL Pipeline

## 2.0 Project Update

### Safe Operations

SOEP’s onshore and offshore operations continued to achieve favourable safety performance during 2012. The achievements of the onshore and offshore workforces - no lost time injuries for 11 and 9 years respectively are best in class. One of the cornerstones of this performance is the Operations Integrity Management System which has been successfully implemented through the active support and participation of the EMCP employees and contractors here in Nova Scotia. The structured safety management systems and programs have been instrumental in sustaining a well-established safety culture.

Safety initiatives such as safety focused training, workshops to share lessons learned, hazard recognition programs, looking out for others and recognition, to highlight a few, were implemented throughout 2012. These initiatives and others helped achieve the results and develop a safety culture.

### Supply Community – Supporting Services

Nova Scotia contractors and service providers play an important role in sustaining the success of the SOEP. During 2012 the local industry has provided many critical support services that are used by both offshore and onshore operations. Table 1 below lists examples of these services and the areas of the SOEP operations that have been supported.

**Table 1 – Supply Community Services**

<b>Support Services Provided by the Supply Community</b>	
<p><b><u>Operations</u></b></p> <ul style="list-style-type: none"> <li>- Aviation services</li> <li>- Supply vessels and Marine crews</li> <li>- Catering personnel</li> <li>- Logistics and stevedoring</li> <li>- Staffing services</li> <li>- Laboratory testing and analysis</li> </ul>	<p><b><u>Business Services</u></b></p> <ul style="list-style-type: none"> <li>- Communications services</li> <li>- Customs clearance and brokerage</li> <li>- Courier services</li> <li>- Staffing services</li> <li>- On-land transportation services</li> <li>- Warehousing</li> </ul>
<p><b><u>Maintenance</u></b></p> <ul style="list-style-type: none"> <li>- Skilled Trades and services such as welding, mechanical fabrication, electrical, instrumentation,</li> </ul>	<p><b><u>Engineering and Technical</u></b></p> <ul style="list-style-type: none"> <li>- Technical support staff and engineering design services</li> <li>- Equipment inspection services</li> </ul>

<ul style="list-style-type: none"> <li>insulation and general labour</li> <li>- Painting and Fabric maintenance</li> <li>- Fabrication services</li> <li>- Maintenance materials and consumables</li> <li>- Valve and equipment services</li> <li>- Equipment and tool rentals</li> <li>- Scaffolding services</li> </ul>	<ul style="list-style-type: none"> <li>- Data analysis</li> <li>- ROV inspection services and personnel</li> <li>- Survey services</li> <li>- Certification of facility design, maintenance and integrity</li> </ul>
<p><b><u>Safety, Health and Environment</u></b></p> <ul style="list-style-type: none"> <li>- Safety advisory services</li> <li>- Safety equipment</li> <li>- Safety training services</li> <li>- Environmental monitoring and testing services</li> <li>- Medical personnel and associated services</li> <li>- Weather monitoring and forecasting</li> <li>- Sea state monitoring – waves and currents</li> </ul>	<p><b><u>Well Services</u></b></p> <ul style="list-style-type: none"> <li>- Equipment rentals and consumables</li> <li>- Staffing services</li> <li>- Logistics</li> </ul>

**Sable Wind Project – Leveraging the Benefits of SOEP**

The Municipality of the District of Guysborough, in partnership with Nova Scotia Power, will develop a 13.8 MW wind farm near the communities of Canso / Hazel Hill, the first large scale wind farm to be developed by a Municipality in Nova Scotia. The project is expected to produce enough energy to serve approximately 4,600 homes. The Nova Scotia Department of Energy has set a renewable energy target that 25% of Nova Scotia Power’s generation must come from renewable energy sources by 2015. The Sable Wind project could play a role in this future achievement.

The Municipality credits tax revenue from the Sable Project with enabling it to make the investment needed to establish the Sable Wind project and is seeking to create a lasting legacy that provides further benefits to the community in the form of revenue from the sale of electrical power. Plans for the development of the wind farm are progressing with a possible startup date of 2014.



### **Coordinating with community based responders**

During 2012 EMCP continued to work with the local area first responders as part of our mutual preparation for emergencies and unforeseen events. Safety and environmental protection is paramount at the Sable Project and one of the fundamental elements of our approach to protecting safety and the environment is preparing for emergencies in the unlikely event of an incident.

