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ENVIRONMENT CANADA
ENVIRONMENTAL PROTECTION SERVICE
FEDERAL ACTIVITIES ABATEMENT GROUP
PACIFIC REGION.

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FEDERAL ACTIVITIES
ENVIRONMENTAL PROTECTION
AND CLEAN-UP PROGRAMS

VANCOUVER, B.C.
DECEMBER, 1973.

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INTRODUCTION

As a result of transfers and promotion to other units the Federal Activity Abatement Group in the Pacific Region required complete restaffing in 1973.

This document is the result of short work sessions and discussions with the new team in which a wide range of questions and problems were explored and related to Headquarters' objectives and regional priorities.

The meetings were conducted for the purpose of:

1. Establishing provisional objectives for the Federal Activity Abatement Group - Pacific Region.
2. Acquainting the new manager and new staff with total resources of the unit (manpower, funds, program).
3. Reviewing the program.
4. Establishing an administrative framework.

It is hoped that this program review will assist staff and management to create a stronger team, provide for an integrated approach and a more concentrated effort

This program is intended to be primarily for in-house use.

However, it may be used to acquaint other federal departments, consultants and agencies with our objectives, our program and organization.

Because of severe time constraints this paper should be considered as an interim draft document. Liberal use was made of existing material and statements by others.



K. Kupka, Chief,
Federal Activities Abatement Branch.

DEPARTMENT OF THE ENVIRONMENT

In 1971 the Department of the Environment was created to amalgamate those services and units within the federal government which already were involved in work related to the environment and renewable resources.

In addition, a new Service, the Environmental Protection Service or E.P.S. was added. E.P.S. is the public's point of contact with Environment Canada for environmental problems for which the Department has responsibility. These problems include pollution control in water and air, solid wastes management, noise control, emergency pollution control and the federal activities environment program. In carrying out its task the Environmental Protection Service will consult with and maintain the closest possible liaison with industry, provincial governments, the public and other federal departments. Figure 1 illustrates E.P.S.'s function within the Department of the Environment and in relation to outside agencies.

It should be noted that Figure 1 is general in nature, is not intended to be an exact organization chart and is only to be a schematic illustration of EPS's role and relationship with other services and agencies.

Through the Federal Activity Environment Protection Program the Environmental Protection Service manages the Federal Government's own clean up program and assures that federal activities and installations conform to provincial and federal environmental laws and standards.

In the Pacific Region this program is managed by the Federal Activities Abatement Group.

ENVIRONMENT PROTECTION SERVICE

IS THE PUBLIC'S CONTACT WITH ENVIRONMENT CANADA FOR PROBLEMS RELATED TO ENHANCEMENT AND PROTECTION OF THE NATURAL ENVIRONMENT.

