CANMET

Canada Centre for Mineral and Energy Technology

Centre canadien de la technologie des minéraux et de l'énergie

COAL RESEARCH AND DEVELOPMENT PROJECTS IN CANADA

Energy, Mines and Resources Canada

Énergie, Mines et Ressources Canada

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COAL RESEARCH AND DEVELOPMENT PROJECTS IN CANADA

COMPILED BY

JOAN BESHAI
TECHNOLOGY INFORMATION DIVISION

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CURRENT COAL RESARCH AND DEVELOPMENT PROJECTS IN CANADA

FOREWORD

A need to compile a comprehensive list of coal research and development projects in Canada has been recognized by both CANMET and the Coal Association of Canada (CAC). The compilation will serve as a comprehensive source of information on current coal R & D projects on a national basis for members of the Coal Association of Canada, federal and provincial government agencies and the general public.

To facilitate reference, the R & D projects have been grouped into the categories listed in the Table of Contents. The project title, a brief description of the work being carried out and information regarding the sponsoring organization, the contracted organization, the resources allocated and the project status are provided where available. Each project has been listed only once, even though it is recognized that the nature of an individual project may encompass more than a single category.

The cooperation of the Coal Mining Research Centre (CMRC) in Edmonton is acknowledged. Other sources of information were the Energy Sector of EMR, the Natural Science and Engineering Research Council (Canada), the Canada Electrical Association and provincial departments dealing with energy matters. It is hoped that this document will be issued annually.

AVANT-PROPOS

La présente compilation servira de source détaillée d'information sur les projets de R & D en cours sur le charbon au niveau national pour les membres de l'Association canadienne sur le charbon, les diverses organismes des gouvernements fédéral et provinciaux et le grand public. Le CANMET et l'Association canadienne sur le charbon (ACC) ont tous deux reconnu le besoin de compiler un répertoire détaillé des projets de recherche et de développement entreprise au Canada.

Les projets de R & D ont été regroupés selon les catégories énumérées dans la table des matières pour un accès facile. Le titre de projet, une brève description des travaux effectués et les renseignements généraux concernant l'organisme de parrainage, l'organisme adjudicataire, les ressources financières attribuées au projet et l'état du projet sont donnés lorsque disponibles. Chaque projet n'est mentionné qu'une seule fois même se celui-ci peut s'appliquer à plusieurs catégories.

Nous remercions le Coal Mining Research Centre (CMRC) à Edmonton pour leur collaboration. Les autres sources de renseignements sont le Secteur énergétique du ministère de l'Energie, des Mines et des Ressources, le Conseil de recherches en sciences naturelles et en génie du Canada, l'Association canadienne sur l'électricité et les ministères provinciaux traitant d'énergie. Nous espérons que cette documentation puisse être émise périodiquement.

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EXPLORATION

TABLE A

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Demonstration of Shallow Seismic Techniques	To evaluate the effectiveness of shallow seismic techniques as a method of locating geological disturbances in advance of mining.	TAU/Montreal Engineering Co. (CMRC/USBM (D. Nicols)		1983/84	
Application of VLF Geophysical Methods	The program will involve full scale testing and application of VIF methods over large areas to delineate seam subcrops and faults. The area has varied topography and overburden depth, and the geological structure is complex.	Smoky River Coal Limited (D. Fawcett)		Summer 1984	None
Geology of N.E.B.C. Coal Measures	Examination of the structure and stratigraphic relationships of the coal bearing measures of northeastern B.C. using coal petrography, geostatistics and computer based structural techniques.	BCMEMPR (W.E. Kilby)	20 K	Ongoing	Fieldwork 1984
1:50,000 Geology Compilation N.E.B.C.	Compilation of open file industry and government geology maps.	BCMEMPR (W.E. Kilby A. Legun)	30 K	1984	Preliminary maps
Detailed Resource Assessment of Northern Dominion Coal Block	Computer assisted structural mapping in areas of potential open pit coal extraction; to include digital deposit model.	BCMEMPR (W.E. Kilby D. Grieve)	15 K	1984	Geological Fieldwork, 1984

EXPLORATION

TABLE A

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Geology and Rank Distribution of the Elk Valley Coalfield (south half)	Stratigraphic and structural mapping petrographic analysis of the coal measures.	BCMEMPR (D. Grieve)	10 K	Complete 1984	Geological Fieldwork 1980, 1981, 1982 Preliminary Maps 1984
Evaluation of the coal resources potential of west-central B.C.	Study of the stratigraphy, depositional environments, structural development, and geologial ages of the Telkwa and other potential coal measures in west-central B.C., the correlation of coal seams; definition of the areal extent of the coal measures, and their relationships to surrounding rocks, evaluation of coal resources, deposit models to be used as local and regional exploration guides.	BCMEMPR (J. Koo)	20 K	1982-1984	Geological Fieldwork
Geoscientific evaluation of Klappan coal measures in Northwestern B.C.	To examine the stratigraphy, structural development, depositional environments, and the geologic age of the Klappan coal measures; the correlation of coal seams and their quality, rank, and number; the areal extent of the coal measures and their relationships to surrounding rocks; coal reserves; geologic relationships of the coal measures to other major coal measures in northwestern British Columbia; regional and local exploration models.	BCMEMPR (J. Koo)	30 K	1984-1987	Geological Fieldwork

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TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Mapping of Mt.-Rochefort Syncline	Stratigraphic and structural mapping of coal-bearing Lower Cretaceous rocks with special attention to the Gething Formation.	BCMEMPR (A. Legun)	10 K	Ongoing	Geological Fieldwork 1982, 1984
The Upper Gething Formation and its eastern limits in the Subsurface	Stratigraphic and geophysical correlation of petroleum well data in the plains with coal drill hole data in the foothills.	BCMEMPR (A. Legun C. Williams)	3 K	Ongoing	Unpublished BSc Thesis, University of Calgary, C. Williams, 1984; Geological Fieldwork 1983, 1984.
Coal Reserve Estimation Project	To apply methods and parameters adopted for interpreting and calculating B.C. coal reserves and resources.	BCMEMPR (J. Thompson)	5 K	Initial study complete 1982 continuing	Will be revised edition of "Coal in B.C."
Stratigraphy of Peace River Coalfield	Correlation of coal bearing units in the Northern Coalfield based on stratigraphy, tonstein, fossils and geophysical logs.	BCMEMPR (J. Broatch)	20 K	Ongoing	Peace River Coalfield Correlation, MEMMPR, Paper 81-3 D. Duff and R. Gilchrist
Geostatistical Evaluation of Seam Characteristics, N.E.B.C.	Study of variability of seam thickness, and compositional characteristics for various properties in N.E.B.C.	BCMEMPR (W.E. Kilby)	10 K	Proposed	Fieldwork 1984

EXPLORATION

TABLE A

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Deposit Modelling with Microcomputers	Examination of a structurally complex coal deposit in Pine Pass area. Application of statistical and geostatistical techniques in the description of the structure of the deposit, quantity and quality of coal.	BCMEMPR (W.E. Kilby)	10 K	1984	External Publication
Altered Volcanic Ash Marker Horizon in N.E.B.C.	Correlation of Tonstein and Bentonite beds in the Lower Cretaceous Gething to Hulcross Formations. Examination of their stratigraphic positions, petrographic textures, mineral and chemical characteristics and ages.	BCMEMPR (W.E. Kilby)	10 K	1985	Geological Fieldwork 1983-1984-1. Ongoing
Borehole Geophysics/ Applications Development	To develop and demonstrate the application of integrated borehole geophysical measurements in mineral exploration and mining; 2) to determine methods to quantify these measurements, and to proceed with the requisite experimental development.	GSC-RGG (P.G. Killeen)			
Borehole Geophysics (Electrical & Magnetic Techniques)	To contribute to the development of borehole mining geophysics technology, as a means of improving the efficiency and effectiveness of mineral exploration practices and geophysical techniques applied to engineering and geological mapping.	GSC-RGG (A.V. Dyck)			

EXPLORATION

TABLE A

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Borehole Geophysics Applications to Coal	To improve borehole methods for the detection and evaluation of coal.	GSC-RGG (C.J. Mwenifumbo)			
The Detection of Abandoned Shallow Underground Coal Mine Workings by Geophysical Methods	Constant offset, high-resolution seismic reflection measurements were made over the main tunnels and older workings of the Prince Mine in the Sydney coalfield. Enhanced reflections were observed over the main tunnels and disrupted reflections over a collapsed area of the old workings. Further work is required to improve resolution using higher frequencies. Field work completed in November 1983.	EMR Research Agreement	5 K	1983/84	In Preparation
Gravity Investigations of the Stellarton-New Glasgow Pennsylvanian Graben, Pictou County, Nova Scotia	Terrain corrections are completed for all 1981/1982 gravity measurements. Older gravity stations in the area are being checked and terrain corrections computed. Map compilation will commence shortly.	Nova Scotia Research Foundation Corporation (K. Howells)	-	1984	-

EXPLORATION

TABLE A

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
The Interpretation and Evaluation of Gravity Measurements in Southern Cape Breton Island, Nova Scotia	Bouguer gravity contour maps at a scale of 1:50,000 are complete for most of the Sydney coal basin. 1983 gravity stations over the western margin of the coal field have been reduced and plotted. Terrain corrections will be completed shortly. It is hoped to incorporate offshore marine geology data prior to interpretation.	Nova Scotia Research Foundation Corporation	-	1984	-
Improvements to Borehole Logging Equipment	A new digital depth/speed electronics module has been designed and constructed. This unit has been interfaced with a photo chopper disc mounted on the cable measuring wheel axle to display probe depths in metres to the nearest 0.01 metre and probe speed in metres/minute. A remote winch control module, a signal routing module and a power supply module have also been designed and constructed. Field tests were carried out in 1983 and the system has been used for production logging since late 1983. A new digital borehole deviation probe and module have also been added to the other functions. Design studies are underway to construct a module for magnetic taping of the geophysical logs.	Nova Scotia Research Foundation Corporation	-	1984	-

