Q. (Reference Application Schedule B, Hydro Facility Rehabilitation, page 3 of 99) It is stated "*The alternative to maintaining the Company's generation facilities would be to retire them*." Please provide a copy of all studies relating to the retirement of Newfoundland Power's hydro generation facilities.

A. Attachment A contains the *2019 Depreciation Study – Hydro Plant Decommissioning Report.*

Newfoundland Power prepares decommissioning studies for all of its hydro generating plants as part of its routine depreciation studies. This is a desktop exercise that updates costs and salvage values established in the 2000 report *Newfoundland Power Hydro Plant Decommissioning Update*.[1] No allowances or estimates are made in the decommissioning study of the costs necessary to return the development to the natural state that existed prior to construction of the facility. The complete decommissioning of a hydroelectric development would necessarily require a detailed environmental assessment, and could include significant costs associated with restoring the site and the environment to a standard that is acceptable from an environmental perspective.

In addition to environmental and other regulatory requirements, Newfoundland Power would expect that the interests of other stakeholders, such as the owners of properties adjacent to the hydro development, would have to be addressed as part of the decommissioning process. Without going through the consultation process with stakeholders and regulatory agencies, there is no certainty with respect to the magnitude of cost and future obligations associated with the decommissioning of a hydro plant and its associated water works.

A detailed site specific decommissioning estimate involving the various stakeholders would only be undertaken where an economic analysis indicates that it may not be economically justifiable to invest further in the life extension of the facility.

[1] See Appendix A of the attached report.

2019 Depreciation Study
Hydro Plant Decommissioning Report

2019 Depreciation Study

Hydro Plant Decommissioning Report

Executive Summary

The primary objective of this report is to provide an update to the previous hydro plant decommissioning reports summarizing the estimated gross salvage, cost of retiring, and net salvage of the hydro-electrical developments currently in-service by Newfoundland Power in Canadian 2019 dollars.

The total estimated decommissioning costs were determined primarily using experience completing similar decommissioning work on components of Newfoundland Power's hydro-electric developments. Where experience was not available, unit prices were derived using common estimating practices. To establish the cost estimates for this report the unit prices utilized in the 2015 report were adjusted to account for increased costs related to market prices, environmental regulations, inflation etc.

A summary of the gross salvage, cost of retiring, and the net salvage value of the hydro plants that Newfoundland Power currently has in-service is provided in the table below:

Estimated Cost of Retiring Less Salvage for Hydro Plant ($000s)

Plant	Fixed Capital	Estimated Net Salvage	Estimated Cost of Retiring	Estimated Retirement Less Salvage
Lookout Brook	11,136	8	1,961	1,953
Sandy Brook	7,728	8	3,895	3,887
Rattling Brook	30,510	13	3,763	3,750
Port Union	4,565	5	1,044	1,039
Lockston	6,670	9	1,009	1,000
Heart's Content	10,569	5	1,361	1,356
New Chelsea/Pittman's	10,850	8	3,309	3,301
Victoria	1,640	1	2,553	2,552
Seal Cove	9,645	6	2,176	2,170
Topsail	7,659	4	6,100	6,096
Petty Harbour	10,156	9	2,845	2,836
Pierre's Brook	21,305	6	9,776	9,770
Mobile/Morris	10,001	13	3,235	3,222
Tors Cove/Rocky Pond	18,842	15	6,511	6,496
Cape Broyle/Horse Chops	15,696	14	3,862	3,848
Fall Pond	982	1	1,031	1,030
West Brook	2,905	1	631	630
Lawn	3,485	3	1,296	1,293
Rose Blanche	18,426	6	2,964	2,958
Total	**202,770**	**135**	**59,322**	**59,187**

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1.0 Introduction

Newfoundland Power owns and operates 23 small hydroelectric plants in 19 developments. The total installed capacity is 97 MW and they generate an average of approximately 430 GWH per annum. The turbine-generator units range in size from 350 kW to 12,000 kW. These developments are scattered all over the province with the greatest concentration on the Avalon Peninsula. The oldest development in the system is Petty Harbour, which is 1900 vintage while the newest development is Rose Blanche Plant. The Rose Blanche Development was constructed in 1998 and commissioned in 1999.

Since the late 1970s there has been extensive work carried out on the existing hydro plants with replacements of various components due to deterioration. Replacements have included entire turbine-generator sets, dams, penstocks, switchgear and controls, and other components. There have also been various refurbishments and upgrading carried out including runner replacements, concrete dam repairs and controls upgrading. The intention of Newfoundland Power is to maintain and operate these developments well in to the future, as long as they continue to provide an economical source of energy.

Since the previous 2015 report there have been several upgrades and replacements to various components of the existing hydro developments. Upgrades and replacements that will directly affect the estimated retirement cost include the replacement of woodstave with steel penstocks such as Hearts Content Hydro Plant.[1]

2.0 Decommissioning Scenarios

To generate estimates associated with the demolition cost estimates and salvage values of each component of every hydro development, many assumptions and methodologies of decommissioning were developed. Comments on these assumptions are presented in Section 2.1.1 - 2.1.17 of the October 2000 *Decommissioning of Hydroelectric Plants Owned by Newfoundland Power* report reproduced here in Appendix A of this report.

3.0 Decommissioning Estimates

In the 2000 report, establishing the costs related to the gross salvage and cost of retiring each component of each hydro system was accomplished by using recent project costs, whenever possible. In instances where this information was not available, unit prices were derived using common raw estimating practices and/or appropriate contractor quotes. The unit prices for the 2000 report were reviewed and appeared to be reasonable for that particular time frame. To establish the cost estimates for this 2019 report the unit prices from the 2000 report were adjusted to account for increase in market price, environmental regulations, inflation etc.

[1] Soil remediation associated with dismantling a woodstave penstock can be extensive with significant cost.

The adjusted unit prices are provided in the table below:

Table 2
Unit Price for Construction Material

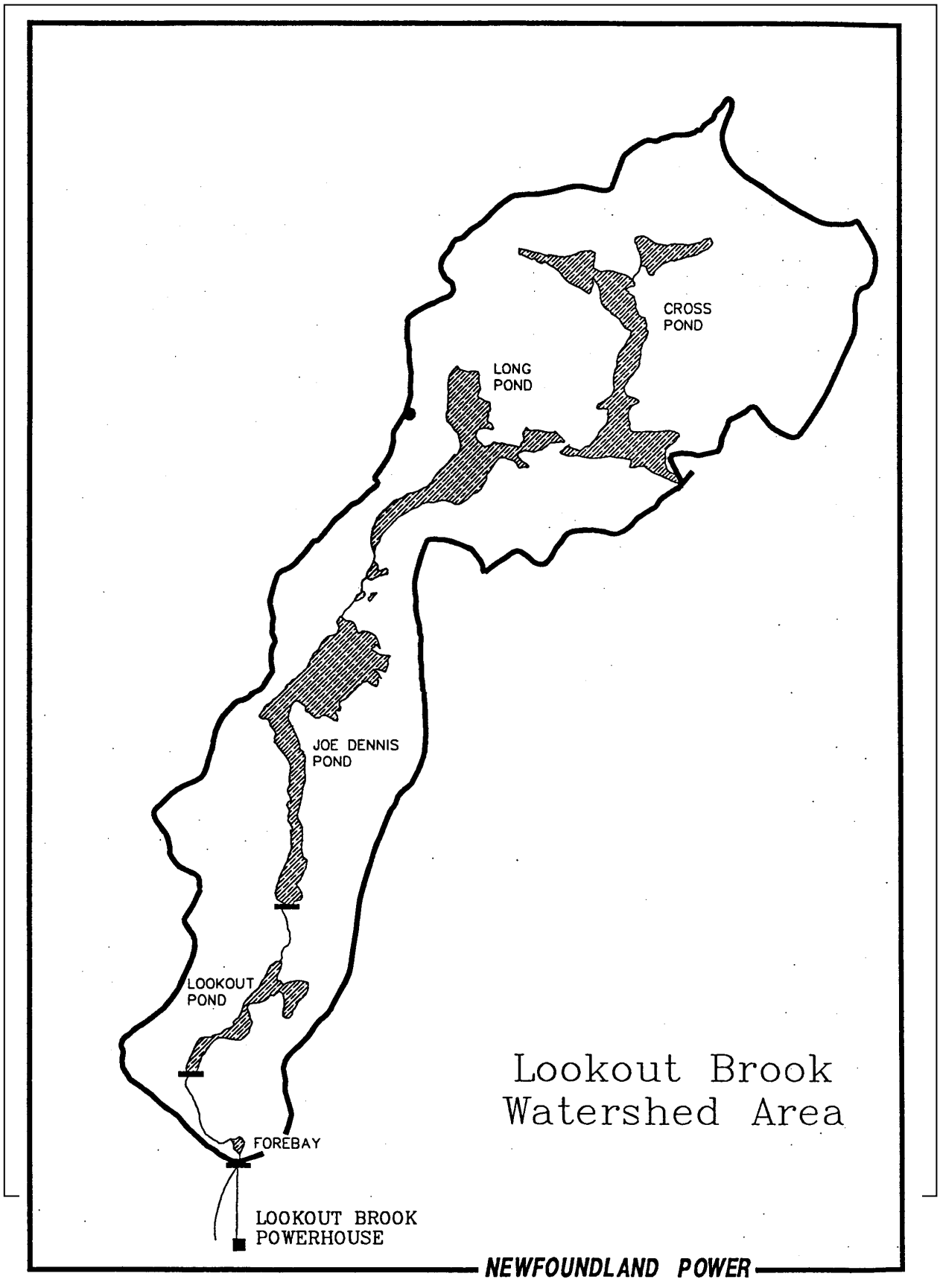
Item Description	Unit Price
DEMOLITION	
Bulk Concrete	\$140 per m^3
Reinforced Concrete	\$230 per m^3
Steel Building Demolition	\$28 per m^3
Asbestos Siding Removal	\$280 per m^2
Wooden Penstock	\$120 per m^2
Steel Penstock (0.914m - 1.52m) diameter	\$21 per m^2
Steel Penstock (1.83m - 2.44m) diameter	\$25 per m^2
Buried Steel Penstock (0.914m - 1.52m) diameter	\$24 per m^2
Buried Steel Penstock (1.83m - 2.44m) diameter	\$29 per m^2
Fibreglass Penstock (0.914m - 1.52m) diameter	\$21 per m^2
Fibreglass Penstock (1.83m - 2.44m) diameter	\$25 per m^2
Transmission (Single Pole)	\$27,000 per km
Transmission (Double Pole)	\$29,000 per km
Distribution (Single Pole)	\$8,000 per km
Rock filled Gabion Demolition	\$31 per m^3
Timber Crib Demolition	100 per m^3
Earth Fill (Removal)	\$19 per m^3
Rock Fill (Removal)	\$20 per m^3
Contaminated Soil	\$800 per m^3
Rock fill Overflow Spillways	\$22 per m^3
CONSTRUCTION	
Common Fill (Supply & Place)	\$24 per m^3
Installed Concrete	\$1,600 per m^3

Based on the above unit prices, a cost estimate related to the gross salvage and retirement for each of Newfoundland Power's hydroelectric developments in 2019 Canadian Dollars is presented below.

A description of each hydro plant, its various components, and decommissioning procedure utilized to generate the estimates is contained in Section 3.1 - 3.19 of this report.

Estimates for the costs associated with an environmental assessment and with putting in place environmental controls during decommissioning are included as percentages of the total decommissioning costs. Costs associated with environmental cleanup or habitat restoration are not included. These costs are site specific and require significant study to produce an accurate site specific cost estimate.

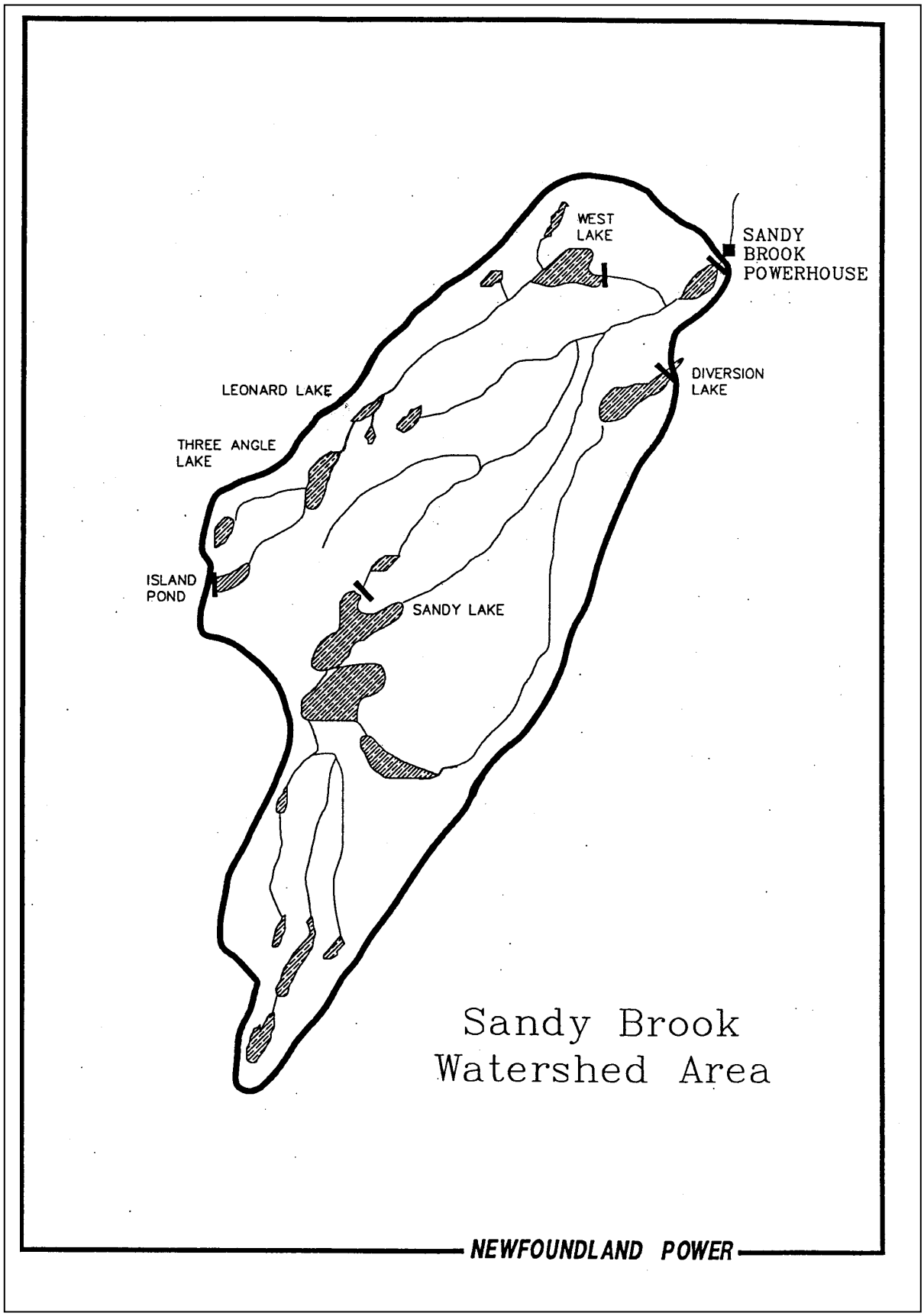
3.1 LOOKOUT BROOK


CROSS POND
LONG POND
JOE DENNIS POND
LOOKOUT POND
FOREBAY
LOOKOUT BROOK POWERHOUSE
Lookout Brook Watershed Area
NEWFOUNDLAND POWER

ESTIMATED COST OF RETIRING LOOKOUT BROOK							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
Powerhouse							
Substructure	Concrete	m^3	$230	55	$12,650	$0	$12,650
Superstructure	Concrete	m^3	$230	195	$44,850	$0	$44,850
Powerhouse crane	7.5 ton	L.S.	$1,600	1	$1,600	$0	$1,600
Turbine/Generator	Horiz Francis	L.S.	$22,000	2	$44,000	$4,000	$40,000
Switchgear & Controls		L.S.	$27,000	1	$27,000	$0	$27,000
Interior Demolition		L.S.	$43,000	1	$43,000	$1,000	$42,000
Tailrace	Concrete	m^3	$230	91	$20,930	$0	$20,930
Penstock							
Penstock	Steel	m^2	$21	2473	$51,933	$0	$51,933
	FRP (buried)	m^2	$25	4666	$116,650	$0	$116,650
Anchor Blocks and Saddles	Concrete	m^3	$230	530	$121,900	$0	$121,900
Forebay							
Forebay Dam	Rockfill	m^3	$20	1593	$31,860	$0	$31,860
	Concrete	m^3	$230	575	$132,250	$0	$132,250
Gatehouse Equipment		L.S.	$2,700	2	$5,400	$0	$5,400
Gatehouse	Woodframe	L.S.	$3,200	1	$3,200	$0	$3,200
Joe Dennis							
Spillway Dam	Earthfill	m^3	$19	4000	$76,000	$0	$76,000
Side Dam	Earthfill	m^3	$19	304	$5,776	$0	$5,776
Gate Equipment		L.S.	$2,200	1	$2,200	$0	$2,200
Outlet	Timber culvert	m^3	$135	250	$33,750	$0	$33,750

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
Cross Pond							
Cross Pond Dam	Rockfill (Spill)	m^3	$22	1694	$37,268	$0	$37,268
Cross Pond Outlet	Concrete	L.S.	$11,000	1	$11,000	$0	$11,000
Walkway/Platform	Timber/Steel	L.S.	$6,000	1	$6,000	$0	$6,000
Gate Equipment		L.S.	$4,000	1	$4,000	$0	$4,000
Various Cabins	Woodframe	L.S.	$6,000	4	$24,000	$0	$24,000
Transmission Line	Single Pole	KM.	$27,000	15	$405,000	$0	$405,000
Forebay Line	Single Pole	KM.	$8,000	1	$8,000	$0	$8,000
Substation							
Transformer Removal		L.S.	$33,000	1	$33,000	$3,600	$29,400
Civil Infrastructure		L.S.	$11,000	1	$11,000	$0	$11,000
Electrical		L.S.	$11,000	1	$11,000	$0	$11,000
SUBTOTALS					**$1,325,217**	**$8,600**	**$1,316,617**
MOBILIZATION	5%				$66,261		$66,261
CONTINGENCIES	10%				$132,522		$132,522
ENGINEERING & SUPERVISION	15%				$198,783		$198,783
ENVIRONMENTAL ASSESSMENT	6%				$79,513		$79,513
ENVIRONMENTAL REQUIREMENTS	12%				$159,026		$159,026
TOTALS					**$1,961,321**	**$8,600**	**$1,952,721**

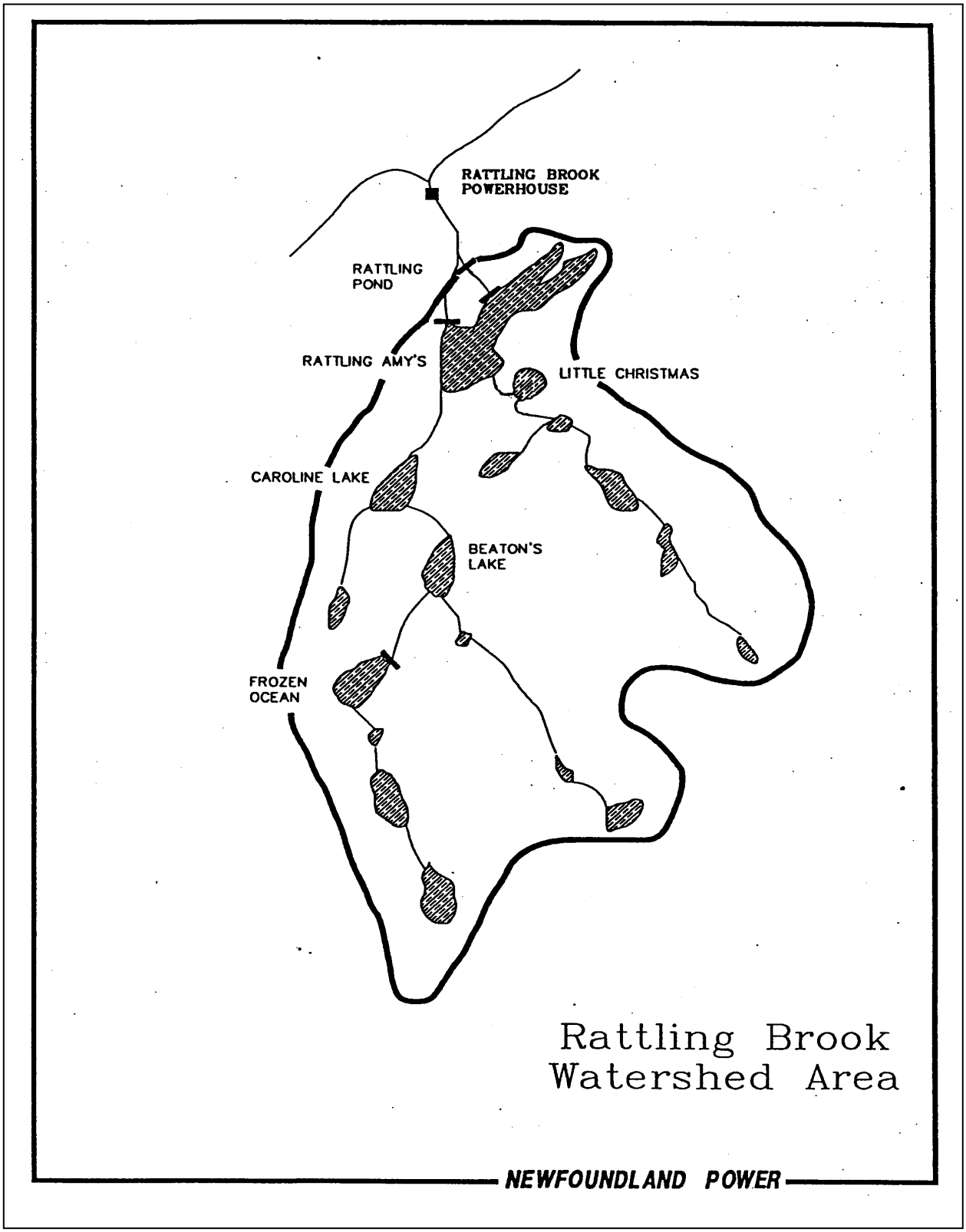
3.2 SANDY BROOK


WEST LAKE
SANDY BROOK POWERHOUSE
DIVERSION LAKE
LEONARD LAKE
THREE ANGLE LAKE
ISLAND POND
SANDY LAKE
Sandy Brook Watershed Area
NEWFOUNDLAND POWER