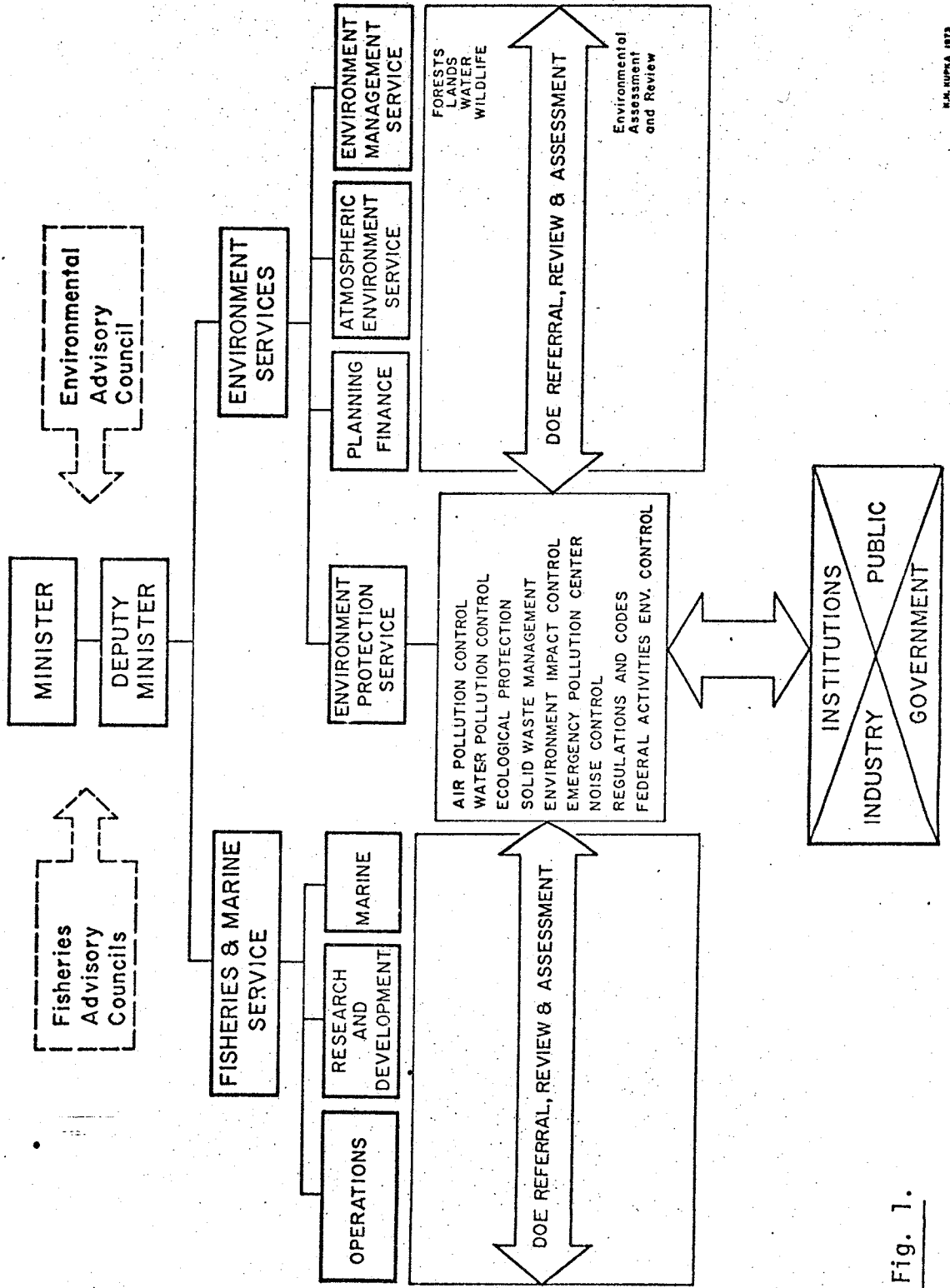


Fig. 1.

FEDERAL ACTIVITIES ENVIRONMENTAL PROTECTION PROGRAM.

The Federal Activities Environmental Protection Program was created as the focal point in dealing with the control of pollution sources from all Federal government departments, agencies and Crown corporations. Areas of environmental concern cover both land facilities and vessels and include treatment and disposal of waste water, solid waste management, the disposal of toxic and other hazardous substances, air pollution, and noise pollution control.

Cabinet gave its approval to this program on June 8, 1972. The Federal Government intends to demonstrate leadership in the environmental protection field by:

- *Developing and managing a program to clean up existing pollution sources resulting from Federal Government operations.*
- *Reviewing all new projects initiated by the Federal Government to ensure that the required environmental standards or guidelines are met and that appropriate environmental protection measures are provided.*
- *The development of guidelines to minimize adverse environmental effects from Federal facilities and activities.*
- *Consultation between other departments and agencies having responsibilities for environmental protection to ensure that requirements under the Federal Government's environmental protection program are consistent.*

The program for the clean-up of existing Federal pollution sources and the prevention of adverse environmental effects from new Federal activities will be approached in the following manner (Fig. 2):

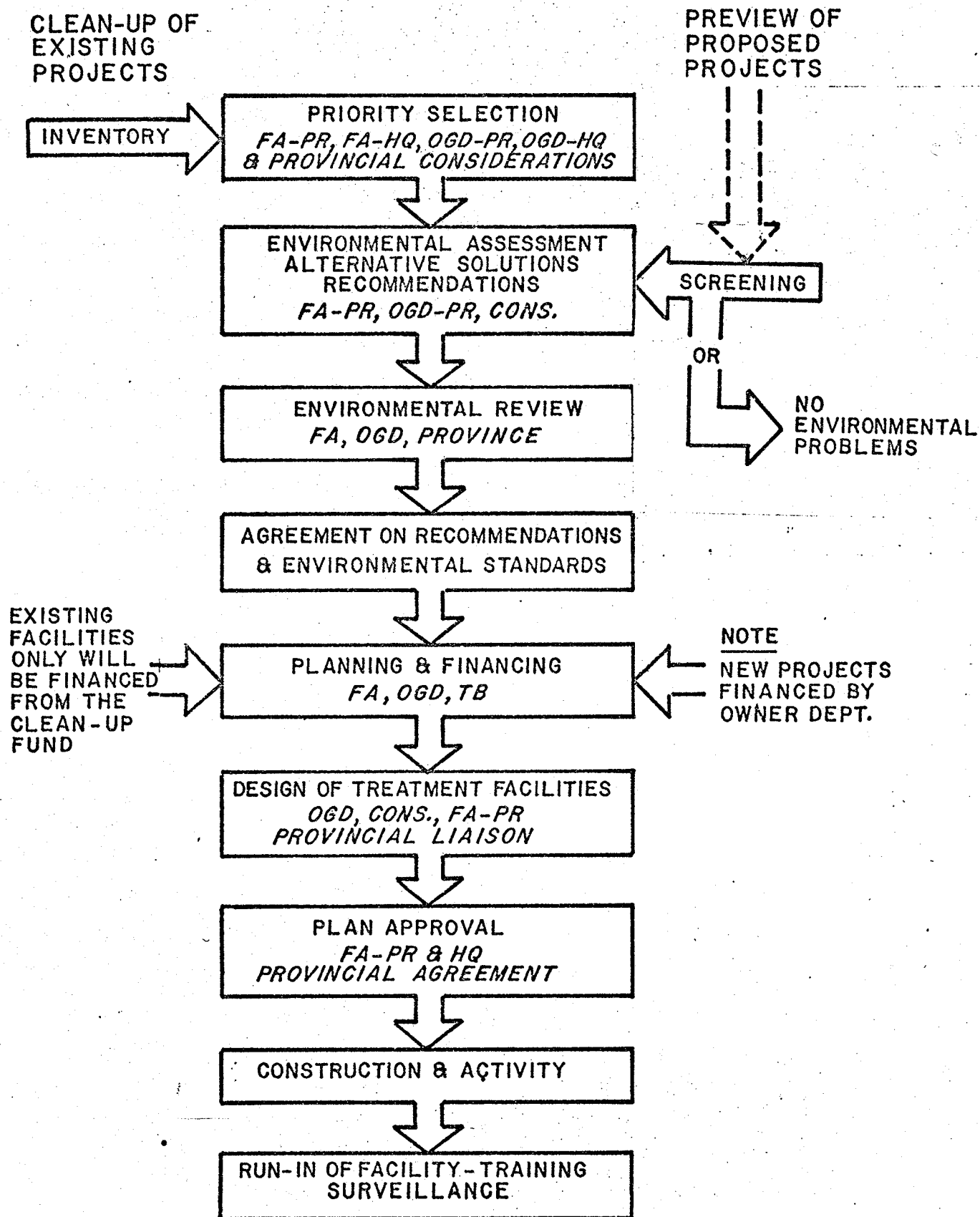
1. Clean-Up of Existing Federal Pollution Sources.

