

Alfred Baber Fonds

Correspondence

Verhoeff, Bram  
1990-95

QUEEN'S UNIVERSITY ARCHIVES	
LOCATOR	5095.5
BOX	8
FILE	32



to: Dr Alfred Bader.

and

Dr Innes van Nostrand, President, Queen's University Alumni Association  
subject: Seventeen's Century Dutch Art & Chemistry

Lectori Salutem,

date: May 15, 1995

55 years ago my country: Holland surrendered to the German Wehrmacht after they bombed the heart out of Rotterdam, not the harbour, the day before. I was nine years old and I lived in a village 10 kilometers from the centre of that city. On the 16th a company of black uniformed soldiers with skull and crossbones on their caps entered our village and put their heavy equipment in our streets. Right in front of our grocery shop there was a field kitchen and the soldiers were eating their soup. One asked me to wash his mess-tin. My mother told me never to do that again. My thoughts go back often these days and now I realize that while the attention was on the burning city the freighters in the harbour were unloading all this heavy equipment.

I am mentioning Rotterdam because I went to Highschool in the City and I saw several executions and Razzia's and I never said anything about that at home for fear that I would be kept home in save Berkel and I would still be there! In Highschool we got a card for the Boymans Museum for one guilder a year ( could be taken away for bad behaviour ) and in my graduating year, 1948, there was an exhibition of Rembrandt etchings from the collection of Van Beuningen. This name: Van Beuningen was later added to the museum's name. I was soaking it up almost daily never dreaming that I could own one of those. Well, two years ago, we had here in Toronto an exhibition of Rembrandt etches of a California collection and when my wife and I walked in I saw "Jews in a Synagoge" and I knew I wanted to have it to leave to my grand daughter Rachel. The etching is dated 1648 and looks like the interior of a Gothic church. Spinoza must have walked around here upsetting everybody. The Portuguese Israeli Synagoge. was not built till 1668. I intend to write to the cantor Hans Bloemendal, who is a professor of bio-chemistry in Nijmegen, if he knows the location. Because of my considerable knowledge of the Golden Age I got \$500 off the price and I was allowed to photograph the whole collection. "The view of Amsterdam from the North" puzzled me as the windmills were on the westside and the ships on the leaside which is ludicrous. Looking at my pictures in the mirror I discovered why portret etchings are so popular with the sitter and I had my slides printed in reverse. I met an artist who engraves in wood and when I saw that he is lefthanded I asked him to make an Ex Libris of the two Jews on the left of the etching and we will see it the way Rembrandt saw it. I want to add the words "MOQUAM ALEPH" from which comes the popular name for Amsterdam: Mokum.

My village is located in the county Delfland with as county seat: Delft, the city of Prins William the Silent; the leader of the fight for independence from Spain. I am a member of the society "Delfia Batavorum" which was the Roman name for the city. And of course it is the city of my favourite painter: Johannes Vermeer as well as my mentor scientist observer Antonie van Leeuwenhoek. Both were baptised on the same Sunday in the Oude Kerk. Dr Bader will recall that he published a picture of a Dutch church in an Aldrich publication and asked his readers to identify it. I and others recognized it as the Nieuwe Kerk in Delft, standing next to the tomb of Prins William I and looking in the direction of the main entrance under the tower. Going outside the corner house to the right is



the inn where Vermeer lived and worked. I have already established that Vermeer painted "het Straatje" from the second floor rear window, using the 3 to 6 o'clock quadrant of the circular image projected by a lens in the darkened window. I have photographed from that window and the perspective fits! I also found the location of: "View of Delft" and Pieter de Hoogh's "een Hollandse Binnenplaats", both done in the same manner. My wife will do some additional video when she visits my son Harley this summer. Born in Canada he emigrated to my country of birth last year. He is the Technical Director of Opera Zuid in Maastricht: a Roman city dating from 50 B.C. When my wife and I visited the Flick Collection in New York I suddenly discovered the location of the painting: "Woman reading a letter": the leaded window is about sixty degrees open and in the separate pieces of glass the curves of the Nieuwe Kerk entrance can be seen. The map on the back wall, is located on the West wall of the building and shows the west on the top. I understand that there is one similar map in the museum in Hoorn, north of Amsterdam. My guess is that it is about the release of Leyden which was done by flooding the polders from Delft to Leyden. The Spanjards fled over the dunes to the sea. This is still celebrated today on the 3rd of October.

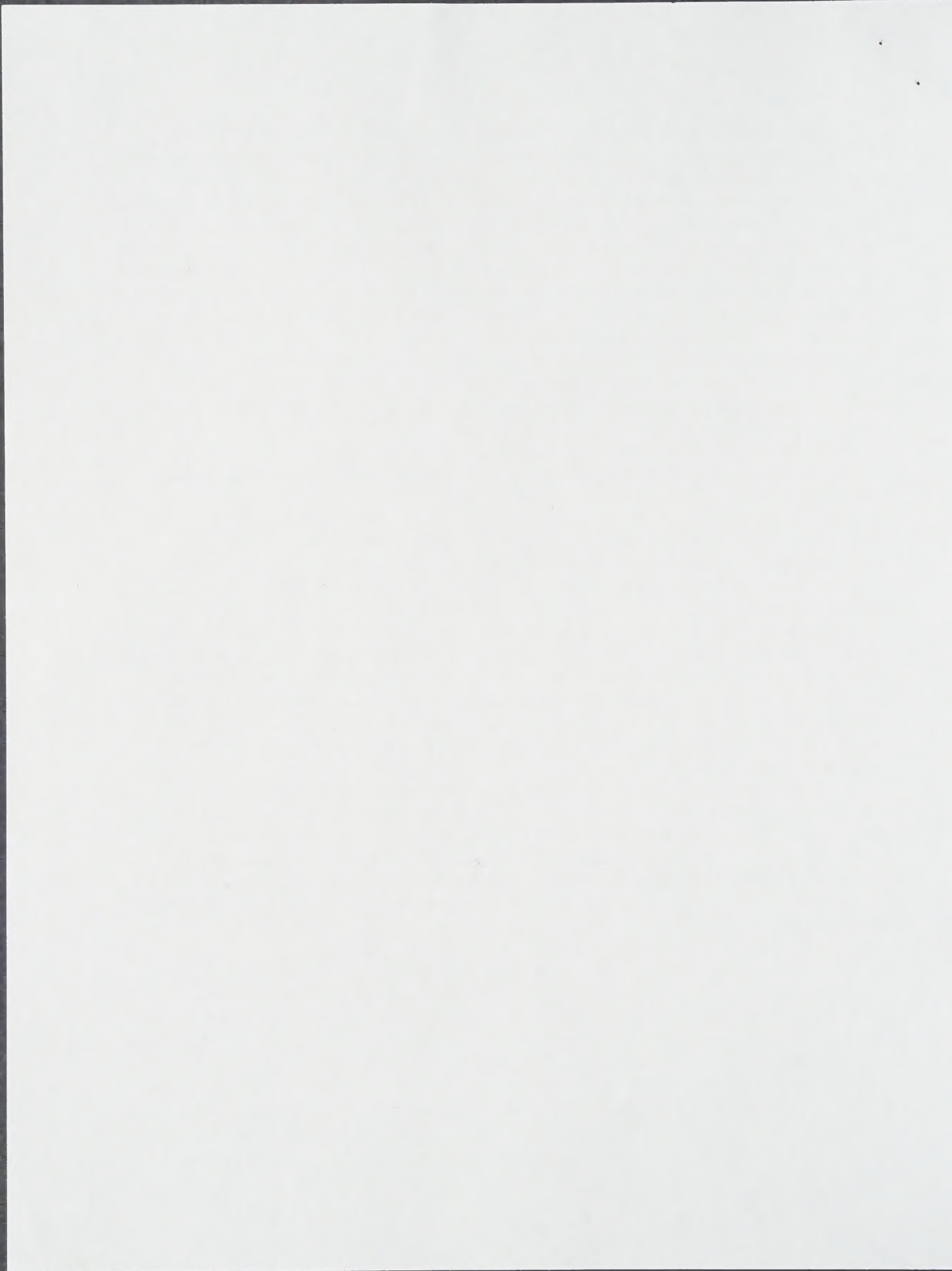
Although I am not a Queen's alumnus I would like the books and art pieces pertaining to the Dutch Golden Age to remain in Canada to augment Dr Bader's gift. My location projects may well be used for graduate thesis.

May 16, 1995

And now my 40 year Canadian career in Chemistry! I first wanted to call this part: "If it such a good idea howcum an American did not think of it?" When I arrived in Sarnia in 1964 after 8 years in the Shell Commissioners Street plant in Toronto any new idea was killed by my manager who "did not want to become the laughing stock of the big shots in Shell Research" He actually said this and when I kept on trying to introduce new ideas, he said "You might as well go back to Holland for if they ask for a reference I will give the worst I can think of." I developed many new products, but I could never shake the first impression on my Toronto manager who, because I freely gave my political opinion, thought I was a communist. I had to lay low for 5 years because I soon found out that the RCMP would check with this kind of people if I was worthy to become a Canadian citizen. I stayed out of trouble and on my own merit climbed to the rank of Senior Staff Research Chemist till disaster struck on April 27, 1982 ( see ref 1)

Our Oakville Research Centre at the border between Oakville and Burlington was built in 1970 as a tax write off and was a thorn in the flesh of our Dutch, British and American masters who each thought they had as we say in Dutch: "de wijsheid in pacht" ( a lease on wisdom ) But my group kept at and in about 1973 it was clear to me that Shell Canada Research would not last till my retirement. I started winemaking. As the main problem in the oil industry is Sulfur dioxide I immediately avoiding the lavish use of sulfite which led to a beautiful process only known to me and Brian Mulroney to whom I offered it before the election of 1984. As the environment is one of my main concerns I was the only industry attendant at the CCIW (Inland Water Centre)

Chemistry/Biology Seminars. The minds of all the other attendants were owned by the Canadian Government. I asked a young graduate who was assigned to me to learn about clay to come with me because I knew that this would mean disaster for the Candu reactors. The meeting was held with about 25 people in the CCIW boardroom and Mr A. Guest (sic) explained that Hydro had discovered that neutron bombardment of the airgap in the fuel tubes converted Nitrogen into Carbon-14. But not to worry Hydro would fill the tubes with an inert gas. I was horrified to hear that they had chosen Carbon Dioxide (sic) which is a very reactant gas! I knew that Shell has holdings in Uranium and that if I said anything I would loose my job. And here were 24 captive scientific minds and they were



worrying about Carbon 14 (with a halflife of 5000years) getting into mothersmilk, but none of them knew that Carbon Dioxide can be reduced by metal to elemental Carbon! I knew then that the tubes would burst when this elemental carbon would enter and weaken the steel. I finally dared to ask a question and I asked if Hydro was warning foreign. Candu customers of this problem and Mr A.Guest said that that was not his department!