ESTIMATED COST OF RETIRING SANDY BROOK							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
Powerhouse							
Substructure	Concrete	m^3	$230	70	$16,100	$0	$16,100
Superstructure	Steel	m^3	$28	1406	$39,368	$0	$39,368
Powerhouse Crane	25 ton	L.S.	$1,600	1	$1,600	$0	$1,600
Turbine/Generator	Vert. Francis	L.S.	$43,000	1	$43,000	$0	$43,000
Switchgear & Controls		L.S.	$22,000	1	$22,000	$2,000	$20,000
Interior Demolition		L.S.	$43,000	1	$43,000	$1,000	$42,000
Tailrace	Backfill	m^3	$24	2700	$64,800	$0	$64,800
Penstock							
Penstock	Woodstave	m^2	$120	2785	$334,200	$0	$334,200
	Steel	m^2	$25	125	$3,125	$0	$3,125
Contaminated Fill	Earth	m^3	$800	1950	$1,560,000	$0	$1,560,000
Surge Tank							
Surge Tank	Steel	L.S.	$36,000	1	$36,000	$0	$36,000
Foundations	Concrete	m^3	$230	178	$40,940	$0	$40,940
Forebay							
Forebay Dam	Earthfill	m^3	$19	3240	$61,560	$0	$61,560
Spillway	Concrete	m^3	$230	360	$82,800	$0	$82,800
Emergency spillway	Timber	m^3	$22	81	$1,782	$0	$1,782
Intake							
Structure	Concrete	m^3	$230	160	$36,800	$0	$36,800
Pipe	Steel	m^3	$21	288	$6,048	$0	$6,048
Walkway	Steel	L.S.	$1,600	1	$1,600	$0	$1,600
Gatehouse	Woodframe	L.S.	$33,000	1	$33,000	$0	$33,000
Gate Equipment		L.S.	$2,700	1	$2,700	$0	$2,700

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
West Lake							
Outlet	Concrete	m^3	$230	40	$9,200	$0	$9,200
Spillway/Dam	Earthfill	m^3	$19	1500	$28,500	$0	$28,500
Walkway	Timber/Steel	L.S.	$700	1	$700	$0	$700
Gate & Lift	Timber/Steel	L.S.	$2,200	1	$2,200	$0	$2,200
Sandy Lake							
Outlet	Concrete	m^3	$230	20	$4,600	$0	$4,600
Spillway/dam	Earthfill	m^3	$19	600	$11,400	$0	$11,400
Gate & Lift	Timber/Steel	L.S.	$2,700	1	$2,700	$1,000	$1,700
Partially Decommissioned Dam Sites							
Cripple Back, Gormans Steady, Diversion Lake	Timber Crib	L.S.	$54,000	1	$54,000	$0	$54,000
Substation							
Transformer Removal		L.S.	$33,000	1	$33,000	$3,600	$29,400
Civil		L.S.	$6,000	1	$6,000	$0	$6,000
Electrical		L.S.	$6,000	1	$6,000	$0	$6,000
Forebay Line	Single Pole	KM.	$8,000	1	$8,000	$0	$8,000
SUBTOTALS					**$2,596,723**	**$7,600**	**$2,589,123**
MOBILIZATION	5%				$129,836		$129,836
CONTINGENCIES	10%				$259,672		$259,672
ENGINEERING & SUPERVISION	12%				$311,607		$311,607
ENVIRONMENTAL ASSESSMENT	8%				$207,738		$207,738
ENVIRRONMENTAL REQUIREMENTS	15%				$389,508		$389,508
TOTALS					**$3,895,085**	**$7,600**	**$3,887,485**

3.3 RATTLING BROOK

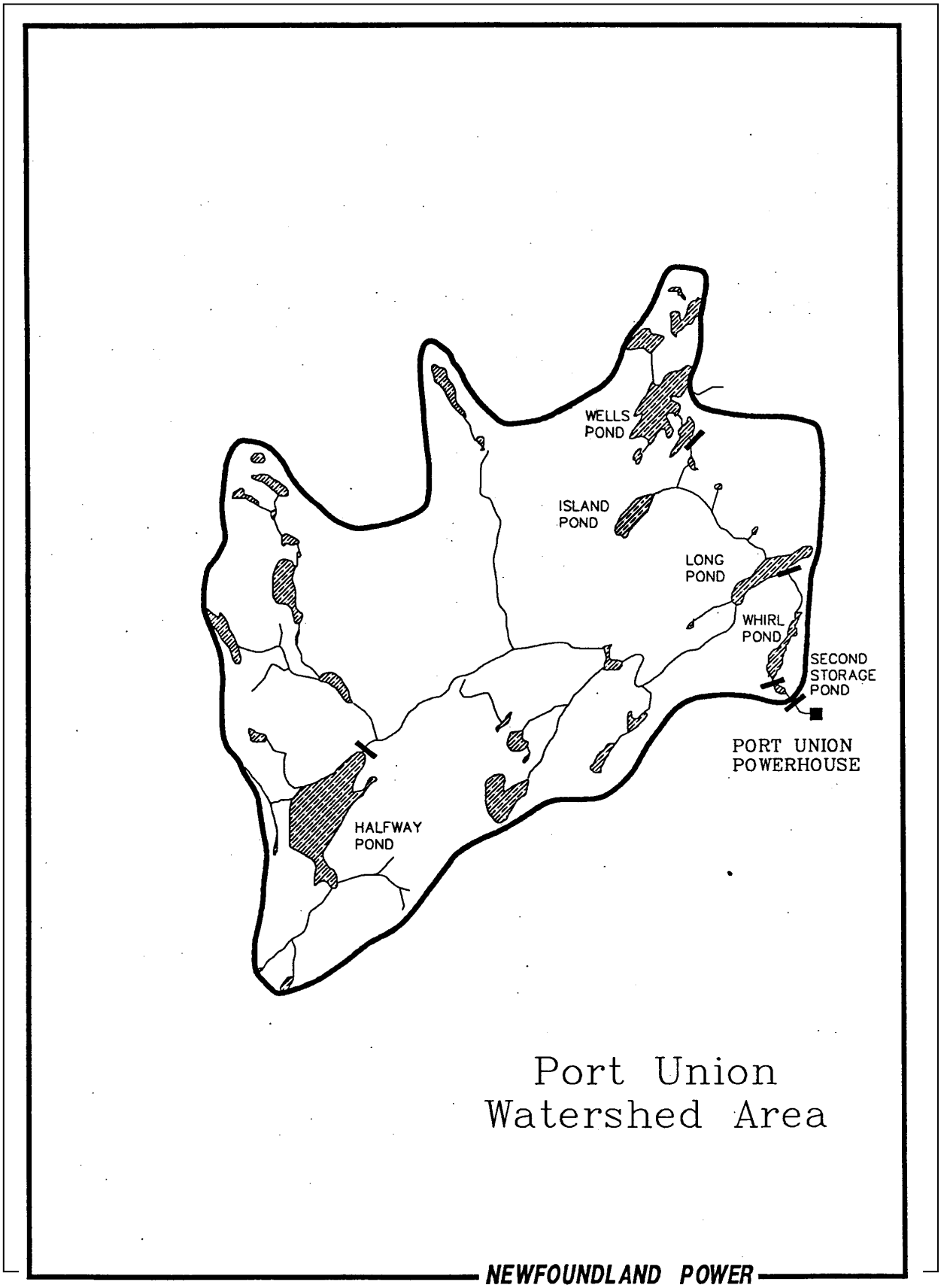

RATTLING BROOK
POWERHOUSE
RATTLING
POND
RATTLING AMY'S
LITTLE CHRISTMAS
CAROLINE LAKE
BEATON'S
LAKE
FROZEN
OCEAN
Rattling Brook
Watershed Area
NEWFOUNDLAND POWER

ESTIMATED COST OF RETIRING RATTLING BROOK							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
Powerhouse							
Substructure	Concrete	m^3	$230	90	$20,700	$0	$20,700
Superstructure	Steel	m^3	$28	1625	$45,500	$0	$45,500
Concrete	Install Concrete	m^3	$1,600	13	$20,800	$0	$20,800
Asbestos Siding		m^2	$280	125	$35,000	$0	$35,000
Powerhouse crane	25 ton	L.S.	$1,600	1	$1,600		$1,600
Turbine/Generator	Vert.Francis	L.S.	$43,000	2	$86,000	$4,000	$82,000
Switchgear & Controls		L.S.	$27,000	1	$27,000	$0	$27,000
Interior Demolition		L.S.	$54,000	1	$54,000	$1,000	$53,000
Tailrace	Concrete	m^3	$230	100	$23,000	$0	$23,000
	Common Fill	m^3	$24	2600	$62,400	$0	$62,400
Tailrace Fisheries Infastructure							
Reinforced Concrete	Concrete	m^3	$230	45	$10,350	$0	$10,350
Salmon Collection Equipment	Steel/Aluminum	L.S.	$16,000	1	$16,000	$0	$16,000
Penstock							
Penstock	Steel	m^2	$25	15657	$391,425	$0	$391,425
	Steel (buried)	m^2	$29	677	$19,633	$0	$19,633
Anchor Blocks	Concrete	m^3	$230	2750	$632,500	$0	$632,500
Surge Tank							
Surge Tank	Steel	L.S.	$109,000	1	$109,000	$0	$109,000
Anchor Blocks	Concrete	m^3	$140	50	$7,000	$0	$7,000

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
Forebay							
Forebay Dam	Earthfill	m^3	$19	2867	$54,473	$0	$54,473
Forebay Spillway	Rockfill (Spill)	m^3	$22	275	$6,050	$0	$6,050
Fisheries Infastructure							
Reinforced Concrete	Concrete	m^3	$230	26	$5,980	$0	$5,980
Bulk Concrete	Concrete	m^3	$140	150	$21,000	$0	$21,000
HDPE Pipe		L.S.	$11,000	1	$11,000	$0	$11,000
MSC Gates + Equipment		L.S.	$16,000	1	$16,000	$0	$16,000
Intake	Concrete	m^2	$140	100	$14,000	$0	$14,000
Pipe	Steel	m	$25	244	$6,100	$0	$6,100
Gate Equipment		L.S.	$4,000	1	$4,000	$0	$4,000
Rattling Lake Dam	Earthfill	m^3	$19	17500	$332,500	$0	$332,500
Spillway	Concrete	m^3	$230	1050	$241,500	$0	$241,500
Amy's Lake Dam	Earthfill	m^3	$19	2867	$54,473	$0	$54,473
Outlet	Concrete	m^3	$230	185	$42,550	$0	$42,550
Gate Equipment		L.S.	$3,000	1	$3,000	$0	$3,000
Gatehouse	Woodframe	L.S.	$4,000	1	$4,000	$0	$4,000
Fisheries Infastructure							
Bulk Concrete	Bulk Concrete	m^3	$140	138	$19,320	$0	$19,320
Reinforced Concrete	Concrete	m^3	$230	42	$9,660	$0	$9,660
HDPE Pipe		L.S.	$11,000	1	$11,000	$0	$11,000
MSC Gates + Equipment		L.S.	$6,000	1	$6,000	$0	$6,000
Frozen Ocean Dam	Earthfill	m^3	$19	850	$16,150	$0	$16,150
Spillway	Rockfill/overflow	m^3	$22	200	$4,400	$0	$4,400
Outlet Timber Crib		m^3	$100	150	$15,000	$0	$15,000
Gate Equipment		L.S.	$3,000	1	$3,000	$0	$3,000

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
Substation							
Transformer Removal		L.S.	$43,000	1	$43,000	$7,800	$35,200
Civil		L.S.	$11,000	1	$11,000	$0	$11,000
Electrical		L.S.	$11,000	1	$11,000	$0	$11,000
Distribution							
Forebay & Amy's	Single Pole	KM.	$8,000	4	$32,000	$0	$32,000
SUBTOTALS					**$2,560,064**	**$12,800**	**$2,547,264**
MOBILIZATION	5%				$128,003		$128,003
CONTINGENCIES	10%				$256,006		$256,006
ENGINEERING & SUPERVISION	12%				$307,208		$307,208
ENVIRONMENTAL ASSESSMENT	8%				$204,805		$204,805
ENVIRRONMENTAL REQUIREMENTS	12%				$307,208		$307,208
TOTALS					**$3,763,294**	**$12,800**	**$3,750,494**

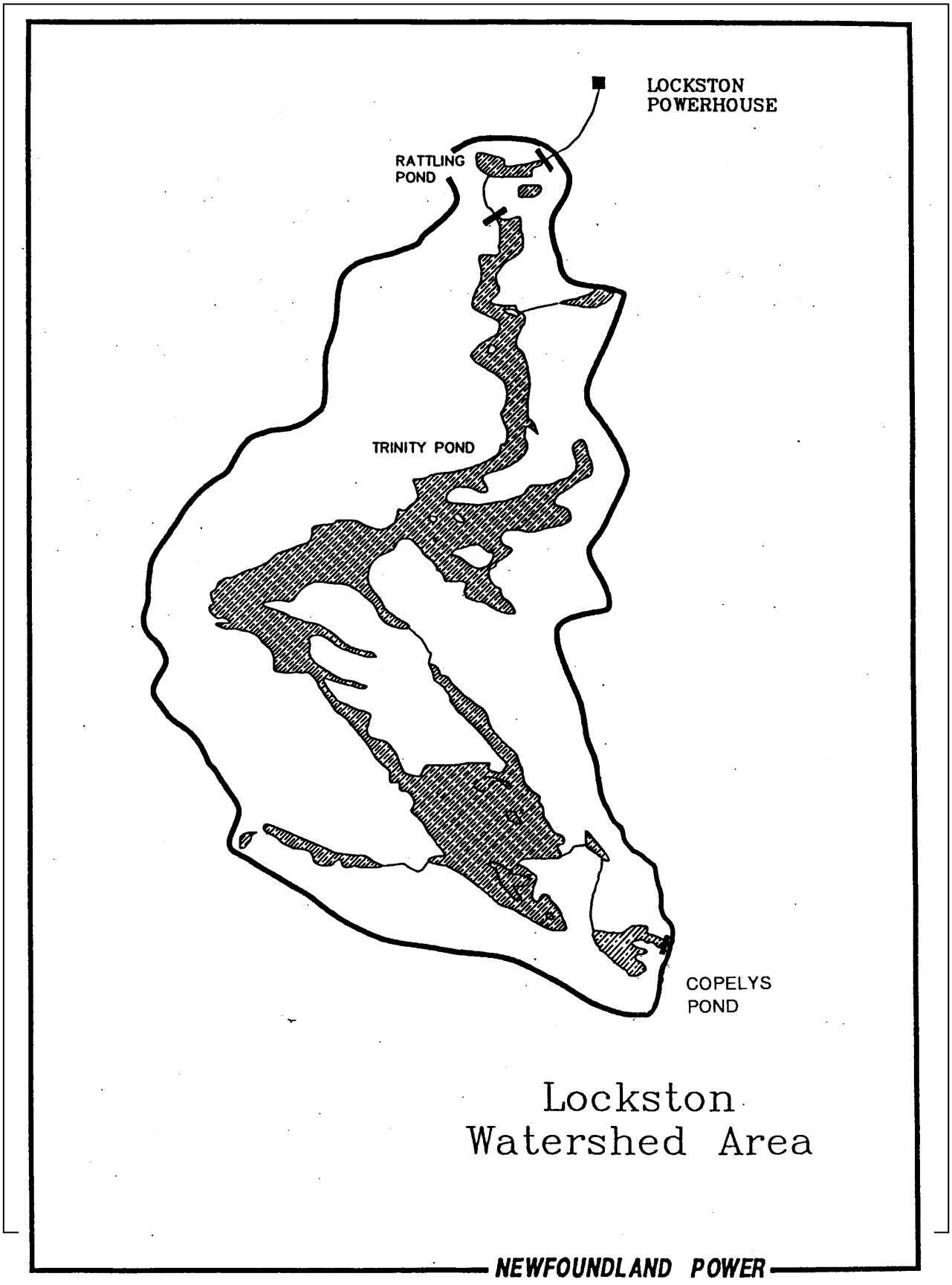
3.4 PORT UNION


WELLS POND
ISLAND POND
LONG POND
WHIRL POND
SECOND STORAGE POND
PORT UNION POWERHOUSE
HALFWAY POND
Port Union Watershed Area
NEWFOUNDLAND POWER

ESTIMATED COST OF RETIRING PORT UNION							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
Powerhouse							
Substructure	Concrete	m^3	$230	40	$9,200	$0	$9,200
Superstructure	Concrete	m^3	$230	65	$14,950	$0	$14,950
Turbine/Generator	Horiz. Francis	L.S.	$16,000	2	$32,000	$4,000	$28,000
Switchgear & Controls		L.S.	$16,000	1	$16,000	$0	$16,000
Interior Demolition		L.S.	$33,000	1	$33,000	$1,000	$32,000
Penstock							
Penstock	Woodstave	m^2	$120	590	$70,800	$0	$70,800
Contaminated Soil	Earth	m^3	$800	300	$240,000	$0	$240,000
Anchor Block	Concrete	m^3	$140	60	$8,400	$0	$8,400
Intake	Concrete	m^3	$140	70	$9,800	$0	$9,800
	Gate Lift	L.S.	$2,700	1	$2,700	$0	$2,700
Gatehouse	Woodframe	L.S.	$3,200	1	$3,200	$0	$3,200
Power Canal	Common Fill	m^3	$24	2100	$50,400	$0	$50,400
Second Storage Pond System	Timber Crib	m^3	$100	450	$45,000	$0	$45,000
Whirl Pond							
Whirl Pond Dam + Freeboards	Earthfill	m^3	$19	1200	$22,800	$0	$22,800
Gate Equipment	Gate Lift	L.S.	$2,700	1	$3,500	$0	$3,500
Outlet	Concrete	m^3	$240	25	$6,000	$0	$6,000
Spillway	Concrete	m^3	$240	60	$14,400	$0	$14,400
Long Pond							
Long Pond Dam	Concrete	m^3	$140	160	$22,400	$0	$22,400
Gate Equipment	Gate Lift	L.S.	$2,700	1	$2,700	$0	$2,700

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
Substation							
Transformer Removal		L.S.	$33,000	1	$33,000	$0	$33,000
Civil		L.S.	$6,000	1	$6,000	$0	$6,000
Electrical		L.S.	$6,000	1	$6,000	$0	$6,000
SUBTOTALS					**$652,250**	**$5,000**	**$647,250**
MOBILIZATION	5%				$32,613		$32,613
CONTINGENCIES	10%				$65,225		$65,225
ENGINEERING & SUPERVISION	15%				$97,838		$97,838
ENVIRONMENTAL ASSESSMENT	10%				$65,225		$65,225
ENVIRRONMENTAL REQUIREMENTS	20%				$130,450		$130,450
TOTALS					**$1,043,600**	**$5,000**	**$1,038,600**