EMCP's emergency plans are tested on a regular basis and On June 23rd, 2012 an emergency response exercise was conducted for a scenario involving the 8" Natural Gas Liquids (NGL) pipeline that links the Goldboro Gas Plant and the Point Tupper Fractionation Plant. Among the external organizations participating in this exercise were:

- Local RCMP
- Fire Departments from Port Hawkesbury and Port Hastings
- Emergency Health Services
- Emergency Measures Organization
- NuStar / Point Tupper Marine Services

Local area residents were made aware of the plan to conduct the exercise through radio and print advertising

## Emergency Response Exercise

ExxonMobil Canada, as operator of the Sable Offshore Energy Project, will be conducting an emergency response exercise in the Point Tupper Industrial Park on Saturday, June 23, 2012 from approximately 8:30 a.m. until noon.

Exercise participants will include local police, fire and other emergency response organizations. During this time, members of the public may notice these emergency responders proceeding with lights and sirens in the area of the exercise.

We appreciate your understanding for any disturbance this causes. The exercise is part of ExxonMobil's commitment to ensuring that responders are prepared to act quickly and effectively in the unlikely event of an emergency.



### 3.0 Economic Impacts

This section includes the economic impact data for the SOEP for 2012 as well as the cumulative data that has been submitted to the CNSOPB since project sanction in 1998. The project expenditures have been classified in one of three categories listed below based on the *Canadian General Standards Board Method*, which has been adopted by the CNSOPB for local benefits reporting purposes.

- *Nova Scotia,*
- *Other Canadian or*
- *Foreign*

In addition to expenditures, three other indicators of economic impact (person hours, headcount and new hires) are also reported.

In preparing the 2012 report EMCP reviewed information provided by SOEP vendors, the scope of work for the vendor and the guidance available from the Canadian General Standards Board (CGSB) reporting guidelines. Data quality assurance methods used in the preparation of previous Benefits Reports were applied in the preparation of the 2012 report.

#### Project Expenditures

The total project expenditures and percentages in each of the three categories for 2012 and historically are provided in Tables 1 and 2 below:

**Table 2 – 2012 Expenditures (\$ millions)**

	<b>Nova Scotia</b>	<b>Other Canadian</b>	<b>Foreign</b>	<b>Total</b>
<b>Total Expenditures</b>	77.6	39.6	29.4	146.6
<b>% of Total</b>	52.9%	27.0%	20.1%	100%

**Table 3 – Cumulative Expenditures (\$ millions)**

	<b>Nova Scotia</b>	<b>Other Canadian</b>	<b>Foreign</b>	<b>Total</b>
<b>December 31, 2008</b>	2,066.6	944.2	2,586.5	5,598.3
<b>% of Total</b>	36.9%	16.9%	46.2%	100%

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

<b>December 31, 2010</b>	2,341.6	1,048.5	2,765.5	6,155.6
<b>% of Total</b>	38.1%	17.0%	44.9%	100.0%

<b>December 31, 2011</b>	2,416.4	1081.9	2,800.6	6,298.9
<b>% of Total</b>	38.4%	17.2%	44.4%	100%

<b>December 31, 2012</b>	2,494.0	1,121.5	2,830.0	6,445.5
<b>% of Total</b>	38.7%	17.4%	43.9%	100%

## Project Employment

### Person Hours of Work

As with expenditures, person hours of work are categorized as 'Nova Scotia', 'Other Canadian' or 'Foreign' based on the location of the work. In 2012 a total of 650 thousand person hours were conducted for SOEP activities. The Nova Scotia component (work done in Nova Scotia) was 606 thousand hours or 93% of the total. This represents 303 full-time equivalent positions in Nova Scotia during 2012.

Information on the person hours of work in the three categories for 2012 and cumulatively for the project is provided in the tables below. Data on person hours by major vendor is included in Appendix 1.