EXPLORATION

TABLE A

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Statistical models for exploration and evaluation of mineral deposits in B.C.	To develop a means by which mathematical models can be combined with other sources of information to form a more reliable method of forecasting ore reserves for the benefit of the mining industry.	Science Council of B.C./Univ. of B.C., B.C. Ministry of Energy, Mines and Petroleum Resources	36,800		
Electrical Exploration for Petroleum, Uranium, Coal and Geothermal Energy	Projects aimed at devising improved or new electrical geophysical methods of exploring sedimentary rock strata for energy resources.	NSERC/ Dept. of Physics Univ. of Toronto (G. West, R. Edwards, R. Bailey, G. Garland)		-	complete
Structures of the Mist Mountain Formation in the SE Canadian Cordillera	The characteristics and mechanism, for the formation of structurally thickened coal deposits is being investigated	NSERC/ Coal Research Centre UBC (R.M. Bustin)			

EXPLORATION

TABLE A

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Organic maturation in Southwestern Alberta	The level of organic maturation of coal and carbonaceous shales collected from surface outcrops in the Rocky Mountain Foothills and from representative wells in the plains from Jurassic and younger strata willbe determined using vitrinite reflectance and/or fluoresence spectroscopy of the liptinite fraction.	Imperial Oil, NSERC/Coal Research Centre UBC (R.M. Bustin)			
In situ Gasification A natural sample	An undergound coal fire in southwestern British Columbia is being studied as an example of in-situ gasification. Six holes drilled in advance of the fire have been sampled for gaseous emissions and temperature over a three year period. The results of the study demonstrate some of the mechanisms of combustion, and emission gases resulting from fire flood of a shallow coal fire.	Gulf Canada, NSERC/Coal Research Centre UBC (R.M. Bustin)	-	-	

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TABLE A

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Structure and stratigraphy of the Groundhog Coalfield	The purpose of the study is to resolve the structure and stratigraphy in the Groundhog coalfield in northcentral British Columbia. The study involves field mapping at a scale of 1:50000 in the Mt. Klappan area and stratigraphic and petrological studies throughout the coalfield area.	NSERC, EMR, Gulf Canada/ Coal Research Centre UBC (R.M. Bustin)	-		
Origin of sulphur and trace elements in Fraser Delta peats	Study to develop depositional models applicable to coal exploration and exploitation based on studies of recent peat deposits of the Fraser Delta.	NSERC/Coal Reseach Centre UBC (R. Bustin, L. Lowe)	-		

MINING TECHNOLOGY - GENERAL

TABLE B

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Coal Mining Research	A variety of projects are being undertaken to research, develop, and demonstrate new or improved technology for the mining and beneficiation of western Canadian coals.	Office of coal Research and Technology under the Alberta/ Canada Energy Resources Research Fund/ Coal Mining Research Centre, Edmonton	$995,640 (FY 84/85)	Ongoing in 84/85	
Alternate Tailings Disposal In-Pit Backfill	To conduct a preliminary investigation regarding the ramifications of disposing preparation plant tailings in cells constructed on surface mine waste backfill, as well as in-pit disposal.	A/CERRF/CMRC (R.G. Chopiuk)	30 K	1st quarter 1985	
Devon Facility Design and Installation	Specification, purchase and installation of equipment for program facilities at Devon Coal Research Centre. Emphasis is on soils and rock testing.	A/CERRF/CMRC (P.L. Wright)		Continuing	
Technology Transfer	To provide information to industry on mining technology which can be applied to general areas of coal mining in western Canada.	A/CERRF/CMRC (P.L. Wright)	18 K	Continuing	

MINING TECHNOLOGY - GENERAL

TABLE B

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Mining Technology Program Development	To evaluate research needs within the fields of Coal Mining Technology, Reclamation and Health and Safety in western Canadian conditions and to identify viable and beneficial tasks which should be undertaken by CMRC to meet these needs.	Q/CERRF/CMRC (P.L. Wright)	30 K	Continuing	
Measurement and Control of Mining Subsidence Handbook	To produce a handbook describing methods of prediction, measurement and control of mining subsidence with case studies of precautionary and remedial measures which will be applicable to conditions in western Canada.	A/CERRF/CMRC (P.L. Wright)	123 K	Continuing	-
Mine Maintenance	Review of mine maintenance in Canada	EMR, Canada/ Queen's University, Kingston, Ont. (Dr. J.H. Brown, Dept. of Mining Engrg)	$34,380		

MINING TECHNOLOGY - GENERAL

TABLE C

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Wear resistant surfacing of mining components	The objective of this project is to develop special additives that, when applied to the surfaces of excavator teeth and conveyor wear plates, will toughen them, thereby extending their usefulness by up to ten times.	Science Council of B.C./Univ. of B.C.; ESCO Ltd.	27,560	-	-
Personnel Transport and Material Handling Technologies for Efficient Underground Rapid Transport System	To summarize existing initiatives in underground transportation of personnel and materials, identity shortcomings of existing technology, highlight industry needs and develop conceptual designs for the next generation of efficient underground transportation systems for personnel and materials.	CANMET/Canadian Mine Services	140 K	Contract abandoned	None
Belt conveyor systems	To facilitate selection of shifting equipment (and development of improved shiftable conveyors), the deformational behaviour of belt conveyors during shifting operations is being investigated.	/University of Alberta, Dept. of Min. Engrg. T.S. Golosinski			

MINING TECHNOLOGY - GROUND CONTROL

TABLE D

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Post-Reclamation Settling Study	Observation pins have been placed on recontoured spoil to monitor horizontal and vertical movements of reclaimed land.	TAU (P. Venner)	-	Continuing	-
Glacial Thrusting of Bedrock Effect on Highwall Stability	Airphoto identification with ground followup. Integration with surface geophysics.	TAU/ARC-Geological Survey (S. Moran)	250 K	In progress 1984-85	Preliminary reports submitted to TAU
Glacial Thrusting of Bedrock	Air photo identification with ground followup.	TAU/ARC-Geological Survey (S. Moran)	325 K	In progress 1983/84	1983 phase report Available
Surface Geophysical Methodology	Test various geophysical methods to delineate zones of disturbed bedrock and coal sub-crops.	TAU (D. Nikols)	300 K	In progress	'83 phase report Available
Use of remote sensing such as side-looking airborn radar imagery for site-specific geological studies - Whitewood & Highvale Mine	Test the use of SLR methods to pit point geological structure in the planes environment.	TAU/ARC (D. Nikols)	45 K	Phase I Completed Phase II in progress	Report unavailable for general circulation
Movements before failure of a surface coal mine slope	To determine the functional form of the creep of mine slopes and its use in the prediction of the time to failure.	Natural Sciences & Energy Research Council (D. Cruden, Univ. of Alta.)	15 K	Completion due September 1, 1984	M.Sc thesis, S. Mazoumzadeh

MINING TECHNOLOGY - GROUND CONTROL

TABLE D

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Support design of underground cavities in weak rock	The development of a monitoring concept to assist in the assessment of in situ performance and the prediction of instability thereby allowing the application of the observational approach to the selection of excavation layout and the design of the support system.	Energy Resources Research Fund (P.K. Kaiser, Univ. of Alta.)	133.5 K	Complete	Parts 1 to 3, contract U-80-3 Support Design of Underground Cavities in weak rock.
Strata Mechanics activities	Cooperative laboratory and field investigations of gate-road deformation gas/rock outbursts, submarine subsidence and related geotechnical topics.	CANMET with support and assistance from CBDC.	5 P-Y $425 K	Continuing	Internal and external reports where appropriate
Stability Enhancement of Coal Measures Strata with Aqueous Based Chemical Agents	To assess potential chemical additives to mine water supplies to prevent undue deterioration of coal measures strata associated with the presence of water.	CANMET/Jacques, Whiteford & Associates	$18 K	Complete	Final report available for public release from CANMET
In Situ Stress Determination in No. 26 Colliery, Cape Breton, N.S.	Measurement of in situ stresses down dip from existing workings (700 m depth).	CANMET/Golder Associates	$30 K	Complete	Final report available for public release from CANMET

MINING TECHNOLOGY - GROUND CONTROL

TABLE D

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
A Review and Evaluation of Potential Data Collection Methods for Monitoring Subsidence over Longwall Workings in Submarine Coalfields.	To examine methods by which the formation of subsidence profiles on the seafloor can be monitored. Attention will be focussed primarily on measuring the amount and extent of the profile (both transverse and longitudinal), however consideration will also be given to estimation of tensile and compressive strain induced during profile deformation.	CANMET/Jacques, Whiteford & Ass.	$60 K	Contract awarded Feb. 1984	Final report will be available from CANMET May 1985
Strata Control in the Cape Breton Coalfield.	Strata control in the Cape Breton coalfield	EMR (McGill University Rowlands/Scoble/ Hassani)	10 K	Started 1984	
In Situ Stress Determination	In situ stress determinations in the Sydney coalfield.	EMR, Canada/ Golder Associates (Eastern Canada) Ltd.	$29,097		
Movements Before failure of a Model Coal Pillar	To determine the functional form of the time-dependant strain of a model coal pillar.	Energy Resources Research Fund (D. Cruden, Univ. of Alta.)	16.7 K	Complete	Due August 1, 1984

MINING TECHNOLOGY - GROUND CONTROL

TABLE D

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Support Design of Underground Cavities in Weak Rock	The development of a monitoring concept to assist in the assessment of in situ performance and the prediction of instability thereby allowing the application of the observational approach to the selection of excavation layout and the design of the support system.	Energy Resources Research Fund (P.K. Kaiser, Univ. of Alta.)	133.5 K	Complete	Parts 1 to 3, Contract U-8-3 Support & Design of Underground Cavities in Weak Rock