I want to diverse here and comment on the 12 National Socialist years in Germany and the 5 years of occupation which ended in 1945. The Germans did not just shout slogans but they were very proud of their scientific research and wrote serious and not fun books about German accomplishments. The Dutch fascists were very disappointed in 1940 after they welcomed the troops that their own leader: Ir Mussert, became governor of Holland. Instead Hitler's Austrian friend Seys-Inquart became Gauleiter in den Niederlanden. But they swallowed their pride and youthwriters translated German books to replace the English influence. But they emphasized Dutch accomplishments where applicable.

Dr Bader will probably be familiar with the Following books:

Hermann Rompp, Chemie das Alltags, Copyright 1936 by Franck'scvhe Verlaghandlung, W. Keller & Co Stuttgart Fondsnummer 17-K 2643.

Hermann Rompp, Chemische Experimenten die gelingen. Copyright 1939 by same Fondsnummer 79, K 1795.

From the latter I did in 1944 the experiment "Soot from Marble" with reaction equasion:  $\text{CaCO}_3 + 2 \text{Mg} = 2 \text{MgO} + \text{C}$ . I also found in an American Highschool book the experiment of burning steelwool in Carbon Dioxide.

( Another book that has sustained me throughout my career is: Prof Wizinger : Kohle, Luft und Wasser. 1944)

I knew that I was in trouble: Conservative Bill Davis was firmly in power, Peterson was not much and I did not expect much of third party Bob Ray. To save my career I had quit the NDP party and widely denounced the party at Shell. My wife however had been Riding secretary for Ed Ziembra and she contacted Queens Park and asked for a meeting with Bob Ray. That night I got a call from David Agnew who wanted to know what I wanted to talk about with Bob Ray. I said it was private and he should forget it. He obviously felt offended and latteron phoned my wife and apologized but got out of her that it was about science. He said that I could see Bob Ray but that he would have to be present as Bob Ray did not know anything about science ( in other words he, David Agnew, had taken Science 101. I made an appointment for me next regular Friday off, not to raise suspicion. I got there in time but Bob was not back from lunch and I was asked to wait. I could hear the secretary talking on the phone and to my astonishment I heard that she had a tape in which she could fake a conversation with a too busy Bob Ray in order to satisfy a caller. She was not aware that I heard all this and when she saw the great Himself walking across the parkinglot she told me so. My reception was extremely cold AND AGNEW WAS NOT THERE. I knew I was sunk and that Agnew had phoned my company. Bob Ray did not want to talk to me and said that I had not done enough research on the matter. I told told him that if Shell knew that I was in his office that I would loose my job. Indeed on Monday Shell started to limit my scientific freedom and on the first of August I found a letter on my desk saying "that Shell accepted my resignation" I typed out a request for clarification and drove home never to receive an answer. Via my doctor I was forced to see a psychiatrist 13 times. Obviously management thought that, because of the fact that I was an artist as





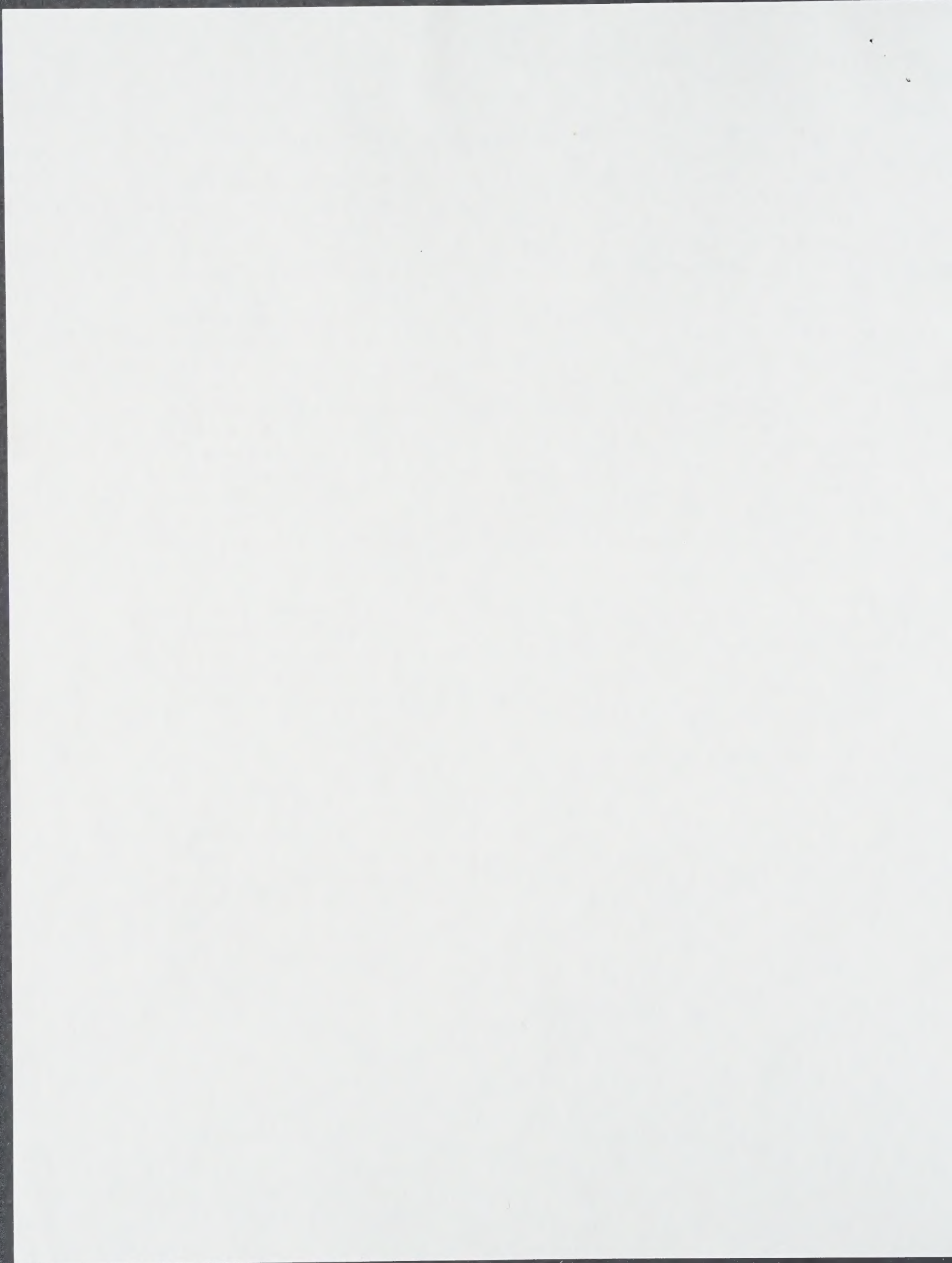
well as a scientist that I was at least a latent homosexual. As the words were never spoken my wife of 42 years could not testify to the oposite.

Then, on the first of August 1983 a tube slit over a 2 meter length in the Pickering plant and you would expect that Bob Rae would have the "Aha! Erlebnis" but no. Shell kicked me out on February 1, 1984 ahead of the first 1000 people downsizing. The Oakville Lab was replaced by a Calgary Lab as was 505 University Avenue in Toronto by a Headoffice in Calgary. In our personnel magazine I saw that the heavily Vanadium contaminated. property is sold to a housing developer and all this at taxpayers expense!

The scientist's intellectual property ( his inventions ) this is guided by the Employment Agreement which I am sur is signed by every graduate who is eager to get a job. (reference 2) Can you imagine Margaret Atwood going with her first effort to a publisher and the publisher says OK we put you on salary, we give you a computer. Now because this computer is our property your writing is our property! That's what Shell does: Our red notebooks were clearly marked "Property of Shell Canada" I felt a bit more at ease after 25 years of service and our patent lawyer said that all our waking thoughts were owned by Shell I laughed and challenged him. It was my last laugh. No wonder Canadians are not creative! Point 4 (b) is of course a Catch 22: In 28 years I have never heard of Shell declaring in writing that they have no interest in an invention. I think that students should be made aware of their vulnerable position and maybe through the Alumni Association the flotsame and jetsame of the Canadian Creative Mind could benefit Queen's University's Science Department.

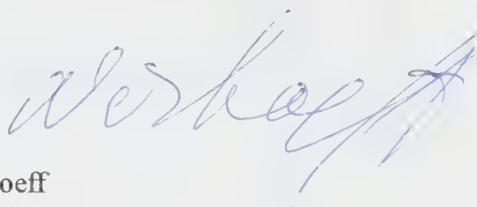
The big Ferrocene package shows that Shell's error to introduce Ferrocene led to two serendipity discoveries: Extinghising Oilfires and the production of macro Buckey Balls. I have reference material from the early 60's about other metal sandwiched between to carbon pentagons. When you look at a standard Soccer Ball you'll see that if you would burn a solution of such a compound in a pure hydrocarbon in a standard Oil Furnace with a continuous electric spark you could produce Bukeyball superconductors in bulk.

If you both agree I would like to correspond about my other inventions lost in the void created by Shell's disappearance from the Canadian Research Scene. I have a sufficient pension; only my pride is hurt. Deep in my heart I believe that my oilfire extinguisher is worth a Noble price but who will blow my horn? If, as predicted , the fires would burn for years waisting all that oil Bush would have been re-elected and Saddam Hussein would have been destroyed like Cartago. On Wednesday November 6, 1991 the last wellfire was put out and the coverage in the news on Television was less than one minute. The Canadian company who did it 10 times faster than Fred Adair made \$ 15 million!