**Table 4 – 2012 Person Hours  
(Thousands of Person Hours)**

	<b>Nova Scotia</b>	<b>Other Canadian</b>	<b>Foreign</b>	<b>Total</b>
<b>Person Hours of Employment</b>	606.48	36.33	6.97	649.78
<b>Percent of Total</b>	93.3%	5.6%	1.1%	100.0%

**Table 5 – Person Hours - Cumulative**  
(Millions of Person Hours)

Year Cumulative as of December 31	Nova Scotia	Other Canadian	Foreign	Totals
1998 - 2008	18.63	3.18	9.23	31.04
% of Total	60.1%	10.2%	29.7%	100
2009	19.92	3.30	9.29	32.51
% of Total	61.27%	10.16%	28.57%	100
2010	20.69	3.37	9.29	33.35
% of Total	62.03%	10.10%	27.87%	100
2011	21.23	3.40	9.29	33.92
% of Total	62.59%	10.02%	27.39%	100
2012	21.84	3.44	9.30	34.58
% of Total	63.16%	9.95%	26.89%	100

### Year End Headcount

The year-end head count is a measure the number of people on shift and scheduled to work on the Sable project at a fixed point each year (December 31<sup>st</sup>). It differs from the full-time equivalent data reported under the person hours measure because it represents a point in time as opposed to all employment activity over the full year. The data is sourced from the EMCP work sites and reports provided by the project's major contractors. The Project year end headcount was 260 on December 31, 2012.

**Table 6 – Year End Headcount**

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

2009	320	11	342
2010	218	0	225
2011	212	1	218
2012	251	9	260

### Residency of New Hires

The total number of new hires reported for the Sable Project and its major contractors during 2012 was 62. The table below shows the historic distribution of the Residency of New Hires for the Sable Project.

**Table 7 – Residency of New Hires**

Year	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
2010	29	3	0	32
2011	39	0	0	39
2012	47	11	4	62

### Co-op Student Employment

Co-op and work placement programs were supported by EMCP and our contractors in 2012. During 2012 there were eight placements at EMCP and our contractors and the total expenditure on this initiative was \$165,400.

This long standing initiative of the Sable Project has provided almost six hundred individual placements since project sanction in 1998. The meaningful assignments that are a part of this program enhance the individual's education and provide benefits to the business activities.

The 2012 program provided work opportunities for students of varied disciplines. Students pursuing engineering and accounting degrees worked with mentors and gained hands on experience with day-to-day operational and business challenges. The students learned about EMCP's and our contractors' business and engineering practices, PC computer applications and accounting systems with a focus on supporting on-going operations, reporting and analysis activities.

The work activities provide relevant experience for those students planning to pursue engineering or CMA or CGA accounting designations upon graduation.

Information on the co-op program expenditures is provided in the table below.

**Table 8 – Co-Op Work Placements**

<b>Year</b>	<b>Number of Placements</b>	<b>Cumulative Placements</b>	<b>Investment</b>	<b>Cumulative Investment</b>
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
2010	7	577	\$100,360	\$5,430,097
2011	7	584	\$93,694	\$5,523,791
2012	8	592	\$165,400	\$5,689,191

## 4.0 Diversity and Inclusion

EMCP continued previously initiated efforts to develop a diverse and inclusive workplace. Data from 2012 and previous years on the four designated groups identified in employment equity legislation is included in the table below. These groups are:

- Aboriginal Peoples
- Visible minorities
- Women
- Persons with disabilities

Information regarding gender representation is gathered from existing Human Resources records. Representation of other designated groups is based on voluntary self-identification data gathered through a confidential survey employee. The information is collected and recorded on employee files in the company's human resources database, accessible only by select designated HR staff.

The following table provides the 2012 data collected from EMCP and the SOEP contractors along with a historical indication of individuals who identified themselves as members of one or more designated groups since 2001. Those categories in which the representation is five individuals or less are marked by an asterisk to protect the privacy of individual respondents.

**Table 9 – Traditionally Under-represented Groups**

Year	Aboriginal Peoples	Visible Minorities	Women	Persons with disabilities
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	*
2007	*	13	83	*
2008	*	9	61	*
2009	6	11	60	*
2010	7	7	55	*
2011	*	8	45	*
2012	6	7	56	*

Beginning in 2010 the ExxonMobil Foundation and the Imperial Oil Foundation committed to a five year, \$4 million innovative national community leadership program for Canadian Indigenous women. The program was established at The Coady International Institute of Antigonish.

The program has three components over the course of four months:

- A three-week course at the Coady International Institute, which includes training in Project Management, Aboriginal History, Leadership, Asset-Based Community Development, Positive Interpersonal Engagement Strategies and Proposal Writing.
- A three-month work placement which is identified and negotiated by the participant with the approval of the IWCL program manager.
- One week and a half at the Coady International Institute, which includes a two day course in Public Speaking and an opportunity for participants to reflect on their placement and the overall program; to present their community project placement results, and to graduate.