MINING TECHNOLOGY - UNDERGROUND

TABLE E

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Main Roadway Drivage	An Atlas Copco/Eickhoff ESA-60 Miner is scheduled to be used with integral power supports and roof/side bolters to develop the main roadways of the 9B-4 mine. The system is designed to improve productivity and the health and safety of the Underground Miners.	Smoky River Coal Ltd. (T. Robson)	-	Trials to start August 1984	None
Movements Before Failure of a Model Coal Pillar	To determine the functional form of the time-dependent strain of a model coal pillar.	Energy Resources Research Fund (D. Cruden, Univ. of Alta.)	16.7 K	Complete	Final report received
Detailed Review of Gateroad Sealant to Reduce Gob Leakage in Advancing Longwall Sections in the Sydney Coalfield	To examine various sealants which could find application in gob leakage control in advancing longwall gateroads with particular emphasis on their suitability in the underground coal mine environment.	CANMET/AMCL	$35 K	Complete	Final report available for public release from CANMET
Measurement and Analysis of Rock Deformation and Support System Response in the Drill and Blast, and Bored Access Drivages at the Donkin-Morien Project	To monitor strata deformation and rock/support interaction in two parallel large diameter coal mine access drivages driven by drill and blast and bored methods and conduct a comparative analysis of rock mass response to the two modes of tunnelling in coal measure strata.	CANMET/Golder Associates	$500K	Complete by June 1985	Final report will be available from CANMET in mid - 1985

MINING TECHNOLOGY - UNDERGROUND

TABLE E

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Analytical approach to design of pillars in coal - Phase III	Analytical approach to design of pillars in coal - Phase III	EMR, Canada/ Coal Mining Research Centre Edmonton, Alta.	76,620		
Study of Alternative longwall facecutting systems	To consider alternatives to double ended ranging drum shearer loaders in the Sydney coalfield which offers the promise of reduced propensity for frictional ignition problems.	EMR, Canada/ John P.L. Bacharach and Associates, Ltd. Calgary, Alta.	74,295	Contract awarded March 1984	Final report will be available from CANMET
Tunnel Boring	Study of an integrated tunnel boring and extruded lining system - phase I.	NRC/ UTDC Research and Development Ltd., Kingston, Ont.	$250,000		
Advanced Technology activities	Cooperative laboratory and field investigations and demonstrations of improved technology equipment and techniques for underground coal mining.	CANMET with support and assistance from CBDC	2 P-Y $170 K	Continuing	Internal and external reports where appropriate
Longwall Mining	Organization of a seminar on longwall mining in Western Canada.	EMR, Canada/ John P.L. Bacharach and Associates, Ltd. Calgary, Alta.	$16,700		

MINING TECHNOLOGY - UNDERGROUND TABLE E

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Rock-bolt/roof interaction mechanisms	In order to gain a better understanding of rock-bolt/ roof interaction mechanisms resin bolt support systems are being studied by theo- retical and physical models.	DSS,Canada/ University of Alberta (B. Stimpson)	-	-	
Review of Tracer Gas Addition and analysis Systems and Provision of Tracer Gas Addition during Shop Floor Trials of a 7.6 m Shielded Full Face Tunnel Boring Machine	To examine potential tracer gas adition and analysis systems, develop appropriate sample addition and analysis systems and provide same for shop floor cutting head venti- lation trials.	CANMET/Ontario Research Foundation	70 K	Complete	Final report available for public release from CANMET

MINING TECHNOLOGY - SURFACE

TABLE F

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Footwall Bolting/ Anchoring	To evaluate the feasibility of bolting/anchoring a portion of a steep footwell instead of benching in a new pit to be developed in 1984. Successful bolting/anchoring of the wall could substantially reduce the waste quantities to be removed from the pit.	Smoky River Coal Ltd./Piteau and Associates (D. Fawcett)	N/A	Evaluation complete by August 1984	None
Forestburg Reclamation Study, An Investigation of the Settlement Behaviour of mine backfill	To identify and understand the mechanisms responsible for the settlement of relevelled mine spoil in the Diplomat and Vista Strip Mines located near the Battle River, South of Forestburg, Alberta.	Land Reclamation Conservation Board/ Alberta Research Council (J.D. Scott, Univ. of Alta. and M.B. Dusseault, Univ. of Waterloo)	146.1 K	July 1980 to March 1984	Reports Available on loan.
Bucket-Wheel Excavation (BWE)	The diggability of plains overburdens by BWE's is under study. Efforts are directed toward defining expected digging forces from geotechnical data from overburdens encountered in TransAlta's Highvale Mine and in Suncor's oil sands pits.	Univ. of Alberta Dept. of Mineral Engrg. (T.S. Golosinski)	-	-	-

MINING TECHNOLOGY - SURFACE

TABLE F

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Bucket-Wheel Excavation	To aid in the selection of excavators for future surface mining operations in plains areas, field studies of Suncor's overburden removal by BWE's are being used to develop relationships between BWE sizes and required digging forces.	Univ. of Alberta Dept. of Mineral Engrg. (T.S. Golosinski)			
Coal handling	Attempt to minimize frozen coal handling problems at Poplar River Mine.	Saskatchewan Power Corp.	-	Ongoing	-
Dragline roller load testing		Saskatchewan Power Corp.	-	Ongoing	Report available on loan Subject to Confidentiality Agreement
X-Raying of Bridge Strand Pendant Line		Saskatchewan Power Corp.	-	Continuing	-

COAL PREPARATION - GENERAL

TABLE G

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Coal Preparation - Program Development	Identify potential research needs which CMRC should undertake particularly in the areas of meeting product specifications for export markets and solving problems encountered in new preparation plants.	A/CERRF (S.G. Butcher)	27 K (FY 84/85)	Continuing	
Technology Transfer	Keep industry abreast of new developments in coal preparation which may be useful for current and planned operations.	A/CERRF (S.G. Butcher)	11 K (FY 84/85)	Continuing	
Economic Evaluation of Upgrading Processes	Determine the optimum level of coal preparation and upgrading for western Canadian coals to meet export market specifications.	A/CERRF (S.G. Butcher)	14 K (FY 84/85)	Continuing	Comparative Economics of Coal Preparation Processes, S.G. Butcher, P. McIntosh
Devon Facility Design and Installation	Design, purchase and install laboratory and pilot plant equipment for CMRC's new facilities in Devon Coal Research Centre. Emphasis is on coal drying pilot units.	A/CERRF (S.G. Butcher)		Continuing	
Development of a coal froth flotation control system		EMR, Canada/ The Cambrian Engineering Group Ltd. Calgary, Alberta	$64,520		

COAL PREPARATION - GENERAL TABLE G

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Identify all existing coal preparation operations in eastern Canada		EMR, Canada/ Jacques Whitford & Associates Ltd. Halifax, N.S.	9.970		
Design and development of a fine coal cleaning mobile plant		EMR, Canada/ Fenco Engineers Inc. Toronto, Ontario	$80,000		
Culture of thiobacillas for use in beneficiation of coal		NRC/ Atlantic Coal Institute Ltd. Sydney, N.S.	$6,850		
Investigation of low cost technology in coal cleaning using the Szego Grinding Mill System		EMR, Canada/ General Comminution Incorporated, Don Mills, Ont.	$25,000		
Simulated processing of ore and coal	Demonstration of the applicability of the simulated processing of ore and coal computer-based methodology to the coal processing industry	EMR, Canada/ Cape Breton Development Corporation Sydney, N.S.	$21,590		
Influence of pore structure on the beneficiation and utilization of coals		NRC/ Technical University of Nova Scotia Halifax, N.S. (J. Wornkzeki) Centre for Energy Studies	24,341		

COAL PREPARATION - GENERAL

TABLE G

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Process simulations of washing eastern Canadian coal	Information from post test work is to be used in washing process simulations to generate data on technique and costs which can be used in planning cleaning for the future.	CANMET/ Research and Productivity Council	$30,000	Completion scheduled Fall 1984	To be made available
Coal beneficiation in a continuous flow electrostatic Processor	To evaluate the success of coal beneficiation by an electrostatic process including surface property modification on a continuous flow basis.	NSERC/ University of Western Ontario (J.R. Brown)	20 K	Ongoing	-
Beneficiation Potential of Eastern Canadian Coals	Comprehensive geochemical and physical analysis of New Brunswick and Nova Scotia coal seams	Energy, Mines and Resources/ Atlantic Coal Institute	150 K	in progress	-
Culture of Thibacillus for use in beneficiation of coal	Studies in pyrite leaching by microbial action on coal fines	National Research Council/ Atlantic Coal Institute	6.85 K	in progress	-
Investigations of microbiological methods in problems related to the coal industry	1. Assessment of the SABA process on coals to 1-2 $^{\circledR}\square$ particle size. 2. Feasibility of bacterially leaching FeS_2 from coal of existing waste dumps.	ARL-NRC Dalhousie Univ. (R. McCready)	71 K	continuing	ARL Technical Report No. 44