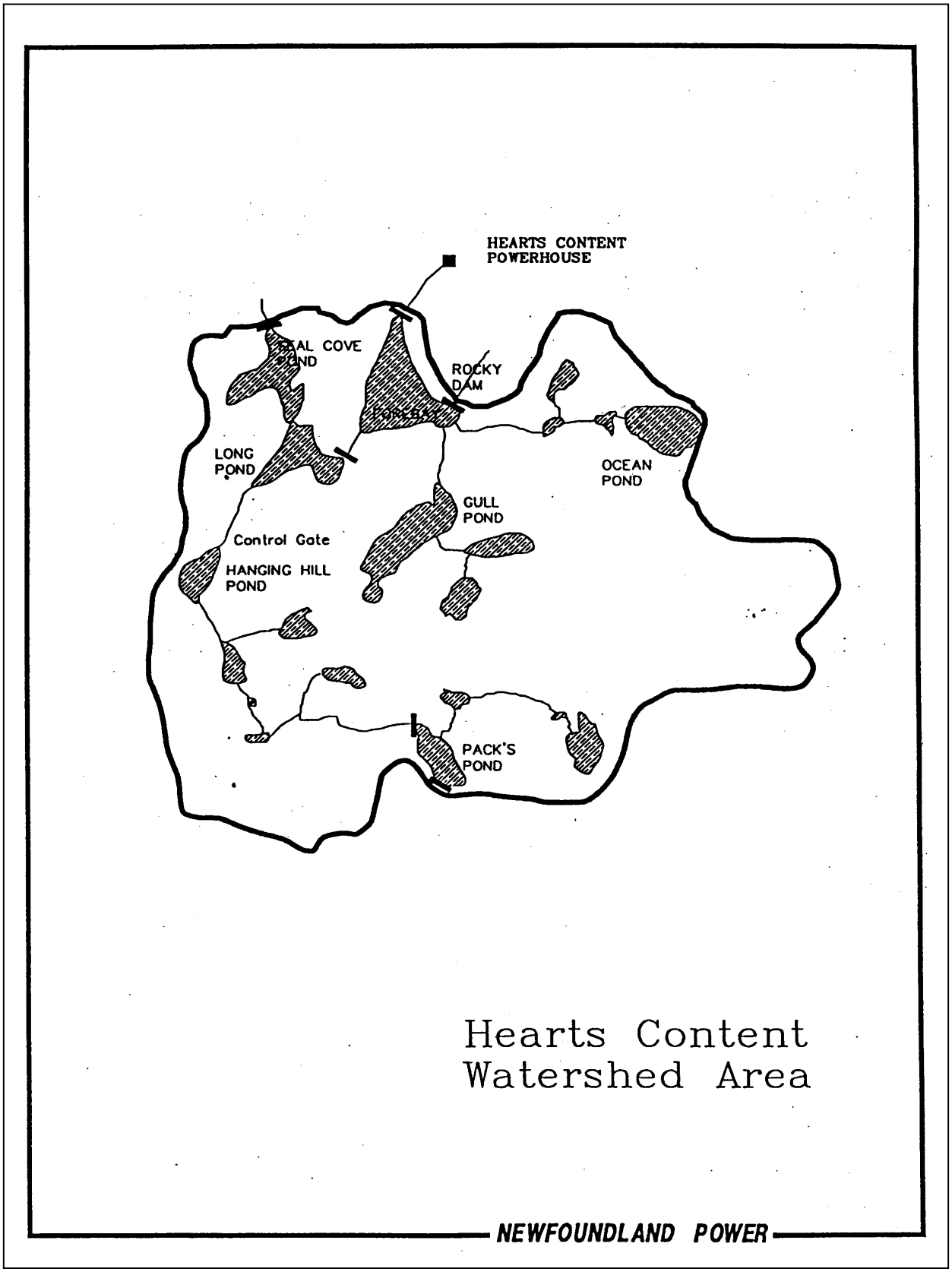
3.5 LOCKSTON


LOCKSTON
POWERHOUSE
RATTLING
POND
TRINITY POND
COPELYS
POND
Lockston
Watershed Area
NEWFOUNDLAND POWER

ESTIMATED COST OF RETIRING LOCKSTON							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
Powerhouse							
Superstructure	Concrete	m^3	$230	150	$34,500	$0	$34,500
Substructure	Concrete	m^3	$230	50	$11,500	$0	$11,500
Powerhouse Crane	10 ton	L.S.	$1,600	1	$1,600	$0	$1,600
Turbine/Generator	Horiz. Francis	L.S	$22,000	2	$44,000	$4,000	$40,000
Switchgear & Controls		L.S.	$22,000	1	$22,000	$0	$22,000
Interior Demolition		L.S.	$43,000	1	$43,000	$1,000	$42,000
Tailrace	Common Fill	m^3	$24	6000	$144,000	$0	$144,000
Bridges	Timber	L.S.	$2,700	2	$5,400	$0	$5,400
Penstock	Steel	m^2	$25	2920	$73,000	$0	$73,000
Intake	Concrete	m^3	$140	100	$14,000	$0	$14,000
Gatehouse	Woodframe	L.S.	$3,300	1	$3,300	$0	$3,300
Gate		L.S.	$2,700	1	$2,700	$0	$2,700
Power Canal	Common Fill	m^3	$24	3400	$81,600	$0	$81,600
Rattling Pond Dam & Spillway	Concrete	m^3	$140	75	$10,500	$0	$10,500
Trinity Pond							
Trinity Pond Outlet	Concrete	m^3	$240	40	$9,600	$0	$9,600
Trinity Pond Canal	Earth Excavation	m^3	$19	1850	$35,150	$0	$35,150
Gatehouse	Woodframe	L.S.	$3,300	1	$3,300	$0	$3,300
Gate		L.S.	$2,700	1	$2,700	$0	$2,700
Substation							
Transformer Removal		L.S.	$22,000	3	$66,000	$4,400	$61,600
Civil		L.S.	$11,000	2	$22,000	$0	$22,000
Electrical		L.S.	$11,000	2	$22,000	$0	$22,000
Distribution	Single Pole	KM.	$8,000	1	$8,000	$0	$8,000

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
SUBTOTALS					**$659,850**	**$9,400**	**$650,450**
MOBILIZATION	5%				$32,993		$32,993
CONTINGENCIES	10%				$65,985		$65,985
ENGINEERING & SUPERVISION	15%				$98,978		$98,978
ENVIRONMENTAL ASSESSMENT	8%				$52,788		$52,788
ENVIRRONMENTAL REQUIREMENTS	15%				$98,978		$98,978
TOTALS					**$1,009,571**	**$9,400**	**$1,000,171**

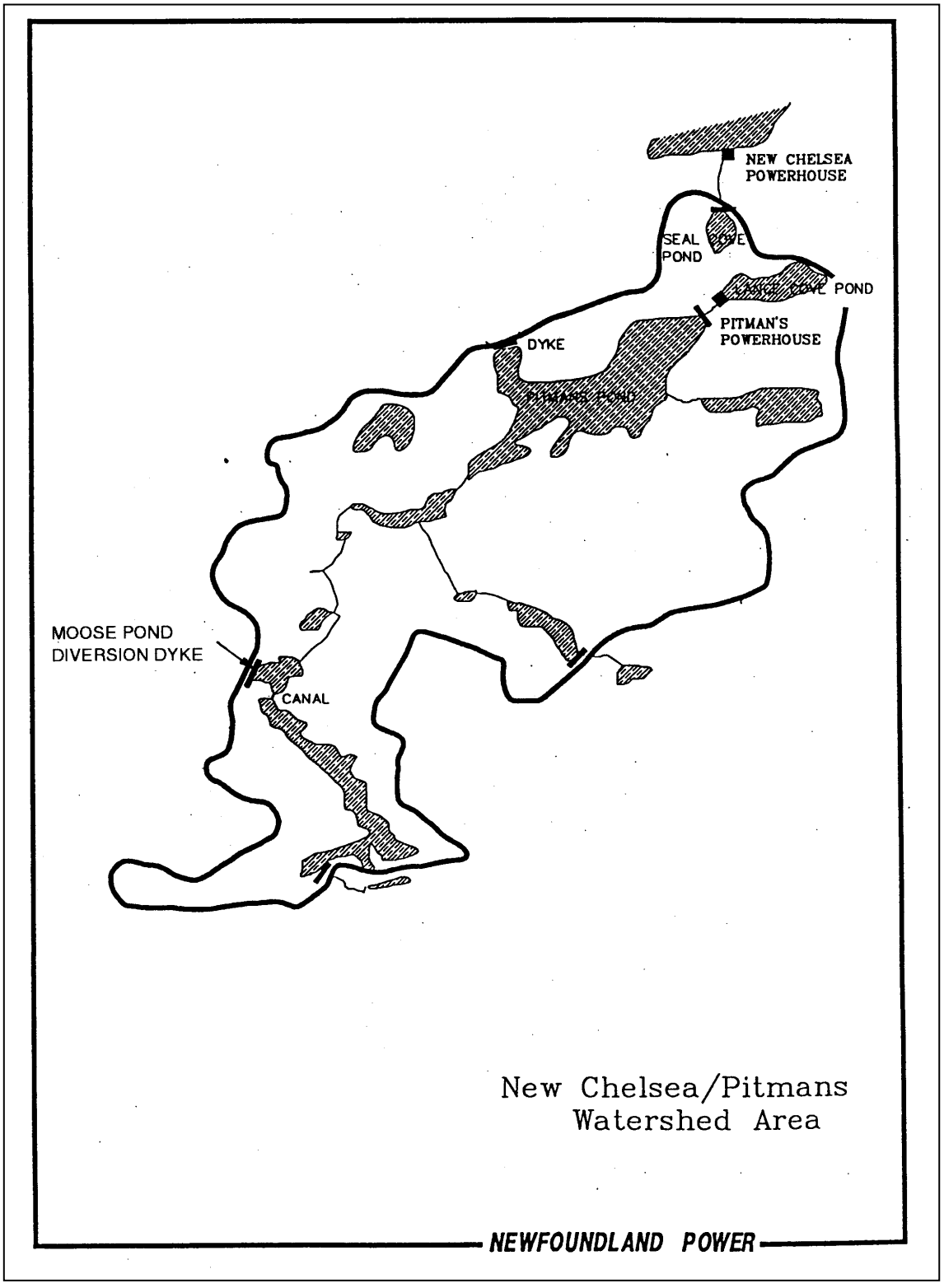
3.6 HEART'S CONTENT


HEARTS CONTENT
POWERHOUSE
SEAL COVE
POND
ROCKY
DAM
FOREBAY
LONG
POND
OCEAN
POND
GULL
POND
Control Gate
HANGING HILL
POND
PACK'S
POND
Hearts Content
Watershed Area
NEWFOUNDLAND POWER

ESTIMATED COST OF RETIRING HEART'S CONTENT							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
Powerhouse							
Substructure	Concrete	m^3	$230	50	$11,500	$0	$11,500
Superstructure	Steel	m^3	$28	956	$26,768	$0	$26,768
Asbestos Siding	Asbestos	m^2	$280	260	$72,800	$0	$72,800
Powerhouse crane	15 ton.	L.S	$1,600	1	$1,600	$0	$1,600
Turbine/Generator	Vert-francis	L.S.	$43,000	1	$43,000	$2,000	$41,000
Switchgear & Controls		L.S.	$22,000	1	$22,000	$0	$22,000
Interior Demolition		L.S.	$43,000	1	$43,000	$1,000	$42,000
Tailrace	Common Fill	m^3	$24	100	$2,400	$0	$2,400
Retaining wall	Concrete	m^3	$140	5	$700	$0	$700
Penstock	Steel	m^2	$25	3329	$83,225	$0	$83,225
Anchor Blocks	Concrete	m^3	$230	565	$129,950	$0	$129,950
Forebay							
Forebay Dam & Intake	Concrete	m^3	$230	200	$46,000	$0	$46,000
Gatehouse	Woodframe	L.S.	$3,300	1	$3,300	$0	$3,300
Gate equipment		L.S.	$500	1	$500	$0	$500
Power Canal Dyke	Earth Fill	m^3	$19	1820	$34,580	$0	$34,580
Southern Cove Pond Dam	Earthfill	m^3	$19	400	$7,600	$0	$7,600
Rocky Pond							
Rocky Pond Dam	Rockfill (Spill)	m^3	$22	2000	$44,000	$0	$44,000
Gate equipment		L.S.	$2,700	1	$2,700	$0	$2,700
Long Pond							
Long Spillway	Rockfill (Spill)	m^3	$22	400	$8,800	$0	$8,800
Long Pond Dam	Earthfill	m^3	$19	400	$7,600	$0	$7,600
Outlet	Conrete	m^3	$140	40	$5,600	$0	$5,600
Gate equipment		L.S.	$2,700	1	$2,700	$0	$2,700

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
Seal Cove Pond Diversion							
Seal Cove Pond Diversion Dam & Spillway	Timber Crib	m^3	$100	1313	$131,300	$0	$131,300
	Earthfill	m^3	$19	450	$8,550	$0	$8,550
Packs Pond Dam	Earth/Rockfill	m^3	$22	4375	$96,250	$0	$96,250
Freeboard Dams	Earthfill	L.S.	$3,300	2	$6,600	$0	$6,600
Partially Decomissioned Dam Sites							
Hanging Hill Pond	Timber Crib	L.S.	$6,000	1	$6,000	$0	$6,000
Substation							
Transformer Removal		L.S.	$27,000	1	$27,000	$1,900	$25,100
Civil		L.S.	$5,500	1	$5,500	$0	$5,500
Electrical		L.S.	$5,500	1	$5,500	$0	$5,500
Distribution	Single Pole	L.S.	$2,200	1	$2,200	$0	$2,200
SUBTOTALS					**$889,223**	**$4,900**	**$884,323**
MOBILIZATION	5%				$44,461		$44,461
CONTINGENCIES	10%				$88,922		$88,922
ENGINEERING & SUPERVISION	15%				$133,383		$133,383
ENVIRONMENTAL ASSESSMENT	8%				$71,138		$71,138
ENVIRRONMENTAL REQUIREMENTS	15%				$133,383		$133,383
TOTALS					**$1,360,511**	**$4,900**	**$1,355,611**

3.7 NEW CHELSEA AND PITMAN'S POND

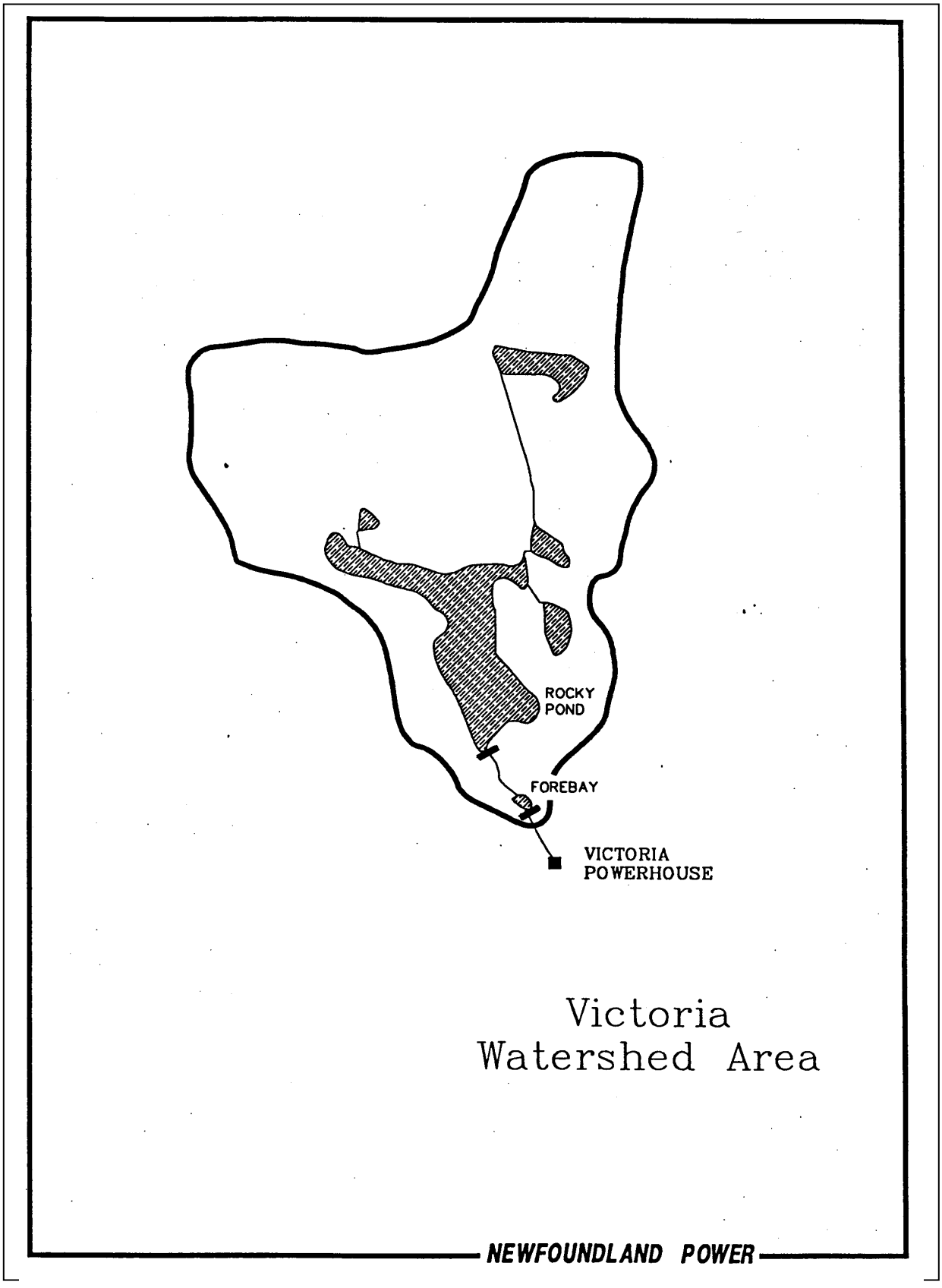

NEW CHELSEA
POWERHOUSE
SEAL
POND
POND
PITMAN'S
POWERHOUSE
DYKE
MOOSE POND
DIVERSION DYKE
CANAL
New Chelsea/Pitmans
Watershed Area
NEWFOUNDLAND POWER

ESTIMATED COST OF RETIRING NEW CHELSEA/PITTMAN'S							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
NEW CHELSEA							
New Chelsea Powerhouse							
Substructure	Concrete	m^3	$230	200	$46,000	$0	$46,000
Superstructure	Concrete	m^3	$230	130	$29,900	$0	$29,900
Powerhouse crane	15 ton	L.S.	$1,600	1	$1,600	$0	$1,600
Turbine/generator	Vert. Francis	L.S.	$38,000	1	$38,000	$2,000	$36,000
Switchgear & Controls		L.S.	$22,000	1	$22,000	$0	$22,000
Interior Demolition		L.S.	$43,000	1	$43,000	$1,000	$42,000
Penstock							
Penstock	Steel	m^2	$21	4982	$104,622	$0	$104,622
	Steel (buried)	m^2	$29	1130	$32,770	$0	$32,770
Anchor Blocks and Piers	Concrete	m^3	$230	640	$147,200	$0	$147,200
PITTMANS POND							
Pitman's Powerhouse							
Superstructure	Concrete	m^3	$230	86	$19,780	$0	$19,780
Substructure	Concrete	m^3	$230	42	$9,660	$0	$9,660
Powerhouse Crane	5 ton		$1,600	1	$1,600	$0	$1,600
Turbine/generator	Horiz Francis	L.S	$33,000	1	$33,000	$1,000	$32,000
Switchgear & Controls		L.S.	$16,000	1	$16,000	$0	$16,000
Interior Demolition		L.S.	$33,000	1	$33,000	$1,000	$32,000
Penstock							
Penstock	Woodstave	m^2	$120	1660	$199,200	$0	$199,200
Contaminated Soil	Earth	m^3	$800	1125	$900,000	$0	$900,000