The Indigenous Women in Community Leadership (IWCL) program provides First Nation, Métis and Inuit leaders the opportunity to develop their leadership skills and experience so they can promote community development from within.

## 5.0 Capacity Development

Capacity development initiatives including focused oil and gas related training, supplier development and technology transfer continued during 2012. Additional information on these initiatives is provided below.

### Training and Education

Training and education expenditures for 2012 are included in the table below. These expenditures were aimed at developing or maintaining oil and gas industry relevant skills and include expenditures by EMCP and major contractors.

**Table 9 – Training and Education Expenditures**

<b>(Including Co-op/Work Placement Programs, Community Training and Education Investments)</b>	
<b>Description of Training</b>	<b>2012 Total</b>
Internal Training	\$39,819
Major Contractor Training	\$475,768
Co-op Programs	\$165,400
2012 Totals	\$680,987

The cumulative project expenditures on Training and Education, including 2012 data, exceeds \$48 million. The cumulative data is presented in the table below.

**Table 10 – Training and Education Expenditures - Cumulative**

<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
2010	\$1,234,541	\$47,046,204
2011	\$687,403	\$47,733,607
2012	\$680,987	\$48,414,594

In addition to direct training and education activities undertaken by EMCP and our major contractors, EMCP 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**

Techsploration is a joint initiative of the NS Community College, WITT National Network (Women in Trades and Technologies), and the Nova Scotia Department of Education - Apprenticeship Division, to promote careers for women in trades and technology occupations. It has been sponsored by EMCP and the Sable owners, and some of the Sable project contractor / suppliers since 1998. The support has been in the form monetary contributions as well as mentors.

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.

Techsploration uses a combination of career research, role models and workshops to expose young women to a variety of career options in trades and technologies. The program is being delivered through the schools with the full involvement of the participants' teachers. A team of ninth grade women is chosen from each participating school. Each team is assigned a high-demand trade or technology career to research with the assistance of a role model who is employed in that career. The teams then create interactive presentations that are shared with the other participants, allowing them to learn about a number of career options.

Techsploration Day is an annual event when Techsploration students and their role models gather together for activities and deliver presentations on their researched careers choices. The young women also attend activity workshops planned and conducted by their role models. The workshops are designed to garner attention and interest, and to highlight the skills required for specific jobs.

It is not just the young women participating in Techsploration Day who benefit from this program. The participants bring the knowledge they acquire back to their classes; "Techsploration Goes to School." Students who have not been selected will have the

opportunity to see the participants' presentation, learn about the Career Research Model and meet the role models. This element is beneficial not only to the young women who did not participate directly in the program, but will also benefit the young men in the class who will learn about the career from a positive female role model.

Exposure to positive female role models working in trades and technology occupations will benefit everyone involved. The young women participating will get hands-on experience in the skills and knowledge necessary for a number of different career options. Through a series of interactive presentations, workshops, and projects the young women will be exposed to careers that they might not otherwise select without the influence of a positive female role model.

The Sable Project 2012 mentor for Techsploration was the Onshore Production Supervisor from the Goldboro Gas Plant and Point Tupper Fractionation Plant. The participating students were from Dr. John Hugh Gillis Regional School in Antigonish. The students visited the Goldboro Gas Plant and learned about the day-to-day job responsibilities of process operators. This was followed by the Techsplorers Event which brought together all the participants of Techsploration, including role models, girls on school teams, Techsplorer alumnae, teachers, sponsors and invited guests to share experiences from their 2012 activities.



*Safety equipment orientation – part of the 2012 Techsplorers site visit to Goldboro*

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

Local engineering, consulting, construction and service related firms have been the principle beneficiaries of this transfer as these local firms have enhanced their in-house expertise and knowledge and in turn enhanced their businesses.

Local firms continue to benefit from the knowledge collected and are actively seeking opportunities to apply these skills at the local, regional and national level. The estimated cumulative value of the technology transfer exceeds \$31 million.