COAL PREPARATION - GENERAL

TABLE G

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Investigation of the pyrite sulphur liberation characteristics of some eastern Canadian coals	Liberation study would evaluate the limits of sulphur removal and best possible yields of clean coal versus sulphur content.	ARL-NRC T.U.N.S. (L. Adorjan)	30 K	continuing	
The influence of the mineralogy of coal, and in particular of sulphur compounds on the possibility of sulphur and ash reduction	1. Compendium and synthesis of data from reports on the mineralogy of eastern Canadian coals 2. Microscopic analysis of 48 samples of liberated pyrite obtained from T.U.N.S. Relation of mineralogic findings to industrial problems of sulphur removal.	ARL-NRC New Brunswick Research & Productivity Council (J. Stirling)	30 K	1 phase accomplished	ARL Technical Report will be available in June 84
The influence of pore structure on the beneficiation and utilization of coals	Hydrophobicity, rate of dewatering, and the flotation recovery as function of porosity is being studied.	ARL-NRC T.U.N.S. (J. Wozniczek)	24 K	1 phase accomplished	ARL Technical Reports will be available in July 84
Analysis and investigation of the surface of coal using a Fourier Transform Infrared Spectrometer	Main goal is to identify areas in which the use of FTIR can be useful for beneficiation of Atlantic coals.	ARL-NRC St. Francis Xavier Univ. (B. Lynch)	25 K	continuing	

COAL PREPARATION - GENERAL

TABLE G

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
The culture of thiobacillus for use in beneficiation of coal	This study is connected with the project listed above. Large quantities of bacteria will be used for testing bacterial leaching of sulphur from dumped coal.	ARL-NRC, C.B.D.C. Atlantic Coal Inst. (D. Birk)	6 K	continuing	
Recovery of Coal From Mine Rejects	To test the feasibility of recovering coal from a coal preparation plant reject stream. To prepare preliminary economics of the process.	Ontario Hydro (Y.V. Nguyen)	10 K Ontario Hydro	Completed May 1984	Ontario Hydro Report 84-176-H
Coal Cleaning for SO_2 Emission Control	To evaluate advanced physical coal cleaning processes for Ontario Hydro's coals. To identify promising technologies, if any, for further development.	Ontario Hydro (Y.V. Nguyen)	13 K Ontario Hydro	Continuing	Ontario Hydro report due 1984
Treatment of Waste Coal Fines	To investigate the use of oil agglomeration to recover and dewater coal fines which are lost in coal preparation plants.	Devco/Guildcraft Luscar/NRC (C.E. Capes)		Continuing	Confidential but some publications available.
Mobile Fine Coal Treatment Pilot Plant	To test pilot plant equipment for the agglomeration and ultrafiltration processes. To obtain economic data. To be tested at various industry locations.	Guildcraft/ American Minechem Arcanum/NRC (C.E. Capes)	N.E.P. and PILP funding	Continuing	Confidential

COAL PREPARATION - GENERAL TABLE G

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Coal Cleaning for Coal Liquid Mixture Preparation	Use of recovered fines and/or fine grinding with oil agglomeration to clean coal.	Scotia Liquicoal/NRC (K.R. Burrill/ W.L. Thayer)	N.E.P. Special Atlantic Initiatives	Continuing	Publications available.
Coal Beneficiation: A Colloid Chemical Study of Fines Recovery and Utilization	A study of the colloid chemical properties of surface active agents. The correlation of dewatering characteristics of eastern Canadian coal fines with the colloid chemical properties of the coal surface.	NERC/ Dept. of Chemistry Dalhousie Univ. (J. Kwak)	-	-	Publications available.
Data Bank on Atlantic Coals	To create a data bank consisting of a synthesis of available & procurable data & computer prediction of plant performance on Atlantic Coals.	Coal Div. EMR (Spon) CANMET (Mgmet) RPC (Contractor)	50 K	1983/84	
Development of the beneficiation potential for Eastern Canadian coals	Creation of data bank - supplementary - to obtain samples of chosen coals & to determine those properties which have been noted as required but not available for existing records.	Coal Div. EMR (Sponsor) CANMET (Mgmet)			

COAL PREPARATION - GENERAL TABLE G

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Identification of all existing prep. plants in East. Can.	As per title		THREE-YEAR PROGRAM AT TOTAL COST OF $2,085,000	1984/85	
Assess the technical economic & social benefits of utilizing beneficiated coal for thermal power generation	As per title			1984/85	
Select specific Eastearn Canadian coals for extensive testing in a pilot plant program	As per title			1984/85	
Test selected coals in a multicircuit pilot plant to deter mine optimum beneficiation techniques for Eastern Canadian coals	As per title			1984/85	
Determine the optimum beneficiation techniques for Eastern Canadian coals based on pilot plant tests	As per title			1985/86	

COAL PREPARATION - GENERAL

TABLE G

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Evaluation and recommendations based on above	As per title	//		1985/86	
Emulsifying reagents in the flotation of difficult-to-treat coals	This research is aimed at the development of a new reagent that will float usable coal from waste. Various emulsifying reagents will be tested in the hope that a way will be found to recover the less-heavily oxidized part of the raw coal fines. This could result in an increase in the overall recovery of coal in British Columbia.	Science Council of B.C./Univ. of B.C., Fording Coal; B.C. Coal; Line Creek.	20,400	-	-
Mathematical Modelling of Auto-Medium Cyclones	To carry out tests to formulate a reliable mathematical model of the water-only (auto-medium) cyclones in coal preparation.	Office of Coal Research and Technology under the Alberta/ Canada Energy Ressources Research Fund	Hydrocarbon Research Centre; Dr. L.R. Pitt and B.C. Flintoff University of Alberta	$37,940 (FY 83/84)	Final report being prepared.
Immersion Carbonization	Upgrading lignites and subbituminous coals to export specifications by a novel form of "immersion carbonization" is being studied.	Meridian Petroleums Ltd. Calgary and NTEP, Canada/ University of Alberta, Mineral Engineering Department (N. Berkowitz)	-	-	A preliminary patent dislosure covering the process has been filed.

COAL PREPARATION - GENERAL

TABLE G

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Flotation Characteristics	A laboratory study of flotation characteristics of unoxidized and oxidized fine coal from Gregg River Resources, Gregg River Mine.	Manalta Coal Ltd./University of Alberta Mineral Engrg Dept. (B.C. Flintoff and L.R. Plitt)	-	in progress	
Sensor for fine coal preparation circuits	On-line analysis of fine coal slurries using a prototype instrument developed for on-line measurement of slurry solids concentrations and ash contents. The new sensor is intended to be the principal sensor in process control systems for fine coal preparation circuits.	A/CERRF/ University of Alberta Department of Mineral Engrg. (B.C. Flintoff and L.R. Plitt)	-	-	
Beneficiation of Ultra fine High-Sulphur coals	Investigation into the beneficiation of ultrafine high-sulphur coal. In addition to conventional flotation experiments, agglomerate flotation and air-dissolved flotation will be evaluated.	EMR(CANMET)/ Coal Research Centre UBC	28,500		
Comparison of Humic Acid, Dextrin and Carboxymethyl Cellulose as Modifying Reagents in Coal-Pyrite	A systematic investigation of the effect of the three reagents humic acid, dextrin and carboxymethyl cellulose on the flotability of coal and coal-pyrite.	EMR(CANMET)/ Coal Research Centre UBC (J.S. Laskowski)			

COAL PREPARATION - GENERAL

TABLE G

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Effect of Humic Acid on flotability of coal and pyrite flotation	Effect of humic acid on the flotability of coal and pyrite	EMR/(CANMET)/ Coal Research Centre UBC (J.S. Laskowski)			
Emulsifying Reagents in the Flotation of Difficult-to-Treat Coals	Development of a new reagent to float difficult-to-treat coals. Various emulsifying reagents will be tested.	B.C. Science Council/ Coal Research Centre UBC	20,400		

COAL PREPARATION - PLANT DESIGN/MONITORING/CONTROL TABLE H

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Pilot plant for coal beneficiation	Design and construction of Model 10-tph coal beneficiation pilot plant	EMR, Canada/ Tepco-Roevin Technical Manpower Resources Incorporated, Edmonton, Alta.	10,304		
Performance Fluctuations in Coal Preparation Plants	Determine the nature and causes of performance fluctuations during the operation of western Canadian coal preparation plants.	A/CERRF (P. McIntosh)	14 K	New Task	

COAL PREPARATION - OIL AGGLOMERATION

TABLE I

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
	Beneficiation of low rank coals with heavy residua	EMR, Canada/ Gulf Canada Ltd. Sheridan Park, Ont.	132,291		
	Investigation of the use of spherical oil agglomeration in the beneficiation of low rank Canadian coals as an integral part of a direct liquefaction process	EMR, Canada/ SNC Inc. Montreal	$99,954		
Recovery of Fine Coal from Scrubber Effluents	Demonstrate that fine coal, normally lost in preparation plant tailings can be recovered from scrubber effluents by agglomeration.	A/CERRF/CMRC (R. Germain)	10 K	New Task	
Coal Dustiness/ Size Enlargement	Demonstrate selective agglomeration of fine coal to reduce dustiness and improve handleability of western Canadian coals.	A/CERRF/CMRC (R. Germain)	22 K	New Task	
Low Ash Coals	To test the feasibility of producing low ash (1.5%) coals using the spherical oil agglomeration process. To recover the oil from the low ash coal microagglomerates produced from the process. To prepare preliminary economics of the process.	Ontario Hydro/ EPRI (Y.V. Nguyen)	405 K Ontario Hydro EPRI/NRCC	Completed June 1983	EPRI report due 1984

COAL PREPARATION - OIL AGGLOMERATION TABLE I

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Coal Beneficiation by Oil Agglomeration	This program studies oil agglomeration for the simultaneous beneficiation and and transportation of coal. Studies in progress in stirred tanks and in a pipeline reactor have demonstrated that Alberta thermal coals can be agglomerated successfully with bridging liquids consisting mainly of low grade bitumen.	Alberta Research Council; Pembina Resources Ltd.,, Electric Power Research Institute		-	-