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
Seal Cove Pond							
Seal Cove Pond Dam	Earthfill	m^3	$19	1224	$23,256	$0	$23,256
Spillway	Concrete	m^3	$140	12	$1,680	$0	$1,680
Intake	Concrete	m^3	$230	60	$13,800	$0	$13,800
Gatehouse Equipment		L.S.	$2,700	1	$2,700	$0	$2,700
Gatehouse		L.S	$3,300	1	$3,300	$0	$3,300
Pittmans Pond							
Pitmans Pond Dam	Earthfill	m^3	$19	13911	$264,309	$0	$264,309
Spillway	Concrete	m^3	$140	54	$7,560	$0	$7,560
Intake and Conduit	Concrete	m^3	$230	374	$86,020	$0	$86,020
Gatehouse Equipment		L.S.	$2,700	1	$2,700	$0	$2,700
Gatehouse	Woodframe	L.S.	$3,300	1	$3,300	$0	$3,300
Pitmans Pond West							
Dyke	Earthfill	m^3	$19	1885	$35,815	$0	$35,815
Pitmans Substation							
Transformer Removal		L.S.	$22,000	1	$22,000	$1,000	$21,000
Civil		L.S.	$11,000	1	$11,000	$0	$11,000
Electrical		L.S.	$6,000	1	$6,000	$0	$6,000
Pitmans Transmission Lines		KM	$8,000	5	$40,000	$0	$40,000
New Chelsea Substation							
Transformer Removal		L.S.	$38,000	1	$38,000	$2,000	$36,000
Civil		L.S.	$6,000	1	$6,000	$0	$6,000
Electrical		L.S.	$6,000	1	$6,000	$0	$6,000
SUBTOTALS					**$2,250,772**	**$8,000**	**$2,242,772**

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
MOBILIZATION	5%				$112,539		$112,539
CONTINGENCIES	10%				$225,077		$225,077
ENGINEERING & SUPERVISION	14%				$315,108		$315,108
ENVIRONMENTAL ASSESSMENT	6%				$135,046		$135,046
ENVIRRONMENTAL REQUIREMENTS	12%				$270,093		$270,093
TOTALS					**$3,308,635**	**$8,000**	**$3,300,635**

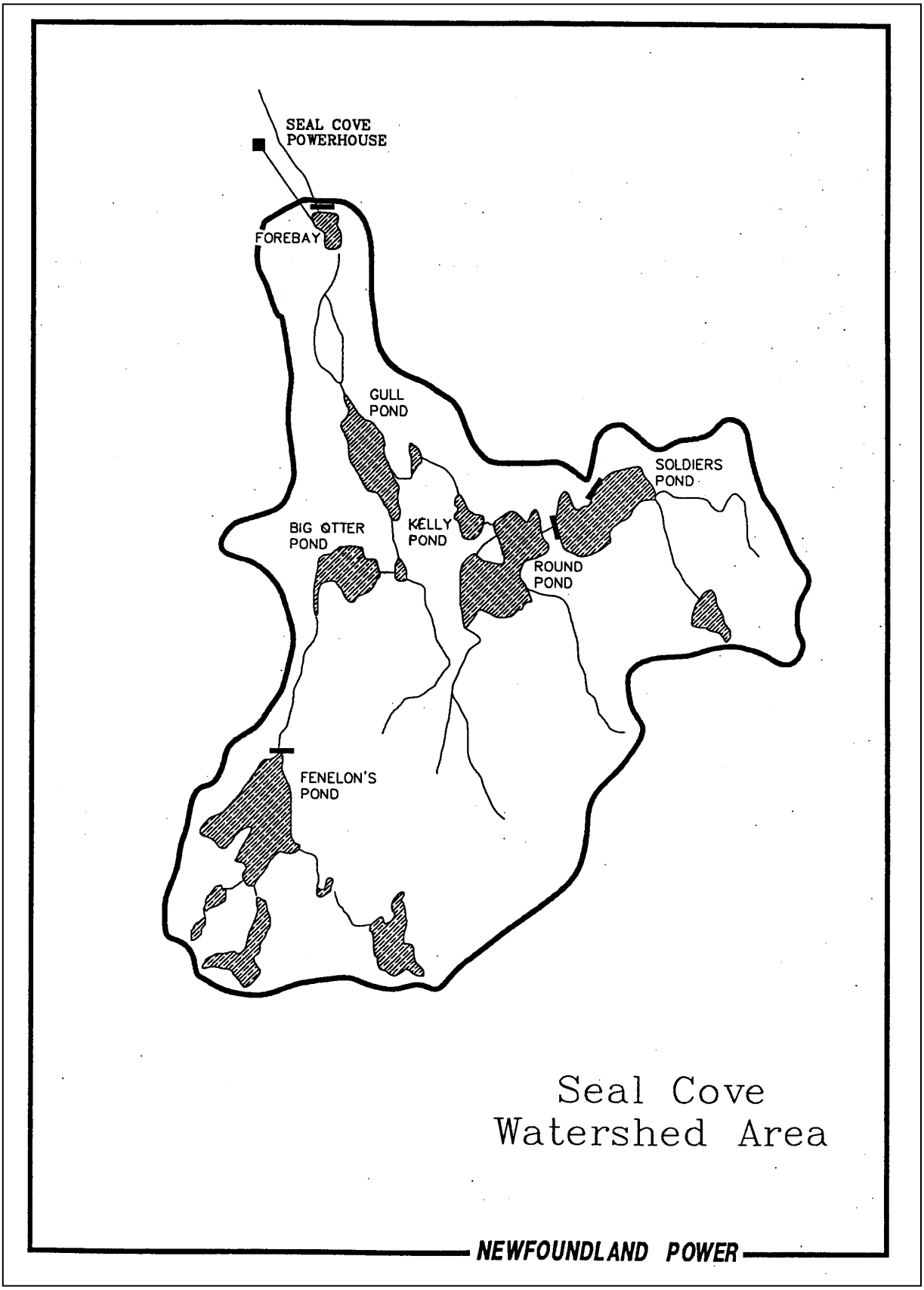
3.8 VICTORIA


ROCKY
POND
FOREBAY
VICTORIA
POWERHOUSE
Victoria
Watershed Area
NEWFOUNDLAND POWER

ESTIMATED COST OF RETIRING VICTORIA							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
Powerhouse							
Superstructure	Rock Masonry	m^3	$140	65	$9,100	$0	$9,100
Substructure	Concrete	m^3	$230	40	$9,200	$0	$9,200
Turbine/Generator	Horiz. Francis	L.S.	$22,000	1	$22,000	$500	$21,500
Switchgear & Controls		L.S.	$16,000	1	$16,000	$0	$16,000
Interior Demolition		L.S.	$33,000	1	$33,000	$1,000	$32,000
Penstock							
Penstock	Woodstave	m^2	$110	1487	$163,570	$0	$163,570
	Steel	m^2	$25	275	$6,875	$0	$6,875
Contaminated Soil	Earth	m^3	$800	1400	$1,120,000	$0	$1,120,000
Blue Hills Pond							
Forebay	Concrete	m^3	$140	127	$17,780	$0	$17,780
	Rockfill	m^3	$22	268	$5,896	$0	$5,896
Gate Equipment		L.S.	$2,200	1	$2,500	$0	$2,500
Rocky Pond							
Rocky Pond Dam	Concrete	m^3	$230	1230	$282,900	$0	$282,900
Gate Equipment		L.S.	$2,200	1	$2,500	$0	$2,500
Substation							
Transformer Removal		L.S.	$22,000	1	$22,000	$0	$22,000
Civil		L.S.	$6,000	1	$6,000	$0	$6,000
Electrical		L.S.	$6,000	1	$6,000	$0	$6,000
SUBTOTALS					**$1,725,321**	**$1,500**	**$1,723,821**

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
MOBILIZATION	5%				$86,266		$86,266
CONTINGENCIES	10%				$172,532		$172,532
ENGINEERING & SUPERVISION	15%				$258,798		$258,798
ENVIRONMENTAL ASSESSMENT	6%				$103,519		$103,519
ENVIRRONMENTAL REQUIREMENTS	12%				$207,039		$207,039
TOTALS					**$2,553,475**	**$1,500**	**$2,551,975**

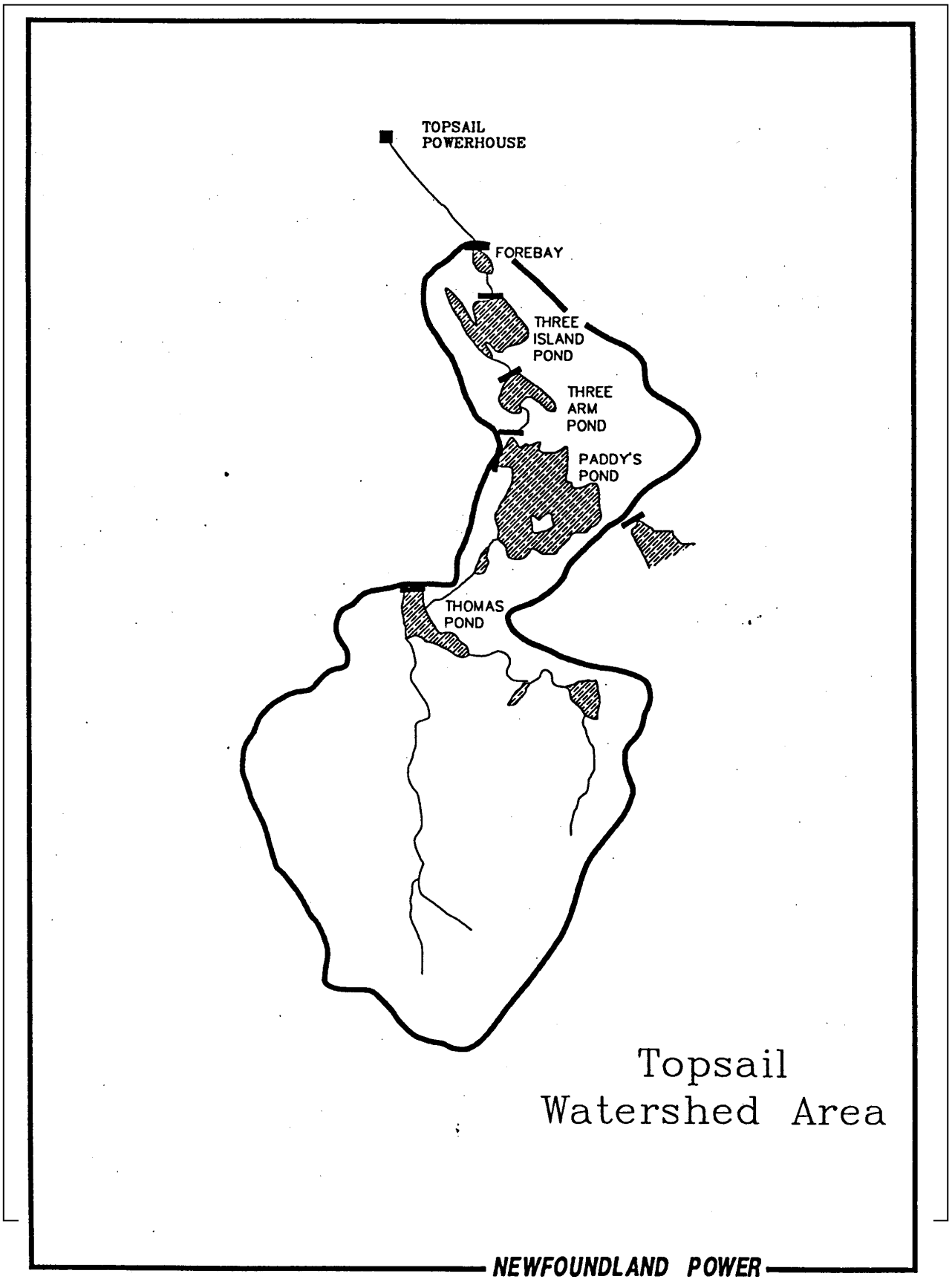
3.9 SEAL COVE


SEAL COVE
POWERHOUSE
FOREBAY
GULL
POND
SOLDIERS
POND
BIG OTTER
POND
KELLY
POND
ROUND
POND
FENELON'S
POND
Seal Cove
Watershed Area
NEWFOUNDLAND POWER

ESTIMATED COST OF RETIRING SEAL COVE							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
Powerhouse							
Superstructure	Concrete	m^3	$230	183	$42,090	$0	$42,090
Substructure	Concrete	m^3	$230	150	$34,500	$0	$34,500
Powerhouse crane	10 ton	L.S.	$1,600	1	$1,600	$0	$1,600
Turbine/Generator	Horiz.Francis	L.S.	$22,000	2	$44,000	$4,000	$40,000
Switchgear & Controls		L.S.	$22,000	1	$22,000	$0	$22,000
Interior Demolition		L.S.	$43,000	1	$43,000	$1,000	$42,000
Tailrace	Common Fill	m^3	$24	500	$12,000	$0	$12,000
Penstock	Steel	m^2	$25	8179	$204,475	$0	$204,475
Anchor Blocks and piers	Concrete	m^3	$230	1620	$372,600	$0	$372,600
Intake							
Substructure	Concrete	m^3	$230	50	$11,500	$0	$11,500
Gate equipment		L.S.	$2,700	1	$2,700	$0	$2,700
Gatehouse	Woodframe	L.S.	$4,300	1	$4,300	$0	$4,300
Forebay							
Forebay Dam	Concrete	m^3	$230	580	$133,400	$0	$133,400
Spillway	Concrete	m^3	$140	52	$7,280	$0	$7,280
Rockfill	Rockfill	m^3	$22	5800	$127,600	$0	$127,600
Gabions	Gabions	m^3	$31	150	$4,650	$0	$4,650
Soldier's Pond							
Dam & Spillway	Earthfill	m^3	$19	800	$15,200	$0	$15,200
	Rockfill(Spill)	m^3	$22	300	$6,600	$0	$6,600
Outlet	Concrete	m^3	$230	70	$16,100	$0	$16,100
	Earthfill	m^3	$19	900	$17,100	$0	$17,100
Gate Equipment		L.S.	$2,700	1	$2,700	$0	$2,700

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
Fenelons Pond							
Dam & Outlet	Earthfill	m^3	$19	2445	$46,455	$0	$46,455
	Timber Crib	m^3	$100	2544	$254,400	$0	$254,400
Gate equipment		L.S.	$2,700	1	$2,700	$0	$2,700
Spillway	Rockfill (Spill)	m^3	$22	426	$9,372	$0	$9,372
Other					$0		$0
Storage shed	Woodframe	L.S.	$3,200	1	$3,200	$0	$3,200
Bridges	Misc.	L.S.	$3,200	2	$6,400	$0	$6,400
Substation							
Transformer Removal		L.S.	$27,000	1	$27,000	$1,500	$25,500
Civil		L.S.	$5,500	2	$11,000	$0	$11,000
Electrical		L.S.	$5,500	2	$11,000	$0	$11,000
Distribution Lines		L.S.	$4,000	1	$4,000	$0	$4,000
SUBTOTALS					**$1,500,922**	**$6,500**	**$1,494,422**
MOBILIZATION	5%				$75,046		$75,046
CONTINGENCIES	10%				$150,092		$150,092
ENGINEERING & SUPERVISION	15%				$225,138		$225,138
ENVIRONMENTAL ASSESSMENT	5%				$75,046		$75,046
ENVIRRONMENTAL REQUIREMENTS	10%				$150,092		$150,092
TOTALS					**$2,176,337**	**$6,500**	**$2,169,837**

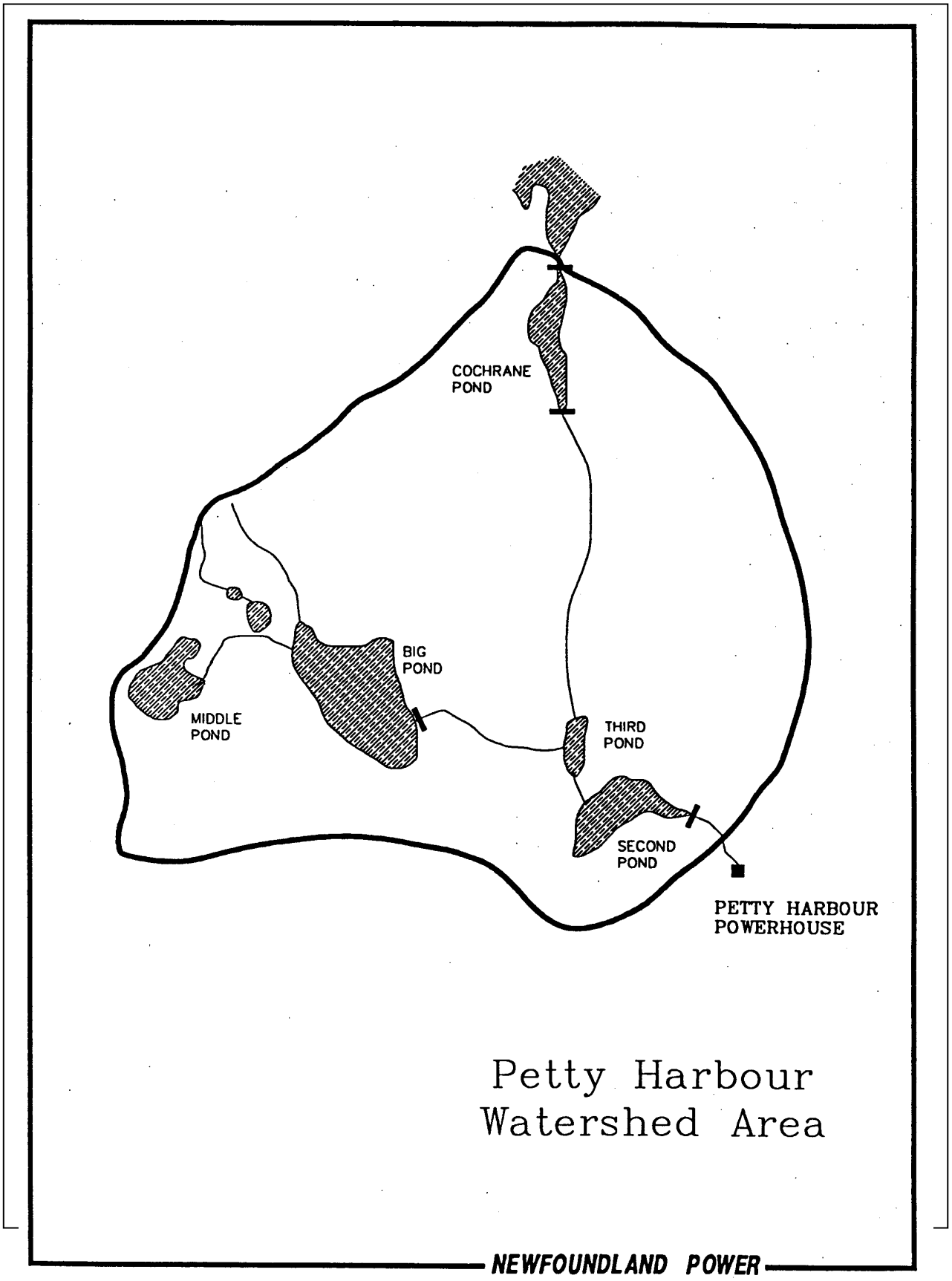
3.10 TOPSAIL


TOPSAIL
POWERHOUSE
FOREBAY
THREE
ISLAND
POND
THREE
ARM
POND
PADDY'S
POND
THOMAS
POND
Topsail
Watershed Area
NEWFOUNDLAND POWER

ESTIMATED COST OF RETIRING TOPSAIL							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
Powerhouse							
Superstructure	Concrete	m^3	$230	89	$20,470	$0	$20,470
Substructure	Concrete	m^3	$230	67	$15,410	$0	$15,410
Powerhouse crane	10 ton	L.S.	$1,600	1	$1,600	$0	$1,600
Turbine/Generator	Horiz.Francis	L.S.	$22,000	1	$22,000	$2,000	$20,000
Switchgear & Controls		L.S	$16,000	1	$16,000	$0	$16,000
Interior Demolition		L.S.	$38,000	1	$38,000	$1,000	$37,000
Tailrace	Common Fill	m^3	$24	500	$12,000	$0	$12,000
Penstock							
Above Ground	Woodstave	m^2	$120	5420	$650,400	$0	$650,400
Buried	Woodstave	m^2	$140	1000	$140,000	$0	$140,000
Contaminated Soil	Earth	m^3	$800	3600	$2,880,000	$0	$2,880,000
Anchor block	Concrete	m^3	$230	15	$3,450	$0	$3,450
Forebay							
Spillway	Concrete	m^3	$230	15	$3,450	$0	$3,450
Intake							
Substructure	Concrete	m^3	$230	15	$3,450	$0	$3,450
Superstructure	Woodframe	L.S.	$3,300	1	$3,300	$0	$3,300
Supply and Place Fill	Earthfill	m^3	$24	50	$1,200	$0	$1,200
Three Island Pond							
Dam	Rockfill (Spill)	m^3	$24	200	$4,800	$0	$4,800
Gate Equipment		L.S	$2,700	1	$2,700	$0	$2,700
Concrete	Concrete	m^2	$230	45	$10,350	$0	$10,350
Three Arm Pond Dam							
Spillway & Outlet	Timber Crib	m^3	$100	150	$15,000	$0	$15,000
Gate Equipment		L.S.	$2,700	1	$2,700	$0	$2,700