An inventory of pollution sources associated with existing activities and installations will be prepared by the Department of the Environment with the assistance of the Federal departments and agencies involved. The Department of the Environment, in conjunction with other departments and agencies, will develop the criteria necessary to set government wide priorities. Based on these priorities an annual program for the construction of pollution control facilities, identified by the Department of the Environment in consultation with other Federal and Provincial departments and chargeable to the Clean-Up Fund, will be submitted by the Department of the Environment to Treasury Board. The fund will cover all capital costs for pollution control facilities, including consultant's fees and related services, which are required to provide treatment.

Treasury Board established two criteria which may apply to potential Clean-Up projects. Treasury Board advised:

- (a) that solution of a pollution problem from a federal facility should not be undertaken within this program if the most efficient and economic solution lies in handling the problem within wider areas of application than the federal facility itself.

FIG. 2 CLEAN-UP AND SCREENING PROCEDURE (FEDERAL ACTIVITIES)



FA-PR FEDERAL ACTIVITIES ABATEMENT GROUP - PACIFIC REGION
 FA-HQ FEDERAL ACTIVITIES ENVIRONMENT PROTECTION BRANCH - OTTAWA
 OGD OTHER GOVERNMENT DEPARTMENT - PACIFIC REGION OR OTTAWA
 CONS. CONSULTANTS
 TB TREASURY BOARD

7.

- (b) that only those projects whose total cost of abatement exceeds \$25,000 should be considered under the program; operating departments would normally be expected to fund necessary pollution clean-up projects costing less than \$25,000 from their approved maintenance expenditure levels.

The Clean-Up Fund totaled \$6,000,000 in the 1973/74 fiscal year and is expected to be \$12,000,000 in 1974/75 and \$20,000,000 for each year thereafter until pollution problems are cleaned up.

2. Prevention of Pollution from New Federal Activities:

A screening system, using criteria established inter-departmentally will be developed against which all new Federal projects or activities will be evaluated by the initiating departments to indicate potential adverse environmental effects. All new projects will be registered to indicate screening decisions. If adverse effects could result from a project, it will be referred to the Department of the Environment for further assessment to identify and/or ensure that the proposed environmental protection measures meet or exceed Federal and Provincial requirements.

Approvals for projects involving environmental control measures pursuant to a Statute or Regulation administered by another department will be coordinated by the Department of the Environment in consultation with the responsible Federal or Provincial agency. In addition, departments would consult with the Department of the Environment on the development of requirements and regulations under such Statutes and, in some cases, special interface mechanisms will be required.

8.

By means of the June 8th Cabinet Decision, federal leadership is emphasized through a more positive approach to the prevention, control and abatement of environmental pollution from federal activities. This will exert considerable leverage on other public and private sectors to get on with the job of pollution control.

OBJECTIVES

To ensure that the Federal Government minimizes adverse environmental effects from its own existing and future facilities and activities by:

1. Setting exemplary and comprehensive standards, guidelines, codes of good practice, in harmony with Federal and Provincial regulations and/or based on the best practical technology for pollution control and protection of the environment.
2. Compiling an inventory of pollution problems associated with existing federal sources and activities.
3. Developing the criteria necessary to set Government-wide priorities for cleaning up existing pollution problems identified so as to meet federal requirements.
4. Establishing the priorities and implementing a program to clean up pollution from existing federal sources.
5. Screening all new government facilities and activities for potential adverse effects upon the environment.
6. Registering all activities, as well as the results of the assessment of those activities having an adverse environmental effect.