COAL PREPARATION - DEWATERING/DRYING TABLE J

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Adsorption Characteristics of Dried western Canadian Coals	Determine the readsorption of moisture of thermally dried coals and evaluate additives to prevent readsorption.	A/CERRF/CMRC (M. Rashid)	44 K	New Task	Coal Moisture Adsorption - A Literature Review, R. Germain
Determination of Coal Dryer Design Criteria	Develop a standard bench scale procedure for predicting the design criteria for coal dryers.	A/CERRF/CMRC (M. Rashid)	27 K	Continuing	Drying Characteristics of western Canadian coals, M. Rashid
Fluid Bed Dryer Development	Demonstrate at a bench scale the benefits from new developments in fluid bed dryer design.	A/CERRF/CMRC (M. Rashid)	15 K (FY 84/85)	Continuing	
Portable Coal Drying Pilot Plant	Do on-site drying tests using the portable coal drying pilot plant.	A/CERRF/CMRC (S.G. Butcher)	17 K (FY 84-85)	Continuing	
Microwave Fast Drying of Lignite	In this new process water is rapidly and efficiently removed from lignite, from approximately 45% to 10% moisture, without significant loss of volatiles.	WCPD/U of Waterloo (Prof. J. Ford)	50 K 81/83	completed Dec. 83	

COAL PREPARATION - DEWATERING/DRYING

TABLE J

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Simultaneous Comminution and Drying of Coal in a Spouted Bed	A detailed study of three comminution mechanisms - impact, crushing, attrition, and the extent to which each contributes to the overall coal comminution process in a spouted bed, over a range of operating conditions and bed inserts. The results will be used to design and test a spouted bed which combines coal drying with comminution.	NSERC/ Coal Research Centre UBC	25,000		

CARBONIZATION

TABLE K

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
	Chemical reactivity of metallurgical coke	EMR, Canada/ McMaster University Hamilton, Ont. (Dr. W.K. Lu Dept. of Metallurgy)	33,287		

METALLURGICAL PROCESSES - OTHER

TABLE I

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Kinetics of the Zinc Slag Fuming Process	The use of high-pressure injection of coal is being investigated.	ASERC/Coal Research Centre UBC	12,000	-	
Kinetics of the Boudouord Reaction Involving Low-Rank, Reactive Coals	Reaction kinetics are being determined by contacing pre-heated CO_2 and coal char in a small fluidized bed reactor and measuring the flowrate and composition of gas exiting the bed.	NSERC,CNP (Brazil)/ Coal Research Centre UBC	14,000		
Direct Reduction of Unagglomerated Iron Ore with Coal	Measurement of the kinetics of reduction of unagglomerated iron ore, such as spiral concentrates, with coal in a batch rotary reactor.	CONACYT (Mexico), NSERC/Coal Research Centre UBC	14,000		

COMBUSTION

TABLE L

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Further technical support for atmospheric fluidized bed combustion ash characterization project		Federal Department of the Environment/ S.E. Sawell Burlington, Ontario	24,0007		
Evaluation and testing of Westar coal to determine its suitability for coal water mixture combustion		EMR, Canada/ Westar Mining Ltd.	28,500		
Determination of the combustion and heat transfer characteristics of Cape Breton Development Corporation cold water mixture in comparison to heavy fuel oil		EMR, Canada/ Technical University of Nova Scotia, Halifax, N.S. (Dr. M.J. Pegg, Centre for Energy Studies)	70,000		
Reduction of light oil usage in coal-fired fossil stations		EMR, Canada/ Ontario Hydro Toronto, Ont.	49,689		
FTI-PAS evaluation of combustion on behaviour of bituminous coals	Fourier transform infrared photo acoustic spectroscopy as an analytical tool for the evaluation of the effects of weathering/oxidation on the combustion behaviour of bituminous coals - Phase II	EMR, Canada/ St. Francis Xavier University Antigonish, N.S. (B.M. Lynch)	37,750		

COMBUSTION

TABLE L

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Coal-Liquid mixtures	Combustion of the coal/liquid mixtures in a flame tunnel - Phase II	NRC/MBB Mechancial Services Ltd. Halifax, N.S.	51,789		
Spontaneous combustion reaction mechanisms	Detailed study of the reaction mechanism of spontaneous combustion of coal with particular emphasis on western Canadian low-rank coals	EMR, Canada/ University of Calgary Calgary, Alta.	75,000	Ongoing 1984/85	
Coal-Water Mixtures	Determination of the combustion and heat transfer parameters of four coal water mixtures	EMR, Canada/ International Flame Research Foundation Ijmuider, The Netherlands	$193,741		
Retrofit burners	Monitor performance testing for low nitrogen and sulphur oxides retrofit burners at Canadian Forces Base, Gagetown, New Brunswick	EMR, Canada/ G.A. Robb Associates Ottawa	$30,000		
Fluidized-bed combustion	Provide support in the field of mathematical modelling of fluidized bed combustion at the 7th combined Technical and Executive Committee Meeting	EMR, Canada/ Queen's University Kingston, Ont. (H.A. Becker, Dept. Chemical Engrg)	$5,001		
Coal-water slurry	Preparation of 50 barrels of an experimental coal-water slurry	EMR, Canada/ Scotia Liquicoal Limited Halifax, N.S.	$6,900		

COMBUSTION

TABLE L

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Tunnel furnace	Performance prediction of the Combustion and Carbonization Research Laboratory tunnel furnace for coal combustion.	EMR, Canada/ Imperial College of Science and Technology London, England	$59,652		
Drop furnace	Prediction of flow and temperature conditions in the Combustion and Carbonization Research Laboratory drop furnace	EMR, Canada/ University of Ottawa Ottawa, Ont. (Dr. H. Hallet, Dept. of Mechanical Engrg)	$27,950		
AFBC	Evaluation of uses for atmospheric fluidized bed combustion solid wastes.	EMR, Canada/ E.E. Berry Technical Consulting Ltd. Ottawa, Ont.	28,260		
Coal-liquid mixtures combustion	Combustion of coal liquid mixtures in a flame tunnel - Phase I	NRC/MBB Mechanical Services Ltd. Halifax, N.S.	41,252		
Pulversized coal burners	Installation and evaluation of novel pulverized coal burners for the combined reduction of nitrogen and sulphur oxides during combustion at Canadian Forces Base, Gagetown, New Brunswick	EMR/Volcano Inc. St. Hyacinthe, Que.	$975,000		
	Pilot plant studies of fluidized coal combustion	EMR/Queen's University Kingston, Ont.	$320,000		

COMBUSTION

TABLE L

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Combustion Research Facility	A 640 MJ/h combustion research facility was constructed and commissioned in 1981. The facility was designed to study the combustion of pulverized coal and lignite, but with some modifications it will burn oil, coal-liquid mixtures, biomass and municipal waste. It is equipped and staffed for both routine testing and complex research.	Ontario Hydro (M.S. Mozes, M. Alvarez-Cuenca)	300 K Ontario Hydro	Commissioning completed. Some modifications in progress.	Ontario Hydro Report 82-222-K. Another report in preparation.
Ash Fusion Characteristics of a Western Canadian Lignite	Ash fusion characteristics of high sodium lignite and lignite-coal blends were studied in the laboratory. Calcitic limestone and alumina appear to be the most efficient additives for raising ash fusion temperatures (ie, reducing slagging).	Ontario Hydro (M.S. Mozes)	25 K Ontario Hydro	Completed May, 1982	Ontario Hydro Report 82-141-K
Adhesion Characteristics of High Sodium Lignite Ash	Severe adhesion of lignite ash on the electrodes of hot side electrostatic precipitators observed in the plant was studied in the laboratory. Factors affecting fly ash adhesion include: high operating temperatures, moisture content of the flue gas and residence time of the fly ash on the electrodes.	Ontario Hydro (M. Alvarez-Cuenca)	30 K Ontario Hydro	Completed October, 1982	Ontario Hydro Report 83-167-K

COMBUSTION

TABLE L

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Combustion Characterization of Western Canadian Coals	A study is in progress to evaluate the combustion characteristics, pollution potential slagging and fouling characteristics of low sulphur Western Canadian coals.	Contract Research (M. Mozes, M. Alvarez-Cuenca, R. Mangal)	100 K	Expected Completion Date Sept, 1984	Confidential
Spout-fluid bed and fluidized bed combustion of coal washery waste	Using fluidized bed research, this team of scientists is developing a way to use coal dust recovered from rejects and tailings that would otherwise be discarded as waste.	Science Council of B.C./ University of B.C., Westar Mining Co. Ltd.	32,480	1986 completion	
Improved combustion technique for NO_x reduction	Develop a low NO_x burner technique, including the effect of alkali injection for SO_2 reduction.	CEA/ Combustion Engineering	100,000	Completion Dec 1983	
The effect on boiler fouling, slagging and corrosion of using calcium chloride as a freeze control additive for coal	Suppliers and users of calcium chloride will be interviewed to determine what application rates are necessary for it to be effective as a freeze control agent. Its impact on coal will be determined for the analysis of typical Canadian coals and for the corrosion in rail cars and boilers, including fans and flues	CEA/ Ontario Hydro	30,000	1984	

COMBUSTION

TABLE L

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
The firing of rotary kilns with pulverized coal	To assist in the full or partial conversion of lime or cement kilns to coal firing, a comparative study is being carried out to investigate the use of pulverized coal and natural gas as fuel.	NSERC/Coal Research Centre UBC	47,000	-	
Spouted Bed Combustion	To show that a spouted bed can be an efficient combustor for low grade solid fuels and to provide information on its operation.	NSERC/ Coal Research Centre UBC	67,671	-	
Circulating Bed Fluidization	Investigation of operating and equipment variables on particle clustering and voidage distributions.	NSERC/ Coal Reserach Centre UBC (J.R. Grace)	119,679	-	
Coal Combustion Mechanics in a Spout - Fluid bed	Development of a mathematical model of the combustor	NSERC/ Coal Research Centre UBC	15,000	-	
Flame Scanners for coal fire monitoring	Flame scanners for coal fire monitoring	CEA/ Saskatchewan Power Corp.	$550,000	June 85	
Distribution of trace elements from Canadian coal-fired generating stations	Distribution of trace elements from Canadian coal-fired generating stations	CEA/ Battelle Pacific N.W. Labs	424,000	Dec 83	

