OIL, GAS AND SALT RESOURCES TRUST

1998 BUSINESS PLAN

Submission to Ontario Ministry of Natural Resources
by
Ontario Petroleum Institute Inc.

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Oil, Gas and Salt Resources Trust - Proposed Business Plan

1. 0 Executive Summary

The Oil, Gas and Salt Resources Trust is a non-profit organisation which funds information management, research, and laboratory and library operations and facilities relating to oil, gas, salt and underground hydrocarbon storage resources in the province of Ontario. The trust is funded by and provides services to companies and individuals involved in oil and gas exploration, drilling or production; the storage of hydrocarbons in geological formations, the disposal of oil field fluid in geological formations, and solution mining. Services are also available to the general public, universities and other clients on a cost-recovery basis.

1. 1 Objectives

1. Negotiate a trust agreement with the Ontario Ministry of Natural Resources (MNR).
2. Establish a budget and a mechanism for funding.
3. Hire and train staff to operate the Oil, Gas and Salt Resources Library and provide client services.
4. Establish an operating plan and schedule of fees and services.
5.Form partnership with MNR for maintenance and marketing of digital database on oil, gas and other wells in Ontario.

1. 2 Mission

The Oil, Gas and Salt Resources Trust specializes in the collection, generation, and dissemination of information and knowledge about the subsurface geology and oil, gas, salt and underground hydrocarbon storage resources of Ontario. It will provide its clients in these resource industries with the data they need to conduct their business in the most orderly, safe and efficient way possible, and provides public access to this data at reasonable cost.

1. 3 Keys to Success

1. Supportive industry and government partners, particularly the Petroleum Resources Centre of the Ministry of Natural Resources, and the Ontario Petroleum Institute.
2. Stable long-term funding.
3. Motivated reliable employees.
4. Customer service.
5. Marketable products.

2. 0 Organization Summary

The Oil, Gas and Salt Resources Trust is an organization that specializes in the collection, generation and dissemination of information and knowledge about the subsurface geology and oil, gas, and salt resources of Ontario. Its clients are oil and gas exploration and production companies, salt solution mining companies, hydrocarbon storage companies, earth science departments at Ontario universities, the Ontario Ministry of Natural Resources, and the general public. The Trust will file a report with the Minister of Natural Resources on the financial affairs of the Trust by March 31 of each year for the preceding calendar year.

2. 1 Organization Ownership

The organisation is owned by the Oil, Gas and Salt Resources Trust, created under the authority of the Oil, Gas and Salt Resources Act.

2. 2 Start-up Summary

The Oil, Gas and Salt Resources Trust will take over the operation of the core and cuttings storage, public well files, client services area, and reference library at the Petroleum Resources Laboratory from the Ministry of Natural Resources. The Lab will be renamed the Oil, Gas and Salt Resources Library and will become the centre of operations for the Trust. Furniture, equipment, data files, reference materials and the drill core and cuttings collection currently in the Lab will remain for the use and mutual benefit of the Trust and MNR. It will remain the property of MNR but will be maintained and replaced as necessary by the Trust. This greatly reduces the need for capital for start-up and the administrative cost of inventory and depreciation of assets.

No provision has been made for collection of start-up funds prior to proclamation of the Oil, Gas and Salt Resources Act. Licence fees are the main source of revenue and cannot be collected until Feb. 15 of 1998 when Form 3 - “Well Status Report” is due for submission by operators of licensed wells. Until that time the only sources of revenue will be user fees and sample processing fees. These fees will be insufficient to cover the salary of a lab/library manager. Consequently start-up of information services and transfer of responsibilities for Lab operations from the Ministry of Natural Resources will occur in phases as funding permits. A tentative proposed schedule is as follows. All time periods are after proclamation date.

2. 2. 1 Start-up Schedule

- proclamation day - sample processing fees will be charged for all wells which reach total depth in drilling operations on or after this date. MNR will be responsible for processing all samples for wells which reach TD before this date.
- two weeks - signing of trust agreement between MNR and Ontario Petroleum Institute (OPI). Set up of bank account by OPI in name of Oil, Gas and Salt Resources Trust. Cheques for sample processing fees will be deposited by MNR

staff on weekly basis. OPI establishes book-keeping system and provides MNR with receipt books for licence and sample processing fees received by MNR

- one month - file search services begin, Trust takes over billing for client photocopying of well records, refiling of well records
- three months - Trust assumes responsibility for maintenance of public well files at the Oil, Gas and Salt Resources Library, user fees begin
- six months (or Jan. 1, 1998) - hiring of Library Manager
- Feb. 1, 1998 - full responsibility for daily operations of Oil, Gas and Salt Resources Library assumed by Trust.

2. 3 Services

Availability of accurate geological and resource data is critical to the exploration industry for identification and development of new sources of oil, natural gas and salt, to decrease risk and maximize exploration success, and attract investment capital; to hydrocarbon storage, solution mining and hydrocarbon production industries to guide the safe, efficient and environmentally sound design and operation of underground storage, production, solution mining, and oil field fluid disposal in geological formations; to the Ontario government to provide a sound factual and scientific basis for development of policy and legislation and their enforcement and to protect public interest; to municipal governments to guide formulation of land-use plans, zoning bylaws, and development plans; to the general public to guide decisions on the leasing or development of their mineral rights; to academic institutions to provide high-quality learning opportunities for future scientists and explorationists.

The Trust will maintain and improve access to the existing data, and will develop digital data products to improve client access to information and generate new revenue.