9.

7. Reviewing and assessing new projects in order to ensure that environmental control measures meet or exceed Federal and Provincial standards and regulations.
8. Carrying out surveillance and monitoring to ensure compliance with established environmental standards, guidelines, and codes of good practice.
9. Assessing Crown Corporations to ensure that they meet industrial standards outlined by the Clean Air Act, Section 33 of the Fisheries Act and the Canada Water Act.
10. Consulting with those departments and agencies responsible for environmental legislation to ensure the development of consistent federal regulations and requirements for pollution control and environmental protection.

ORGANIZATION - PACIFIC REGION

In the Pacific Region the Federal Activities Environment Protection Program is managed by the Federal Activities Abatement Group of the Environmental Protection Service. The organization is illustrated in Fig. 3. The 'phone numbers are:

KUPKA, Karl	666-1002
ARNOWITZ, Scotty	666-6205
HENDREN, Murray	666-6129
ATWATER, Jim	666-6205
SCOTT, Paul	666-1070
DUNCAN, Adrian	666-6653
BRADSHAW, Gil	980-4214 & 980-2020

10.

The mailing address is:

Federal Activities Abatement Group,
Environmental Protection Service,
1090 West Pender Street,
Vancouver 1, B.C.

Successful and timely completion of the Federal Clean-Up Program will depend on how well other government departments and agencies understand and support our objectives. The need for proper communication is evident. The relationship with other government institutions will be participative. These agencies have important functions and, in turn, are governed by participative arrangements with local authorities or other governmental departments. They, therefore, may not always be able to respond immediately to our program.