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
Paddy's Pond							
Outlet	Timber Crib	m^3	$100	40	$4,000	$0	$4,000
Gate Equipment		L.S.	$2,700	1	$2,700	$0	$2,700
Paddy's Pond Dam	Earthfill	m^3	$19	2000	$38,000	$0	$38,000
Spillway repairs	Rockfill (Spill)	m^3	$22	350	$7,700	$0	$7,700
Freeboard Dams	Timber Crib	m^3	$100	54	$5,400	$0	$5,400
Thomas Pond							
Thomas Pond Dam	Earthfill	m^3	$19	12382	$235,258	$0	$235,258
Spillway	Concrete	m^3	$140	172	$24,080	$0	$24,080
Outlet	Concrete	m^3	$230	20	$4,600	$0	$4,600
Gate Equipment		L.S.	$2,700	1	$2,700	$0	$2,700
Thomas Pond Canal	Common Fill	m^3	$24	3000	$72,000	$0	$72,000
Substation							
Transformer Removal		L.S.	$27,000	1	$27,000	$1,000	$26,000
Civil		L.S.	$11,000	1	$11,000	$0	$11,000
Electrical		L.S.	$11,000	1	$11,000	$0	$11,000
Distribution		L.S.	$3,800	1	$3,800	$0	$3,800
SUBTOTALS					**$4,295,518**	**$4,000**	**$4,291,518**
MOBILIZATION	5%				$214,776		$214,776
CONTINGENCIES	10%				$429,552		$429,552
ENGINEERING & SUPERVISION	12%				$515,462		$515,462
ENVIRONMENTAL ASSESSMENT	5%				$214,776		$214,776
ENVIRRONMENTAL REQUIREMENTS	10%				$429,552		$429,552
TOTALS					**$6,099,636**	**$4,000**	**$6,095,636**

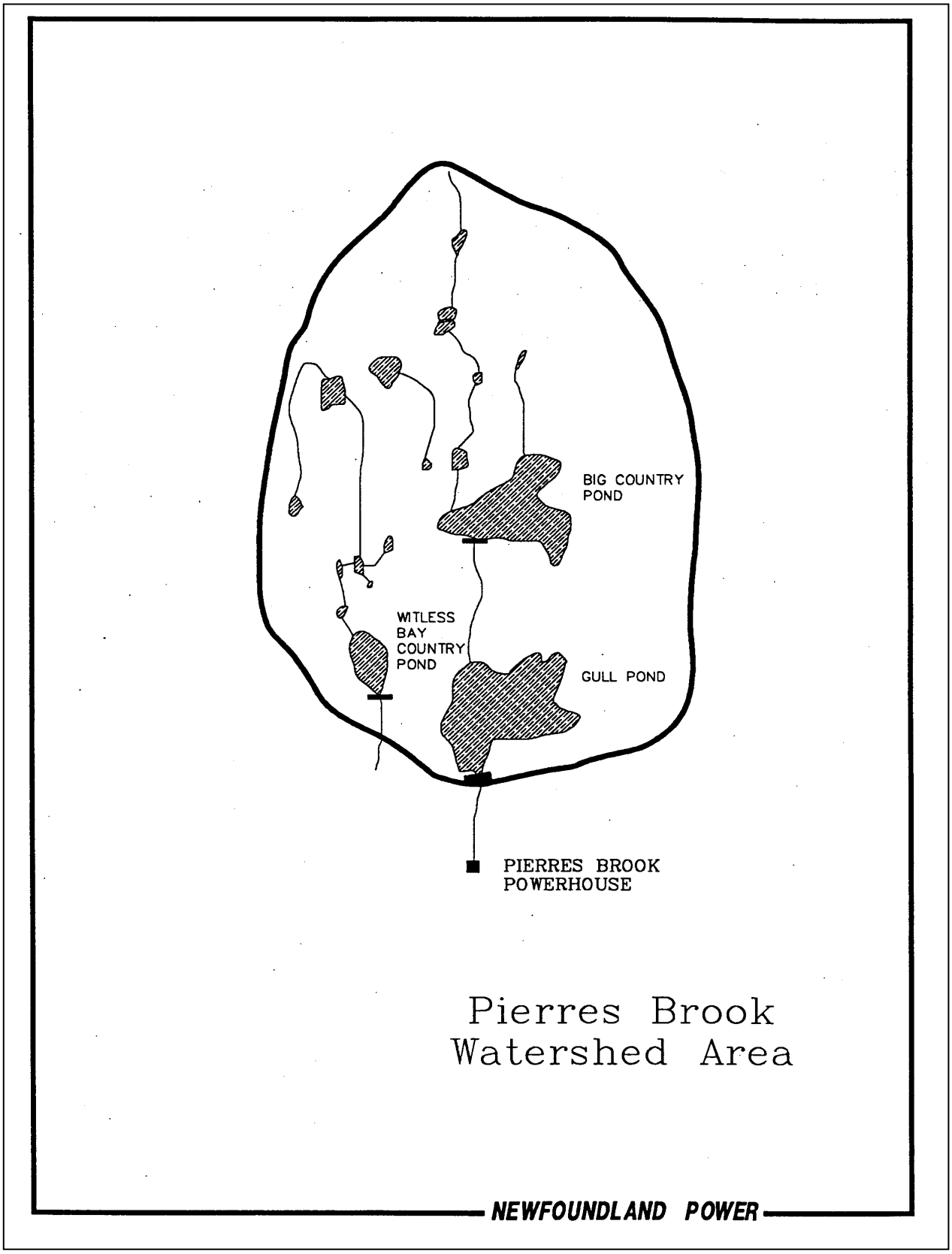
3.11 PETTY HARBOUR


COCHRANE POND
BIG POND
MIDDLE POND
THIRD POND
SECOND POND
PETTY HARBOUR POWERHOUSE
Petty Harbour Watershed Area
NEWFOUNDLAND POWER

ESTIMATED COST OF RETIRING PETTY HARBOUR							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
Powerhouse							
Superstructure	Rock Masonry	m^3	$140	275	$38,500	$0	$38,500
Substructure	Concrete	m^3	$230	192	$44,160	$0	$44,160
Turbine/Generator	Horiz. Francis	L.S.	$22,000	3	$66,000	$6,000	$60,000
Powerhouse Crane	15 ton	L.S.	$2,200	1	$2,200	$0	$2,200
Switchgear & Controls		L.S.	$27,000	1	$27,000	$0	$27,000
Interior Demolition		L.S.	$49,000	1	$49,000	$1,000	$48,000
Tailrace	Common Fill	m^3	$24	1500	$36,000	$0	$36,000
Penstock							
Penstock	Steel	m^2	$25	6032	$150,800	$0	$150,800
	Wood Stave	m^2	$120	1500	$180,000	$0	$180,000
Anchor blocks and Piers	Concrete	m^3	$230	935	$215,050	$0	$215,050
Contaminated Soil	Earth	m^3	$800	600	$480,000	$0	$480,000
Penstock Trestle	Structural Steel	L.S.	$9,000	1	$9,000	$0	$9,000
Surge Tank	Steel	L.S.	$103,000	1	$103,000	$0	$103,000
Forebay							
Forebay Dam	Concrete	m^3	$230	1025	$235,750	$0	$235,750
Gatehouse Equipment		L.S.	$2,700	1	$2,700	$0	$2,700
Gatehouse	Woodframe	L.S.	$3,300	1	$3,300	$0	$3,300
Bay Bulls Big Pond							
Bay Bulls Big Pond Spillway	Rockfill (Spill)	m^3	$22	400	$8,800	$0	$8,800
Bay Bulls Big Pond Dam	Earthfill	m^3	$19	6000	$114,000	$0	$114,000
Outlet	Concrete	m^3	$230	250	$57,500	$0	$57,500
Gatehouse Equipment		L.S.	$2,700	1	$2,700	$0	$2,700
Gatehouse		L.S.	$3,300	1	$3,300	$0	$3,300

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
Cochrane Pond							
Cochrane Pond Spillway	Concrete	m^3	$230	102	$23,460	$0	$23,460
Cochrane Pond Dam	Earthfill	m^3	$19	2800	$53,200	$0	$53,200
Cochrane Pond Outlet	Timber Crib	m^3	$120	100	$12,000	$0	$12,000
Substation							
Transformer Removal		L.S.	$33,000	1	$33,000	$2,300	$30,700
Civil		L.S.	$6,000	1	$6,000	$0	$6,000
Electrical		L.S.	$6,000	1	$6,000	$0	$6,000
SUBTOTALS					**$1,962,420**	**$9,300**	**$1,953,120**
MOBILIZATION	5%				$98,121		$98,121
CONTINGENCIES	10%				$196,242		$196,242
ENGINEERING & SUPERVISION	12%				$235,490		$235,490
ENVIRONMENTAL ASSESSMENT	6%				$117,745		$117,745
ENVIRRONMENTAL REQUIREMENTS	12%				$235,490		$235,490
TOTALS					**$2,845,509**	**$9,300**	**$2,836,209**

3.12 PIERRE'S BROOK


BIG COUNTRY POND
WITLESS BAY COUNTRY POND
GULL POND
PIERRES BROOK POWERHOUSE
Pierres Brook Watershed Area
NEWFOUNDLAND POWER

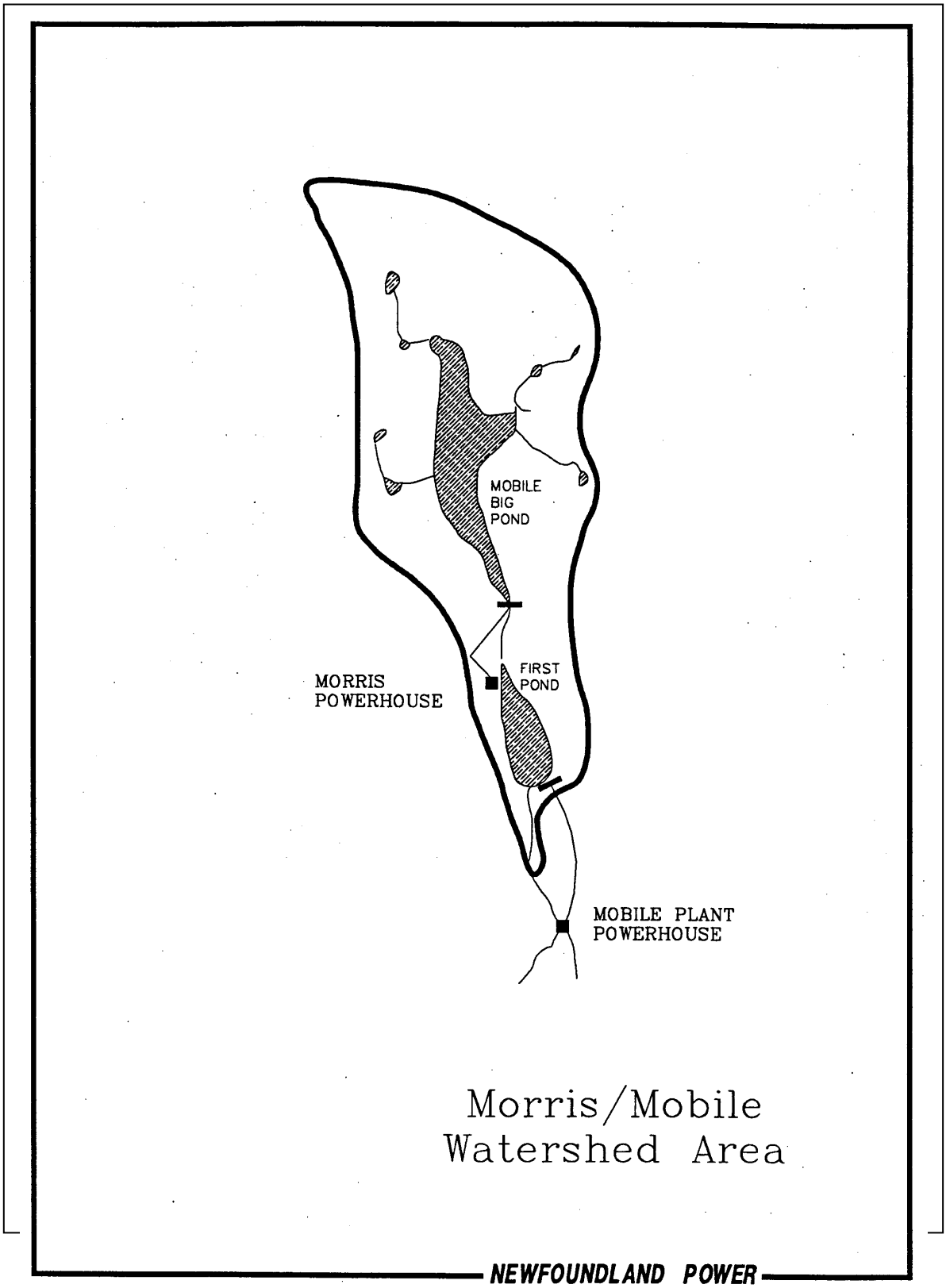
ESTIMATED COST OF RETIRING PIERRE'S BROOK							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
Powerhouse							
Superstructure	Rock Masonry	m^3	$140	150	$21,000	$0	$21,000
Substructure	Concrete	m^3	$230	70	$16,100	$0	$16,100
Powerhouse Crane	25 ton	L.S.	$1,600	1	$1,600	$0	$1,600
Turbine/Generator	Vertical Francis	L.S.	$43,000	1	$43,000	$2,000	$41,000
Switchgear & Controls		L.S.	$22,000	1	$22,000	$0	$22,000
Interior Demolition		L.S.	$43,000	1	$43,000	$1,000	$42,000
Tailrace	Common Fill	m^3	$24	500	$12,000	$0	$12,000
Penstock	Woodstave	m^2	$120	14203	$1,704,360	$0	$1,704,360
	Steel	m^2	$25	364	$9,100	$0	$9,100
Contaminated Soil	Earth	m^3	$800	6000	$4,800,000	$0	$4,800,000
Anchors & Cradles	Concrete	m^3	$140	80	$11,200	$0	$11,200
Surge Tank							
Tank & Riser	Steel	L S.	$38,000	1	$38,000	$0	$38,000
Piers & Anchor	Concrete	m^3	$140	80	$11,200	$0	$11,200
Gull Pond Forebay							
Gull Pond Forebay Dam	Earthfill	m^3	$19	2170	$41,230	$0	$41,230
Earthfill with Concrete Core (Concrete)	Concrete	m^3	$140	280	$39,200	$0	$39,200
Earthfill with Concrete Core (Earthfill)	Earthfill	m^3	$19	1575	$29,925	$0	$29,925
Intake	Concrete	m^3	$230	120	$27,600	$0	$27,600
Gate Equipment		L.S.	$2,700	1	$2,700	$0	$2,700
Gatehouse		L.S.	$3,300	1	$3,300	$0	$3,300

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
Gull Pond Spillway							
Spillway	Concrete	m^3	$230	166	$38,180	$0	$38,180
Wing Walls	Concrete	m^3	$140	240	$33,600	$0	$33,600
Gull Pond Free-board dam	Earthfill	m	$19	1436	$27,284	$0	$27,284
Witless Bay Country							
Pond Dam & Outlet	Earthfill	m^3	$19	960	$18,240	$0	$18,240
Gatehouse	Woodframe	L.S.	$3,300	1	$3,300	$0	$3,300
Gate Equipment		L.S.	$2,700	1	$2,700	$0	$2,700
Pond Spillway	Concrete	m^3	$140	195	$27,300	$0	$27,300
	Earthfill	m^3	$19	2650	$50,350	$0	$50,350
Diversion Canal.	Earthfill	m^3	$19	5150	$97,850	$0	$97,850
Big Coutnry Pond							
Big Country Pond Dam	Earthfill	m^3	$19	900	$17,100	$0	$17,100
Outlet	Concrete	m^3	$230	300	$69,000	$0	$69,000
Gate equipment		L.S.	$2,700	1	$2,700	$0	$2,700
Spillway	Earthfill	m^3	$19	104	$1,976	$0	$1,976
Rocky Pond							
Rocky Pond Dam	Earthfill	m^3	$19	173	$3,287	$0	$3,287
	Timber Crib	m^3	$120	150	$18,000	$0	$18,000
Other							
Shed	Woodframe	L.S.	$9,000	1	$9,000	$0	$9,000
Bridges	Misc.	L.S.	$3,300	3	$9,900	$0	$9,900

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
Substation							
Transformer Removal		L.S.	$33,000	1	$33,000	$2,600	$30,400
Civil		L.S.	$16,000	1	$16,000	$0	$16,000
Electrical		L.S.	$11,000	1	$11,000	$0	$11,000
Transmission	Single Pole	KM.	$26,000	5	$130,000	$0	$130,000
Forebay line	Single Pole	KM.	$8,000	3	$24,000	$0	$24,000

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
SUBTOTALS					**$7,520,282**	**$5,600**	**$7,514,682**
MOBILIZATION	3%				$225,608		$225,608
CONTINGENCIES	10%				$752,028		$752,028
ENGINEERING & SUPERVISION	7%				$526,420		$526,420
ENVIRONMENTAL ASSESSMENT	5%				$376,014		$376,014
ENVIRRONMENTAL REQUIREMENTS	5%				$376,014		$376,014
TOTALS					**$9,776,367**	**$5,600**	**$9,770,767**

3.13 MOBILE AND MORRIS

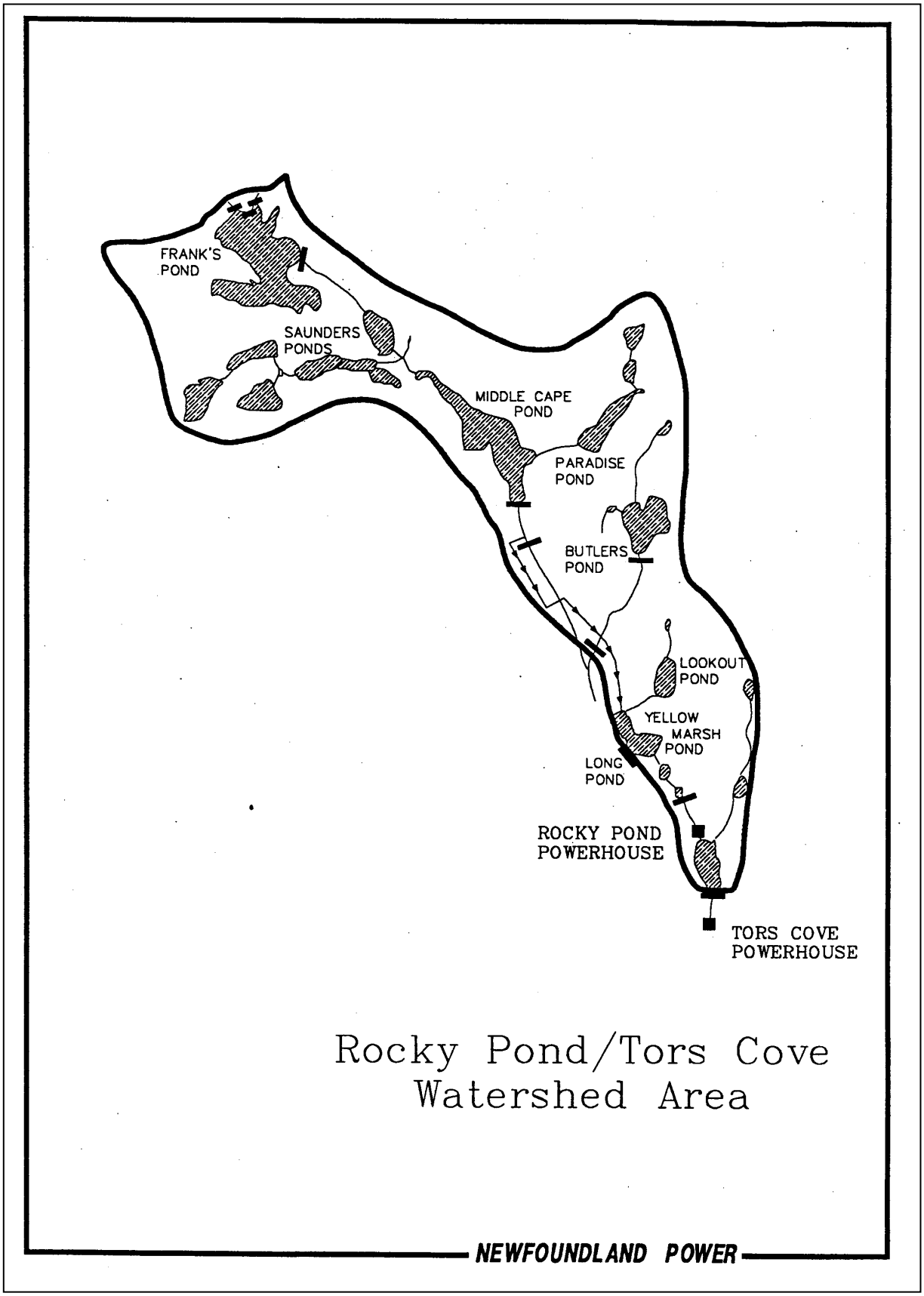

MOBILE
BIG
POND
FIRST
POND
MORRIS
POWERHOUSE
MOBILE PLANT
POWERHOUSE
Morris/Mobile
Watershed Area
NEWFOUNDLAND POWER