2. 4 Location and Facilities

The Trust Fund will conduct its operations in the Oil, Gas and Salt Resources Library, the former Petroleum Resources Laboratory, a 600 square metre building located in the complex of Ontario government buildings at 659 Exeter Road in London, Ontario. The building is owned by the Ontario Realty Corporation (ORC) and is operated by the Petroleum Resources Centre of the Ontario Ministry of Natural Resources (MNR). The MNR will continue to be the tenant of the building and will continue to use part of the office area for staff offices. MNR will provide suitable office space for Trust staff within the building. The Trust will assume responsibility for their own office space, all of the client services area, the core and sample storage area, the sample processing room, and the outdoor covered storage area formerly operated by the Ministry of Northern Development and Mines. Costs for utilities, cleaning, maintenance, rent and security will be shared with MNR proportional to the amount and type of space occupied. No costs will be charged to or payable by the Trust until after March 31, 1998.

The Library is a resource centre for the study of the subsurface Paleozoic geology and oil, gas, salt and underground hydrocarbon storage resources of Ontario. Drill core from approximately 900 wells and cuttings from approximately 13,000 wells are stored in the unheated storage area which comprises approximately 60% of the floor area of the building. Approximately half of the core and cuttings storage area is occupied by a large number of metal cabinets containing trays of glass vials filled with washed and catalogued drill cuttings. The other half of the storage area is occupied by metal storage racks on which are stored the drill core. Supplies for processing drill core and cuttings are stored above the cabinets. The loading area is located at the south end of the building.

The heated office area is comprised of a large client work room, a staff office and reception area, and a sample preparation room, with full washroom facilities. The client work room is equipped with roller tables for viewing drill core, four cubicles with electrical outlets for microscope examination of cuttings, five desks for file examination, two work tables, and a fiche viewing area. This room contains hanging files of well location maps, file folders of annual oil and gas production reports for the years 1980 to 1996, a library of assorted government publications and periodicals, a transmitted light petrographic microscope with a Nikon camera for photomicrography, and a fiche file of geophysical logs of all wells drilled in Ontario. The room is designed for easy conversion to an open display area for core workshops or audio-visual presentations and lectures to small groups.

The office area houses the public well files with information on over 20,000 wells contained in a large number of four and five drawer file cabinets. Five additional cabinets were recently obtained to allow for growth of the well file collection. Two private offices in this area are occupied by the Subsurface Geologist of the Petroleum Resources Centre of the MNR, and a Petroleum Resources Inspector. A large open work area next to the sample preparation room is equipped with 3 desks, 2 drafting tables and a light table. Near the main entrance is a desk for a secretary/file clerk/librarian/receptionist and a computer work station.

The sample processing room is equipped with a sample processing machine for washing and drying of bagged cuttings samples, a roller table for core preparation, a 14 inch diamond blade saw for longitudinal slabbing of drill core, a small crusher for preparation of core chips, and a 6 inch diamond blade trim saw for sampling of drill core.

3. 0 Services

The goal of the Oil, Gas and Salt Resources Trust is to provide the data needed by its clients to conduct their business in the most orderly, safe and efficient way possible. The Trust will also fund research and publications relevant to the needs of its client industries, dependent on the availability of funds, and organize educational workshops and courses. Public access will be provided at reasonable cost.

3. 1 Service Description

1. Oil, Gas and Salt Resources Library: The Library is a resource centre for the study of the subsurface geology and oil, gas, salt, and subsurface storage and fluid disposal resources of all the potential oil, gas and salt-bearing rocks of Ontario. Resources and data available for study include:

   - drill cuttings samples from approximately 13,000 wells
   - cores from over 900 wells
   - file information on over 20,000 wells, including geophysical logs, formations tops, well history and construction, oil/gas/water zones, initial completion results, core analyses, oil/gas/water analyses
   - an extensive collection of reference books, periodicals and reprints on the subsurface geology and oil, gas, salt and subsurface storage resources of Ontario.

2. Publications: The Trust will publish and market an annual summary of oil, gas, and salt resources exploration, drilling, production and storage in Ontario in partnership with the Petroleum Resources Centre of the MNR. Other publications will be considered contingent on funding and demand. The Trust will also attempt to negotiate a licensing agreement with the MNR and OPI to act as an agent for sale of the geological and resource publications of these organizations which are relevant to the oil, gas and salt resources industries of Ontario.

3. Information management: The Trust will attempt to negotiate a partnership with the MNR to build, maintain and market a digital database of geological and engineering information on wells drilled in Ontario. Database design will be compatible with current models and standards of the Public Petroleum Data Model Association. Details on staffing, licensing and cost-sharing will be negotiated. The Trust will be the data vendor for information on Ontario oil, gas, salt and storage resources, modelled after the services provided by successful data vendors in western Canada. Data will be accessible over the Internet.

3. 2 Technology

The Trust will utilize modern communications technology including Internet e-mail, telephone, fax, courier and mail services. The Trust will purchase a multimedia-capable desktop computer and printer and word-processing, spreadsheet, database, and desktop publishing software. The Trust will also maintain a home page on the World Wide Web to promote the products and services of the Trust and provide improved services to clients.

3. 3 Future Services

The first year of operation of the Trust will focus on transfer of the operation of the Petroleum Resources Laboratory from the Ministry of Natural Resources. Once operations are consolidated and funding is stabilized the Trust will offer a broader range of services, which may include;

1. Research: Funding of applied research projects on the subsurface geology of Ontario and its oil, gas, salt and storage resources that are relevant to the interests of its client industries. Guidelines for proposal and approval of research projects will be established by the Trust Advisory Committee once sufficient funds are available, probably at the beginning of the third year of operation. Possible scenarios include research grants to fund student theses at the masters and doctoral levels, co-funding of research with industry partners, hiring of consultants, etc.

2. Workshops and training courses: The Fund could organize workshops and training courses either alone or in partnership with clients. Currently most of the professional and technical training courses for the oil, gas and salt resources industries are offered at locations outside of Ontario. Some of these training needs are common to several clients and client groups and could be met more efficiently and economically if courses were available locally. Workshops could be offered as early as the second year of operation of the Trust.