FEDERAL ACTIVITIES ABATEMENT GROUP -- PACIFIC REGION ORGANIZATION CHART

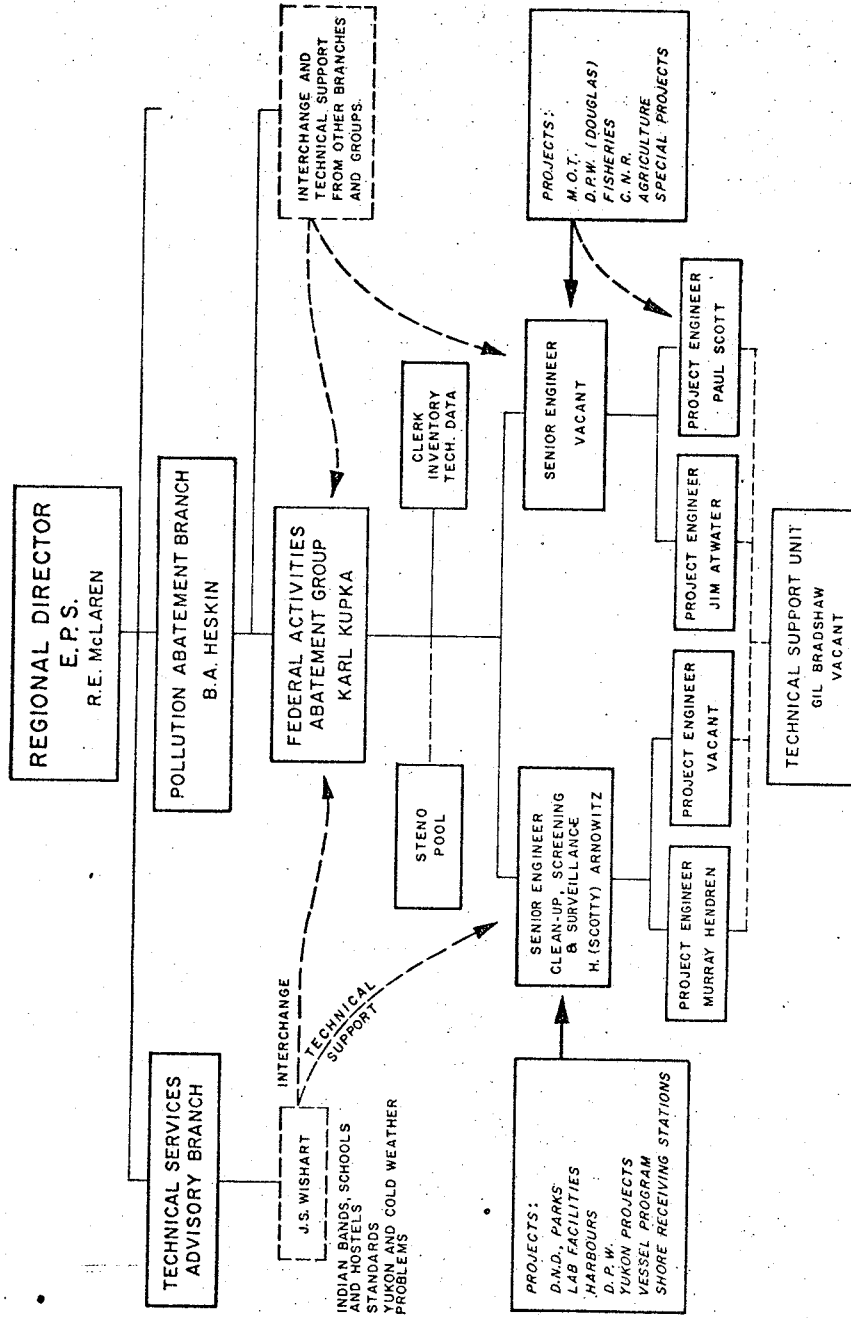


Fig. 3

POLLUTION CONTROL PROGRAM FOR CANADIAN GOVERNMENT VESSELS
(L. J. Kamp, P. Eng., J. M. Higgins and T. G. Low, P. Eng.)

ABSTRACT

With respect to Federal vessels, a "no discharge" policy for shipboard pollutants has been adopted for territorial waters with top priority being given to the installation of equipment for holding human wastes and to the construction of on shore reception facilities. In the case of the latter, a summary of a "state of the art" review is given.

HISTORY

The majority of the Federal Government's civilian fleet were constructed during the past twenty year period to meet the regulations of the Canada Shipping Act. Generally, pollution control equipment was fitted at the time of vessel construction and subsequently updated as new regulations were promulgated. Equipment fitted included oily water separators for vessels operating in both coastal and inland waters, while sewage treatment systems and solid waste handling systems were also installed for those vessels operating in inland waters and other restricted areas.

Most of the oily water separators fitted were of the simple gravity type. Sewage treatment systems fitted were macerator-chlorinators, aerobic or anerobic biological units and recirculating systems. Solid waste disposal involved the fitting of incinerators or the compaction of wastes for shore disposal. During the past year, action has been taken to install newly developed sewage handling systems such as the low water use vacuum collection system, recycling systems, and incinerators for the disposal of dry and wet garbage and sewage sullage.

These systems were installed as pilot units primarily to determine costs, efficiencies, operating problems and suitability for future installation.

MAGNITUDE OF PROBLEM

The Canadian Federal Government cannot be considered a major contributor to the pollution caused by vessels since it is estimated that less than 4% of the vessels registered in Canada are owned by the Federal Government.

Table I summarizes the number of Federal Vessels and crew according to owner department and vessel category. The largest concentration of these vessels is in the Halifax-Dartmouth area on the Atlantic Coast and the Victoria-Esquimalt area on the Pacific Coast. Table II lists all the vessel bases normally used in Canada. In some of these areas, because of the nature of the operation of the Federal vessels, the occupancy rate can be quite high relative to other non-government vessels. In these situations, the government vessels can be a significant contributor to the pollution caused by vessels in that particular area and steps must be taken to implement corrective action.

INTERDEPARTMENTAL WORKING GROUP

In order to implement a pollution control and abatement program for federal vessels, as required under the Cabinet Decision, an Inter-departmental Working Group was formed. The Group, comprised of delegates from those departments engaged in vessel

operation, development of regulations and contracting for the government's fleet of vessels, had its initial meeting on August 2, 1972. Significant decisions and actions taken by the Group since that meeting include:

1. The Establishment of Priorities

In considering the various types of wastes or shipboard pollutants that are to be controlled or eliminated, the Group decided that the highest priority would be given to human wastes and garbage. A high priority was given to these wastes because of existing and proposed regulations and the quantities generated relative to other shipboard pollutants and their effect on water quality. The latter is particularly important for those waters which are used for domestic and recreational purposes or for the harvesting of shellfish. In these areas it is necessary to keep the public health risk to a minimum and to have the water acceptable from the aesthetic point of view by prohibiting the discharge of raw sewage and garbage. Other pollutants listed in order of priority for their effective treatment and/or elimination include oil and oily water discharges; galley, laundry and other contaminated wastewaters; combustion emissions and industrial chemicals.

The Group also considered the operational areas of the vessels and listed them in order of priority. Inland lakes and rivers including the Great Lakes and the St. Lawrence Seaway System were given the highest priority because of the need to maintain

TABLE ICANADIAN GOVERNMENT SHIPS AND VESSELSVESSEL CATEGORIES AND PERSONNEL

<u>DEPARTMENT</u>	<u>SEAGOING</u>	<u>LIMITED SEAGOING</u>	<u>SMALL CRAFT</u>	<u>PERSONNEL</u>
TRANSPORT	36	18	151	2418
ENVIRONMENT	11	7	304	1174
SOLICITOR GENERAL	1	3	24	69
NATIONAL DEFENCE (CIVIL)	10	3	105	570
NATIONAL DEFENCE (MILITARY)	39	5	-	7828
PUBLIC WORKS	-	-	<u>137</u>	<u>494</u>
	97	36	721	12,553

NOTE: VESSEL CATEGORIES

SEAGOING - These vessels may operate on a world wide basis

LIMITED SEAGOING - These vessels normally operate offshore in Canadian coastal waters

SMALL CRAFT - These vessels are usually employed in inshore coastal waters, harbours, inland lakes and rivers. Depending on type and use they may require the fitting of anti-pollution equipment.