The other reference material is for future correspondence. My telephone has been bugged for years so that faxing to my wife's fax would be best: Lynn Verhoeff c/o Ontario Forest Industries Association (416) 368 5445

A vous,

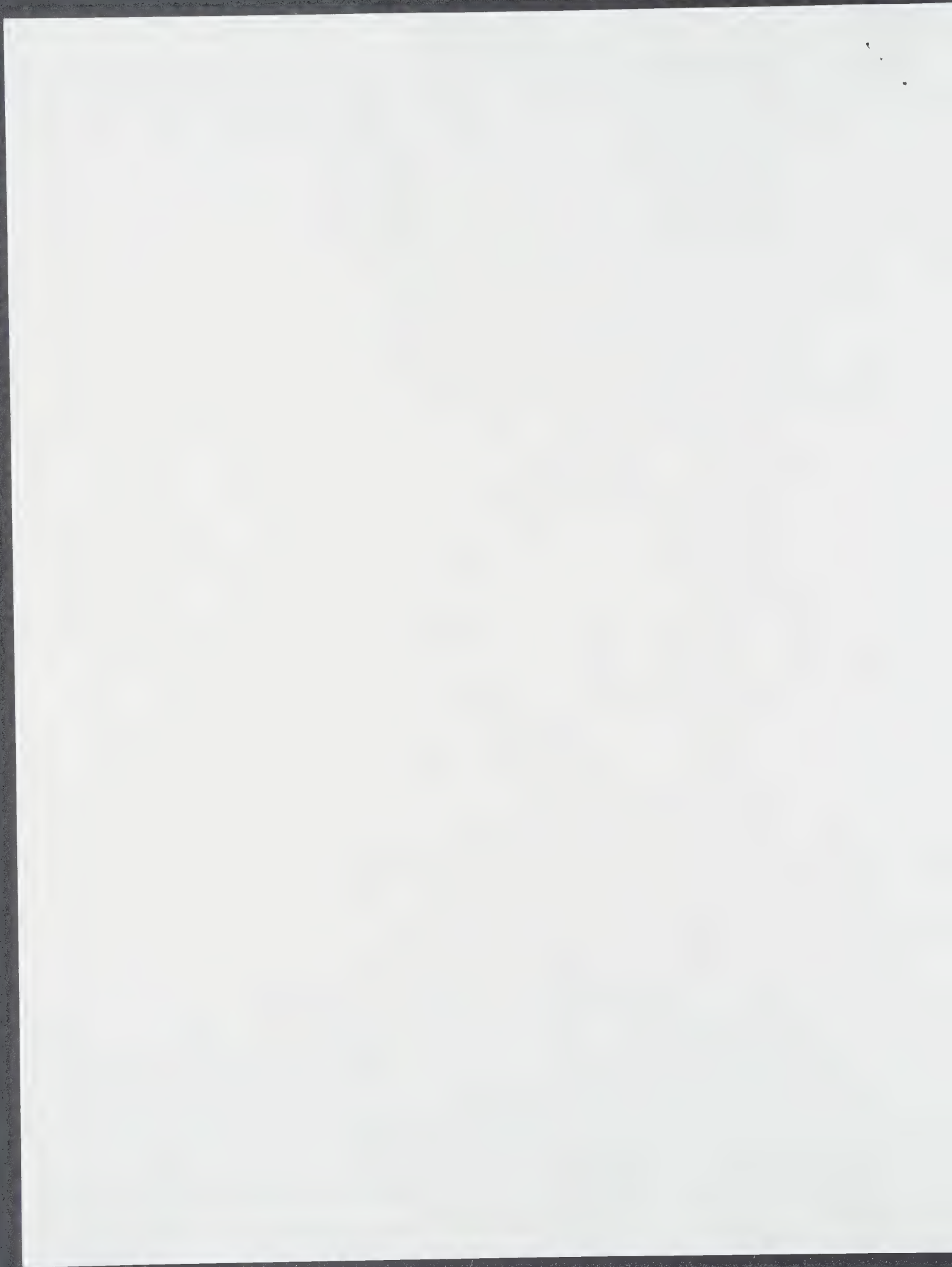


Bram Verhoeff  
243 Indian Grove  
Toronto ON Canada  
M6P 2H4 Tel (416) 533 8636

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Toronto (Ontario)  
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02D1902

March 30, 1990

12

Mr. Bram Verhoeff  
243 Indian Grove  
Toronto, Ontario  
M6P 2H4

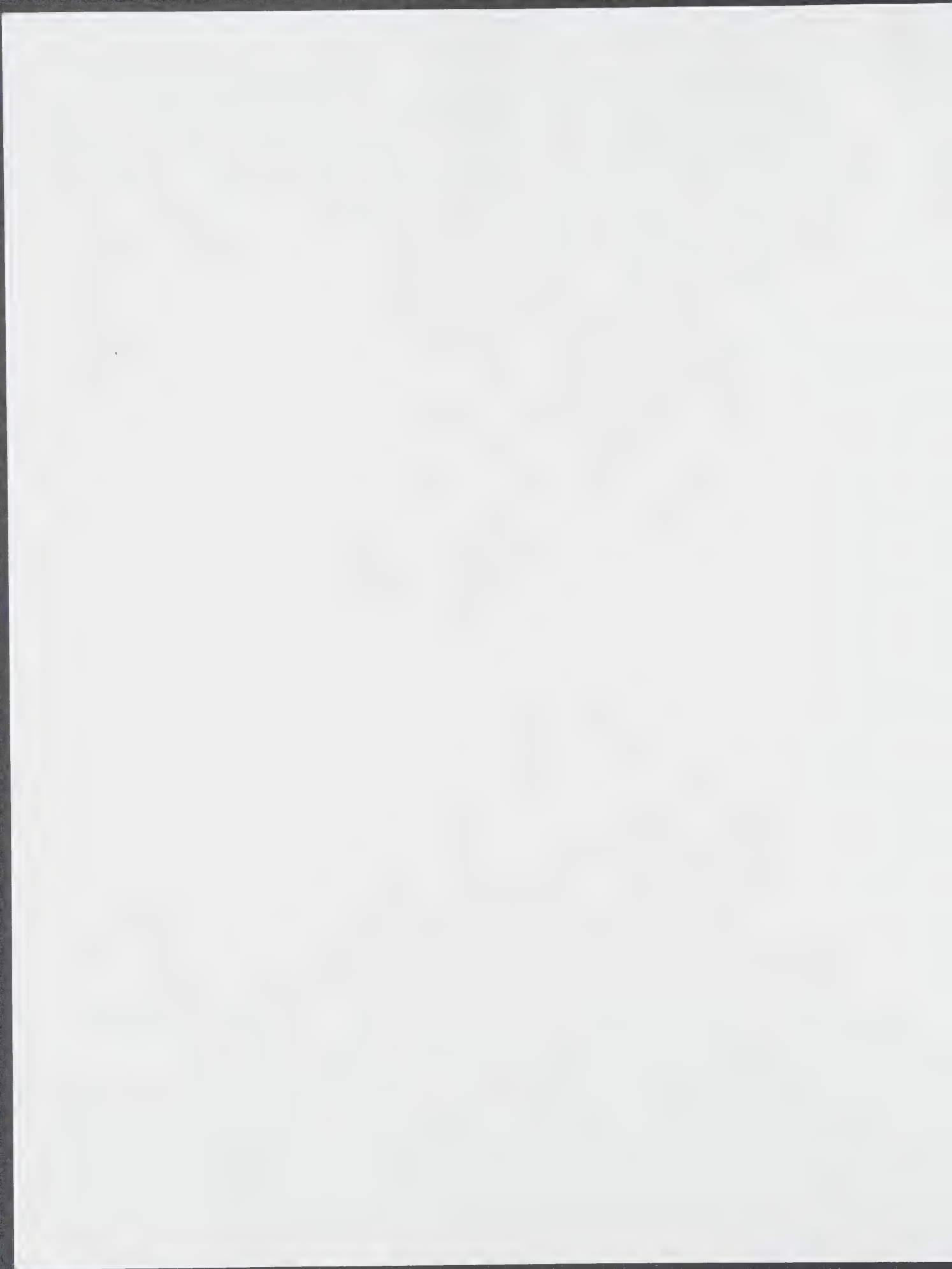
Dear Mr. Verhoeff:

Thank you for your letter of February 15, 1990 and your advice on how to put out the Hagersville tire fire. As you are no doubt aware, the fire was successfully extinguished and my Ministry is proceeding with clean-up of the site.

I appreciate your concerns in this matter and your taking the time to write to me.

Yours sincerely,

Gary S. Posen  
Deputy Minister





PATENTS AND TRADEMARK DIVISION

UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20530

APR 15 1974

13

SEARCHED  
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CONFIDENTIAL SOURCE AND INFORMATION

Special Agent in Charge  
Lawrence J. ...  
Chicago, Illinois ...  
100 ...

Administrative ...  
Chicago, Illinois ...

Reference ...

Reference is made to the report of the Chicago Office dated ...

The Chicago Office report ...

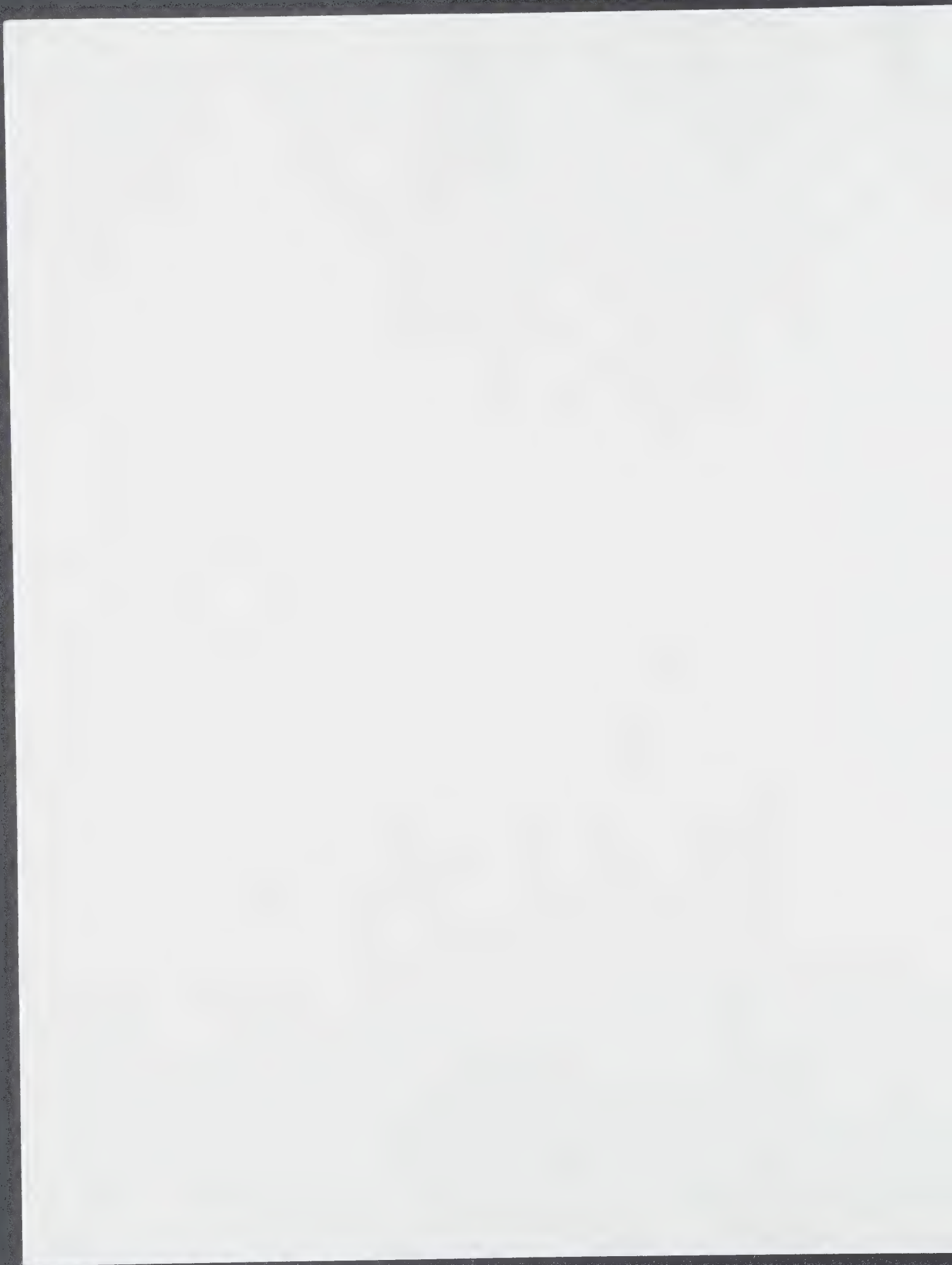
It is noted that ...