ESTIMATED COST OF RETIRING MOBILE/MORRIS							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
MOBILE							
Mobile Powerhouse							
Substructure	Concrete	m^3	$230	81	$18,630	$0	$18,630
Superstructure	Concrete	m^3	$230	140	$32,200	$0	$32,200
Concrete Install	Concrete	m^3	$1,600	6	$9,600	$0	$9,600
Powerhouse Crane	36 tons	L.S.	$3,300	1	$3,300	$0	$3,300
Tailrace	Common Fill	m^3	$24	60	$1,440	$0	$1,440
Turbine/generator	Vert. Francis	L.S.	$43,000	1	$43,000	$4,000	$39,000
Switchgear & Controls		L.S.	$22,000	1	$22,000	$0	$22,000
Interior Demolition		L.S.	$43,000	1	$43,000	$1,000	$42,000
Penstock	Steel	m^2	$25	3037	$75,925	$0	$75,925
	FRP (buried)	m^2	$31	8008	$248,248	$0	$248,248
Surge Tank	Steel	L S.	$54,000	1	$54,000	$0	$54,000
Surge Tank (foundations)	Concrete	m^3	$140	87	$12,180	$0	$12,180
Pipeline Thrust Blocks	Concrete	m^3	$140	137	$19,180	$0	$19,180
Forebay							
Forebay Dam	Earth	m^3	$19	1290	$24,510	$0	$24,510
Forebay Dam Intake	Concrete	m^3	$230	85	$19,550	$0	$19,550
Gatehouse	Woodframe	L.S.	$2,200	1	$3,000	$0	$3,000
Gatehouse Equipment		L.S.	$2,200	1	$2,500	$0	$2,500
Mobile							
Mobile Power Canal	Earthfill	m^3	$19	23000	$437,000	$0	$437,000
Canal Stoplog Structure	Concrete	m^3	$230	9	$2,070	$0	$2,070
Mobile First Pond Spillway	Concrete	m^3	$230	237	$54,510	$0	$54,510

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
MORRIS							
Morris							
Morris Spawning Canal	Common Fill	m^3	$24	2000	$48,000	$0	$48,000
Spawning Canal Control Structure	Concrete	m^3	$140	7	$980	$0	$980
Powerhouse Building	Pre-eng. metal	L.S.	$11,000	1	$11,000	$0	$11,000
Turbine/generator	Horiz francis	L.S.	$33,000	1	$33,000	$2,000	$31,000
Switchgear & Controls		L.S.	$16,000	1	$16,000	$0	$16,000
Interior Demolition		L.S.	$22,000	1	$22,000	$1,000	$21,000
Penstock	FRP (buried)	m^2	$28	1037	$29,036	$0	$29,036
Intake							
Intake structure	Concrete	m^3	$230	60	$13,800	$0	$13,800
Gatehouse Equipment		L.S.	$2,700	1	$2,700	$0	$2,700
Gatehouse		L.S.	$3,300	1	$3,300	$0	$3,300
Morris Canal							
Morris Canal	Earthfill	m^3	$19	20000	$380,000	$0	$380,000
Canal stoplog structure	Concrete	m^3	$230	18	$4,140	$0	$4,140
Diversion Spillway Concrete		m^3	$230	13	$2,990	$0	$2,990
SHARED							
Mobile Big Pond							
Mobile Big Pond Dam	Earthfill	m^3	$19	12431	$236,189	$0	$236,189
Mobile Big Pond Intake	Concrete	m^3	$230	21	$4,830	$0	$4,830
Gatehouse	Woodframe	L.S.	$3,300	1	$3,300	$0	$3,300
Gatehouse Equipment		L.S.	$2,700	1	$2,700	$0	$2,700
Mobile Big Pond Spillway	Concrete	m^3	$230	12	$2,760	$0	$2,760
Mobile Substation							
Transformer Removal		L.S.	$38,000	1	$38,000	$4,000	$34,000
Civil		L.S.	$11,000	1	$11,000	$0	$11,000
Electrical		L.S.	$11,000	1	$11,000	$0	$11,000

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
Morris Substation							
Transformer Removal		L.S.	$22,000	1	$22,000	$1,000	$21,000
Civil		L.S.	$11,000	1	$11,000	$0	$11,000
Electrical		L.S.	$11,000	1	$11,000	$0	$11,000
Mobile forebay line	Single Pole	KM.	$8,000	2	$16,000	$0	$16,000
Morris Forebay line	Single Pole	KM	$8,000	1	$8,000	$0	$8,000
Transmission line	Single Pole	KM.	$26,000	5	$130,000	$0	$130,000
SUBTOTALS					**$2,200,568**	**$13,000**	**$2,187,568**
MOBILIZATION	5%				$110,028		$110,028
CONTINGENCIES	10%				$220,057		$220,057
ENGINEERING & SUPERVISION	12%				$264,068		$264,068
ENVIRONMENTAL ASSESSMENT	8%				$176,045		$176,045
ENVIRRONMENTAL REQUIREMENTS	12%				$264,068		$264,068
TOTALS					**$3,234,835**	**$13,000**	**$3,221,835**

3.14 TORS COVE AND ROCKY POND


FRANK'S POND
SAUNDERS PONDS
MIDDLE CAPE POND
PARADISE POND
BUTLERS POND
LOOKOUT POND
YELLOW MARSH POND
LONG POND
ROCKY POND POWERHOUSE
TORS COVE POWERHOUSE
Rocky Pond/Tors Cove Watershed Area
NEWFOUNDLAND POWER

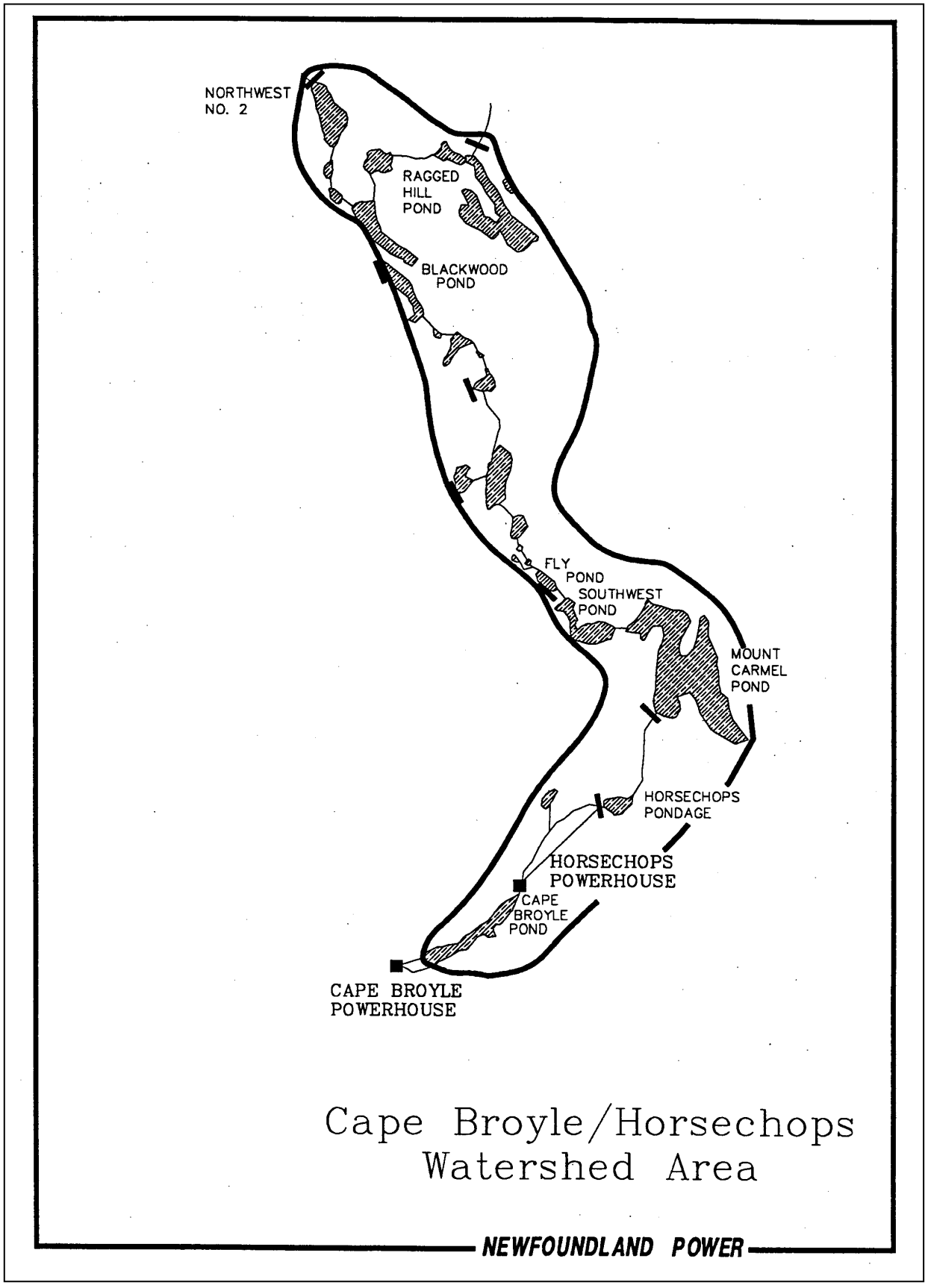
ESTIMATED COST OF RETIRING TORS COVE/ROCKY POND							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
TORS COVE							
Tors Cove Powerhouse							
Substructure	Concrete	m^3	$230	140	$32,200	$0	$32,200
Superstructure	Concrete	m^3	$230	180	$41,400	$0	$41,400
Powerhouse Crane	15 ton	L.S.	$1,600	1	$1,600	$0	$1,600
Turbine/Generator	Horiz Francis	L.S.	$22,000	3	$66,000	$6,000	$60,000
Switchgear & Controls		L.S.	$33,000	1	$33,000	$0	$33,000
Interior Demolition		L.S.	$54,000	1	$54,000	$1,000	$53,000
Tailrace	Concrete	m^3	$1,600	4	$6,400	$0	$6,400
Penstock							
Penstock	Woodstave	m^2	$120	5958	$714,960	$0	$714,960
Contaminated Soil	Earth	m^3	$800	1750	$1,400,000	$0	$1,400,000
Trestle	Steel	L.S.	$5,400	1	$5,400	$0	$5,400
Surge Tank	Steel	L. S.	$43,000	1	$43,000	$0	$43,000
Foundations	Concrete	m^3	$140	80	$11,200	$0	$11,200
Anchor Blocks	Concrete	m^3	$140	100	$14,000	$0	$14,000
Tors Cove Dam							
East Dam	Backfill	m^3	$22	285	$6,270	$0	$6,270
Tors Cove Pond Dam Reconstruction	Earthfill	L.S.	$33,000	1	$33,000	$0	$33,000
Gatehouse	Woodframe	L.S.	$3,300	1	$3,300	$0	$3,300
Gate Equipment		L.S.	$2,700	1	$2,700	$0	$2,700
ROCKY POND							
Rocky Pond Powerhouse							
Substructure	Concrete	m^3	$230	50	$11,500	$0	$11,500
Superstructure	Concrete	m^3	$230	90	$20,700	$0	$20,700
Powerhouse Crane	16.5 ton	L.S.	$1,700	1	$1,700	$0	$1,700
Turbine/generator	Vert-Francis	L.S	$43,000	1	$43,000	$2,000	$41,000

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
Switchgear & Controls		L.S.	$22,000	1	$22,000	$0	$22,000
Interior Demolition		L.S.	$43,000	1	$43,000	$1,000	$42,000
Tailrace	Backfill	m^3	$22	200	$4,400	$0	$4,400
Penstock							
Penstock	Steel	m^2	$25	5400	$135,000	$0	$135,000
Anchor Blocks	Concrete	m^3	$230	875	$201,250	$0	$201,250
Rocky Pond							
Rocky Pond	Earthfill	m^3	$19	5575	$105,925	$0	$105,925
Spillway	Concrete	m^3	$230	57	$13,110	$0	$13,110
Intake	Concrete	m^3	$230	130	$29,900	$0	$29,900
Gatehouse		L.S.	$3,300	1	$3,300	$0	$3,300
Gatehouse equipment		L.S.	$2,200	1	$2,200	$0	$2,200
Rocky Pond freeboard dams (3)	Earthfill	L.S.	$19	1000	$19,000	$0	$19,000
Long Pond /Middle Pond							
Long Pond/Middle Pond structure	Concrete	m^3	$140	39	$5,460	$0	$5,460
Long Pond Spillway Dam	Rockfill (Spill)	m^3	$22	819	$18,018	$0	$18,018
La Manche/Butlers							
Lamanche Canal Spillways (6)	Concrete	L.S.	$3,300	6	$19,800	$0	$19,800
Butlers Spillway	Rockfill (Spill)	m^3	$22	286	$6,292	$0	$6,292
Lamanche Canal	Earthfill	m^3	$19	12493	$237,367	$0	$237,367
Butlers Pond Dam	Rockfill (Spill)	m^3	$22	1300	$28,600	$0	$28,600
Cluneys							
Cluneys Downstream Spillway	Rockfill (Spill)	m^3	$22	120	$2,640	$0	$2,640
Cluney's Weir	Concrete	m^3	$140	65	$9,100	$0	$9,100
Cluney's Control Structure	Concrete	m^3	$140	23	$3,220	$0	$3,220
	Gabions	m^3	$31	40	$1,240	$0	$1,240
Gatehouse	Woodframe	L.S.	$2,200	1	$3,000	$0	$3,000

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
Cluney's upstream spillway	Rockfill (Spill)	m^3	$22	890	$19,580	$0	$19,580
Cluney's Diversion Dam	Earthfill	m^3	$19	1300	$24,700	$0	$24,700
Cluney's Canal	Earthfill	m^3	$19	8254	$156,826	$0	$156,826
Cape Pond							
Cape Pond Dam	Earthfill	m^3	$19	14500	$275,500	$0	$275,500
Spillway	Concrete	m^3	$140	625	$87,500	$0	$87,500
Gate Equipment		L.S.	$2,700	1	$2,700	$0	$2,700
Partially Decomissioned Dam Sites							
Saunders Pond	Timber Crib	L.S.	$11,000	1	$11,000	$0	$11,000
Franks Pond							
Frank's Pond Storage Dam	Earthfill	m^3	$19	1929	$36,651	$0	$36,651
Frank's Pond Intake	Concrete	m^3	$230	33	$7,590	$0	$7,590
Gatehouse	Woodframe	L.S.	$3,300	1	$3,300	$0	$3,300
Gatehouse equipment		L.S.	$2,700	1	$2,700	$0	$2,700
No. 7 Dam	Earthfill	m^3	$19	455	$8,645	$0	$8,645
No. 6 Dam	Earthfill	m^3	$19	350	$6,650	$0	$6,650
No. 5 Dam	Earthfill	m^3	$19	870	$16,530	$0	$16,530
No. 4 Dam	Earth Encased	m^3	$19	835	$15,865	$0	$15,865
No. 3 Dam	Earth Encased	m^3	$19	400	$7,600	$0	$7,600
No. 2 Dam	Earthfill	m^3	$19	120	$2,280	$0	$2,280
No. 1 Dam	Vertical Wood	L.S.	$1,300	1	$1,300	$0	$1,300
Frank's Pond Canal	Earthfill	m^3	$19	5664	$107,616	$0	$107,616
Transmission Lines							
Tore Cove	Single Pole	KM.	$27,000	5	$135,000	$0	$135,000
Tore Cove Forebay Line	Single Pole	KM	$8,000	1	$8,000	$0	$8,000
Rocky Pond	Single Pole	KM.	$27,000	1	$27,000	$0	$27,000
Rocky Pond Forebay Line	Single Pole	KM.	$8,000	1	$8,000	$0	$8,000

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
Tor's Cove Substation							
Transformer Removal		L.S.	$33,000	1	$33,000	$3,000	$30,000
Civil		L.S.	$11,000	1	$11,000	$0	$11,000
Electrical		L.S.	$11,000	1	$11,000	$0	$11,000
Rocky Pond Substation							
Transformer Removal		L.S.	$33,000	1	$33,000	$2,300	$30,700
Civil		L.S.	$16,000	1	$16,000	$0	$16,000
Electrical		L.S.	$11,000	1	$11,000	$0	$11,000
Other							
Bridges	Misc.	L.S.	$3,300	2	$6,600	$0	$6,600
SUBTOTALS					**$4,553,285**	**$15,300**	**$4,537,985**
MOBILIZATION	5%				$227,664		$227,664
CONTINGENCIES	10%				$455,329		$455,329
ENGINEERING & SUPERVISION	10%				$455,329		$455,329
ENVIRONMENTAL ASSESSMENT	8%				$364,263		$364,263
ENVIRRONMENTAL REQUIREMENTS	10%				$455,329		$455,329
TOTALS					**$6,511,198**	**$15,300**	**$6,495,898**

3.15 CAPE BROYLE AND HORSE CHOPS


NORTHWEST
NO. 2
RAGGED
HILL
POND
BLACKWOOD
POND
FLY
POND
SOUTHWEST
POND
MOUNT
CARMEL
POND
HORSECHOPS
PONDAGE
HORSECHOPS
POWERHOUSE
CAPE
BROYLE
POND
CAPE BROYLE
POWERHOUSE
Cape Broyle/Horsechops
Watershed Area
NEWFOUNDLAND POWER