Technology and knowledge transfer have helped with the establishment of safety cultures that extend beyond the Sable project work to other aspects of the vendors work. Sable project vendors have applied the "nobody gets hurt" philosophy to their work throughout the region. The Sable safety culture and lessons learned from contractor safety workshops has helped the vendors reduce accident rates, improve their overall business performance and improve their competitiveness as they seek to obtain work in the oil and gas sector and other business sectors.

During 2012 EM&I Stantec, the Sable Project inspection contractor, continued work on finding and applying more efficient and cost effective methods for equipment inspections. Two new technologies - Digital Radiography (Digi-Rad) and Backscatter Computed Tomography (BCT) have been applied to varying degrees at the Sable Project onshore and offshore facilities.

Additional information on the BCT technology and how it was evaluated during 2012 is provided in the Research and Development section of this report. The development and application of new technologies supports the development of local expertise and supports the on-going operation of oil and gas facilities through improved efficiency and reduced operating costs.

### **International Oil and Gas Training from Cape Breton University**

In early 2012 Cape Breton University (CBU) welcomed 73 ExxonMobil trainees from Papua New Guinea (PNG) as part of a 12-month Advanced Skills Training Program led by LearnCorp International (LCI). LCI works with international clients to identify their training needs and then engages the appropriate mix of partners to provide training solutions. LCI has an on-going multi-year contract with ExxonMobil Global Services to train African, Russian, and Italian nationals in select disciplines associated with the Petroleum industry. LearnCorp has partnered with Cape Breton University and the Nova Scotia Community College to address ExxonMobil's training needs.

The 2012 training represents the second phase of the PNG training program with the first conducted 18 months earlier with training held in Port Moresby, PNG. The students were selected from a competitive pool of almost eight thousand applicants.

While attending CBU the student received customized training programs in four disciplines with emphasis on LNG (Liquefied Natural Gas). Class time and hands-on training used the combined state-of-the-art energy industry labs and training facilities at CBU and the Nova Scotia Community College-Marconi (NSCC) campuses.

Facility Specific Training at PNG LNG facilities will be the third phase of the overall training program. This phase is planned for 2013.

## 6.0 Research and Development Initiatives

Condition 4 of the SOEP Benefits Plan Decision Report requires a research and development (R&D) plan be approved by the CNSOPB. Under the current approved R&D plan, EMCP and the Sable owners have committed to 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.

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 continued to support broader R&D activities in Nova Scotia during 2012.

The 2012 R&D activities amounted to \$766 thousand. The cumulative R&D expenditures by the owners and contractors since project sanction in 1998 exceeds \$28.7 million.

Please see the table below for historic research and development initiatives reported.

**Table 12 – Research and Development Initiatives Historical**

Year	Investment	Cumulative
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
2010	\$627,600	\$27,347,641
2011	\$613,600	\$27,961,241
2012	\$766,466	\$28,727,707

## **Examples of Supported R&D Initiatives**

### Supporting Geoscience Research at Nova Scotia Universities

In 2012 EMCP and the Sable owners began the next phase of the R&D plan developed in response to Condition 4 of the SOEP Benefits Plan Decision Report. A key element of this phase is the support for geological and geoscience research at Dalhousie University. In addition to a multi-year financial commitment of \$375,000 per year to research initiatives, the Sable owners provided researchers with access to a comprehensive set of seismic data that was collected in the offshore Nova Scotia Sable sub-basin.

The combination of the financial commitment and access to the seismic data will provide practical tools and research opportunities for local student researchers.

### Pengrowth Nova Scotia Energy Scholarship Programs

The Pengrowth Nova Scotia Energy Scholarship Programs provides financial support through the Energy Scholarship and Innovation Grant Program. These programs provide resources to ensure the success of future oil and gas industry leaders.

Established in March 2005, the \$3 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 \$1million to over 150 students in the form of university and trade scholarships and innovation grants at the Masters level of university studies. The program consists of the following components:

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

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

Emma Poirier, of Cheticamp, a master's student in Applied Science at Saint Mary's University, is one of the 2012 recipients. Ms. Poirier is studying tidal energy in the Bay of Fundy and how it creates and affects sediment in the water.

Nicholas Dourado, of Calgary, a master's student in Physical Oceanography at Dalhousie University, is another 2012 recipient. His research is focused using sonar technology to understand how ice in the Minas Passage could be a risk to tidal energy equipment.