The Chicago Office ...

Very truly yours,

Special Agent in Charge  
Chicago Office

Enclosure



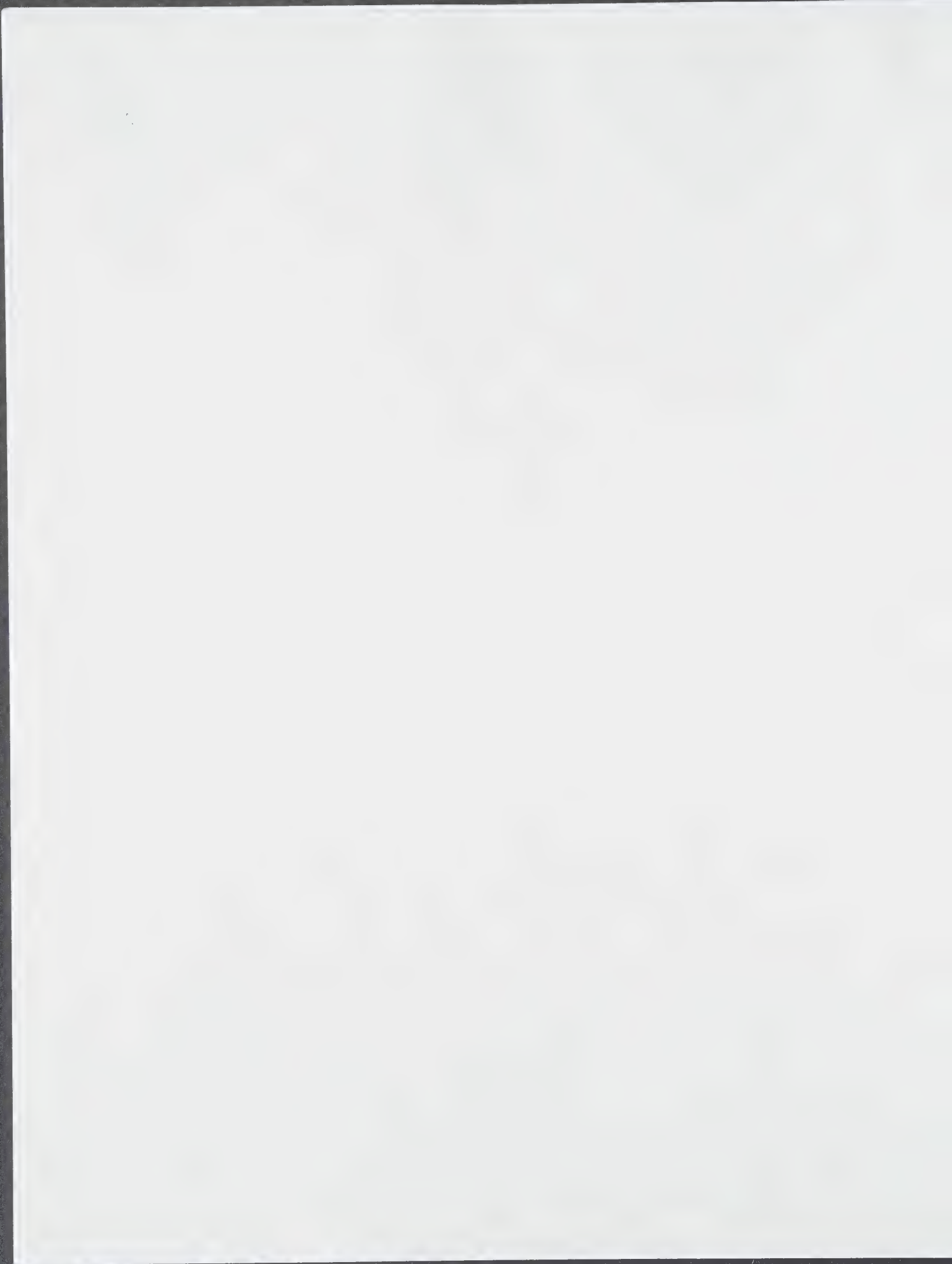


15

page 3260

Chairman to Mr Kawalec:But they (Union Gas) were deeply involved in non-associated activities weren't they,or would you say Precambrian and their investments in gas reduction and so on?

Mr Kawalec:No,Mr Chairman,how could we? It was done quickly through the government and that was it.It was a fait accompli.



P.O. Box 2001, 50 Keil Drive N  
Chatham, Ontario N7M 5M1  
Telephone (519) 436-4511



**W. Darcy McKeough**  
*Chairman and President*

May 2, 1985

*Bram Verhoeff*

Thank you for your letter of May 2nd.

I am not an Engineer or a Scientist or a Geologist or an Agriculturalist, and so frankly, some of what you are suggesting is not easily understood by me. I am going to make some inquiries and hope to be back to you.

With kindest regards.

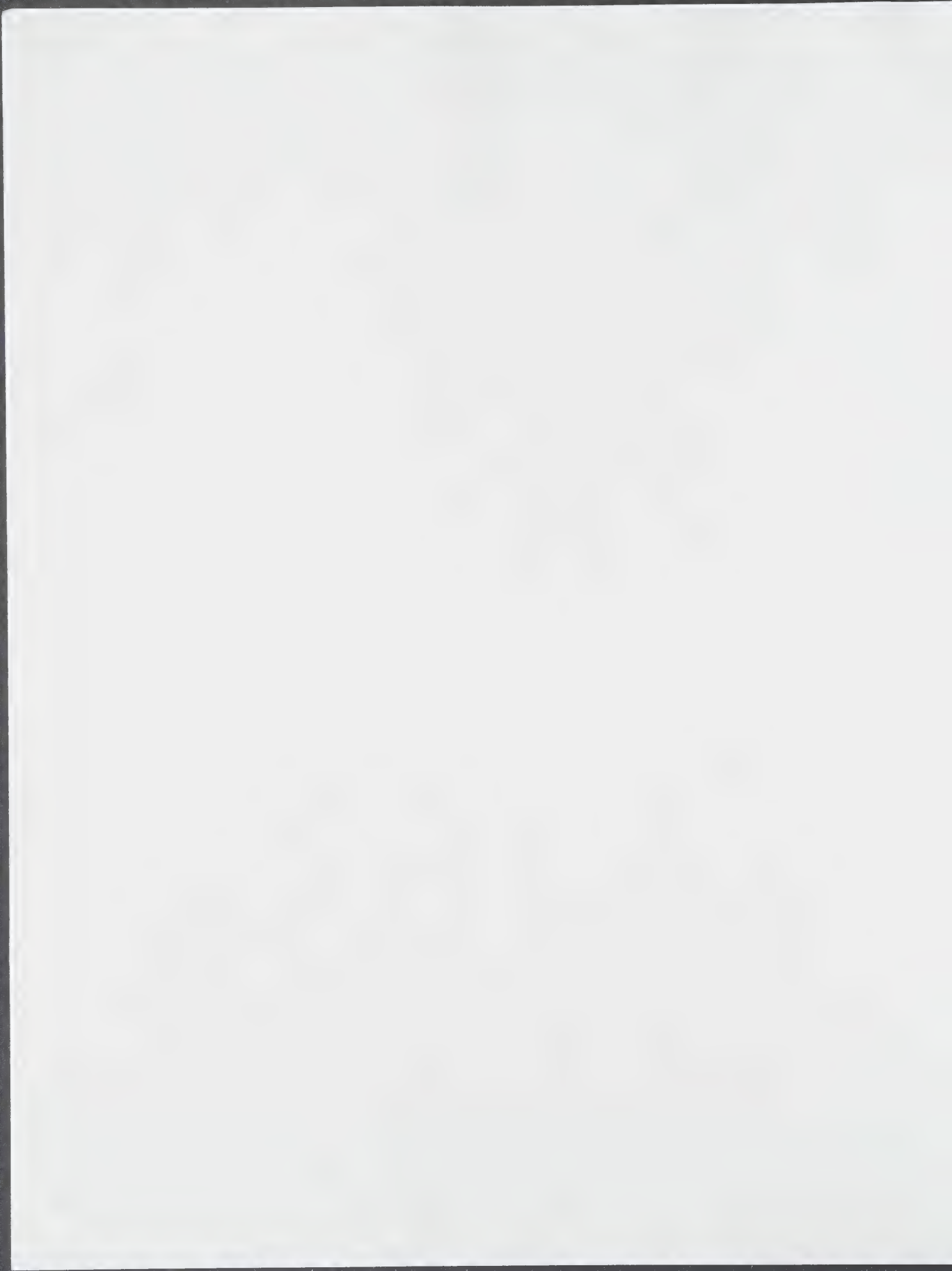
Sincerely,

A handwritten signature in dark ink, appearing to read "W. Darcy McKeough", with a long horizontal flourish extending to the right.