3. Geophysical logs. Attempt to negotiate a partnership with International Datashare for management, sale and distribution of their fiche library of Ontario well logs.

4. Water well records. Attempt to negotiate a licensing agreement with the Ministry of Environment for management, sale and distribution of Ontario water well records.

4. 0 Market Analysis Summary

The principal clients of the Trust are companies and individuals who hold licences or permits issued under the authority of the Oil, Gas and Salt Resources Act, and the Petroleum Resources Centre of the Ministry of Natural Resources. These clients pay fees or provide support to the Trust Fund using the formulae defined in the regulations. Other potential clients are consultants to the oil, gas, solution mining and storage industries, university earth science departments, the general public, environmental consulting companies, resource exploration companies with no current Ontario operations, municipal planning agencies, Ontario Geological Survey, Ontario Ministry of Environment and Energy, and real estate agents/lawyers involved in land transactions.

4. 1 Industry Analysis

There is no other commercial or public supplier of this service to the oil, gas and salt resources industries in Ontario. All drill core, cuttings and associated nonconfidential drilling and production data for wells drilled under jurisdiction of the Oil, Gas and Salt Resources Act and its predecessor legislation is presently stored at the Petroleum Resources Laboratory.

Similar facilities exist in Saskatchewan, Alberta, British Columbia, and Manitoba. All of these facilities are government owned and operated. The Core Research Centre operated by the Alberta Energy and Utilities Board in the city of Calgary is a world class facility. It is able to recover 80% of its operating costs through user fees, with the balance provided by the provincial government.

There are several private sector data vendors in western Canada who specialize in providing digital data services to companies which explore for oil and gas in western Canada. The data is obtained under licence from provincial governments or from exploration companies and packaged with data display and management tools designed for the needs of their clients. With the exception of a fiche library of Ontario well logs maintained by International Datashare none of these vendors collect or market data on Ontario wells due to the limited size of the Ontario market and the lack of availability of a suitable database. Consequently, with the exception of International Datashare, these companies are not considered to be competitors. The Trust will attempt to negotiate a partnership with International Datashare for distribution rights to the fiche, and will negotiate with MNR for an exclusive right to commercial marketing and distribution of other MNR oil, gas, salt and storage data.

4. 2 Market Analysis

Current clients of the Petroleum Resources Laboratory comprise 7 different industries; oil and gas producers and exploration companies, oil, gas and environmental consultants, cavern storage companies, solution mining companies, natural gas storage companies, Ontario government agencies, and earth science/geology departments at Ontario universities (Table 1). Collectively these industries operate a total of approximately 3350 wells in Ontario (Table 2).

Two Alberta-based companies accounted for approximately 67% of the 1994 production of natural gas, and 78% of the crude oil. Most of the other oil and gas producers and consultants are small Ontario-based companies, both public and private, often with a single proprietor. Revenue from oil and gas production totalled approximately $90 million in 1994 and again in 1995. Oil production set records in both 1993 and 1994. Gas production is 20% less than the record set in 1985 (Appendix 1).

TABLE 1. Summary of client industries.

Client Industry	# of Companies
Oil & gas producers	126

Oil & gas consultants	17
Natural gas storage	2
Cavern storage	7
Solution mining	3
Ontario universities	9
Government	3 +

TABLE 2. Summary of wells in Ontario as of 1994/12/31

Well Type	**# of Wells**
Oil	1220 (100 suspended)
Gas	1600 (350 suspended)
Cavern Storage	95
Natural gas storage	232 + 70 observation
Solution mining	50 (+30? suspended)
Disposal	50(incl. 14 suspended)

Natural gas storage operations are conducted by 2 companies; Union Gas Limited and Tecumseh Gas Storage, a division of The Consumers' Gas Company Ltd. Both these companies are large publicly-traded natural gas utilities. Cavern storage operations are carried on by 7 refineries and petrochemical manufacturers in the Sarnia and Windsor areas; Amoco Canada, Dow Chemical, Imperial Oil Ltd, Shell Canada Ltd, Sun Oil Ltd, Bayer Inc, and Novacor. These are all large publicly-traded companies with very large capital investments in Ontario. Solution mining operations are carried on by 3 companies; Sifto Inc, Canadian Salt Ltd, and General Chemical Inc. All 3 companies have large capital investments in Ontario.

There a total of 9 Ontario universities with earth science departments which have utilized the services of the Petroleum Resources Laboratory in the past 5 years; University of Western Ontario, University of Waterloo, Queen's University, Carleton University, Brock University, University of Toronto, Laurentian University, University of Windsor, and McMaster University. The Petroleum Resources Centre of the Ontario Ministry of Natural Resources has operated the Lab for the past 25 years and is the largest single user. Other potential government clients include the Ministry of Environment and Energy, the Geological Survey of Canada, and all of the municipal planning agencies in southern Ontario.

Ontario landowners comprise a very large group of potential clients but do not represent a large potential for revenue as their information needs are usually very limited. Other large groups of potential clients are environmental consulting companies, and lawyers/real estate agents involved in land transactions. These two groups should be targets for promoting the services of the Lab. Out-of-province investors such as western Canada-based oil and gas companies are frequent clients but have not been indicated on the market analysis table as the interest of these companies in Ontario is cyclical. Most disposal wells are operated by oil and gas producers and do not constitute a separate industry.

5. 0 Marketing, Pricing and Promotion Summary

The Trust Fund will focus on three geographical markets; Ontario, Alberta, and the north-eastern American states. The target client is usually the operator of oil, gas, solution mining, natural gas storage, oil field fluid disposal or petroleum product storage wells in the province of Ontario, or a consultant providing services to these operators. Outside of Ontario the target client is a resource exploration company considering new locations for investment. Ontario environmental consulting companies and lawyers/real estate agents needing information on wells and their status should be targeted for new business, as well as municipal planning agencies needing resource data for completion of official plans.