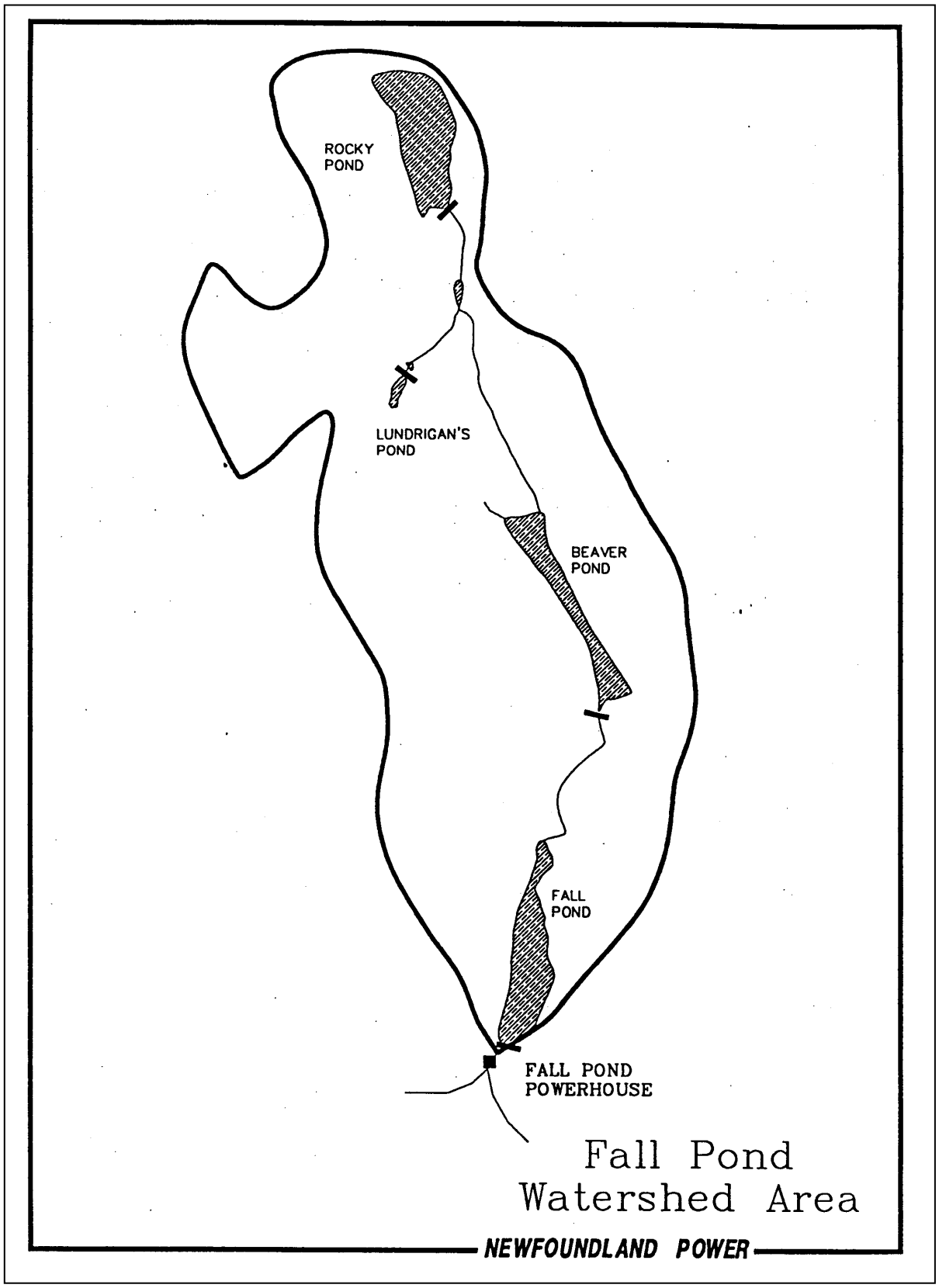
ESTIMATED COST OF RETIRING CAPE BROYLE/HORSECHOPS							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
CAPE BROYLE							
Powerhouse							
Superstructure	Masonry	m^3	$140	156	$21,840	$0	$21,840
Substructure	Concrete	m^3	$230	50	$11,500	$0	$11,500
Powerhouse crane	30 ton	L.S.	$1,700	1	$1,700	$0	$1,700
Turbine/Generator	Vertical francis	L.S.	$33,000	1	$40,000	$2,000	$38,000
Switchgear & Controls		L.S.	$22,000	1	$40,000	$0	$40,000
Interior Demolition		L.S.	$43,000	1	$40,000	$1,000	$39,000
Tailrace							
Installed concrete	Concrete	m^3	$1,600	4	$6,400	$0	$6,400
Penstock							
Penstock	Steel	m^2	$25	3236	$80,900	$0	$80,900
Anchor Blocks and piers	Concrete	m^3	$230	600	$138,000	$0	$138,000
Intake	Concrete	m^3	$230	35	$8,050	$0	$8,050
Backfill	Common Fill	m^3	$25	175	$4,375	$0	$4,375
Installed concrete	Concrete	m^3	$1,600	10	$16,000	$0	$16,000
Gate Equipment		L.S.	$2,700	1	$2,700	$0	$2,700
Cape Broyle Forebay							
Cape Broyle Dam	Earth Fill	m^3	$19	3250	$61,750	$0	$61,750
Spillway	Concrete	m^3	$230	150	$34,500	$0	$34,500
HORSE CHOPS							
Powerhouse							
Superstructure	Steel	m^3	$25	1570	$39,250	$0	$39,250
Substructure	Concrete	m^2	$230	112	$25,760	$0	$25,760
Siding	Asbestos	m^2	$230	515	$118,450	$0	$118,450
Powerhouse crane	36 ton	L.S.	$1,700	1	$1,700	$0	$1,700

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
Turbine/Generator	Vertical Francis	L.S.	$43,000	1	$43,000	$2,000	$41,000
Switchgear & Controls		L.S.	$22,000	1	$22,000	$0	$22,000
Interior Demolition		L.S.	$43,000	1	$43,000	$1,000	$42,000
Tailrace							
Culverts	Steel	m^3	$24	180	$4,320	$0	$4,320
Backfill	Common Fill	m^3	$24	1008	$24,192	$0	$24,192
Penstock							
Penstock	Steel	m^2	$25	8018	$200,450	$0	$200,450
Anchor Blocks and piers	Concrete	m^3	$230	930	$213,900	$0	$213,900
Surge Tank							
Surge Tank	Steel	L. S.	$54,000	1	$54,000	$0	$54,000
Foundations	Concrete	m^3	$140	80	$11,200	$0	$11,200
Intake	Concrete	m^3	$230	35	$8,050		$8,050
Gate Equipment		L.S	$2,700	1	$2,700	$0	$2,700
Gatehouse	Wooden Frame	L.S.	$3,300	1	$3,300	$0	$3,300
Embankment	Earthfill	m^3	$19	700	$13,300	$0	$13,300
Horse Chops							
Horse Chops Power Canal	Earthfill	m^3	$19	13000	$247,000	$0	$247,000
Horse Chops East dam	Earthfill	m^3	$19	1215	$23,085	$0	$23,085
Horse Chops Spillway	Concrete	m^3	$230	40	$9,200	$0	$9,200
Horse Chops West Dam	Earthfill	m^3	$19	8164	$155,116	$0	$155,116
SHARED							
Mount Carmel							
Mount Carmel Pond Dam	Common Fill	m^3	$24	11265	$270,360	$0	$270,360
Outlet	Concrete	m^3	$230	130	$29,900	$0	$29,900
Spillway	Concrete	m^3	$140	246	$34,440	$0	$34,440
Backfill	Common Fill	m^3	$24	1100	$26,400	$0	$26,400

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
Gate Equipment		L.S.	$2,700	1	$2,700	$0	$2,700
Gatehouse	Wooden Frame	L.S.	$3,300	1	$3,300	$0	$3,300
Fly Pond							
Fly Pond Diversion Dam	Earthfill	m^3	$19	1380	$26,220	$0	$26,220
Fly Pond Canal Bridge	Steel & Timber	L.S.	$5,200	1	$5,200	$0	$5,200
Two Arm Pond							
Two Arm Pond Diversion Dam	Earthfill	m^3	$19	1300	$24,700	$0	$24,700
Fourth Blackwoods Pond Canal Bridge and							
Stoplog Structure	Concrete	m^3	$230	10	$2,300	$0	$2,300
Blackwood Pond							
Dam/Spillway	Earthfill	m^3	$19	358	$6,802	$0	$6,802
Fourth Blackwood Pond Freeboard Dams (1&2)	Earthfill	m^3	$19	300	$5,700	$0	$5,700
East Blackwoods Pond Spillway	Earthfill	m^3	$19	306	$5,814	$0	$5,814
East Blackwoods					$0		$0
East Blackwoods Pond Freeboard Dams (1-9)	Earthfill	m^3	$19	1960	$37,240	$0	$37,240
Northwest Blackwoods Pond							
Diversion dam	Earthfill	m^3	$19	2126	$40,394	$0	$40,394
Freeboard dam	Earthfill	m^3	$19	150	$2,850	$0	$2,850
Pond Diversion Dam	Earthfill	m^3	$19	840	$15,960	$0	$15,960
Jordan River							
Diversion Dam	Earthfill	m^3	$19	495	$9,405	$0	$9,405
Freeboard Dam (1&2)	Earthfill	m^3	$19	650	$12,350	$0	$12,350
West Ragged Hills							
West Ragged Hills Spillway Dam	Timber crib	m^3	$120	301	$36,120	$0	$36,120
Rock Pond							
Rock Pond Dam	Earthfill	m^3	$19	107	$2,033	$0	$2,033

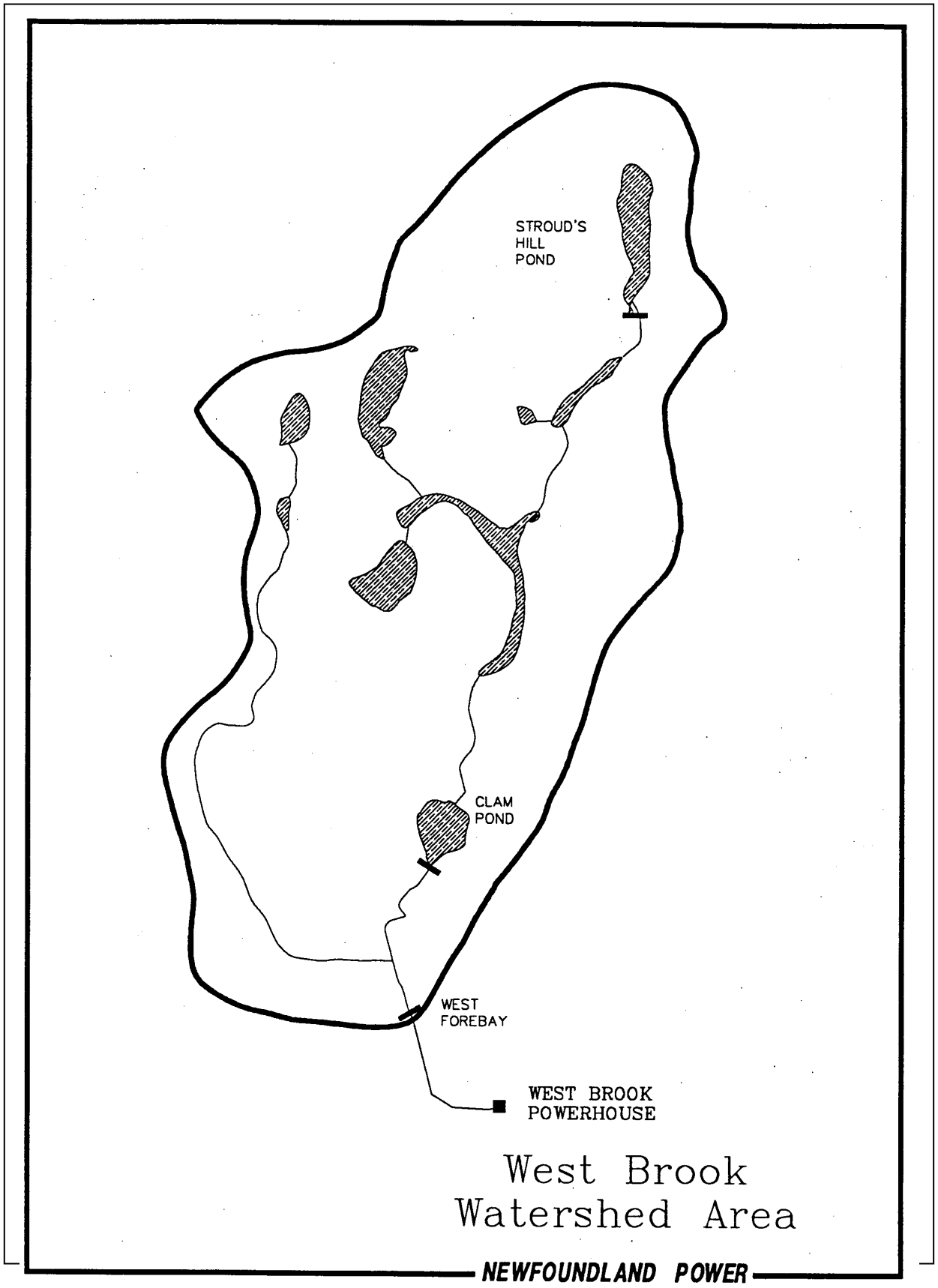
DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
Other							
Storage Sheds	Woodframe	L S.	$2,700	1	$3,000	$0	$3,000
Concrete		m^3	$230	11	$2,530	$0	$2,530
Substation (Cape Broyle)							
Transformer Removal		L.S.	$33,000	1	$33,000	$3,400	$29,600
Civil		L.S.	$6,000	1	$6,000	$0	$6,000
Electrical		L.S.	$6,000	1	$6,000	$0	$6,000
Substation (Horsechops)							
Transformer Removal		L.S	$33,000	1	$33,000	$4,600	$28,400
Civil		L.S	$16,000	1	$16,000	$0	$16,000
Electrical		L.S	$11,000	1	$11,000	$0	$11,000
Transmission (Horsechops)							
Forebay Line	Single Pole	KM	$8,000	1	$8,000	$0	$8,000
Transmission Line H-frame		KM.	$29,000	6	$174,000	$0	$174,000
SUBTOTALS					**$2,663,406**	**$14,000**	**$2,649,406**
MOBILIZATION	5%				$133,170		$133,170
CONTINGENCIES	10%				$266,341		$266,341
ENGINEERING & SUPERVISION	10%				$266,341		$266,341
ENVIRONMENTAL ASSESSMENT	8%				$213,072		$213,072
ENVIRRONMENTAL REQUIREMENTS	12%				$319,609		$319,609
TOTALS					**$3,861,939**	**$14,000**	**$3,847,939**

3.16 FALL POND


ROCKY POND
LUNDRIGAN'S POND
BEAVER POND
FALL POND
FALL POND POWERHOUSE
Fall Pond Watershed Area
NEWFOUNDLAND POWER

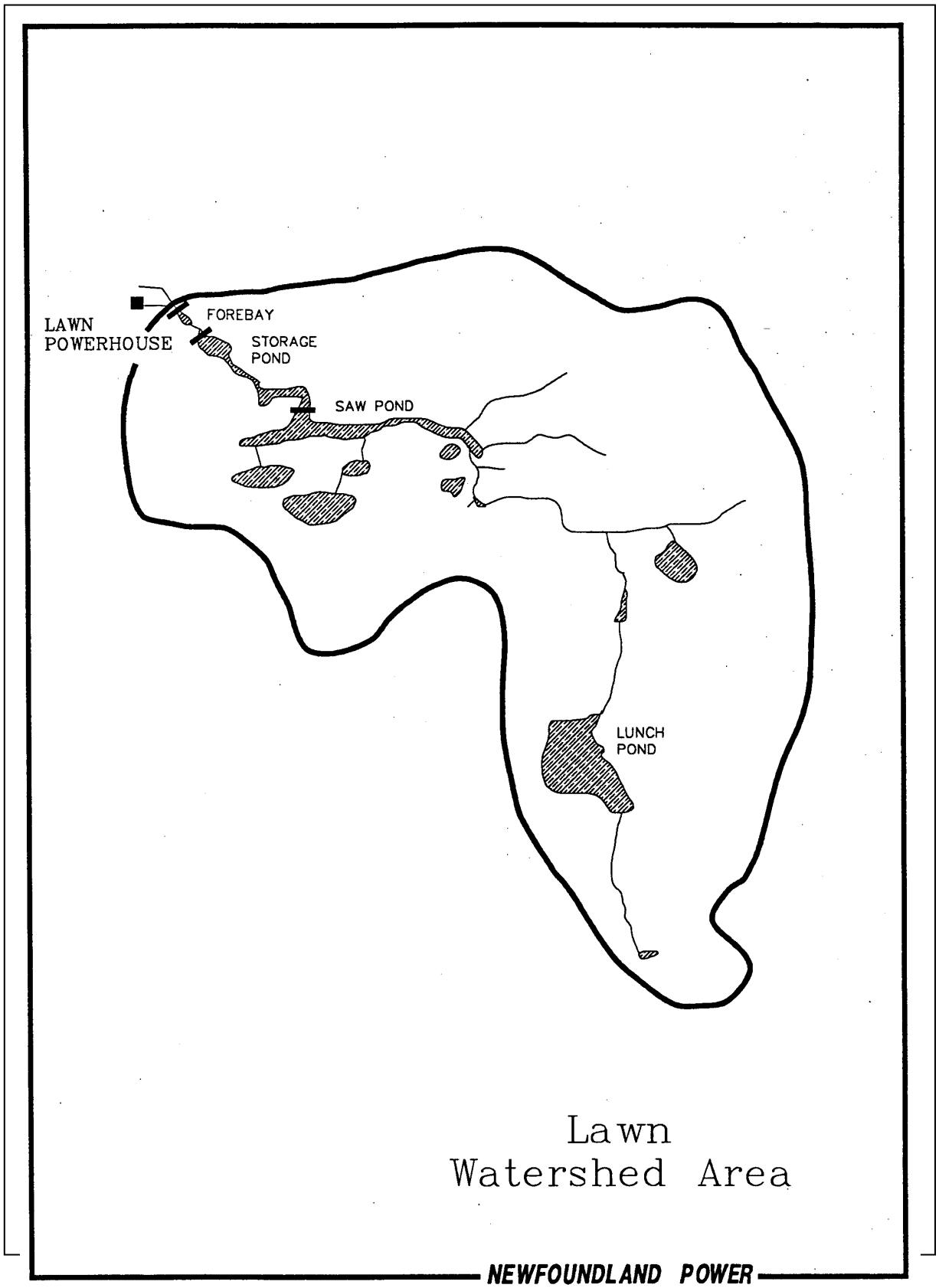
ESTIMATED COST OF RETIRING FALL POND							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
Powerhouse							
Superstructure	Concrete	m^3	$230	52	$11,960	$0	$11,960
Substructure	Concrete	m^3	$230	26	$5,980	$0	$5,980
Turbine/Generator	Horiz. Francis	L.S.	$16,000	1	$16,000	$500	$15,500
Switchgear & Controls		L.S.	$6,000	1	$6,000	$0	$6,000
Interior Demolition		L.S.	$16,000	1	$16,000	$500	$15,500
Penstock	Woodstave	m^2	$25	50	$1,250	$0	$1,250
Forebay							
Forebay Structures	Concrete	m	$340	1450	$493,000	$0	$493,000
Partially Decomissioned Dam Sites							
Beaver Pond, Lundrigan's Pond, Rocky Pond	Timber/Rockfill	L.S.	$33,000	1	$33,000	$0	$33,000
Substation							
Transformer Removal		L.S.	$22,000	1	$22,000	$0	$22,000
Civil		L.S.	$6,000	1	$6,000	$0	$6,000
Electrical		L.S.	$6,000	1	$6,000	$0	$6,000
SUBTOTALS					**$617,190**	**$1,000**	**$616,190**
MOBILIZATION	5%				$30,860		$30,860
CONTINGENCIES	15%				$92,579		$92,579
ENGINEERING & SUPERVISION	20%				$123,438		$123,438
ENVIRONMENTAL ASSESSMENT	12%				$74,063		$74,063
ENVIRRONMENTAL REQUIREMENTS	15%				$92,579		$92,579
TOTALS					**$1,030,707**	**$1,000**	**$1,029,707**