W. Darcy McKeough

/en

Mr. Bram Verhoeff,  
Six Senses Enterprises,  
243 Indian Grove,  
TORONTO, Ontario.  
M6P 2H4





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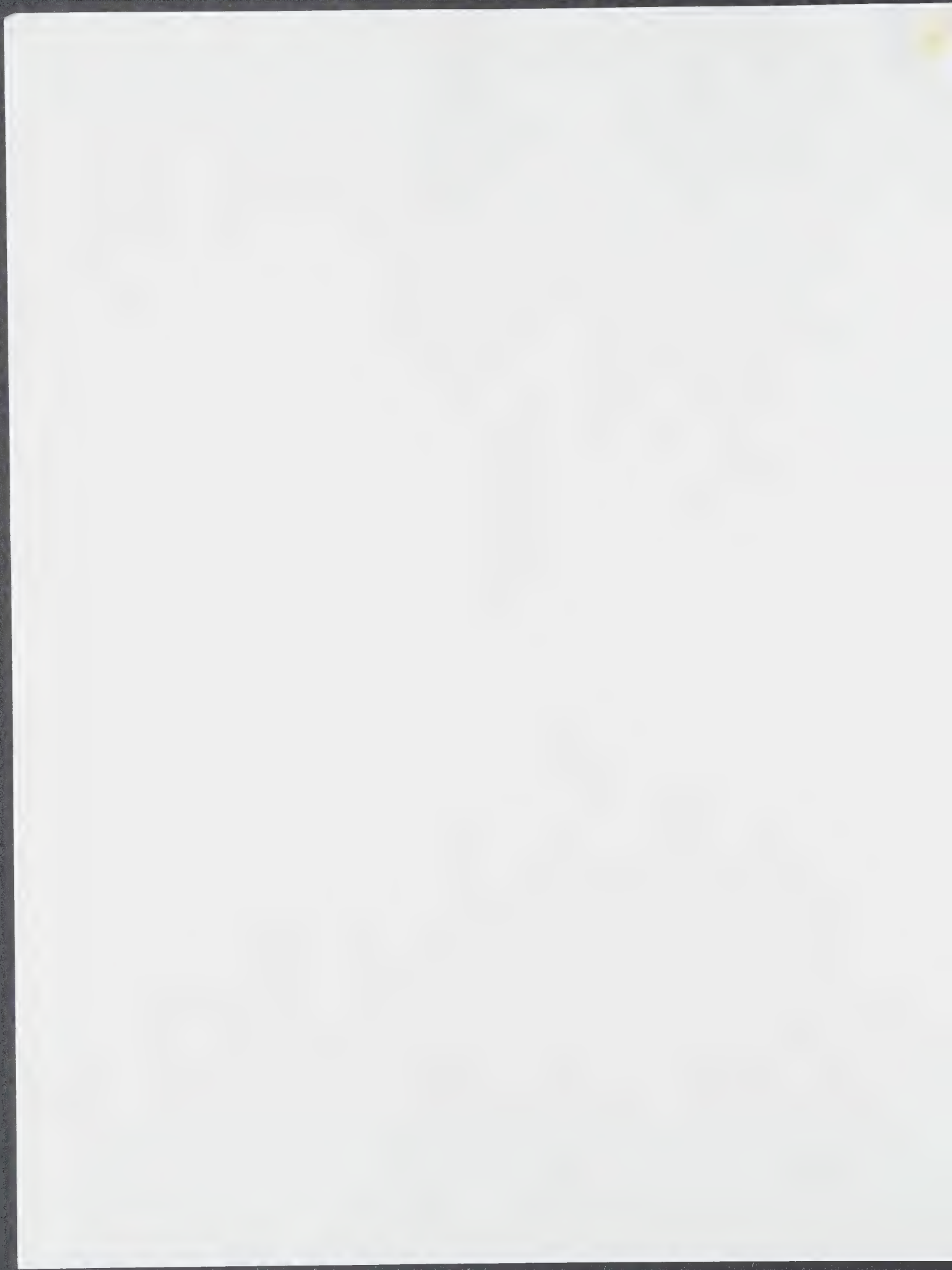
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Receipt recommandation

To Brian Mulroney  
Ottawa

Date	Date
Time	Time
Signature	Signature
Initials	Initials



16



467 VK.11 24 VIII 84

Toronto, August 10, 1984

Private & Confidential

Dear Mr Mulroney,

On the afternoon that the election was called I turned on the radio just at the moment that you held your press conference.

You were just saying that you thought you could create jobs by sponsoring Canadian Research.

A few hours later in Calgary the Liberal Minister of Energy held a press-conference with a vice-president of Shell Canada Resources (or was it vice versa) to announce that Shell would go ahead with an in-situ Tar-sand Plant which would create 500 (temporary) jobs and that this was made possible through liberal! tax concessions.

They hoped that the people would not be dumb enough to elect a Conservative government who may not give as generously to this Dutch oil company.

Talk about patronage!

Many leaders are talking about new technology but they seem to mean computers and word-processors which never have come up with an idea of their own and Dr Stewart Smith, the patronage Liberal chairman of the National Science Council; a psychiatrist who knows nothing about Science, tells an audience in Quebec City that the Forest Industry is doing the wrong research.

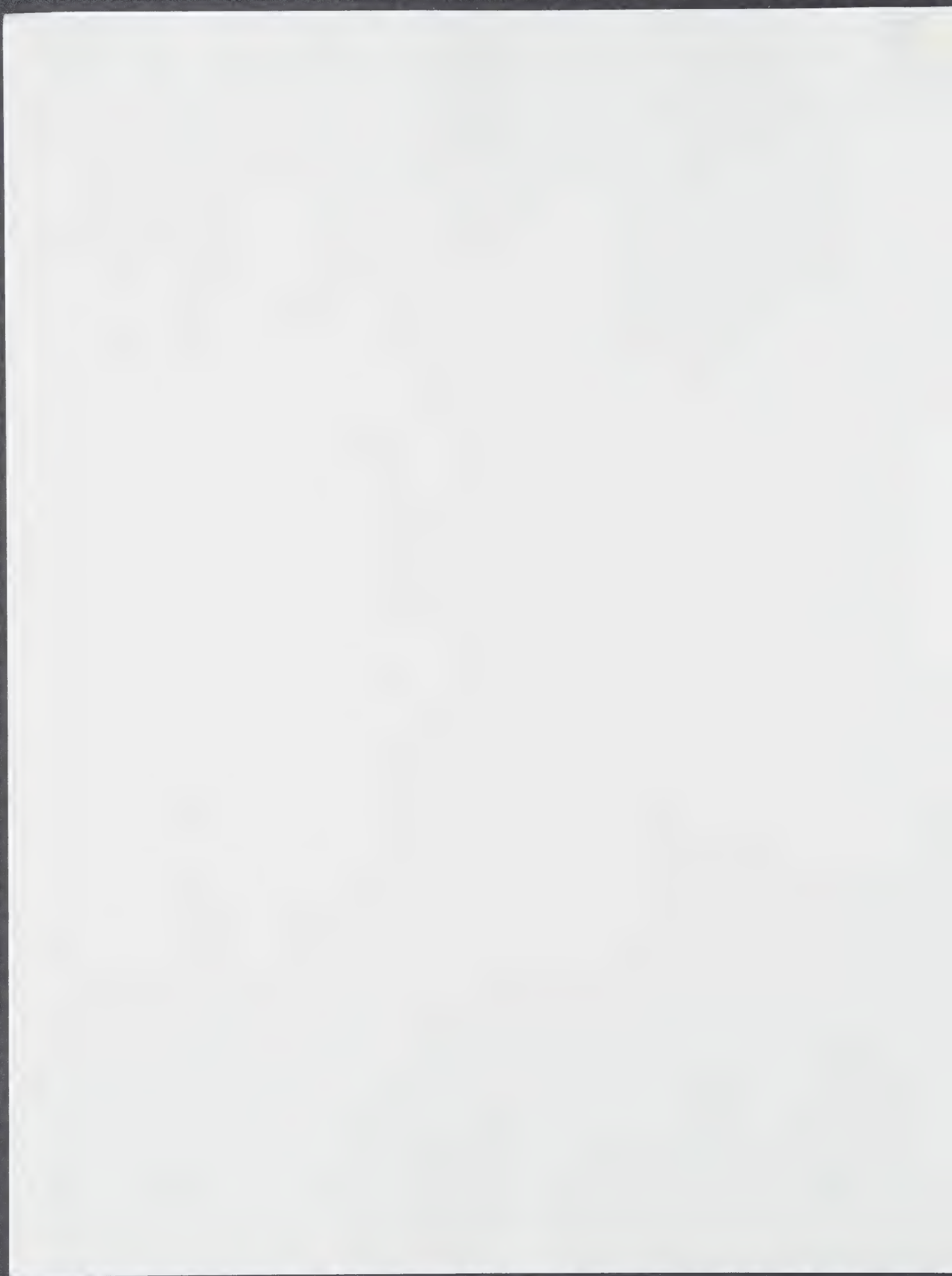
I know nothing about politics but I know a considerable amount about the other matters and I would like to bring this to your attention as I hope that you will form the next government and because you were once the president of a technological company.

I was born in the United States and I obtained my Canadian Citizenship in the Diefenbaker years, Ellen Fairclough signed my certificate.

I had a brilliant career of 28 years in Research with Shell Canada till I was forced to retire at the top of my career (Senior Staff Research Chemist) last February 1.

I had done research in lubricants, clays, catalysts, drilling mud and Tar Sand; the above Shell announcement was made possible through an invention of mine in which I was able to separate the emulsion formed from steam which is injected in the deep tarsand and the heavy oil as it is brought to the surface. Shell now has an invention of mine which is to be novel and then re-applied under the name of a junior engineer while I was ill at home.\*

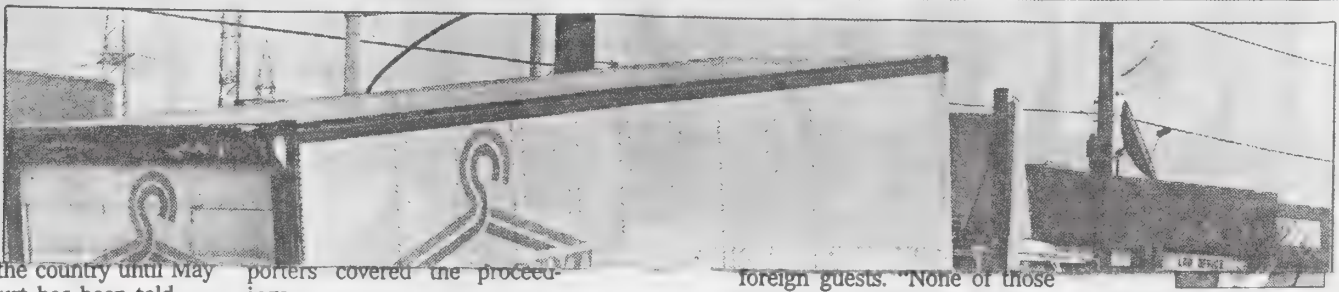
(A) Shell Internationale Research Maatschappij in The Hague, Holland handles all Shell Canada patents which are all assigned to that foreign company as you can see from another one of my patents (B)





17

**GREATER TORONTO**



be out of the country until May 23, the court has been told.