Darragh O'Connor is a 2011 recipient of an Innovation Grant. His research examining elements of specific sediments that make up the Mesozoic basins off Nova Scotia

carried forward into 2012. This research will allow past reservoirs to be re-examined and help judge the potential of current ones.

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

Up to 12 renewable scholarships, valued at \$10,000 each (\$2,500 per year over four years), are awarded annually to students pursuing energy related studies at a university. The program also offers up to ten non-renewable \$2,500 scholarships for first-year students pursuing energy related trades and technology programs at the Nova Scotia Community College.

In 2012 there were 22 students were chosen to receive Pengrowth-Nova Scotia Energy Scholarships.

Application of New Technologies in Offshore Oil and Gas

During 2012 EMCP and the Sable owners funded studies aimed at applying new technologies to offshore oil and gas assets. Backscatter Computed Tomography (BCT) brings the diagnostic capability of medical Computed Tomography (CT or CAT scan) to the management of offshore oil and gas assets, providing information not available with current inspection techniques. BCT enables the inspection of multi-layered assets, while in operation and without disassembly. This capability decreases shut-down scope, increases up-time, and reduces the need for confined space entry.

The goal of this project was for Inversa Systems Ltd. and EM&I Stantec Ltd., to fully evaluate Inversa's current INSIGHT™ system and to identify capability gaps for the in-service inspection of offshore insulated vessels. This work extends a proof of concept feasibility study conducted in partnership with Petroleum Research Atlantic Canada (PRAC), EM&I Stantec and Inversa at the Goldboro natural gas processing plant in September 2010.

In this project, the first commercial version of the INSIGHT™ system was evaluated using test plates with manufactured defects with varying geometries and dimensions, as well as an offshore trial on the Thebaud platform. This system was designed to visualize defects and was extended to gauge remaining wall thickness for this project.

Based on the 2012 work, another suitable application to the offshore environment has been identified. This next application has the potential to better manage certain repairs and assist in shutdown scheduling. With the continued support of the Sable owners and the technology owners, continual improvement will extend its applicability to many additional asset types within the offshore environment.





*BCT Scanner on Insulated Piping*

Imperial Oil Foundation - St. Francis Xavier University and Dalhousie University

The Imperial Oil Foundation's support for the science outreach program on the campus of St. Francis Xavier University in Antigonish and in schools throughout northeastern Nova Scotia continued in 2012. The 2012 program offered eight on campus and eight off-campus as well as four Aboriginal science camps. The program employs eight instructors who studying in science and technology degree programs at the University.

The Foundation also continued to support the Math Circles initiative at Dalhousie University in Halifax. The purpose of the program is to foster interest in mathematics among high school students and expose them to mathematics beyond the high school curriculum. Math Circles began as an initiative of graduate students in the Department of Mathematics and Statistics and to date over 40 different high schools in the province have been visited as part of this initiative.

Sable Island Research – Beached Bird Surveys

During 2012 EMCP and the Sable owners continued funding of a research project carried out on Sable Island where regular surveys were conducted to gather data on beached birds. The data has been collected for a number of years in an effort to monitor trends in the number and rates of oiling in beached seabirds. Specimens were collected in order to identify possible oil types contributing to any observed oiled birds.

Overall the objectives are:

- To monitor trends in oiling rate in beached seabird corpses over the long term;  
and
- To generically identify oil types found on seabird feathers and in pelagic tar.

## 7.0 Community Education and Participation

EMCP, its employees and many of the Sable Project major contractors have a history of supporting the communities in which we live and work. Wherever we operate, we try to strengthen local communities by donating time, talent or money to many organizations that provide much-needed services or enhance the culture of the our community.

Some of the highlights from our 2012 activities are noted below.

### **United Way**

The United Way provides support for services in many of the Nova Scotia communities in which we operate or our employees and contractors live. During 2012 EMCP and Imperial Oil employees continued to support the United Way through direct giving, payroll deduction and volunteering their time to the many charitable organizations that function under the United Way umbrella. Participation and overall giving remains at a high level.

### **President's Safety Award**

The ExxonMobil Canada President's Safety Award was established in 2008 as a way to recognize and celebrate employees who exercise safety leadership in the workplace. The award recognizes up to two individuals or work groups, employees or contractors per month who have exceeded expectations in the areas of safety, health, environment and security and consists of a gift of \$1,000 to a qualifying local not-for-profit educational or health care institution chosen by the award winners.