5. 1 Marketing Strategy

Principal focus will be provision of services to the oil, gas, salt, and hydrocarbon storage resources industries which will be providing funding for operations through a variety of fees. User fees and publication sales will initially contribute only 10% of the operating revenue of the Trust. This can be increased by; (1) developing new products such as digital databases, and (2) marketing the information services to other industries such as environmental consulting companies and mining exploration companies, to oil, gas and salt resource companies outside of Ontario, and to other government agencies such as planning departments in municipalities. The goal is to increase the percentage of revenue from user fees and publication sales to 20% of total revenue by Jan.1, 1999.

5. 1. 1 Pricing Strategy

The Trust will have three main sources of revenue; well licence fees based on oil/gas production and/or well type, drill sample processing fees, and client service fees and publication sales. Initially, licence fees will provide approximately 68% of the annual revenue of the Trust, client service fees and publication sales 9%, and sample processing fees 23%. Detailed summaries of these fee schedules and calculations are in Appendix III.

The OPI Trust Fund Committee has endorsed licence fees based on production or its equivalent for most types of wells as it is a direct measure of the economic benefit derived from the well by the operator. It also in part reflects Trust staff workload associated with each well since production records must be created and maintained, the files are accessed more frequently by clients, and well work-overs require file and database updates. These fees provide the stable funding needed to ensure the long-term success of the Trust. Licence fees can be used as a credit toward purchasing an annual corporate or individual Library facility membership fee. For example, if a company has paid $1500 or more to the Trust based on its oil or gas production, then it is entitled to a one year corporate membership for use of Library facilities. Fees for other Library services such as staff time and photocopying would still be payable as these incur additional costs to the Trust. Requests for reduced licence fees must be accompanied by evidence (receipt) of payment of licence fees.

User service fees will be priced to promote access to information and knowledge by a wide cross-section of clients and increase the client base. Daily and weekly fees will be priced higher to encourage regular clients to purchase annual memberships to minimize administrative costs for invoicing and fee collection. The minimum daily fee for searching and copying of files will be kept low so that landowners have affordable access to information about their resources. Publications will be priced to recover all preparation, printing and distribution costs. Student fees will be priced very low, conditional on a copy of the research results being made available to the Trust at the conclusion of the research project. In this way research is encouraged and all Trust clients will benefit from the research results. The Trust will reimburse the student for the cost of reproduction and binding of the research report. All users will pay for photocopies, including students, members, landowners and MNR staff.

5. 1. 2 Promotion Strategy

Place ad or write article for OPI newsletter, Michigan Basin Geological Society newsletter, Canadian Society of Petroleum Geologists newsletter and other relevant trade journals. Prepare brochure describing services provided and mail to potential new clients. A home page on the Internet would be an inexpensive and effective way of providing world-wide advertising of Library services.

5. 1. 3 Distribution Strategy

Clients obtain data and information principally by personal visits to the Oil, Gas and Salt Resources Library, and by telephone inquiry. Telephone inquiries are usually followed up by mailing or faxing of file information, maps or publications and invoicing for service fees. Digital files can be mailed on diskettes or e-mailed over the Internet. Once suitable digital databases are available provisions will be made for direct access via Internet, with automatic billing to a credit card account.

5. 2 Strategic Alliances

The Trust will have a close working and business relationship with the Petroleum

Resources Centre of the Ontario Ministry of Natural Resources, and the Ontario Petroleum Institute. Other possible alliances include the Lambton Industrial Society, the Cavern Operators Group, the Ontario Geological Survey, and earth sciences departments of Ontario universities.

5.3 Milestones

The following schedule lists important milestones in the first year of operation of the Trust. The dates indicated are tentative as they rely heavily on the assumption of passage and proclamation of the Oil, Gas and Salt Resources.

1. July 1, 1997 -Proclamation of the Oil, Gas and Salt Resources Act.
2. Oct 1, 1997 - Beginning of user fees.
3. Jan. 1, 1998 -Hiring of library manager.
4. Feb. 1, 1998 - Transfer of responsibility for operation of Oil, Gas and Salt Resources Library.

6. 0 Management Summary

The Trust is a non-profit organization managed by a Trustee appointed by the Minister of Natural Resources. The Trustee is a person who is not employed by the government. The Minister of Natural Resources has invited the Ontario Petroleum Institute Inc. to act as initial Trustee of the Trust. The term of the initial Trustee expires Dec. 31, 1998, and is automatically extended from year to year thereafter subject to the conditions of the Trust Agreement. The agreement can be terminated by either party with ninety days written notice. The Trustee manages the funds as directed by a ten-person Trust Advisory Committee. The scope of Trust operations are governed by a Trust Agreement between the Ontario Petroleum Institute Inc. and the Minister of Natural Resources.

6. 1 Organizational Structure

The Trust Advisory Committee is comprised of one representative of the Ministry of Natural Resources, four representatives of the oil and gas industry, one representative of the natural gas storage industry, one representative of the hydrocarbon cavern storage industry, one representative of the solution mining industry, one member representing academic institutions, and one member representing the general public. Except for the MNR representative, the members are appointed by the Trustee. The member representing the MNR will be a non-voting ex-oficio member.

The Trustee manages the Trust funds, operations and assets as directed by the Trust Advisory Committee and according to the terms of the Trust Agreement with the Ministry of Natural Resources. The money received or held by the Trust does not form part of the Consolidated Revenue Fund. The Trust reports annually to the Minister on the financial affairs of the Trust, and provides the Minister with other such reports and information as he or she may request.

6. 2 Personnel Plan

One employee - the library manager, with a seasonal position for a sample processing technician, if needed. The library manager would manage daily Lab operations for the Trust including collection of daily user fees, marketing, promotion, client services, ordering supplies, writing of annual summary, data and file management, organization of workshops, and supervision and training of any seasonal staff. The manager will also process samples during the initial term of employment. The sample processing technician would be employed on a seasonal basis, probably a student for an 18 week work term in the summer months, or on a service contract and would report to the library manager. Book-keeping and accounting services will be provided by the Trustee.