LeSage advised the juror he could leave Canada "as long as you take care of yourself."

More than 50 standby jurors are available for duty in the event one of the original 12 jurors is unable to start for reasons such as illness or death.

If the legal arguments finish early, both Houlahan and John Rosen, Bernardo's lawyer, told LeSage they could use the extra time to prepare their cases.

The bodies of French and Mahaffy were found two weeks after they vanished, French from St. Catharines in April, 1992, and Mahaffy from Burlington in April, 1991. Bernardo was arrested at his home in Port Dalhousie on Feb. 17, 1993.

porters covered the proceedings.

**Fire sparks chimney warning**

BY BOB MITCHELL  
STAFF REPORTER

Homeowners are being urged to check their chimneys following a fire that caused \$100,000 in damage to a Brampton home.

Nobody was injured in Tuesday night's blaze but Brampton firefighters yesterday delivered notices to homes in the subdivision, warning residents about a potential safety hazard associated with corroded metal chimneys.

"But this problem isn't just in Brampton ... hundreds of homes across the Metro area potentially could have this same problem without the homeowner realizing they may have a safety hazard," Brampton Deputy Fire Chief Wayne Moore said yesterday.

The Ontario Fire Marshal's Office is investigating the blaze that occurred on Mangrove Rd., but Brampton firefighters say the fire was caused by corrosion in a prefabricated, double-walled, mass-insulated galvanized metal chimney that set off a fire in the attic.

"We surveyed the neighborhood and could visually see there were numerous homes with corroded chimneys," Brampton fire prevention officer Linda Pierce said. "As a result we hand-delivered notices to about 50 homes, informing them of the potential danger and urging them to have their chimneys checked by a qualified inspector."

foreign guests. "None of those who ever came to Russia with a sword managed to do this.

"And nobody ever will." Strong stuff, for a party boy. Deciphering Yeltsin kept the Kremlinologists busy. But by the time the last Russian cadet had goose-stepped his way out of Red Square on Tuesday, the Americans got the point.

Yeltsin faces parliamentary elections this year and a presidential ballot next year. Like Clinton, he's being politically

outflanked by right-w. He's in no mood to be led by foreigners.

Isolate Russia, under Yeltsin, and you will out courage the extremists was the theme of a speech given to kick off 'Week. Despite its import went largely unreported.

His points were:  
■ Efforts to isolate, marginalize and contain Russia are m

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Bring in your old suit before Sunday, May 21st and you will receive \$100 off the ticket price of a new suit of your choice.	Bring in your used sports jacket or blazer before May 21st and we'll take \$50 off the ticket price of a new sports jacket.
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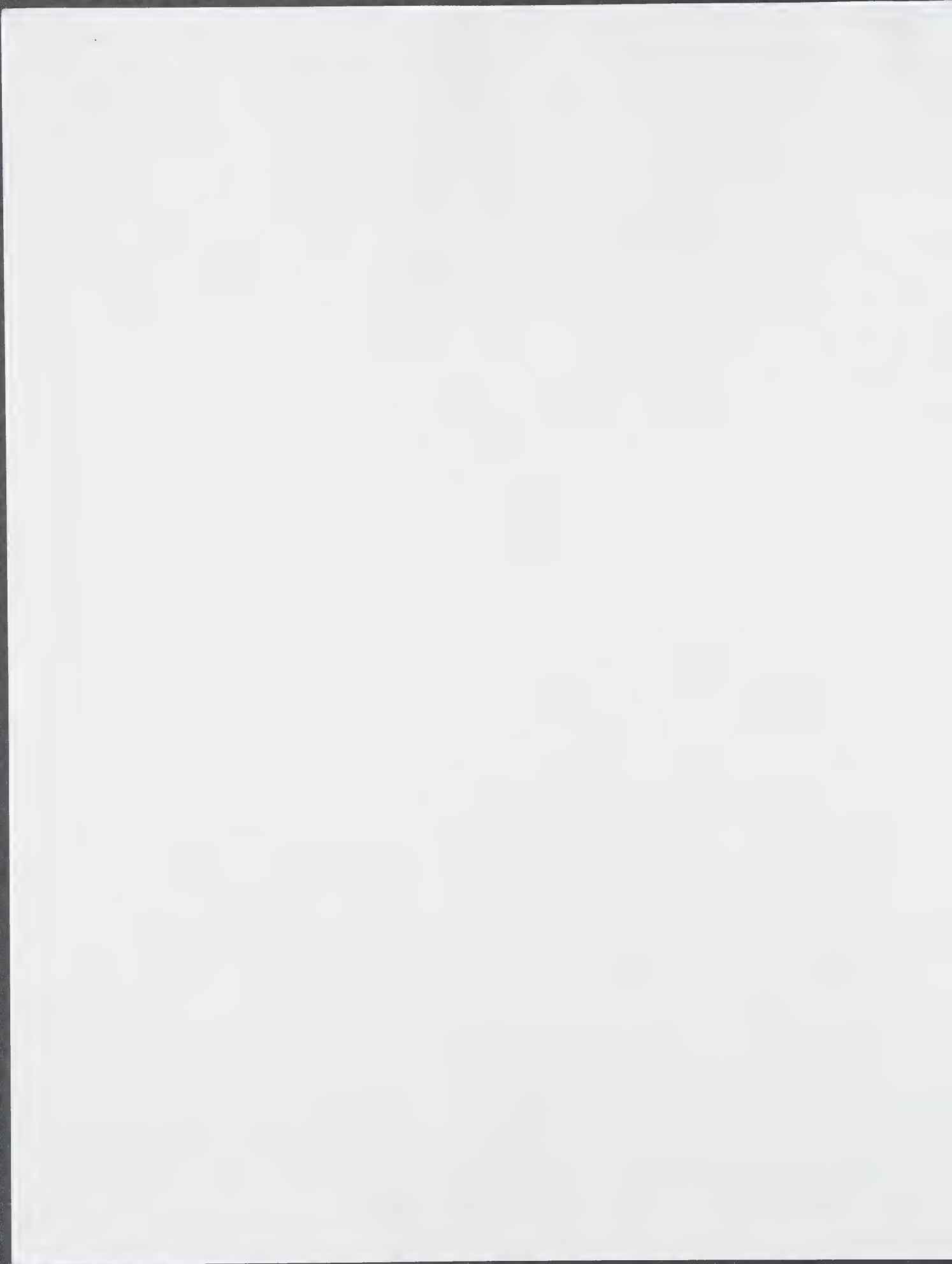
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om Houston Boots on  
Lou Amba, who was  
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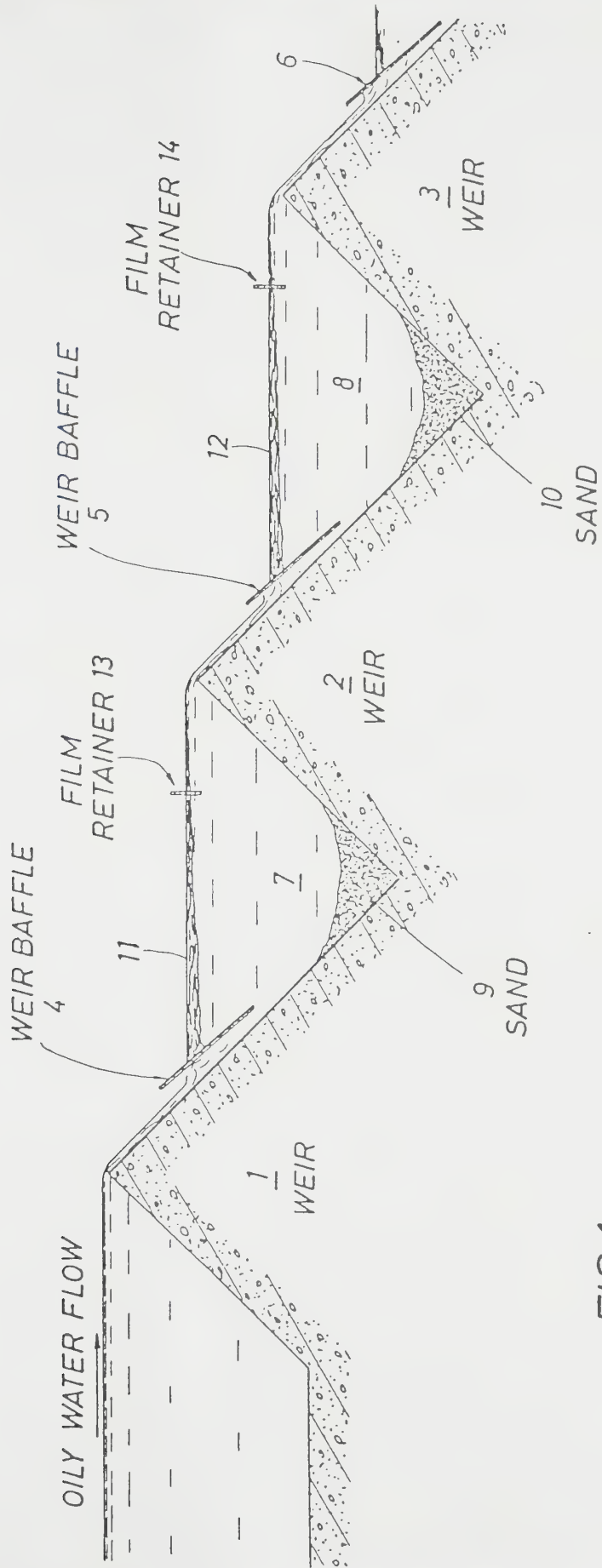
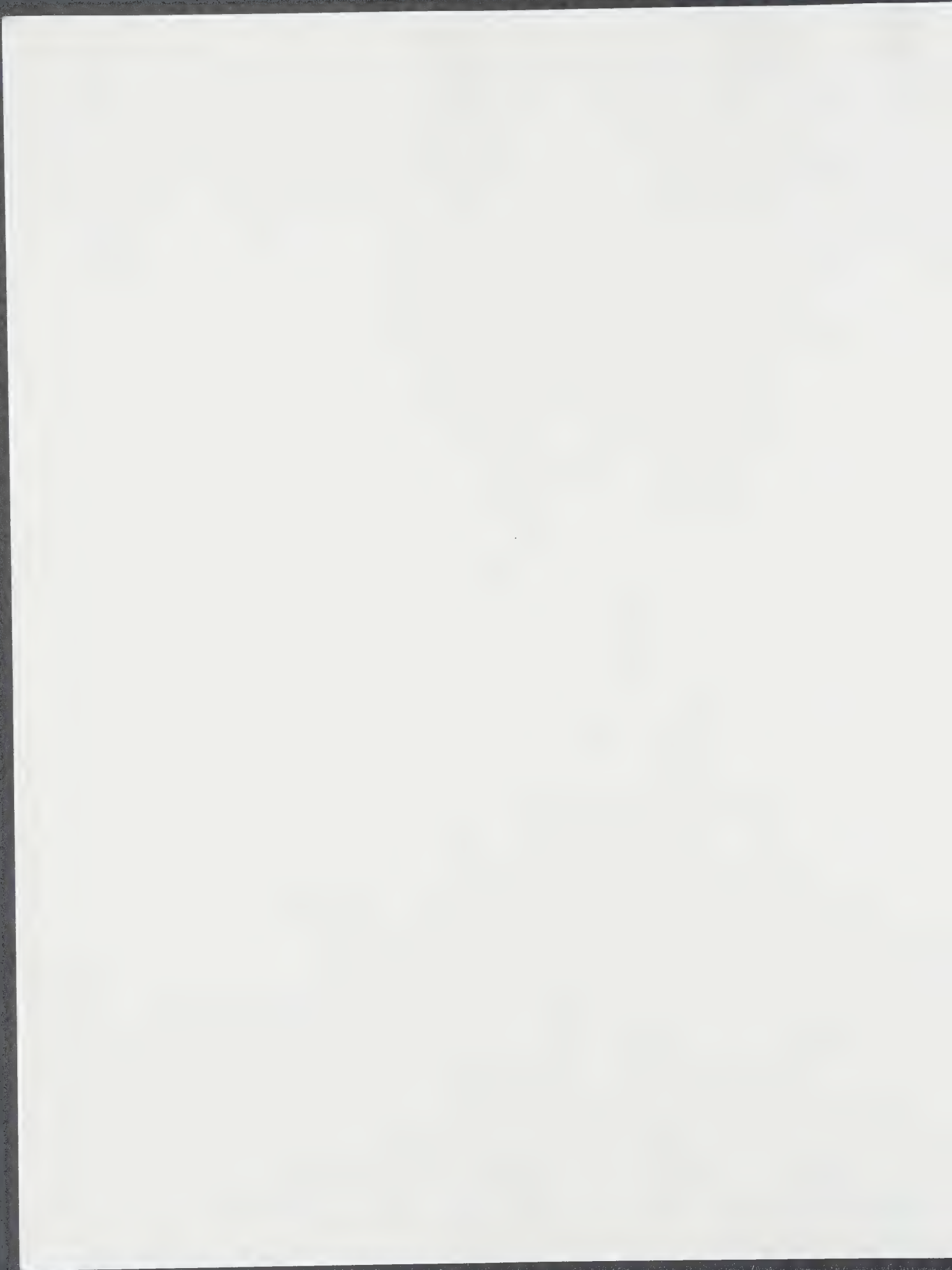