COMBUSTION TABLE L

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
The Firing of Rotary Kilns with Pulverized Coal or oil	-	NSERC/ Depts. of Metallurgical and Chemical Engrg UBC	-	complete	"Heat transfer from flames in a Rotary kiln" J.P. Gorog, T.N. Adams, J.K. Brimacombe Met. Trans. B. 1983 Vol. 148, pp 411-424
Spouted Bed Combustion	Demonstration of the feasibility of using spouted-fluid bed and spouted bed for combustion of solid fuels.	NSERC/ Dept. of Chem Engrg UBC	-	complete	

CONVERSION

TABLE M

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Characterization of solid residues from coal liquefaction processes		EMR, Canada/ University of Regina (B.D. Kybett)	108,081		
Evaluation of flash liquefaction pyrolysis process applicable to Canadian coals		EMR, Canada/ University of Waterloo (D.S. Scott)	79,146		
Preliminary studies of Canadian coals using the coal flash hydropyrolysis unit at Ontario Research Foundation		EMR, Canada/ Ontario Research Foundation, Mississauga, Ont.	69,789		
Use of Hydrogen sulphide as a catalyst in coprocessing	Demonstration of the effectiveness of the use of hydrogen sulphide as a catalyst in the coprocessing of Estevan lignites, Forestburg subbituminous coals with Cold Lake vacuum residue	EMR, Canada/ Sandwell and Company Ltd., Mississauga, Ont.	$45,364		
Continuation study on gasification of western Canadian coal in a spouted bed		EMR, Canada/ University of British Columbia Vancouver, B.C.	$131,206		

CONVERSION

TABLE M

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Experimental liquefaction of Nova Scotia coal - phase 5		EMR, Canada/ Nova Scotia Research Foundation Corporation Dartmouth, N.S.	$116,088		
Direct coal liquefaction under ambient conditions		EMR, Canada/ University of Victoria, B.C. (Drs. Paul West and S. Stobart)	$150,000		
Thermal Conditioning	Fracture and thermal conditioning of canadian coals with intended Application to in Situ Coal Gasification	NSERC/ Dept. of Mechanical Engrg Univ. of Manitoba (Tai-Ron Hsu, M.N. Bassin)	-	complete	Reports available
	Continuous Liquefaction of Hat Creek coal.	EMR, Canada/ British Columbia Research Council Vancouver, B.C.	$171,912		
	Freezing behaviour of coal water fuel (carbogel)	EMR, Canada/ Research and Productivity Council, Fredricton, N.B.	19,306		

CONVERSION

TABLE M

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
	Corrosion of metal by coal water mixtures	EMR, Canada/ Research & Productivity Council, Fredricton, N.B.	47,835		
	Conduct a study on direct coal liquefaction under ambient conditions.	EMR/University of Victoria, B.C. (Dr. P.R. West, Dept. of Chemistry)	$150,000		
Coal/Lime Pyrolysis	Characterization of Volatile Products and Product yield measurements from the pyrolysis of coal/lime mixtures	ARL/Nova Scotia Research Foundation Corp.	37 K	Continuing	Published as phases of study completed
Indirect Liquefaction	Review and assessment of processes for indirect liquefaction of Ontario lignite into methanol	EMR, Canada CANMET/Ontario Energy Corp.			
Beneficiation of low rank coal with heavy oil		EMR, CANMET/	69 K		
The influence of reactor hydrodynamics on direct coal liquefaction reaction kinetics	To improve the understanding of Direct Coal Liquefaction Kinetics and to develop improved reactor design concepts for direct coal liquefaction processes.	NSERC, B.C. Research/ Coal Reserach Centre UBC	20,000	-	

CONVERSION

TABLE M

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Liquid fuels from coal by spouted bed pyrolysis	A two-reactor pyrolysis process is being developed in which B.C. coals are decomposed to produced liquids, gases and chars.	B.C. Science Council/ Coal Research Centre UBC	17,000	-	
	Gasification reactivities of ultrasonically treated coal rejects.	EMR/Carleton University	21.4 K	-	In progress 1985 completion
Kinetics of coal Pyrolysis Reactions	Key aspects of coal and hydrocarbon pyrolysis kinetics are examined.	NSERC/Coal Research Centre UBC	8,000	-	
Effect of particle size on liquid yields in spouted bed pyrolysis	The range of particle size is being extended from about 2.5 to 0.7 mm to lower values and operation of the spouted bed is being modified.	NSERC/Coal Research Centre UBC	12,000		
Utilization of coal to make coke and gasees	-	McMaster University Hamilton, Dept. of Metallurgy & Materials Science (W-k. Lu)	-	-	-
Direct Liquefaction Studies by High Pressure Hydrogenation of Western Canadian Coals	Batch experiments on Byron Creek (bituminous), Forestburg (subbituminous), and Saskatchewan (lignite) coals with H-coal catalyst and an oil derived from the SRC-1 pilot plant at Wilsonville, Alabama.	ASERC/ Dept. of Metallurgical Engrg. Univ. of B.C. (E. Peters)	complete		-

CONVERSION

TABLE M

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
ENR/ARC Coal Conversion Program	To evaluate the reactivity of Alberta sub-bituminous coals in hydroliquefaction processes for the production of liquid fuels and in different pyrolysis processes for the co-production of electricity, fuels and chemicals. To collect and disseminate technical information on coal mining, beneficiation and utilization. 1. Liquefaction of Alberta subbituminous coals - evaluation of selected coal regions and process types. Coals from the major Alberta subbituminous coal regions are being evaluated in batch autoclaves, a semi-continuous hot charge/discharge unit and a 2 kg/h continuous bench unit under conditions representative of known processes.	Office of Coal Research and Technology under the Alberta/ Canada Energy Resources Research Fund/ Alberta Research Council, Edmonton	$4,768,000 (FY 83/84)	Ongoing in 84/85	

CONVERSION TABLE M

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
	2. Liquefaction of Alberta subbituminous coals - supporting services. This program provides services which directly support the autoclave, hot charge and bench unit programs. Program activities are: sample acquisition and maintenance of a coal sample bank, petrography of coals and liquefaction residues, routine analysis of coals and products, acquisition of engineering data needed for process design.				
	3. Liquefaction of Alberta subbituminous coals - supporting R and D. The program studies the chemistry of coal and liquefaction processes, develops analytical methods for coal and coal products and investigates innovative process concepts.				

CONVERSION

TABLE M

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
	4. Pyrolysis of Alberta thermal coals - evaluation of selected coal regions and process types. Coal regions have been selected on potential suitability for combined generation of electricity and marketable liquid products from pyrolysis. Selected coals and process types are being evaluated in a 10 g/h laboratory mini reactor and a 2 kg/h multi purpose flash pyrolysis bench unit.				
	5. Pyrolysis of Alberta thermal coals - supporting services. This program provides services which directly support the mini reactor and bench unit programs. Program activities are: sample acquisition and maintenance of a coal sample bank, petrography of coals and chars, analyses of coals and pyrolysis products, acquisition of engineering data needed for process design.				

CONVERSION

TABLE M

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
	6. Pyrolysis of Alberta coals - supporting R&D. This program studies the chemistry of coal and carbonization processes, develops laboratory methods of measuring char combustion properties and investigates innovative process concepts.				
Economic Evaluation of coal/oil co-proessing	To determine the economic potential for utilizing coal in the production and upgrading of heavy oil.	Office of Coal Research and Technology through the Alberta Dept./ Hydrocarbon Research Inc., Lawrenceville, New Jersey	$40,000 (US) (FY83/84) 84/85		Final report received.
Synthetic Fuels Program	This multi-client project is intended to provide its sponsors, on an annual basis with an analysis of topics such as the incentives and constraints to the development of synthetic fuels industry in North America.	Office of Coal Research and Technology through the Alberta Dept. of Energy and Natural Resources/ SRI International, Menlo Park, California, U.S.A.	$12,773 (FY83/84)		Participation by the Office of Coal Research and Technology has terminated.

CONVERSION

TABLE M

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Catalyzed Supercritical Gas Extraction of Coal and Primary Coal Liquids	To explore generation of synthetic liquid hydrocarbons and primary coal liquids by supercritical gas extraction with (a) H-donors and (b) non-donors in the presence of hydrogenation catalysts.	Office of Coal Research and Technology under the Alberta/Canada Energy Resources Research Fund/ Hydrocarbon Research and Centre - N. Berkowitz, University of Alberta, Edmonton	$31,208.23 (FY 84/85)		Final report in preparation
Hydroprocessing of Coal-Based Liquids for Removal of Detrimental Constituents: Organic Sulphur and Nitrogen	Investigate the effectiveness of commercial catalysts for the hydrodenitrogenation of quinoline blended into a heavy gas oil and for the hydroprocessing of a coal-based liquid.	Office of Coal Research and Technology under the Alberta/ Canada Energy Resources Research Fund/ Hydrocarbon Research Centre, F.D. Otto and I.G. Dalla Lana, University of Alberta, Edmonton	$34,462.59 (FY 83/84)		Final report in preparation