The MNR Subsurface Geologist and Petroleum Resources Inspector will also retain their offices in the building as they will require regular access to the same information resources as are currently available to them in the Petroleum Resources Laboratory. MNR staff will not provide client services which are normally available through the Trust. In the absence of Trust staff however, clients will still have access to the building for services which do not require staff time. This will allow regular operating hours to be maintained and provide flexibility in scheduling of work hours and vacation time for Trust employees.

7. 0 Financial Plan

The Trust's financial objective is to retain a surplus of revenue over expenditures of 20% in each of the first 5 years with the objective of building a reserve fund equal to one year of expenditures. After that time the fees will be reviewed and revised. This reserve will serve as a contingency against fluctuations in well licence fee revenue caused by hydrocarbon production declines or unforeseen expenditures. Investment income from this reserve fund can also then be used to supplement research funding, or replace it if revenue has declined.

7. 1 Important Assumptions

- The Oil, Gas and Salt Resources Act will be proclaimed on July 1, 1997. Operation of the Oil, Gas and Salt Resources Library will be assumed from the MNR by Feb 1, 1998. Lab manager will be hired Jan. 1.
- The Ministry of Natural Resources will fund processing of drill cuttings and core from wells drilled before proclamation of the Oil, Gas and Salt Resources Act.
- Ontario Realty Corporation will not be charging rent for the Library until April 1, 1998. Rent charged to the Trust will not exceed $20,000/year in the first three

years.

- 1997 oil and gas production is same as 1994, oil decline at 5 % per year in 1998 and 1999, gas decline at 3% per year, hydrocarbon storage capacity and solution mining continue at 1994 rates.

7. 2 Fiscal Year

The fiscal year of the Trust will begin Jan. 1 of each year, ending Dec. 31.

7.3 Sources of Revenue

The Trust has four main sources of revenue, in the following order of importance;

- annual well licence fees
- sample processing fees
- client services fees
- publication sales

Section 16(4) of The Oil, Gas and Salt Resources Act states “The holder of a licence or permit shall pay the prescribed amounts to the trust within the prescribed times.” Licence fee rates are prescribed in Regulation 915 (as amended) under the Oil, Gas and Salt Resources Act and requires payment to accompany Form 3 - Annual Report of Well Status. The report and payment are due by Feb. 15 of each year, and are submitted to the MNR.

Provincial Standards for Oil, Gas and Salt Resources Operations require operators of licensed wells to collect samples from drilling operations and deliver them to the Oil, Gas and Salt Resources Library at the operators expense. The operator must also pay the cost of processing the samples according to the fee schedule prescribed in the Standards. The fees are submitted to the MNR at the time of submission of the Form 7 - Drilling and Completion Report, within 60 days after the TD Date of a well. Fees for processing of drill core will be invoiced to well operators upon delivery of the core to the Library.

Client service fees are set by the Trust Advisory Committee and are reviewed on an annual basis. Service fees are invoiced to annual members by the Trust monthly or as required, and are due 30 days after the invoice date. Invoicing service is not available to daily or weekly clients. Fees may be paid in cash, by cheque, or by credit card. Fee collection is the responsibility of the Trust.

Publications produced by the Trust will be priced to recover all printing, distribution, and some preparation costs. Payment in advance is required. The Trust will also sell publications of the MNR and OPI for a commission on sales. Revenue collection is the responsibility of the Trust.

7. 4 Projected Surplus and Deficit

Based on the proposed fee schedule the Trust is projected to have a deficit of $25,100 in the first year of operation, and a surplus of $26,100 in the second year.

Revenue	Jun 97	Jul 97	Aug 97	Sep 97	Oct 97	Nov 97	Dec 97	FY 97	FY 98
Sample processing	$0	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$18,000	$36,000
User fees	$0	$0	$0	$0	$1500	$900	$600	$3,000	$14,400
Licence fees	$0	$0	$0	$0	$0	$0	$0	$0	$120,000
Investment	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total revenue	$0	$3,000	$3,000	$3,000	$4,500	$3,900	$3,600	$21,000	$170,600
Operating Expenses									
Sample supplies	$0	$0	$0	$0	$0	$0	$0	$0	$23,400
Sample salary	$0	$0	$0	$0	$0	$0	$0	$0	$8,000
Facilities	$0	$0	$0	$0	$0	$0	$0	$0	$15,000
Insurance	$0	$0	$0	$0	$2,000	$0	$0	$2,000	$2,000
Lab manager salary	$0	$0	$0	$0	$0	$0	$0	$0	$45,000
Publications	$0	$0	$0	$0	$0	$0	$0	$0	$5,000
Client Services	$0	$200	$300	$300	$400	$400	$400	$2,000	$13,000
Information management	$0	$0	$0	$0	$0	$0	$0	$0	$20,000
Research	$0	$0	$0	$0	$0	$0	$0	$0	$0
Trustee management fee	$0	$0	$0	$0	$3,750	$0	$1,250	$5,000	$5,000
Trustee service fees	$0	$1,000	$300	$200	$200	$200	$200	$2,100	$5,000
Annual Financial Report								$1,500	$1,500
Total expenses	$0	$0	$0	$11,600	$6,600	$6,600	$12,600	$10,600	$144,500
Surplus(Deficit)								$10,400	$26,100

APPENDIX I: Statistics

TABLE I-1. Recent Exploration Activity

Year	# samples	# wells	metres drilled
1990	22,301	111	75,194
1991	22,199	107	70,665
1992	18,163	77	58,437
1993	22,481	115	71,199
1994	20,303	120	66,657
Average	21,303	106	68,430