FIG.1



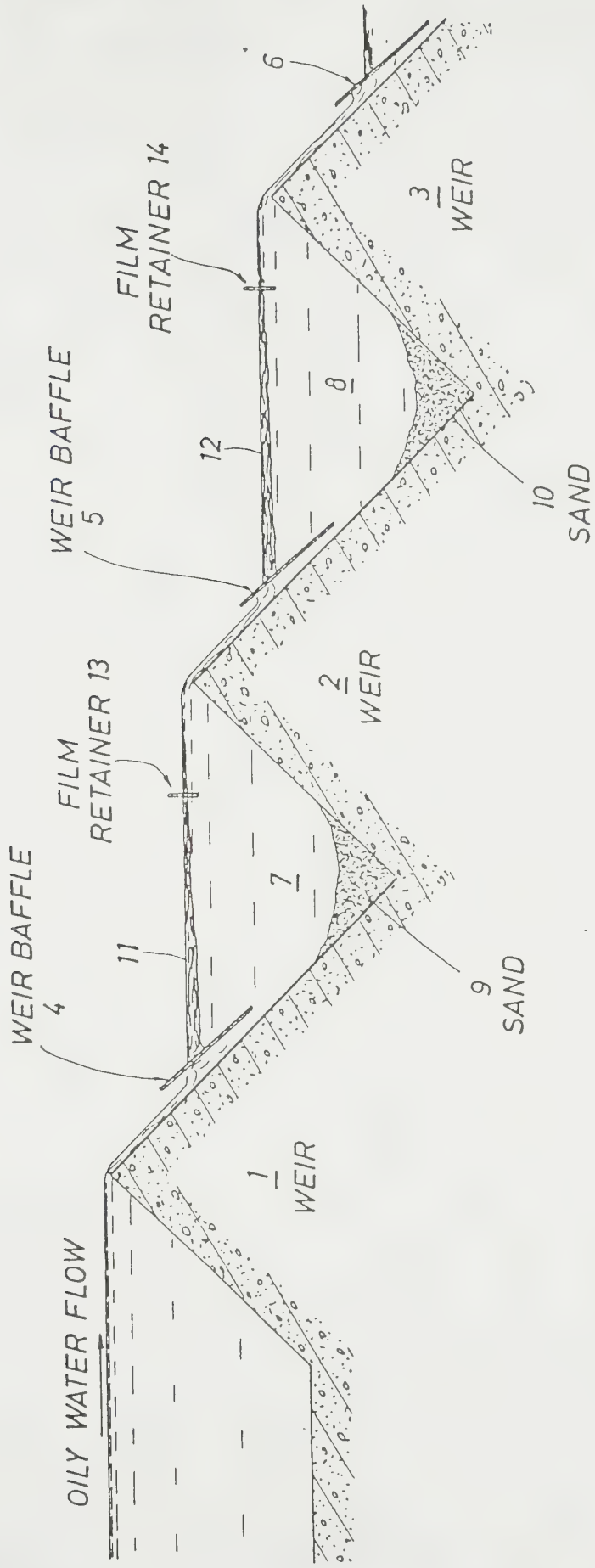
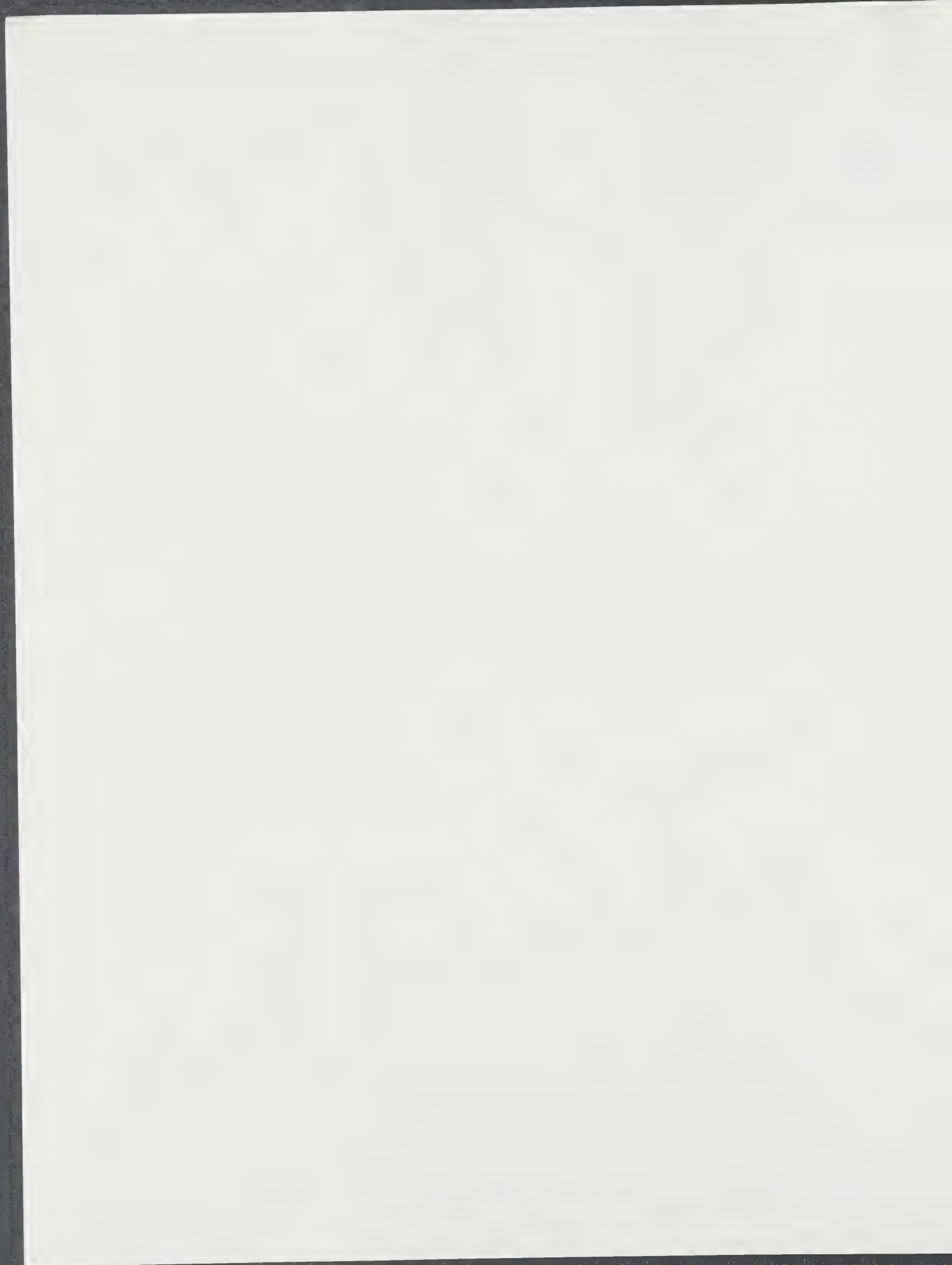


FIG.1

11



Fax 403 - 269 - 7625-①  
FERROCENE

MEMORANDUM

DATE: November 1, 1990  
TO: Mr. Peter Sarvos  
Advisor, Aviation and ThermoShell  
FROM: Bram Verhoeff  
Senior Staff Research Chemist (Oakville) - retired  
RE: Ferrocene in furnace oil

On Monday I received a delivery of 150 liters of Shell furnace oil containing a new additive.

Ever since I joined Shell in 1956 in the Commissioner Street laboratory, Shell has never revealed to our customers the generic name of our additives and the first test run was always carried out in well-tuned employee's furnaces, supervised by P.A.D.