During 2012 qualifying recipients of this award at the Sable Project supported the following community based organizations

- Children's Wish Foundation
- IWK
- Crohns & Colitis Foundation
- Big Brothers and Big Sisters of Greater Halifax
- John Bernard Croak Memorial School
- New Germany & Lions Club
- The Life Center Community Outreach

### **Volunteer Involvement Program (VIP)**

EMCP 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.

### **Nature Conservancy of Canada**

The Nature Conservancy of Canada (NCC) protects areas of natural diversity for their intrinsic value and for the benefit of our children and those after them. EMCP has supported the work of the NCC for a number of years and in 2012 Shell Canada, one of the Sable Project owners also supported NCC activities in Nova Scotia.

One of the NCC's projects conducted in 2012 was at Deep Cove, a property totaling 838 acres bordering Hollahan Lake on Nova Scotia's South Shore, about 60 kilometres southwest of Halifax. The NCC's conservation areas here feature possibly the largest stand of jack pine in the province, a thriving forested bog and rare lichens. Together they form a vast ecological corridor that functions to maintain the health of local ecosystems and foster regional biodiversity.

The protected Deep Cove properties are an untouched wilderness that have kept some of Nova Scotia's rarest species safe from extinction. In addition to preserving large stands of fir, white and jack pine trees, rare lichens and excellent amphibian habitat, the bog at Deep Cove also works to purify local groundwater.



*Deep Cove, Nova Scotia (Photo by Mike Dembeck)*

The Shell Conservation Internship supported two university students in conducting baseline surveys and monitoring for the NCC in areas of Nova Scotia such as Sandy Bay, Gaff Point and various saltwater marshes. The students were graduate level students with backgrounds in biology and earth sciences and were able to apply skills developed through education in support of NCC's overall objectives.

### **Bursaries**

Qualifying students graduating from seven high schools in Guysborough, Inverness, Antigonish and Richmond counties were awarded bursaries funded by the Sable Project owners. These bursaries assist with the cost of postsecondary education. A total of 24 bursaries were awarded under this program in 2012.

### **The Discovery Centre**

The Discovery Centre is located in downtown Halifax and offers three floors of interactive fun and education through permanent and temporary exhibits, HD movies, live science shows and many special events and outreach activities. The centre is a resource for families looking to spend quality time with their children, or for schools and groups looking to provide a quality educational opportunity for their students or members. EMCP is a supporting partner of the Discovery Centre.

One of the exhibits featured in 2012 was entitled "*Be the Dinosaur: Life in the Cretaceous*". The exhibit was presented for the first time in Canada and included the world's first dinosaur simulation ever created, and was the world's most complex and far reaching restoration of dinosaurs and their environment. The exhibit was developed with an expert advisory panel from the fields of paleontology, academia and interactive entertainment to ensure high value educational content. The exhibit also includes a number of fossils, information stations, and educational materials.

### **NS YES! Youth Experiences in Science**

Nova Scotia Youth Experiences in Science (NS YES!) is a group of parents, teachers, students, and professional scientists working to create enjoyable and educational science experiences for Nova Scotia youth. NS YES! is a non-government, non-profit organization that is overseen by a volunteer board of directors with a mission to inspire young Nova Scotians to experience science in their lives, and to celebrate their discoveries. In 2012 EMCP partnered with the NS YES and the Nova Scotia Department of Education as part of program to enhance the understanding of Nova Scotia's geology. Under this program every elementary and junior high school in the province was provided a collection of rock samples that tell the story of Nova Scotia's geological history.

## The Stan Rogers Folk Festival

EMCP and the Sable owners have provided sponsorship support to the Stan Rogers Folk Festival (or Stanfest) which was held in July in Canso. The three-day festival brings upwards of 10,000 people to Canso to enjoy world renowned folk artists in a picturesque setting. Stanfest was established to honour the legacy of Stan Rogers – an artist that managed to influence a whole generation of performers, while contributing to the emerging popularity of East Coast Music. Stan was a frequent visitor to Canso and Guysborough County. These visits inspired Stan to write songs like The Jeannie C., Guysborough Train and Fogarty's Cove - and they also earned Stan a place in the local folklore of the town and the region.