TABLE I-2. Recent Production Data

YEAR	NATURAL GAS 10^3 m^3	CRUDE OIL m^3
1979	377576	92932
1980	448904	93279
1981	517701	90104
1982	512890	85781
1983	522928	85077
1984	544976	90372
1985	588869	112945
1986	531640	135825
1987	511330	135628
1988	503422	190580
1989	489000	243699
1990	456713	247825
1991	475103	235615
1992	477798	222321
1993	474671	254370
1994	488484	263874

TABLE I-3. Oil and gas well statistics as of end of 1994

Target	Average TD (m)	# Gas Wells	# Oil Wells	1994 Oil Production (m^3)	Oil Production per well (m^3)	1994 Gas Production (1000 m^3)	Gas Production per well (1000 m^3)
DEV	120	0	910	26,321.6	28.9	0	0
CLI	325 (425 LE)	480 + 620 LE	0	0		169,799.2*	106.3 191.6 (LE)
SAL	575 (475 LE)	160 + 230 LE	120	24,019.7	200	194,844.8*	157.2 737.8 (LE)
ORD	970	30 (+70 oil+gas)	140 (+15 oil+gas)	208,851.3	1350	42,147.7	421
CAM	1000	80	50	4,681.2	94	81,692.6	1021
TOTAL		1600	1220	263,873.4	216.3	488,484.3	305

*these figures are only approximate due to commingling of Lake Erie production
All figures include active and inactive wells

TABLE I-4. Natural gas storage pools in southern Ontario

Reservoir	Formation	Status	Operator	Gas In Place at Delta Pressure	Working Capacity at Delta Pressure	Delta Pressure	Original Reservoir Pressure	Year Activated
				million m^3	million m^3	kPag	kPag	
Bentpath	G, A-1	Active	Union	183.0	125.9	6916	5981	1974
Bickford	G, A-1	Active	Union	727.1	539.8	7612	6398	1972
Corunna	G, A-1	Active	Tecumseh	NA	138.8	7964	6502	1963
Crowland	Whirlpool	Active	Tecumseh	NA	14.2	4330	3447	1962
Dawn 156	G, A-1	Active	Union	979.1	700.1	6757	6047	1962
Dawn 167	G, A-1	Active	Union	200.9	122.7	5692	6247	1976
Dawn 47-49	G, A-1	Active	Union	163.0	110.7	6757	5964	1942
Dawn 59-85	G, A-1	Active	Union	260.5	138.5	6757	5964	1943
Edys Mills	G, A-1	Active	Union	82.2	58.5	8620	6271	1993
Enniskillen 28	G	Active	Union	115.6	95.1	7819	5288	1989
Kimball-Colinville	G, A-1	Active	Tecumseh	NA	1019.8	7964	6336	1963
Moore 3-21-XII	G, A-1	Active	Tecumseh	969.4	758.3	10067	6412	1988
Oil Springs East	G, A-1	Active	Union	129.9	105.8	8102	6376	1990
Payne	G, A-1	Active	Union	833.7	635.6	8219	6047	1957
Rosedale	G, A-1	Active	Union	109.6	75.6	6957	6460	1975
Sarnia Block A	G, A-1	Active	Union	210.5	174.0	10310	5723	1992
Seckerton	G, A-1	Active	Union	NA	320.1	7964	6481	1963
Sombra	G, A-1	Active	Union	71.2	49.0	7612	6467	1989
Terminus	G, A-1	Active	Union	400.1	277.5	6757	6109	1975
Waubuno	G, A-1	Active	Union	328.9	245.4	6757	6419	1960
Wilkesport	G, A-1	Active	Tecumseh	NA	192.6	7929	6378	1978
Zone	A-1, A-2	Inactive	Union	146.1	NA	NA	4971	NA

G - Guelph Formation, A-1 - A-1 Carbonate Unit, A-2 - A-2 Carbonate Unit NA - no data

TABLE I-5. Hydrocarbon storage caverns in southern Ontario showing contents and capacities.

Company Name	Cavern Number	Contents	Capacity m^3	Company Name	Cavern Number	Contents	Capacity m^3
Amoco Canada	RP-1	NGL mix	19237	Imperial Oil Ltd.	C-982	Ethane/Propane	39747
(Sarnia)	RP-2	NGL mix	20350		C-981	Empty	28618
	RP-3	NGL mix	28618		C-985	LPG	20668
	RP-4	NGL mix	58825		C-4040	Iso-Butane	33387
	RP-5	NGL mix	32751		C-4043	n-Butane	41337
	RP-6	NGL mix	50240		C-4044	Propane	34997
	RP-7	NGL mix	63595		C-983	Fuel Gas	31797
	P-1	Spec LPG	62800		C-4041	Propylene	21463
	P-2	Spec LPG	61200		C-4042	Ethylene	38316
	P-3	Spec LPG	73930	Total			290330
	P-4	Spec LPG	55170				
	P-5	Spec LPG	66770	Novacor	1	Ethylene	38680
	P-6	Spec LPG	64230		2	Ethylene	61626
	P-7	Spec LPG	45310		3	Fuel Gas	15700
	P-8	Spec LPG	45310		4	Propylene	42900
	B-1	Spec LPG	110650		5	Propane	17900
	B-2	Spec LPG	24960		6	LPG mixture	23848
	B-3	Spec LPG	72970	Total			200654
	B-4	Spec LPG	57710				
Total			1014626	Bayer	1	Butylene	31000
					2	Butylene	17000
Amoco Canada	E-1	Ethane	61210		3	Butylene	18000
(Windsor)	E-3	Propane	50560		4	Butylene	16700
	E-5	Ethane/Ethylene	41350		5	Isobutylene	21400
	I-4	Butane	12720		7	Butylene	12600
	32/33	NGL	397500	Total			116700
	34	Empty	12100				
	35	Propane	81000	Shell Canada Ltd.	W-1	Butane	33400
	B-7	Butane	47700		W-2	Butane	23200
	P-8	Butane	54850		W-3	Propane	15400
Total			758990		W-4	Propane	5500
				Total			77500
Dow Chemical	HC-1	Ethylene	42340				
Canada	HC-2	Oil	9197	Sun Oil Ltd.	3	Pentanes/Hexanes	22894
	HC-3	Ethylene	58673		4	Propane	19873
	HC-4	Ethylene	44243		5	Butane	34570
	HC-5	Ethylene	36155		7	Butane/Butylene	11420
	HC-6	Ethylene	31239		8	LPG mixture	16376
	HC-8	Propylene	19188		9	LPG mixture	36090
	49-50	Ethylene	171354		10	LPG mixture	16853
	51-52	Ethylene	79718		13	LPG mixture	14547
	56	Butane	74062		14	Iso-Butane	16025
	59-60	Propane	254387	Total			188648
Total			820556				
				TOTAL	73		3468004