PERSONNEL - Figures given are estimates of current strengths.

TABLE IICANADIAN GOVERNMENT VESSELSOPERATING BASESATLANTIC REGION:

Newfoundland,
Nova Scotia,
Prince Edward Island,
New Brunswick.

Alberton, Arichat, Arnolds Cove, Bayview,
Buctouche, Burin, Burgeo, Caraquet,
Charlottetown, Chester, Cornerbrook, Digby,
Fortune, Grand Bank, Grand Manan, Halifax,
Dartmouth, Liverpool, Lunenburg, Pictou,
Pointe Sapin, Richibucto, Saint John,
Shippegan, Souris, St. Johns, Sydney,
Tignish, Twillingate, Wallace, Wedgeport,
Weymouth.

QUEBEC REGION:

Quebec

Isle Perrot, Montreal, Presqu'ille, Quebec,
Sorel, St. Jean, Valleyfield.

ONTARIO REGION:

Ontario

Amherstberg, Burlington, Fort Frances,
Kenora, Kingston, Long Sault; Ottawa,
Parry Sound, Prescott, Sarnia, Thunder
Bay, Sault Ste. Marie.

NORTHWEST REGION:

Arctic, Northwest
Territories, Manitoba,
Saskatchewan, Alta

Cambridge Bay, Churchill, Frobisher,
Tuktoyaktuk, Hay River, Selkirk.

PACIFIC REGION:

Alert Bay, Bamfield, Bella Bella, Bella
Coola, Campbell River, Coal Harbour,
Comox, Dawsons Landing, Fort St. James,
Ganges, Kelowna, Kitimat, Lake Babine,
Madeira Lake, Masset, Mission, Nakusp,
Nanaimo, New Westminster, Ocean Falls,
Pender Harbour, Port Alberni, Port Hardy,
Powell River, Prince Rupert, Queen
Charlotte City, Sicamouse, Steveston,
Tahsis, Tofino, Vancouver, Victoria (Esquimalt).

or improve water quality in these areas. In particular the Great Lakes was given emphasis because of the regulations to be developed under the Canada-U.S. Great Lakes Water Quality Agreement. Other areas, in order of priority, are northern waters, semi-enclosed ports, and harbours and open ports and harbours. In addition, sensitive areas such as shellfish producing waters or recreational waters will be given special attention.

2. No Discharge Policy

In reviewing the problem of waste treatment onboard ship, together with existing and proposed regulations, it was decided that for federal vessels a "no discharge" policy would be adopted within practicable limits insofar as the Canadian Territorial limits and fishing zones are concerned. In particular, emphasis was placed on the "no discharge" concept for human wastes because of public health, aesthetics and the failure of existing discharge systems to demonstrate reliability in producing a high quality effluent.

Systems available which will meet the "no discharge" requirement for human wastes in conjunction with reception facilities include:

- (a) Simple holding tanks used in conjunction with normal
• toilets.
- (b) Low water use collection systems such as vacuum and controlled flush water toilets used in conjunction with a holding tank or incinerator.

18.

- (c) Recirculating systems, either self contained toilet units or larger systems where the effluent is treated and reused for flushing purposes.

3. Establishment of Objectives

In addition to objectives relating to the control and elimination of shipboard pollutants, as outlined above, the Group also established other objectives for the orderly and effective implementation of the vessel pollution control program.

These objectives included:

- (a) The establishment and maintenance of a central inter-departmental technical information system to provide a full and complete exchange of information between departments on guidelines and regulations, newly developed pollution control systems and operating experiences.
- (b) The prevention of environmental pollution from new vessels by ensuring that the required environmental protection systems are planned and installed consistent with best practicable technology.
- (c) The preparation of a comprehensive educational program for Federal vessel personnel in order to develop an awareness of their role in pollution control and to train operating personnel in the operation of pollution control systems.
- (d) The development of an on-going monitoring program in order to assess the effectiveness of pollution control systems installed and to identify and resolve operational problems with the feedback of information to assist in future

installations.

- (e) The dissemination of information on the vessel pollution control program to the general public, including technical information based on operating experience.

4. Preparation of 1973/74 Program

As required under the terms of the Cabinet Decision, the Working Group prepared and submitted through the Federal Activities Protection Branch, a program for the installation of pollution control systems on board vessels during 1973/74. Funds were allocated to the various departments to carry out the work identified, which includes the engineering, purchase and installation of the necessary equipment.

For the fiscal year 1973/74, 104 vessels have been identified for the installation of pollution control systems involving mainly the fitting of "no discharge" systems for handling human wastes. In addition, shore facilities for receiving shipboard generated pollutants have been proposed for seven sites across Canada with the Great Lakes area having the highest priority.