*Stanfest – Canso, Nova Scotia*

### **Phoenix Youth Programs**

EMCP has supported the programs carried out by Phoenix House and Phoenix Youth for a number of years. This is a non-profit, community based organization located in Halifax that offers at-risk and homeless youth ages 12 to 24 the opportunity to break the cycle of homelessness and find a better path. The services are free of charge to any youth who reaches out. Phoenix House offers a wide range of programs and services including: prevention, crisis assistance, emergency and long-term shelter, employment and learning assistance, counseling, parent support, food, laundry, medical support and more.

### **Neptune Theatre**

EMCP and the Imperial Oil Foundation continued to support Neptune Theatre in 2012 as a presenting sponsor of season's finale production of the Les Cage aux Follies. Neptune Theatre is Atlantic Canada's largest professional regional theatre. The theatre is also home to a year-round Theatre School which runs classes, camps and workshops for theatre enthusiasts of all ages. Neptune Theatre School also coordinates elite training programs, such as the Youth Performance Company, the Pre-Professional Training program, the Musical Theatre Foundation Program and the Young Actors Company, which give aspiring local actors an opportunity to work with and learn from this region's top artistic talent.

### **Granville Green Outdoor Concert**

EMCP and the Sable owners continued to support a series of free Sunday concerts held throughout the summer in Port Hawkesbury. Each summer regional and national artists visit Port Hawkesbury to share in this unique musical opportunity. The outdoor concerts provide a stage for local musicians and continue to attract both tourists and local fans.

### **Festival Antigonish**

The Sable Project has been a supporter of Festival Antigonish since the late 1990's. The Festival has become a place where Nova Scotia artists can create dynamic new works and gain valuable experience performing in works produced to the highest artistic and technical standards. Some of Nova Scotia's finest playwrights, directors and performers have originated new works and honed their performance and directing skills at Festival Antigonish.

### **Mulgrave Road Theatre**

The Mulgrave Road theatre has been supported by the Sable Project for a number of years. The Theatre's roots in Nova Scotia extend back to 1977, when a group of energetic young artists and playwrights founded the company in Guysborough County.

From its earliest beginnings, the company's vision has been to create, develop and produce theatre inspired by the Nova Scotia experience. As a professional touring theatre, Mulgrave Road has enabled a wide audience to experience acclaimed works by some of Atlantic Canada's most respected playwrights. Over 10 productions have toured outside of the Maritimes to destinations such as Ottawa, Toronto, Vancouver, Winnipeg, Edmonton, Ireland, Australia and New Zealand. Local performances are held at the Guysborough Masonic Hall, at the Mulgrave Road Theatre Centre, and at Guysborough's 300-seat performance space, Chedabucto Place Performance Centre. Mulgrave Road Theatre has also made a commitment to reaching out to young performers.



**APPENDICES**

Appendix 1 – 2012 Sable Project Person Hours ..... 34

Appendix 2 - 2012 Research and Development Initiatives ..... 35

**Appendix 1**  
**Sable Project Person Hours 2012**  
**EMCP and Major Contractors**

	NS	OC	FOR
ABB	2,070	27	0
Engineering Support (ACCENT/CBCL/Eastpoint)	6,000	0	0
AMEC	156,443	661	0
AOMS	4,000	0	0
Cooper Cameron	898	0	0
Cougar Helicopters	36,768	10,863	0
East Coast Catering	16,000	0	0
EM&I	36,051	241	6,806
ExxonMobil Canada (Sable Project)	200,872	0	0
Helly Hansen	1,327	0	0
Lloyd's Register	1,692	177	164
Newalta	2,832	0	0
Reliance Offshore	22,267	0	0
Secunda	106,513	24,288	0
SGS	12,755	72	0
Total	606,486	36,328	6,970

## Appendix 2

### 2012 Research and Development Initiatives

Recipient	Program Description	Investor
Dalhousie University	Geoscience Research	Sable Owners
Dalhousie University	Imperial Oil Foundation	Imperial Oil Ltd.
EM&I Stantec	Backscatter Computed Tomography (BCT) Evaluation	Sable Owners
Nova Scotia Students	The Pengrowth - Nova Scotia Scholarships	Pengrowth
Nova Scotia University Students	The Pengrowth-Nova Scotia Innovation Grant	Pengrowth
St. Francis Xavier University	Imperial Oil Science Outreach Program	Imperial Oil Ltd.
Zoe Lucas	Beached Bird Survey	Sable Owners