CONVERSION

TABLE M

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Flash Pyrolysis	A laboratory study of flash pyrolysis has been initiated. The effects of operating variables, coal types and catalysts on the yield and composition of the primary liquids, as well as the quality of the char residues are being investigated.	NSERC and Alberta ENR/ University of Alberta Department of Mineral Engrg (N. Berkowitz)	-	-	-
Coal Liquefaction under Solvolytic conditions and H-donor systems	Complete coal liquefaction solvolytic conditions and in H-donor systems is under study. Attention centers on the effects of coal type on the yield and quality of primary coal liquids, and on the impact of prior chemical modification of the feedstock on these parameters.	NSERC and ENR/ University of Alberta, Dept. of Mineral Engrg (N. Berkowitz)	-	-	-
Coal & Coke Gasification in Fixed and Fluidized Bed Reactors	Gas yields, calorific values and desulphurization of product gases are being measured as functions of gasification atmospheres, temperatures and heating rates, and the effects of potential catalysts are being explored.	AOSTRA/ University of Alberta Dept. of Mineral Engrg (T.H. Etsell)			
Hydrocarbon upgrading: two-stage processing of coal/ bitumen mixtures	Evaluation of the ARC two-stage CO-steam/hydrogen bitumen/coal coprocessing scheme for upgrading of bitumen (coal at additive levels).	Alberta Research Council; AOSTRA/ARC		-	-

PROPERTIES - PETROLOGY TABLE N

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Study of reactive macerals in thermal decomposition of coals		EMR, Canada/ Université du Sherbrooke, Sherbrooke, Que. (Dr. C Roy, Dept. Chemical Engrg)	5,300		
Indirect evaluation of the reactivity of inertinites in western Canadian coking coals		EMR, Canada/ D.E. Pearson Associates Ltd. Victoria, B.C.	$47,000		
Petrographic evaluation of core from the Sydney Basin	Maceral and reflectance analysis of select core	Nova Scotia Mines & Energy	-	completed	proprietary report
Coal Mineral/ Maceral analysis by SEM-EDXray	Evaluation of sulphur occurrence and morphology by correlation of petrographic and image analysis techniques.	Atlantic Coal Institute		commenced May, 1984	

PROPERTIES - PHYSICAL/CHEMICAL TABLE P

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Micro-analytical techniques on fossil fuel samples		EMR/ ORL Analysis Corporation	2,000		
Analysis of chosen eastern Canadian coal samples		EMR/ Atlantic Coal Institute, Sydney, N.S.	150,000		
Mineralogy of pyrite in eastern Canadian bituminous coals	Examination of the nature and manner of occurence of the iron sulphide minerals using both conventional and advanced techniques to obtain information which can be used to improve removal by various upgrading processes	Atlantic Research Laboratory (NRC)/ Research and Productivity Council	25 K	First of a 3 year program completed March 1984	Forthcoming through ARL (Halifax)
Organization of a data bank on the properties of eastern Canadian coals	The literature has been searched for information on the physical and chemical characteristics of the exploitable coals. The data has been stored in a specially designed computer program for easy retrieval	CANMET/ Research and Productivity Council	$50,000	Data bank to be ready for public use by Fall 1984	
	Routine quantitative fourier transform infra-red spectroscopic analysis of fossil fuel samples, using the KBr pellet technique	EMR, Canada/ Advance Fuel Research Incorporated, East Hartford, Connecticut	$5,904		

PROPERTIES - PHYSICAL/CHEMICAL

TABLE P

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
	Development of fourier transform infrared systems and fluidized bed design for in situ measurement of electrokinetic behaviour of coal	EMR, Canada/ J.C. Donini, Antigonish, N.S.	$19,400		
	Characterization of solid residues from coal liquefaction processes	EMR/University of Regina, Regina, Sask. (Dr. D.B. Kybett Dept. of Chem)	$92,838	-	
X-ray Photoelectron Spectroscopy of Coal	X-Ray photoelectron spectroscopy of coal	NSERC/ Coal Research Centre UBC	-	-	
Small angle X-ray scattering of coal samples	The SAXS patterns for four western Canadian coal samples: Roselyn, Forestburg, Balmer, and Balmer rejects measured.	Coal Research Centre (Y. Koga)	-	-	
Characterization of Liquid Fuels from Spouted Bed Pyrolysis of Canadian Coals	Hydrocarbon type and homolog type analysis of tar samples. The chromotographic profiles of major polynuclear aromatic hydrocarbon (PAH) series and the O, N, and S substituted heterocyclic PAHs were compared for a series of tar samples generated for the same coal under different pyrolysis temperatures.	EMR (CANMET)/ Coal Research Centre UBC (A.P. Watkinson)	98,000		

PROPERTIES - PHYSICAL/CHEMICAL TABLE P

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Analysis and investigation of the surface of coal using a fourier transform infrared spectrometer		EMR, Canada/ St. Francis Xavier University, Antigonish, N.S.	25,480		
Investigation of the pyritesulphur liberation characteristics of some eastern Canadian coals		ARC/ Technical University of Nova Scotia Halifax, N.S. (L.A. Adorjan, Dept. of Mining & Metallurgy)	30,050		
Thermogravimetric and differential scanning calorimetry analysis of solid fuel samples		EMR, Canada/ Dunlop (Canada) Limited, Mississauga, Ont.	$10,000		
Analysis of coal and bitumen samples by FTIR spectroscopy		EMR, Canada/ St. Francis Xavier University, Antigonish, N.S. (Dr. B.M. Lynch, Dept. of Chem)	$24,000		
Review of the scanning electron microscopy method as applied to coal dust identification and analysis		Department of the Environment/ Technology Resource Incorporated, North Vancouver, B.C.	$500		

PROPERTIES - MISCELLANEOUS

TABLE O

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Rheology and Rheological Testing of Western Canadian Bituminous Coals (Phase II)	Western Canadian and Appalachian coking coals of equal rank reflectivity, ash content, micro lithotype are to be compared, after ash separation at different specific gravities and size consists, with respect to rheology as measured by a Ruhr Dilatometer and a Gieseler Plastometer to identify which factors (ash content, particle size, microlithotypes, etc.) influence rheology.	EMR (CANMET)/ U. of Waterloo (Prof. P.L. Silveston) Prof. P. Readyhough	55 K	To be completed 1984	Final report 1984
Dilatometric Testing of Western Canadian Coals	To determine why the standard dilatometer test fails to accurately rate western Canadian coals according to cokeability and to assess what must be done to procedures or to data interpretation to make it useful.	EMR/U. of Waterloo, (Dr. P.L. Silveston Mr. P. Readyhough	8 K	Completed	Thesis available Spring, 1984
Plastofrost Study of Rheology Differences Between Western Canadian and Appalachian Coals	The Plastofrost device device developed in Germany, for the study of coal rheology is being applied along with other rheological devices to a study of the sources of rheology differences between Western Canadian and Appalachian coals	Univ. of Waterloo (Prof. P.L. Silveston P. Readyhough)	8 K	To be completed Spring, 1985	

PROPERTIES - MISCELLANEOUS TABLE O

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Scanning and transmission electron microscope studies of macerals and pore structure in coals		EMR, CANMET/ORF	9 K		

ENVIRONMENTAL ASPECTS

TABLE Q

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Coupled fluidized bed treatment of coal liquefaction wastewater - Phase II		Department of the Environment/ Canviro Consultants Limited, Kitchener, Ont.	98,265		
Environmental activities	Cooperative laboratory and field investigation of coal mine ventilation methane and dust control technology	CANMET with support and assistance from CBDC	6 P-Y $510 K	Continu-ing	Internal and external reports where applicable
Trace organic compounds in coal wastewater	Determination of trace organic compounds in Canadian coal wastewater - phase II	Dept. of Environment/ University of British Columbia (Dr. J.W. Atwater Dept. of Civil Engrg)	21,683	--	-
Analysis of coal dust	Testing and development of methods for collection and analysis of coal dust from unit trains.	Dept. of Environment/ Environmental Sciences Ltd. Vancouver, B.C.	44,964		

ENVIRONMENTAL ASPECTS

TABLE Q

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Environmental Protection Criteria Coal Mining, Preparation and Bulk Transfer Facilities	To identify: pollution potential of liquid and solid wastes from coal mines, preparation plants bulk Transfer terminals and the impacts of these wastes on the quality and quantity of surface waters on coal producing areas.	IPB, EPS Contract Consultants		November 1984	Final Report available by November '84 Draft report available.
Characterization of Air Emissions from Coal Preparation Plant Thermal Driers	Collection and analysis of stack emission samples from a coal fired thermal drier, to characterize conventional particulate and gaseous emissions.	IPB, EPS EPS - N&W Region		-	Final Report forthcoming
Potential Impact of Expanded Coal Mining Activities on Groundwater Demand and Supply	To assess water demand and supply for the coal mining industry by year 2000 and to compare demand/supply. Methods for groundwater supply enhancement will also be presented.	NHRI, IWD IPB	-	Final Reports are forthcoming	

ENVIRONMENTAL ASPECTS

TABLE Q

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Coal Conversion Wastewater Technology	To develop an improved understanding of anaerobic decomposition of phenolic compounds found in coal conversion wastewaters.	Office of Coal Research and Technology through the Alberta/Canada Energy Resources Research Fund/ Hydrocarbon Research Centre; S.E. Hrudey, University of Alberta, Edmonton	$57,890.26 (FY 83/84)		Final report
Distribution of Trace Elements from Canadian Coal-Fired Generating Stations		CEA/Battelle Pacific (N.W. Lobs)	424 K	Dec 83	

HEALTH & SAFETY

TABLE R

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Feasibility study of the biological control of methane in coal mines		EMR, Canada/ Gemini Biochemical Research	$10,000		
Biological control of methane in coal mines, coal storage silos, and ship holds - Phase II		EMR, Canada/ Gemini Biochemical Research Ltd, Calgary, Alta.	60,000		
Influence of turbulence on dust explosions and the effect of methane on coal dust-air explosions		EMR, Canada/ McGill University Montreal, Que (Dr. J. Lee, Dept. Mechanical Engrg)	60,000		
Teratological studies on end-products from coal liquefaction - phase II		Dept. Health & Welfare University of Guelph Guelph, Ont. (Dr. W. Black, Dept. of Phormorology & Toxicology Biomedical Sciences)	$58,902		