SHORE RECEPTION FACILITIES

The "no discharge" policy accepted by the Federal Government for its own vessels will require that suitable shore reception facilities be provided. Two such sites have already been installed for Federal vessels at the Canada Centre for Inland Waters in Burlington, Ontario, and at Nanaimo, British Columbia. The facility at Burlington can also accept oily wastes which are pumped to a

gravity separator before the effluent is discharged to the sanitary sewers. All liquid wastes from these reception facilities receive secondary treatment before being discharged to receiving waters.

Since "no discharge" systems for human wastes will be installed on Federal vessels beginning this year, shore reception facilities are needed at other bases across Canada where commercial facilities are not available. In order to develop and implement a program for the installation of these facilities, a technical group was formed to review the "state of the art" relative to shore reception systems and to select sites for possible installations.

The first phase of the task, the "state of the art" review, has been completed and the summary of findings from the literature reviewed are as follows:

1. For a "no discharge" policy in territorial or inland waters, studies reviewed to date appear to indicate that the holding of human wastes and the subsequent discharge while berthed of all sanitary wastes to an existing on-shore secondary treatment facility provides effective pollution abatement at minimum total cost.
2. Quantities of human wastes are expected to vary from 15 to 30 U.S. gallons per capita per day (U.S. gpcd) for conventional waterborne systems while total domestic wastewater flows range from 30 to 60 U.S. gpcd. Per capita figures for solid wastes are estimated to range from 5 to 20 pounds per day. Quantities of bilge and ballast water are not well

documented.

3. Strength of human body wastes where conventional waterborne systems are used may approach three times that of an average municipal sewage. For all domestic wastewater, the strength in terms of five-day biochemical oxygen demand and suspended solids is about twice that of normal municipal sewage.
4. Transfer facilities for vessel sanitary wastes are being standardized for pleasure craft in some provinces and states and also for the U.S. Navy ships. Hose sizes and fittings are being standardized at 1½ inch diameter for pleasure craft while the U.S. Navy uses 4 inch diameter hoses for the transfer of all sanitary wastes.
5. Reception facilities for wastes from pleasure craft are being used successfully in the Province of Ontario and the State of Michigan. However, few facilities are available at major ports for the larger vessels.
6. Existing municipal plants provide the most economical and efficient treatment facility for the disposal of domestic wastes from vessels. In cases where municipal facilities are not available or costs to connect to such systems are prohibitive, alternatives for on-site treatment include small package plants of either the biological or physical-chemical type, lagoons, land disposal and incineration.
7. Costs for vessel waste treatment are more variable and more expensive on a per gallon or a per capita basis than average municipal treatment costs. On-shore capital costs will be reasonable where an existing treatment plant can be used, but

where a separate treatment facility is required for vessel wastes only, both capital and operating on-shore costs will be substantially increased.

Although the general "state of the art" for the disposal of vessel wastes on-shore is known, individual sites will have specific problems. In the design of the transfer facility consideration must be given to protection of the system from freezing, wave action, ice or mechanical damage, clogging and corrosion. When on-site treatment systems are used, special attention must be given to variable loadings, characteristics of waste to be handled and the ultimate disposal of sludge. Finally, in the design of the overall disposal facility, including the sewage handling system on the vessel, the health and safety of the crew and the operators must be taken into account to ensure maximum protection for all personnel involved.

CONCLUSION

The program to clean up and prevent pollution from Federal vessels demonstrates the desire of the Federal Government to be exemplary in minimizing adverse environmental effects from its vessels. At this time the "no discharge" policy for human wastes from vessels operating in territorial waters and fishing zones, reflects best practicable treatment in providing the maximum protection to water quality from the public health standpoint. Vessel installations and provision of shore reception facilities will commence in 1973. For the latter facilities, municipal systems will be used for the ultimate disposal of shipboard wastes whenever possible.

REVIEW OF THE 1973/74 CLEAN-UP PROGRAM

Proposed Assessment Studies by Consultants.

Construction Projects.

Shore Facilities & Design Projects.

Completed Assessment Studies.

1973/74 ASSESSMENT STUDIES - PACIFIC REGION (Updated Jan. 8, 1974)
to be carried out by Consultants

PROJECT	TOTAL AMOUNT ESTIMATED	1973-74 CONTRACT AMOUNT	PROJECT ENGINEER AND REMARKS
<u>Projects underway</u>			
Yoho-Field Townsite (Parks)	\$21,860	\$6,500	S.A.
Chilliwack (DND)	15,000	15,000	S.A.
Pr. Rupert Grain Elevators (AGR)	4,800	4,800	P.S.
Fort Nelson	8,000	8,000	S.A.
William Head (S.G.)	17,713	17,713	S.A.
Esquimalt-Plating Shop (DND)	8,600	8,600	M.H.
Esquimalt-Fire School (DND)	23,700	23,700	M.H.
Vanc. Int. Airport - Solid & Toxic	23,600	15,000	P.S.
Work Point	<u>500</u>	<u>500</u>	Completed
	SUB-TOTAL:	99,813	
<u>Proposed Projects</u>			
Whitehorse Study		10,000	
Coal Harbour Noise Study		<u>5,000</u>	
	Present 73/74 commitment:	<u>\$114,813</u>	
	Surplus from \$130,000 available:	<u>\$15,187</u>	