APPENDIX II: Annual Operating Costs

Sample Processing

All estimates based on 25,000 samples/year (21,000 + 20% contingency) and include PST and GST.

BAGS $265/1000 bags
Annual cost = **$6,650**

VIALS $ .22 each
Annual cost = **$5,500**

WOODEN TRAYS $7.50 each. Each tray holds 208 samples. Need 120 per year.
Annual cost = **$1,000**

PAPER TRAYS $700/1000. Hold 26 vials per tray. Need 1000 per year.
Annual cost = **$800**

CABINETS $2850 each. Hold 60 trays each. Need 2 per year.
Annual cost = **$5,700**

SIEVES $30 each. Need 60 per year.
Annual cost = **$2,000**

CORE SUPPLIES Saw blades $350 each for large, $70 for trim.
Core boxes $5 each. Need 200 per year.
Annual cost = **$1200**

WASTE DISPOSAL Monthly rent = $25, pickup fee = $50 (approx. 4x/year)
Annual cost = **$500**

MISCELLANEOUS SUPPLIES Annual cost = **$1,000**

EQUIPMENT MAINTENANCE Annual cost = **$1,000**

TOTAL SUPPLIES **$23,350**

SALARY Sample technician Seasonal labour at $10/hour + 10% benefits, 40 hours/week for 18 weeks = **$8000**. It takes about 7 hours to process the cuttings from one well if they are delivered to the Lab in sample bags. If samples are delivered in vials it takes about 3 hours of staff time. These times are approximate as the actual time will depend on the depth of the well. Full diameter core delivered to the Lab uncut requires about 1 hour of staff time per metre for processing including measuring, longitudinal slabbing, boxing and labelling, racking and cataloguing.

TOTAL

$31,850

Client Services

PHOTOCOPIER Toshiba 1710 @ $105/month on 36 month lease
+ 1.3 cents/copy. 45,000 copies/year
Paper at $500/year. Annual cost = **$2500**

TELEPHONE 2 lines at $150/month, long distance at $200/month. Annual cost = **$4,200.**

TRAVEL, MISC. Local business travel, attendance at OPI conference, out-of-province meetings with prior approval of Advisory Committee. **$2,000**

STAFF TRAINING Cost of approved training courses **$1,500**

OFFICE SUPPLIES **$1,500**

OFFICE EQUIPMENT **$2,500**

INTERNET ACCOUNT **$400**

SALARY Library Manager. This position is to have decision-making authority regarding daily operations, purchasing, data management, promotion and sales etc. It is not simply a clerical position.

$45,000 incl. benefits

TOTAL **$59,600**

Facilities

Trust operations will be based in the former Petroleum Resources Lab building which is operated by MNR. The building is owned and maintained by Ontario Realty Corporation (ORC), a branch of the provincial government. MNR currently does not pay rent for this space.

MNR will continue to be the tenant of this building and will base two staff in the building. Beginning April 1, 1998 ORC will be charging rent to all government ministries based on the amount of occupied space. The net cost to MNR of renting this space will be passed on to the Trust, proportional to the amount and type of space occupied. No firm figures on rental rates are yet available, but estimated annual cost to the Trust should not exceed $20,000 in each of the first three years. Rental rates will be reviewed at the end of three years.

TOTAL **$20,000**

Insurance

An estimate of general accident and liability insurance. No quote is yet available. **$2,000**

Publications

ANNUAL SUMMARY The Trust will publish an annual summary of oil and gas exploration and production, underground storage of hydrocarbons in geological formations, solution mining, and oil field fluid disposal in geological formations. Cost depends on number of pages, binding method, reproduction method. The costs could be easily balanced by revenue from advertising and sales.

Based on past experience, the approximate annual cost = **$5,000**

Other publications may be developed and sold after the second year of operation.

Information Management

DATABASE Costs to design, test and enter data into an updated digital database of Ontario wells may be substantial in the first two years. This project is planned to be conducted as a partnership with the MNR subject to negotiation of a satisfactory agreement. This is a high-priority item and should be targeted for early completion after start-up. Costs include software, hardware, supplies, consulting services, casual staff salary for data entry, Public Petroleum Data Model membership.

Annual budget =

$20,000 +

Research

No research projects will be initiated in the first 2 years of the Trust until start-up priorities are met and funding is stabilized. Consequently no budget will be established at this time.

Trustee Fees

The Trustee will receive an annual management fee of **$5,000** to cover the cost of general administration, organization of the Trust Advisory Committee, arrangement of and attendance at meetings, set-up and maintenance of bank accounts, investment of cash assets, staff supervision and hiring.