3.17 WEST BROOK


STROUD'S
HILL
POND
CLAM
POND
WEST
FOREBAY
WEST BROOK
POWERHOUSE
West Brook
Watershed Area
NEWFOUNDLAND POWER

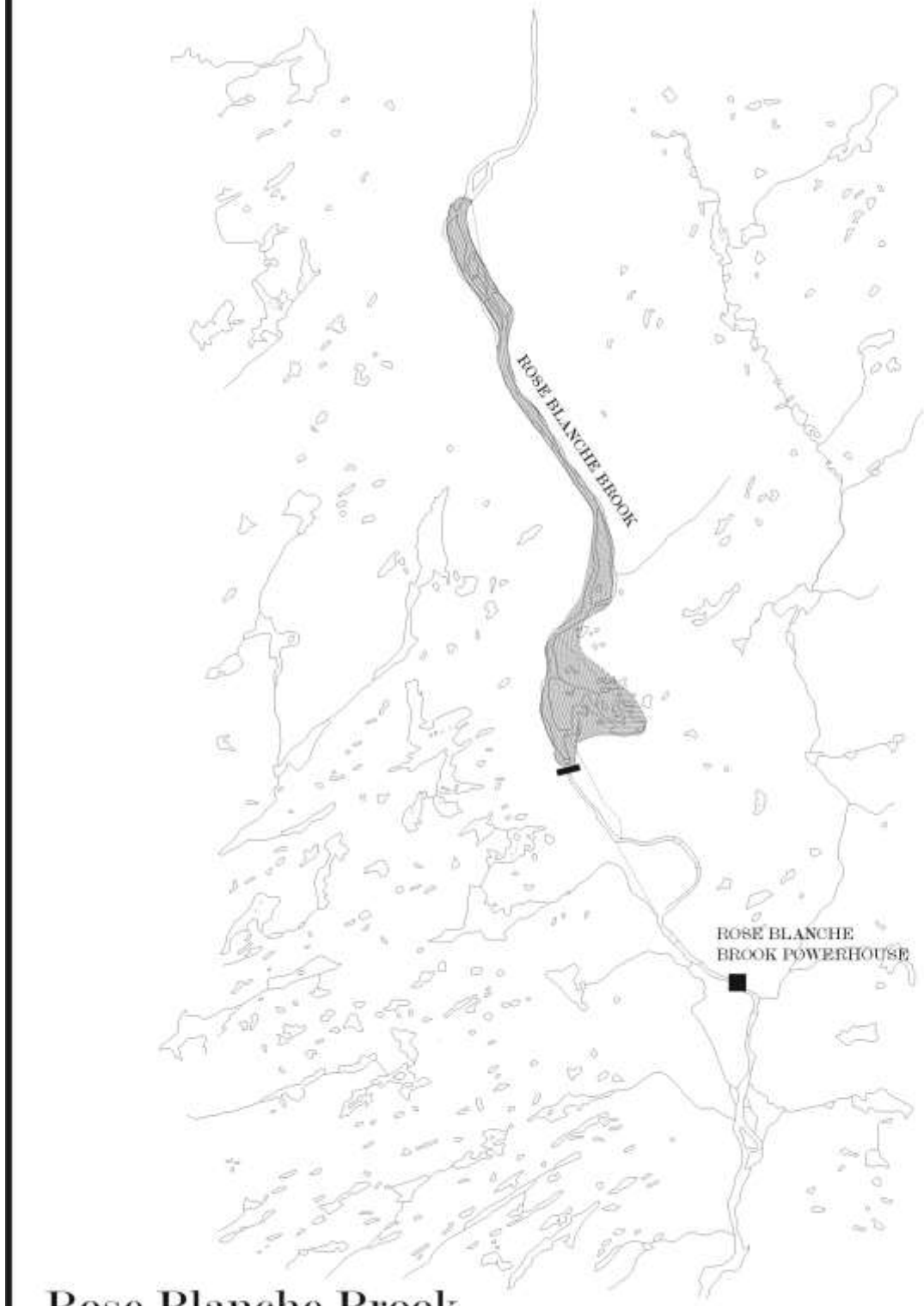
ESTIMATED COST OF RETIRING WEST BROOK							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
Powerhouse							
Superstructure	Concrete	m^3	$230	42	$9,660	$0	$9,660
Substructure	Concrete	m^3	$230	29	$6,670	$0	$6,670
Turbine/Generator	Horiz-Francis	L.S.	$22,000	1	$22,000	$500	$21,500
Switchgear & Controls		L.S.	$11,000	1	$11,000	$0	$11,000
Tailrace	Common Fill	m^3	$24	321	$7,704	$0	$7,704
Interior Demolition		L.S.	$22,000	1	$22,000	$500	$21,500
Penstock	Fiberglass (buried)	m^2	$29	2311	$67,019	$0	$67,019
Intake							
Intake & Canal Spillway	Concrete	m^3	$230	340	$78,200	$0	$78,200
Power Canal	Earthfill	m^3	$19	4800	$91,200	$0	$91,200
Partially Decomissioned Dam Sites							
Strouds Hill Pond	Timber	L.S.	$11,000	1	$11,000	$0	$11,000
Substation							
Transformer Removal		L.S.	$22,000	1	$22,000	$0	$22,000
Civil		L.S.	$6,000	1	$6,000	$0	$6,000
Electrical		L.S.	$6,000	1	$6,000	$0	$6,000
SUBTOTALS					**$360,453**	**$1,000**	**$359,453**
MOBILIZATION	5%				$18,023		$18,023
CONTINGENCIES	15%				$54,068		$54,068
ENGINEERING & SUPERVISION	20%				$72,091		$72,091
ENVIRONMENTAL ASSESSMENT	15%				$54,068		$54,068
ENVIRRONMENTAL REQUIREMENTS	20%				$72,091		$72,091
TOTALS					**$630,793**	**$1,000**	**$629,793**

3.18 LAWN


LAWN
POWERHOUSE
FOREBAY
STORAGE
POND
SAW POND
LUNCH
POND
Lawn
Watershed Area
NEWFOUNDLAND POWER

ESTIMATED COST OF RETIRING LAWN							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
Powerhouse							
Superstructure	Concrete	m^3	$230	62	$14,260	$0	$14,260
Substructure	Concrete	m^3	$230	47	$10,810	$0	$10,810
Turbine/ Generator	Horiz.Francis	L.S.	$22,000	1	$22,000	$2,000	$20,000
Switchgear & Controls		L.S.	$11,000	1	$11,000	$0	$11,000
Interior Demolition		L.S.	$22,000	1	$22,000	$1,000	$21,000
Penstock							
Penstock	Woodstave	m^2	$120	960	$115,200	$0	$115,200
Contaminated Soil	Earth	m^3	$800	500	$400,000	$0	$400,000
Forebay							
Forebay Dam	(Conc. encased)	L.S	$82,000	1	$82,000	$0	$82,000
	Rockfill	m^3	$22	1200	$26,400	$0	$26,400
	Gatelift	L S.	$2,700	1	$2,700	$0	$2,700
Gatehouse	Wooden	L.S.	$3,300	1	$3,300	$0	$3,300
Forebay Spillway	Concrete	m^3	$230	43	$9,890	$0	$9,890
Substation							
Transformer Removal		L.S.	$22,000	1	$22,000	$0	$22,000
Civil		L.S.	$6,000	1	$6,000	$0	$6,000
Electrical		L.S.	$6,000	1	$6,000	$0	$6,000
SUBTOTALS					**$753,560**	**$3,000**	**$750,560**
MOBILIZATION	5%				$37,678		$37,678
CONTINGENCIES	15%				$113,034		$113,034
ENGINEERING & SUPERVISION	20%				$150,712		$150,712
ENVIRONMENTAL ASSESSMENT	12%				$90,427		$90,427
ENVIRRONMENTAL REQUIREMENTS	20%				$150,712		$150,712
TOTALS					**$1,296,123**	**$3,000**	**$1,293,123**

3.19 ROSE BLANCHE



Rose Blanche Brook
Watershed Area

NEWFOUNDLAND POWER

ESTIMATED COST OF RETIRING ROSE BLANCHE PLANT							
DESCRIPTION	**TYPE**	**UNIT**	**UNIT COST ($)**	**ESTIMATED QUANTITY**	**ESTIMATED COST ($)**	**SALVAGE VALUE ($)**	**TOTAL COST ($)**
Powerhouse							
Superstructure	Steel	m^3	$25	$1,085	$27,125	$0	$27,125
Substructure	Concrete	m^3	$230	$1,015	$233,450	$0	$233,450
Powerhouse Crane	30 ton	L.S.	$1,700	$1	$1,700	$0	$1,700
Turbine/Generator	Dual Hor. Francis	L.S.	$130,000	$1	$40,000	$2,000	$38,000
Switchgear & Controls		L.S.	$22,000	$1	$22,000	$0	$22,000
Tailrace	Concrete	m^3	$230	$123	$28,290	$0	$28,290
	Rockfill	m^3	$22	$1,200	$26,400	$0	$26,400
Interior Demolition		L.S.	$43,000	$1	$43,000	$1,000	$42,000
Penstock							
Above Ground	Streel	m^2	$21	$6,765	$142,065	$0	$142,065
Anchor Blocks	Concrete	m^3	$230	$1,200	$276,000	$0	$276,000
Forebay							
Forebay Dam	Concrete	m^3	$230	$1,010	$232,300	$0	$232,300
	Rockfill	m^3	$22	$26,600	$585,200	$0	$585,200
Spillway	Concrete	m^3	$230	$150	$34,500	$0	$34,500
Intake	Concrete	m^3	$230	$680	$156,400	$0	$156,400
Gate Equipment		L.S.	$2,200	$1	$2,500	$0	$2,500
Gatehouse	Wooden Frame	L.S.	$3,300	$1	$3,300	$0	$3,300
Substation							
Transformer Removal		L.S.	$33,000	$1	$33,000	$3,300	$29,700
Civil		L.S.	$11,000	$1	$11,000	$0	$11,000
Electrical		L.S.	$11,000	$1	$11,000	$0	$11,000
Transmission		KM	$27,000	$5	$135,000	$0	$135,000

DESCRIPTION	TYPE	UNIT	UNIT COST ($)	ESTIMATED QUANTITY	ESTIMATED COST ($)	SALVAGE VALUE ($)	TOTAL COST ($)
SUBTOTALS					**$2,044,230**	**$6,300**	**$2,037,930**
MOBILIZATION	5%				$102,212		$102,212
CONTINGENCIES	10%				$204,423		$204,423
ENGINEERING & SUPERVISION	12%				$245,308		$245,308
ENVIRONMENTAL ASSESSMENT	8%				$163,538		$163,538
ENVIRRONMENTAL REQUIREMENTS	10%				$204,423		$204,423
TOTALS					**$2,964,134**	**$6,300**	**$2,957,834**

Appendix A

2000 Decommissioning Report: Section 2 Reproduced

NEWFOUNDLAND POWER
HYDRO PLANT DECOMMISSIONING UPDATE
OCTOBER 2000

Section 2 Reproduced

2.1 GENERAL

Newfoundland Power owns and operates 23 small hydroelectric plants in 19 developments. The total installed capacity is 94.7 MW and they generate an average of 450 GWH per annum. The turbine-generator units range in size from 350 kW to 12,000 kW. These developments are scattered all over the province with the greatest concentration on the Avalon Peninsula. The oldest development in the system is Petty Harbour, which is vintage 1900 while the newest development is Rose Blanche Plant. The Rose Blanche Development was constructed in 1998 and commissioned in 1999.

Since the late seventies there has been extensive work carried out on the existing hydro plants with replacements of various components due to deterioration. Replacements have included entire turbine-generator sets, dams, penstocks, switchgear and controls, and other components. As well as replacement there have been various repairs and upgrading carried out including runner replacements, concrete dam repairs and controls upgrading. The intention of Newfoundland Power is to maintain and operate these developments as long as they continue to be an economical source of energy.

The first basic assumption of this report is that all developments will be maintained in good condition up until the time that they are decommissioned. This means that there should be no unexpected environmental costs during decommissioning. All equipment will be maintained in good condition and any faulty equipment will be replaced.

In the preparation of this report a number of difficulties in estimating decommissioning costs were encountered. The main items were environmental factors, demolition cost estimates, salvage values and availability of drawings and other technical information for each component. In order to carry out the estimates many appropriate assumptions and methodologies of decommissioning were developed. Comments on these assumptions are presented in point form.

2.1.1 Environmental

Most work either in new construction or decommissioning affects the environment in some way and is therefore subject to approval from a number of government agencies before execution of the work. In addition to direct approvals there will be a requirement to go through an environmental assessment process before any approvals can be obtained for the decommissioning of an entire project. In view of this, each development has a lump sum cost included for this environmental assessment. This lump sum ranges from five to eight percent of the total decommissioning cost and is dependent on the environmental sensitivity.

Recent decommissioning projects also have had the added measure of a full assessment of the site to determine the occurrence of contaminants. As stated previously all sites will be cleaned up on an ongoing basis to ensure there are no legacy issues with respect to contamination, however, it will be necessary upon the decommissioning of an entire site to verify that the site is clean. A lump sum of five percent of the total cost has been added for this work.

The methods assumed for decommissioning the various components in the developments are based mainly on past experience. As stated previously, many structures in our small hydro systems have been rebuilt and this work involved retirement of the original structures. The decommissioning procedures are based on experience from these projects. As well, prior to compiling this report, input from the Department of Environment & Labour was obtained to see if there will be more stringent measures required in future.

One of the most critical environmental concerns, of course, is salmonoids. This is a major consideration in all work associated with hydroelectric developments and is considered a significant factor in decommissioning of dams. Past experience governed the various scenarios and costs reflected in the mandate of the Federal Department of Fisheries and Oceans of no net loss in fish habitat. This was the main factor for determining which direction the water would flow after removal of dams as well as the extra work that would be required on some dams to allow for passage of fish.

Other environmental concerns were water levels on reservoirs where there are a considerable number of inhabitants, both year round and seasonal, and maintenance of reservoirs that are used for municipal water supply. In both of these cases the dams would be left in place or replaced with a lower level dam in new condition. The structures would then be turned over to the appropriate authority.

2.1.2 Dams

Dams are the most environmentally sensitive component of hydroelectric projects due to their effect on water resources and fish habitat as well as their impact on flooding of land. As a basis for this study we have made the following assumptions or restrictions for the decommissioning of dams.

- The removal of dams must direct the flow of water to its original direction.
- The outlet channel after retirement of the dam must allow upstream passage of fish.
- The outlet channel must be wide enough and side slopes protected to allow passage of required flood flows.
- For earthfill dams the remainder of the dam, after the outlet is opened, will be leveled and graded to a maximum slope of 1:5.
- The timber crib dams will be demolished with all exposed timber being buried adjacent to site. The remaining rock rubble will be mounded and sloped to a maximum slope of 1:5.

- Disposal of treated timbers will required special attention. The treated timbers will be removed from site and disposed of at an approved waste disposal site. At this time disposal of this timber is permitted at local landfill sites.
- Concrete dams will be demolished to original ground level and all concrete will be buried adjacent to site.
- Areas where the dams were located will be reinstated by covering with topsoil and seeded or will receive selected planting.
- In areas where the reservoir is used as a municipal water supply the dam will be reinstated to good condition and the required structures will be turned over to the local authority.
- In areas where the reservoir is used for recreation the dam will be demolished and reinstated to maintain normal low water levels. The associated structure(s) will then be turned over to the local authority.
- There are numerous small dykes that form part of the developments and since there are minimum costs associated with any removal, these dams have been given a uniform lump sum cost for decommissioning.

Costs used in the estimates are based on actual costs that have been incurred to carry out similar work in recent years.

2.1.3 Penstocks

The various decommissioning scenarios for woodstave and steel penstocks again are based on past experience. The fiberglass penstocks are based on discussion with the manufacturer.

- For woodstave penstocks the pipe will be demolished in sections and the treated timber will be transported to the nearest waste disposal site, while the steel bands will be separated and transported to a scrap metal dealer.
- For steel penstocks the steel pipe will be cut up and transported to the nearest metal scrap yard. The present market price for scrap steel and iron is approximately $15.00/tonne in Newfoundland.

For fiberglass penstocks, it was assumed that the pipe lengths will be removed in 12 meter sections. Since there is a limited market for this material as salvage, it is assumed that the salvage value will only equal the transportation costs to a salvage location. The pipe sections will have a very limited reuse as a pipeline and will most likely have miscellaneous uses such as well liners and tanks.

Concrete anchor blocks that form part of the penstock installation will be demolished and buried on site. Costs for demolition are based on past experience with bulk concrete removal.

2.1.4 Powerhouses

Some of the powerhouses will be sold at market value when stripped of equipment. This will be limited to the buildings that are located in and around communities. Because of their age

and construction they will have a limited market and will be useful for light industrial or storage uses. It is expected that they will have a low market value.

In a couple of cases it was determined that the building would have value as a museum or historical site and in these cases the building will be retained by Newfoundland Power.

The majority of the buildings, however, have no possibility of being useful and therefore it has been assumed that they will be demolished. The concrete buildings will have the superstructure totally demolished as well as the top 500 mm of the substructure. The demolished concrete will be buried adjacent to the site possibly in the manmade tailrace where there is one. Where the tailrace is part of the natural stream the rubble will be buried in an excavation.

The remainder of the buildings are of steel frame construction with siding. In these cases the structural steel and metal siding will be removed and salvaged. Buildings with asbestos siding will have the structural steel salvaged and the asbestos siding would be carefully removed meeting present standards and disposed of as required. The buildings with asbestos insulation will also have this material removed and disposed in a similar way. As in the buildings with the concrete superstructure, the steel buildings substructure will have the top 500 mm of concrete removed and this material will be buried.

The entire powerhouse area will be reinstated after demolition with a covering of fill and topsoil and then will be seeded. Cost estimates for demolition of powerhouses are based on past experience for removal of bulk concrete and earth operations.

Estimates on salvage and removal of the superstructures were obtained from various local contractors. Market values for the salvageable buildings were as supplied from Newfoundland Power property appraisers based on the current market.

2.1.5 Turbine-Generator

The turbine-generator sets are of various sizes with regard to both electrical capacity and physical size. The costs to remove were based on discussions with local contractors and the fact that the units had little residual value therefore removal would be much quicker. Our own recent experience in the removal of the sets was also considered and past costs reviewed to verify the estimates.

With regard to salvage value it has been assumed that the turbine-generator sets have no value for resale. This is again based on past experience with units that were taken out of service and attempted to sell. Therefore salvage value for these units is based on prices for scrap metal and since there is virtually no value for steel and iron, the value is based mainly on the value of copper from the generator.

2.1.6 Powerhouse Equipment

Costs for removal and salvage value for powerhouse equipment is again based on past experience where possible and where past experience is not available the estimates are based on information supplied by local contractors and suppliers.

Most of the associated powerhouse equipment (i.e. switchgear and controls) have very little value for reuse. The switchgear that has been retired recently has provided insignificant salvage value.

Minor parts have been kept for spares and there is a very little precious metal in the switchgear.

Battery Banks and other equipment have a limited salvage value and it is assumed that they will be near the end of their life at time of decommissioning.

The powerhouse cranes, however, have seen limited use and will be in excellent condition when decommissioned, therefore, these items will have a salvage value. Based on discussions with local contractors, salvage values for these items have been determined which should accurately reflect the uniqueness of this type of equipment.

2.1.7 Tailrace

The tailrace that is man-made would be filled in. At the bottom of the tailrace will be concrete from powerhouse demolition and the remainder will be common fill from an adjacent site. The area will be sloped and graded to maintain the landscape in as natural a condition as possible. The area will then receive topsoil and seeding or selected planting.

For tailraces in natural streambeds the bed will be reinstated as close to its natural condition as possible.

2.1.8 Intake

The demolition of intakes is based on past experience in the removal of bulk concrete. The concrete removed will be buried either in the power canal, where available, or in an excavation adjacent to the site. The small wooden gatehouses will be removed and buried on site. Since these buildings are very small a fixed lump sum price for all of these buildings has been used.

Other equipment in the gatehouse has been given no salvage value except for screw type gate lifts. Most of the equipment is of a minor nature and will have no salvage value. The exception of course is the gate lift that can easily be reused. Since most gate lifts in service are of similar size, a uniform salvage value has been used.

2.1.9 Power Canals

The man made power canals in various hydroelectric developments will be filled in during decommissioning. The costs to carry out this work are based on past experience for common

fill, rockfill and blasting. The amount of each type of fill is based on the features of the individual power canals.

The areas of the power canal will be reinstated upon completion of backfilling by selected planting.

2.1.10 Surge Tanks

Costs for removal and dismantling of surge tanks are based on past experience and information from local contractors. The steel tanks will be removed with the steel cut up and sold for scrap, when close enough to a salvage contractor, or trucked to the nearest waste disposal site. The concrete foundations and tee anchor blocks will be demolished and buried on site.

The areas will be reinstated as part of the reinstatement for the penstock.

2.1.11 Transmission Lines

Costs for removal of and salvage value for transmission lines are based on comprehensive past experience in this type of work. The costs are based on historic information of the number of structures and the amount of conductor and insulators that will be suitable for reuse. Poles will be removed and returned to stock or disposed of depending on their condition. Conductor and hardware will be returned to stock, disposed at an approved site, or sold to a scrap dealer.

2.1.12 Substations

Costs for decommissioning substations are also based on previous experience. Costs are estimated for removal of structures and equipment. Experience indicates that there is little residual value for the substation structures but there is a significant salvage value for substation equipment. All standard substation equipment will be reused and equipment that is non-standard will be sold for scrap. These costs, estimated from recent history, are included in the salvage value.

2.1.13 Miscellaneous

There are a number of miscellaneous components that form part of the hydroelectric developments. These include storage sheds, bridges, access roads and other items that are not mentioned specifically. Since it would serve no purpose to mention everything here it would suffice to say that the demolition costs for these items are based on previous experience where possible. In cases where none existed, assistance from various local contractors was used to prepare the estimate.

Some assumptions that were made were that all access roads will be left in place for use by the general public, and bridges will be removed from service. Any roads not required for public use will be left in place and allowed to grow in. There are a number of small buildings that will be of no salvage value. Therefore, a lump sum uniform demolition cost was used.

2.1.14 Reinstatement

Part of the estimate for decommissioning includes, as a lump sum for each development, a cost for reinstatement of the sites. This reinstatement cost is based on covering the area with topsail and hydro seeding in areas near public use and on using selected planting of native trees in areas not close to public use.

The cost estimates for these items are from local contractors for hydro seeding and from the Provincial Department of Forest Resources and Agrifoods for the cost of planting seedlings.

2.1.15 Engineering & Supervision

Since the estimates are based on actual contractor's costs for carrying out the work, a contingency of 10% has been added to the cost. Additionally an engineering and supervision cost of 5% has been used.

2.1.16 Environmental Assessment (Regulatory Process)

Environmental regulations in effect today on both the provincial and federal level would require an assessment to be carried out. This would focus on the effect the decommissioning would have on the environment. Some of the developments are located in areas that are more environmentally sensitive than others, therefore, the costs estimated for this work will range from 5% to 8% of the total decommissioning cost.

2.1.17 Environmental Site Assessment and Remediation

The present industry practices before the sale of a property or taking a property out of service is to have a site assessment carried out to determine the existence of containments at the site. Site remediation would likely be required before the site can be sold or abandoned. The cost of this assessment and site remediation would vary depending on the size of the site; therefore, an assessment cost of $40,000 to $60,000 has been added to each development.