REVIEW OF THE 1973/74 CLEAN-UP PROGRAM - PACIFIC REGION (SEPT. 1973)
 (LISTED ARE ALL PROJECTS SUBMITTED TO TREASURY BOARD FOR THE 1973/74 FISCAL YEAR)
 (SS) PROJECTS SUBMITTED IN THE SUPPLEMENTARY SUBMISSION TO TB

LOCATION	PROJECT	AMOUNT	REMARKS
<u>C O N S T R U C T I O N</u>			
Agassiz	Exp. Farm - Treatment System (AGR)	\$ 5,000	Will not be used
Baldy-Hughes	Provide Secondary Treatment (DND)	175,000	Design completed, contract awarded Delays due to railway strike Will be completed in 73/74.(M. Hendren)
Comox	Increase Aeration & Spray Irrigation (DND)	55,000	Preassessment studies will be completed in October. Project will not be ready for construction in 1973/74. Funds may be used for project design (M. Hendren)
Douglas	Vacuum Toilet System (DPW)	40,000	Pending acceptance by DPW (J. Atwater)
Okanagan (SS)	Barge Salvage (DPW)	60,000	Will be undertaken later this year by DPW. (M. Hendren)
Penticton	Airport (MOT)	120,000	Design completed, going out for Tender.
Penticton (SS)	Airport (MOT)	10,000	Project completion in 73/74. (P. Scott)
Vancouver (SS)	Airport (MOT)	80,000	\$80,000 will be spent in 73/74. Project to be completed in 74/75. (P. Scott)

REVIEW OF THE 1973/74 CLEAN-UP PROGRAM - PACIFIC REGION (SEPT. 1973)

LOCATION	PROJECT	AMOUNT	REMARKS
<u>SHORE FACILITIES.</u>			
Esquimalt (SS)			
New Westminster (SS)			
Steveston (SS)		\$95,000	M. Hendren, Project Engineer. Design by Consultants
Nanaimo (SS)			
Victoria (SS)			
Vancouver			
<u>DESIGN.</u>			
Smithers (SS)	Airport (MOT)	6,000	Design started (Swan Woosters)
Port Hardy (SS)	" (MOT)	12,000	McCarter Nairne & Partners Consultants
Prince George (SS)	" (MOT)	10,000	Design completed (AESL)
Belmont Park (SS)	(DND)	20,000	DND is proceeding to hire
Quadra (SS)	(DND)	20,000	design consultants

COMPLETED ASSESSMENT STUDIES - PACIFIC REGION 1973/74

Agassiz Correctional Work Camp	By DOE Staff (Aug. 73)
Douglas Boarder Crossing	By DOE Staff (Aug. 73)
Pitt Meadows Airport	By DOE Staff (Oct. 73)
CFB Holberg	By DOE Staff (Oct. 73)
Victoria International Airport	By DOE Staff (July 73)
Port Hardy Airport	By DOE Staff (Oct. 73)
Prince George Experimental Farm	By DOE Staff (Oct. 73)
Quesnel Airport	By DOE Staff (Oct. 73)

PROPOSED 1974/75 CLEAN-UP PROGRAM.

Construction

Design.

1974/75 CLEAN-UP PROGRAM - PACIFIC REGION (NOV. 30, 1973)
As submitted by Headquarters to Treasury Board, November, 1973.

Priority	Project	Design	Estimated Construction Cost	Project Engineer & Remarks
<u>CONSTRUCTION</u>				
1	Prince George Airport (MOT)	Completed	\$120,000	P. Scott
2	{ Vanc. Int. Airport-Collection system (MOT)	{ Completed		
	{ Vanc. Int. Airport-Lift Station (MOT)	{ Completed	115,000	P. Scott
3	Victoria Int. Airport (MOT)	Completed	150,000	P. Scott
4	Abbotsford Airport (MOT)	To be compl. 73/74	80,000	P. Scott
5	Belmont (DND)	To be compl. 73/74	300,000	M. Hendren
6	Comox (DND)	74/75	200,000 (500,000 75/76)	M. Hendren
7	Pitt Meadows Airport (MOT)		70,000	P. Scott
8	Agassiz Work Camp (SG)		45,000	J. Atwater
9	Agassiz Mt. Prison (SG)		50,000	S. Arnowitz
10	Work Point (DND)		100,000	S. Arnowitz
11	Agassiz Exp. Farm (AGR)		200,000	J. Atwater
12	Pr. Rupert Grain Elevator (AGR)	73/74 by owner	300,000 (1,200,000 75/76)	P. Scott
13	Vessel Program		TBA	M. Hendren
14	Shore Stations		TBA	M. Hendren
		TOTAL:	\$1,730,000	

NOTE: Treasury Board approved the above projects without change in Treasury Board Decision Number T.B. 723838 of December 13, 1973.