The Trustee may bill any additional direct expenses to the Trust, including legal fees, accounting/book-keeping services, etc. Estimate an additional **$5,000.**

$10,000

Annual Financial Report

Auditors fees, etc to prepare annual report to Minister on financial affairs of Trust **$1,500**

GRAND TOTAL

$149,450

APPENDIX III: Sources of Revenue

Bill 52, the Aggregate and Petroleum Resources Statute Law Amendment Act, 1996, empowers the Minister of Natural Resources to establish a trust to be known as the Oil, Gas and Salt Resources Act. Section 16(4) requires the holder of a well licence or permit to pay prescribed amounts to the Trust within prescribed times. Failure to comply would be an offence. Proposed fees and methods of calculation are listed and described below.

Fee Schedule

Item	Fee	Unit	Minimum
Sample Processing Fees - new wells			
Cuttings			
- bagged and unwashed	$.60/m.		
- washed and vialed	$.40/m.		
Full diameter core			
-delivered unslabbed to Lab	$30.00/m.		
-delivered, slabbed to Lab specs	$10.00/m.		
Facility User Fees			
Annual fees individual	500.00	annual	
Annual fees corporate	1500.00	annual	
Weekly fees	200.00	week	
Daily fees - core & cuttings research	50.00	day	10.00
Daily fees - file & library research	25.00	day	5.00
Student daily fee	10.00	day	
Service Fees			
Core sample cutting	30.00	hour	30.00
Core delivery to table	.30	box	10.00
Photocopies - weekly/annual members	.125	each	
Photocopies - daily users	.25	each	
External copying of well cards(annual members only)	.02	each	5.00
Labour and clerical	25.00	hour	7.50
Core index - on diskette	50.00	each	
- printout	10.00	each	
- update on return of disk	20.00	each	
Handling charges			
- for mailing of publications, files, maps	5.00 minimum + postage		
Well Licence Fees			
Oil well	$.18	m^3 oil	$20/operator

Gas well	$.09	10^3	m^3	gas
$20/operator				
Natural gas storage	$75 well			
LPG storage	$150 well			
Solution mining	$150 well			
Observation well	$10 well			

Sample Processing Fees
Would be collected on all new wells. The fees would be paid at the time of submission of the Form 7 report. Samples must be taken every 3 metres from top of bedrock to TD. Failure to collect or submit samples would not relieve operators of the obligation to pay.
Annual revenue = **$36,000**

Client Services
USER FEES Annual fees for regular users. Weekly and daily fees for occasional users. Estimated annual revenue = **$6,000.**

PHOTOCOPIES 30,000 copies/year by clients @ 12.5 cents = **$3,600**

FILE SEARCH FEES For file searches by staff. This service is not currently available and would be especially useful to out-of-town clients. Annual revenue = **$3,000 ?** Revenue could be much higher than this if all current information requests requiring MNR staff time can be redirected to the trust fund. In order to be effective trust fund staff would have to have access to MNR source files.
Examples:
- copies of current P.R.A./Regulations/Policy/Procedures/Standards
- search and copying of well records
- file searches at request of lawyers for land transactions
- production information

Publication Sales
Sale of annual summaries and any other Trust publications. Sales outlet for OPI and MNR petroleum publications. The Trust would retain a commission on all MNR publications sold. The same could be done with the O.P.I., Ministry of Northern Development and Mines, and other publications. Estimate annual revenue = **$2,000+**

Well Licence Fees
Annual licence fees will be paid to the Trust to provide a stable source of revenue. The amount of the fees varies depending on the type of wells since some types of wells require more file space, more administrative time, require more storage space for samples due to depth, are more frequently accessed by clients, etc. Two methods of calculating the fees were considered - a fee based on annual production or its equivalent, or a fixed annual fee for each licensed well.

Oil and Gas Wells Annual licence fees for oil and gas wells will be based on the volume of annual production of oil and natural gas reported on Form 8 to MNR from a licensed well. This method was judged to be the fairest as the operators which have the largest volumes of production are deriving the largest benefit from exploitation of the resources. The fee is paid for the past calendar year of production at the time of submission of Form 8 to MNR, the annual report of monthly oil and gas production. The licence rate is 18 cents per cubic metre of produced crude oil, and 9 cents per 1000 m3 of produced natural gas. Based on 1990 gas production and 1992 oil production this would produce annual revenue of **$40,000** from oil production and **$41,000** from gas production. At current production levels revenue would be slightly higher. It is further proposed that there be a minimum annual fee of $20 payable per operator of licensed wells who reports production of oil or gas. The alternative of setting an annual fee payable for each licensed well was rejected as it would result in the highest fees being paid by the operators of stripper wells.

Hydrocarbon Storage Wells Using the analogy above of basing fees on resource usage, the annual fee for underground hydrocarbon storage in geological formations could be based on working storage capacities. The suggested licence rate was $3 per million cubic metres of natural gas storage capacity and $4 per 1,000 cubic metres of cavern storage capacity. This was judged to be administratively too complex, consequently annual fees for these wells are fixed annual fees based on the number of wells. There are 232 injection-withdrawal wells in 21 natural gas storage pools in Ontario and 70 observation wells. To raise approximately the same amount of revenue the annual fee is $75 per injection-withdrawal well and $10 for each observation well, resulting in annual revenue of **$18,000.** There are 73 LPG storage caverns in operation in Ontario, with approximately 95 injection-withdrawal wells. The annual fee per well in this case is $150 for annual revenue of **$13,500**.

Solution Mining Wells Again the annual fee could be based on tonnes of salt mined from a licensed well. Annual production of salt from solution mining wells totals approximately 900,000 tonnes. The salt solution mining industry expressed a preference for fees based on fixed rates per licensed well. The rate is set at $150 based on a current total of approximately 50 solution-mining wells, resulting in annual revenue of approximately **$7,500.**

Disposal or Injection Wells Since most of these wells are drilled and operated in conjunction with oil production no annual fee is proposed for these types of wells since a fee is already being paid on the oil production.

TOTAL REVENUE $170,600