HEALTH & SAFETY TABLE R

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Subchronic dermal toxicity of coal-liquefaction chemicals in the rat		Health & Welfare/ University of Montreal, Montreal, Que. (Drs. G.L. Plaa, M.G. Côté Dept. of Pharmacology)	30,000		
Study of underground coal mine fire control with inerting systems		EMR/ Associated Mining Consultants Ltd. Calgary, Alta.	50,285		
Underground Coal Mine Fire Control with Inerting System - A Study	To compare the various inerting systems available, summarize advantages/disadvantages of each from the Canadian perspective and demonstrate how such systems are used through case history summaries.	CANMET/AMCL	$55 K	Complete	Final report available for public release from CANMET
Survey and Assessment of Mine Rescue Program	Comparison of Canadian and selected foreign mine rescue programs.	CANMET/Norwest	$65 K	Complete	Final report available for public release from CANMET
Diesel Emissions Reduction	To develop diesel emissions reduction equipment	CANMET/ORF	153 K	Completion Mar.31/84	

HEALTH & SAFETY

TABLE R

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Diesel Emissions Health Impact Assessment	To determine diesel emissions health impact by assessment of PAHs and mutagens in underground environments and reduction produced by equipment development	CANMET/ORF and Laurention University	97 K	Completion Mar.31/84	
Conveyor Belt Flammability	Development of more realistic tests, particularly to assist formulation of a national standard	CANMET (K. Mintz)	in-house	Ongoing	"New Flammability Tests for Conveyor Belts used in Underground Mines" CANMET, Div. Rep. EMR/MRL 83-108
Thermite Reaction	To evaluate the effectiveness of protective coatings on aluminum equipment in preventing ignition of methane by the thermite reaction (aluminum and rust)	CANMET (K. Mintz)	in-house	Starting mid-1984	
Physical Properties of Explosible Coal Dust	To investigate the particle size distribution and particle shape of explosible coal dust from Canadian coal mines by using image analyzer	CANMET in-house (K. Feng)		March, 1985	
Explosibility Test	To evaluate the explosibility tests of Canadian coal dusts in the 20 litre explosion chamber	CANMET in-house (K. Feng)		March, 1985	

HEALTH & SAFETY

TABLE R

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Spark Ignition	To determine the ignition time and spark ignition energy by using high voltage pulse instrumentation	CANMET in-house (K. Feng)		March, 1985	
Fundamental Study of the Flame Acceleration process	To study the flame accelerations process under various initial and boundary conditions and to investigate dust concentration, initial turbulence as well as turbulence including obstacle assays	McGill University (T. Lee)	60 K	Phase 1 completed Phase II in progress	Reports available on loan
Review of Tracer Gas Addition and Analysis Systems and Provision of Tracer Gas Addition during Shop Floor Trials of a 7.6 m Shielded Full Face Tunnel Boring Machine	To examine potential tracer gas addition and analysis systems, develop appropriate sample addition and analysis systems and provide same for shop floor cutting head ventilation trials	CANMET/Ontario Research Foundation	$70 K	Complete	Final report available for public release from CANMET
Demonstration of the micro seismic emmission technique for predicting roof falls in underground coal mines	To demonstrate the effectiveness of the rock stress monitor in order to reduce the hazards faced by underground miners	Alberta Occupational Health, Safety and Compensation/CMRC	22 K	In progress	

HEALTH & SAFETY

TABLE R

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
A Training Manual and film for coal mine rib control	To produce a training film and manual for presentation to underground coal mine personnel to demonstrate the mechanics of failure of the coal mine rib	Alberta Occupational Health and Compensation/ CMRC	41 K	In progress	
Emergency Response Team Training Series	A number of training modules (24) are being researched and prepared on subjects that relate to mine safety and mine rescue operations at surface mines in Alberta	Alberta Health, Safety and Compensation	-	In progress	
Solid Fuel Fired Equipment	Development of standards for solid fuel fired equipmemt	EMR/Canadian Standards Association Rexdale, Ont.	50,000		
A Pilot Mine Occurrence Reporting System	The purpose of the system is to provide industry and the occupational HEalth and Safety Division with statistical data for use in accident prevention	Alberta Occupational Health, Safety and Compensation	-	March 83	-

TRANSPORTATION

TABLE R

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Pipeline Agglomeration of Coal	To investigate the potential of the oil agglomeration process for beneficiation of bituminous and sub-bituminous Alberta coals in a pipeline using heavy oil bitumen as bridging liquids.	Office of Coal Research and Technology and Alberta Research Council/Alberta Research/Council	$204,111 (FY 83/84)		Final report received.
Coal Slurry Pipeline Program	To determine the potential of different coal/water slurry pipeline technologies for application in Canada including areas of possible application and additional technological development required to establish their commercial viability.	Office of Coal Research and Technology through the Alberta/Canada Energy Resources Research Fund and Pembina Resources Ltd./ Pembina Resources Ltd.	$430,000		Final year of
Coal Slurries	Rheology and Transportation	McMaster University Dept. of Mechanical Engrg (G.F. Round)	-	-	-
Manual of Pipeline Design		Transport Canada/ Saskatchewan Research Council	-	-	-
Coal Slurry Pipeline transportation	Determination of the hydraulic parameters necessary for pumping dense coal/water slurry in 50, 100, and 150 mm pipeline loops	EMR/ Techman Engineers, Calgary	-	-	-

TRANSPORTATION TABLE R

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Slurry Pipeline Transport	Development of pumps for slurry pipeline transport	Industry, Trade and Commerce/ Ingersoll Rand Canada Corp. (Cambridge, Ont.)	-	-	-
Coal slurry transport	Program covers four areas: 1. dense coal slurry 2. hydraulic transport of coarse coal 3. Slurry transport of metallurgical coal 4. manual on design of slurry pipelines	Co-operative R&D Program Federal Republic of Germany and Canadian Federal Government	-	-	-

OTHER

TABLE S

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Small Structures on Reclaimed Land Study - Phase 3	To investigate the time-settlement relationship of mine spoil material and to outline an acceptable foundation design procedure for the founding of light structures on reclaimed land.	TransAlta Utilities, (J.D. Scott, S. Thompson, Univ. of Alberta and D. Nikols, TransAlta Utilities)	83 K	In progress	Data and Progress Reports - 1982 & 1983 Small Structures on Reclaimed Land Study
Data analysis and input to Cape Breton Coal Research Laboratory computer.		EMR, Canada/ J. Britten, Sydney, N.S.	1,800		
Erosion resistant ceramics for coal utilization - Phase III		NRC/Nova Scotia Research Foundation Corporation, Dartmouth, N.S.	50,288		
Self Stabilizing Ash Berms	The use of compacted fly ash in the construction of berms has proved successful in trials to date. Field monitoring of the constructed berms continues	Smoky River Coal Limited	-	Ongoing project Trials successsully completed	None
Measurement of coal wettability and prediction of the hydrophobic nature of oxidized coal		EMR, Canada/ Technical University of Nova Scotia Halifax, N.S. (Dr. D.M. AlTawheel, Chem Engrg Dept.)	80,000		

OTHER

TABLE S

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Evaluation of Alberta's Coal for Activated Carbon Production	Kinetics of coke desulpurization, evaluation of coal present in waste tailings.	NSERC/ University of Calgary (E.L. Tollefson)	29,786	-	Completion 1984
Software Development	Provision of software development services for coal research laboratories	EMR, Canada/ G. Dentman, Edmonton, Alta.	4,000		
Coal Data Files	Construct coal data computer files for central and western Alberta and southern Saskatchewan	EMR, Canada/ Summus Resources Evaluations Ltd. Edmonton, Alta.	$165,242		
Lightweight Aggregate from Coal	Technical and economic feasibility study of the CANMET process for the production of lightweight aggregate from coal	NRC/ B.H. Levelton and Associates Ltd. Vancouver, B.C.	122,723		
Ash Leachate	Characterization of ash leachate in old ash lagoons	TransAlta (A. Hickenbotham)	100 K	In progress	-
Ash Leachate	Characterization of ash and its leachate in dry ash disposal sites.	TransAlta (A. Hickenbotham)	-	Phase I complete Phase II in progress	Limited number of reports available
Small Building construction on reclaimed land	Study of engineering factors to be considered in small building design on reclaimed land leading to a demonstration construction.	TransAlta/ U. of A. (S. Thompson)	230 K	Commenced 82 Continuing to 84	1982/83 report on activity

OTHER

TABLE S

TITLE	PROJECT STATEMENT	SPONSOR/ CONTRACTOR (CONTACT)	FUNDING COST ESTIMATE	STATUS TIMETABLE	REPORTS
Demand for Imported Steaming Coal in Japan and other Asian countries	This multi-client study undertook to analyze and project the demand for steaming coal in Japan, Korea, Taiwan, Hong Kong, Malaysia and the Phillippines in 1985 and 1990.	Office of Coal Research and and Technology through the Alberta/Canada Energy Resources Research Fund	The Institute of Energy Economics Tokyo, Japan	$5,340	Final report received.
Construction of the Energy Resources Research Building, Devon, Alberta	To provide laboratory and pilot plant facilities for the coal related research activities of the Alberta Research Council, the Coal Mining Research Centre and the Canada Centre for Mineral and Energy Technology, Energy Research Laboratory, Edmonton.	Office of Coal Research and Technology through the Alberta/Canada Energy Resources Research Fund/ Alberta Department of Public Works, Supply and Services, Edmonton, Alberta	$7,618,084 (FY 83/84)		
Engine Development	Coal-burning Ringbom-Stirling engine development	T/C/University of Calgary, Dept. of Mec'h Engrg. (D.R. Fauvel, S. Walker)	254,560	-	-
Coal Slurry	Mixing and pumping of coal slurries	McMaster University, Dept. of Mechanical Engrg (B. Latto)			