I intended and still will write you a detailed letter of what happened to my furnace, but more important, about my research results of 1956 till 1984 regarding additives in fuel oils. However, when I started to read Sphere magazine issue 5/1990 this morning and realized that you are the advisor Aviation and ThermoShell I felt it my duty to warn you of the consequences of this additive travelling through the same pipeline as Aviation Turbine Fuel for Pearson Airport.

Ray Davies and I worked on this problem in the late fifties and I shudder to think what dicyclopentadiemyliron could do to the alluminum of the fuel system of a jet aircraft. Just ask Ray Davies.

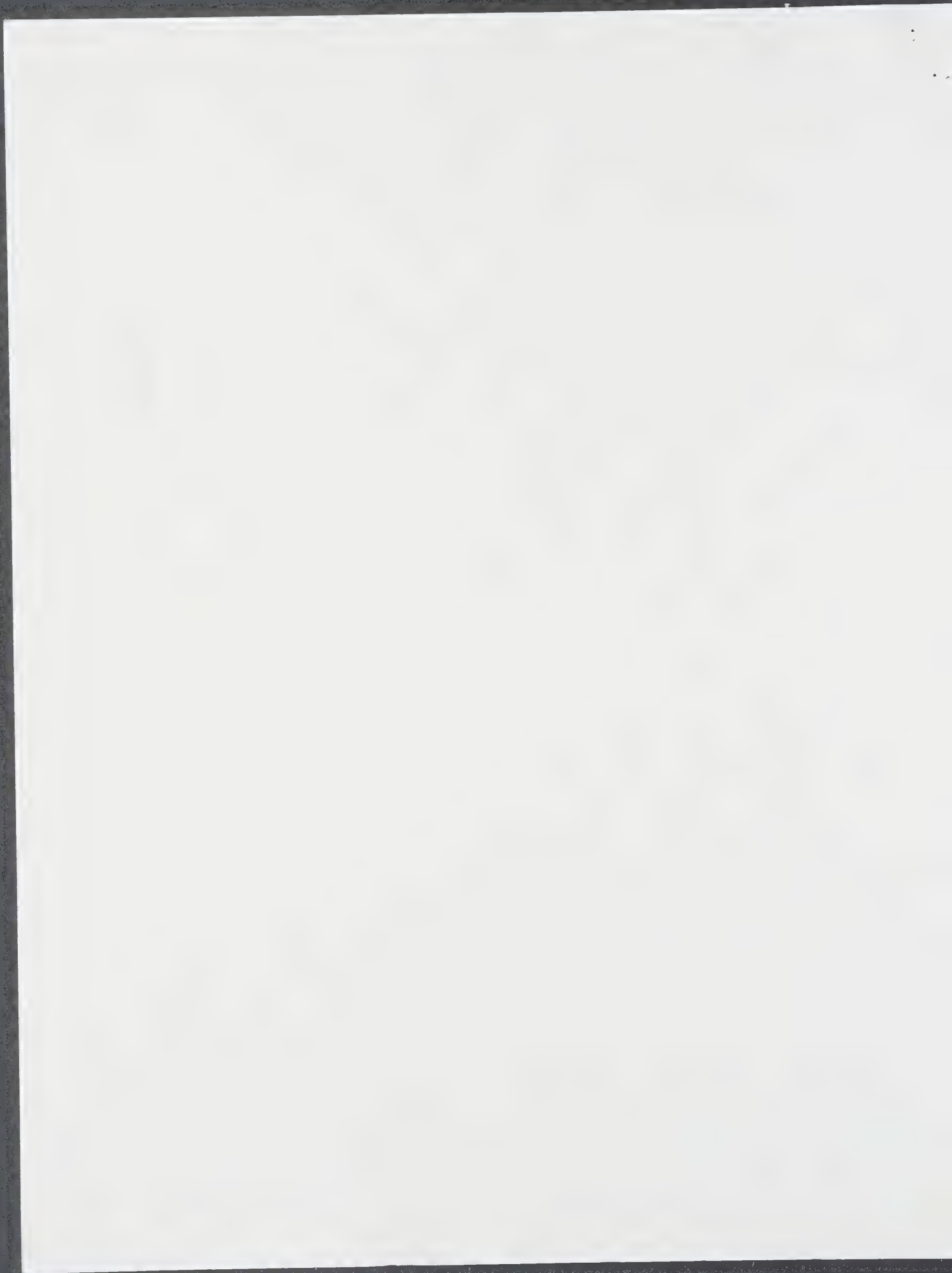
I see in the article Who's who in Products that Bill Hall is manager Products Planning. Bill started his career with Shell in my group in Oakville laboratory.

I will continue to write my detailed report. You can reach me by Fax at my wife's business address. ( Lynn Verhoeff, Fax 416-368-5445)

A.V.

\*\* TX CONFIRMATION REPORT \*\* AS OF NOV 1 '90 12:43 PAGE.01  
OFIA 416 368-5445

DATE	TIME	TO/FROM	MODE	MIN/SEC	PGS	STATUS
01 11/ 1	12:42	SHELL MARKETING CLGY	UF--S	00"26	01	OK





2



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TO: ADDRESSEE		FROM: ORIGINATOR	
COMPANY:		COMPANY: (* Cable Address/Reference Indicator) Shell Canada Products Company	
ATTENTION: <i>Lynn Verhoeff</i>		SENT BY: (* or Authorized Signature) <i>Peter Sarvos</i>	
ADDRESSEE'S LOCATION <i>Toronto area</i>		LOCATION (Building and Room No.): Shell Centre Room 2936	
FACSIMILE PHONE NO: <i>(416) 368-5445</i>	CONFIRMATION PHONE NO:	FACSIMILE PHONE NO: <i>(403) 269-7625</i>	DEPT. CHARGE CODE <i>160</i>

REMARKS

• Reply letter to

*Bram Verhoeff*

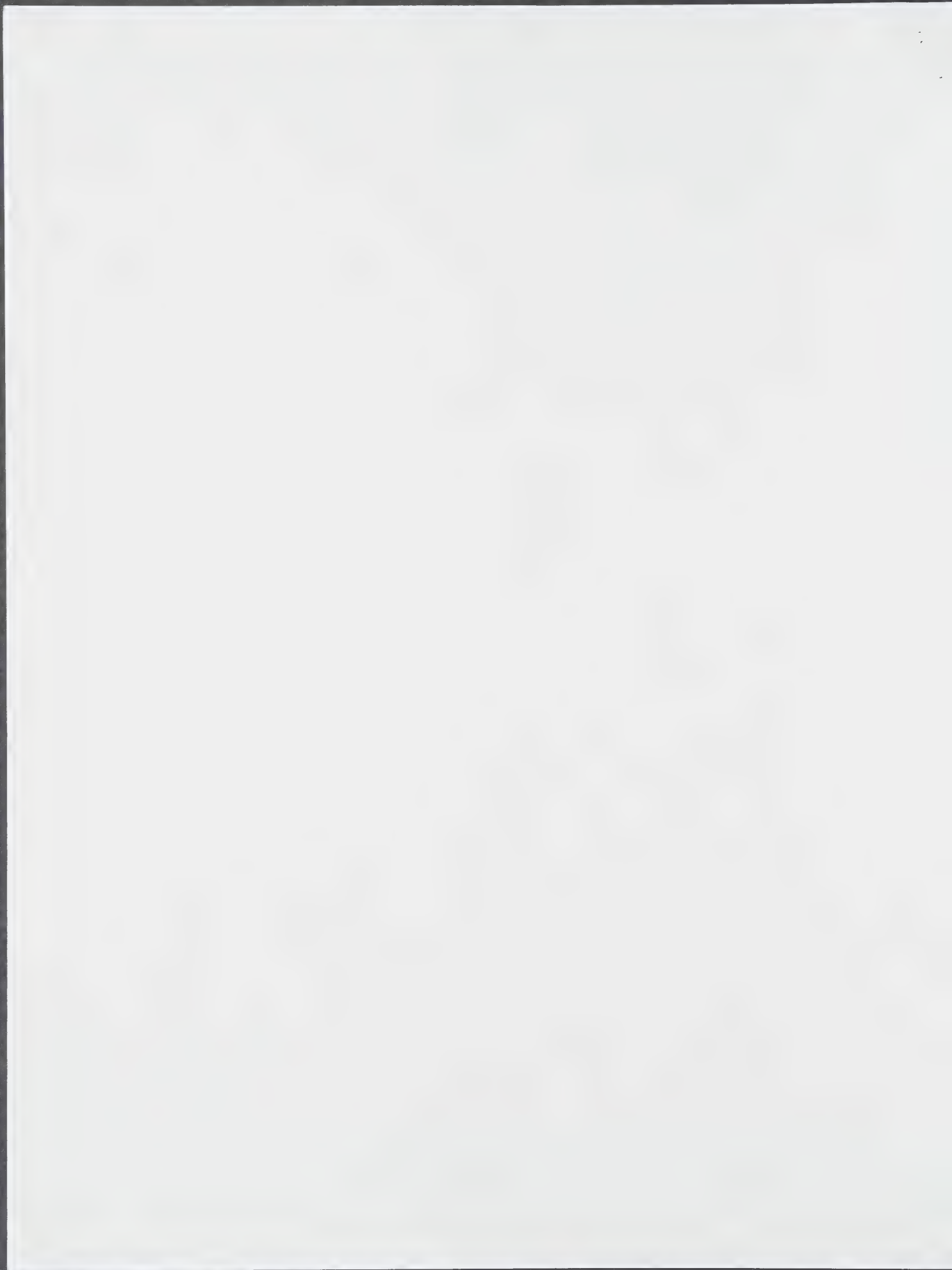
*c/o Lynn Verhoeff.*

• Please pass on. Thanks.

*Peter Sarvos*

THIS SECTION TO BE COMPLETED BY OPERATOR

VERIFICATION PHONE NO:	DATE SENT	TIME SENT	OPERATOR'S NAME
		<input type="checkbox"/> AM <input type="checkbox"/> PM	



3

November 16, 1990

Mr. Bram Verhoeff  
Senior Staff Research Chemist (Retired)  
Oakville Research Centre

Dear Mr. Verhoeff:

My apologies for not getting back to you sooner.

I wanted to thank you for your note of November 1. You obviously still care about the direction Shell Canada is taking with fuels and lubricants marketing.


Regarding your concern about pipelining ferrocene or, more specifically, fuel containing ferrocene, let me quickly dispel any concerns you have by saying that we are not pipelining such product.

In regard to our divulgement of the additive in Pureflame, time will tell whether this was a wise move but suffice it to say for now, this was a marketing decision based on the fact that we were giving up no competitive advantage keeping this secret and we are imparting a sense of authenticity to our product by being more open about what it is and how it works, etc.

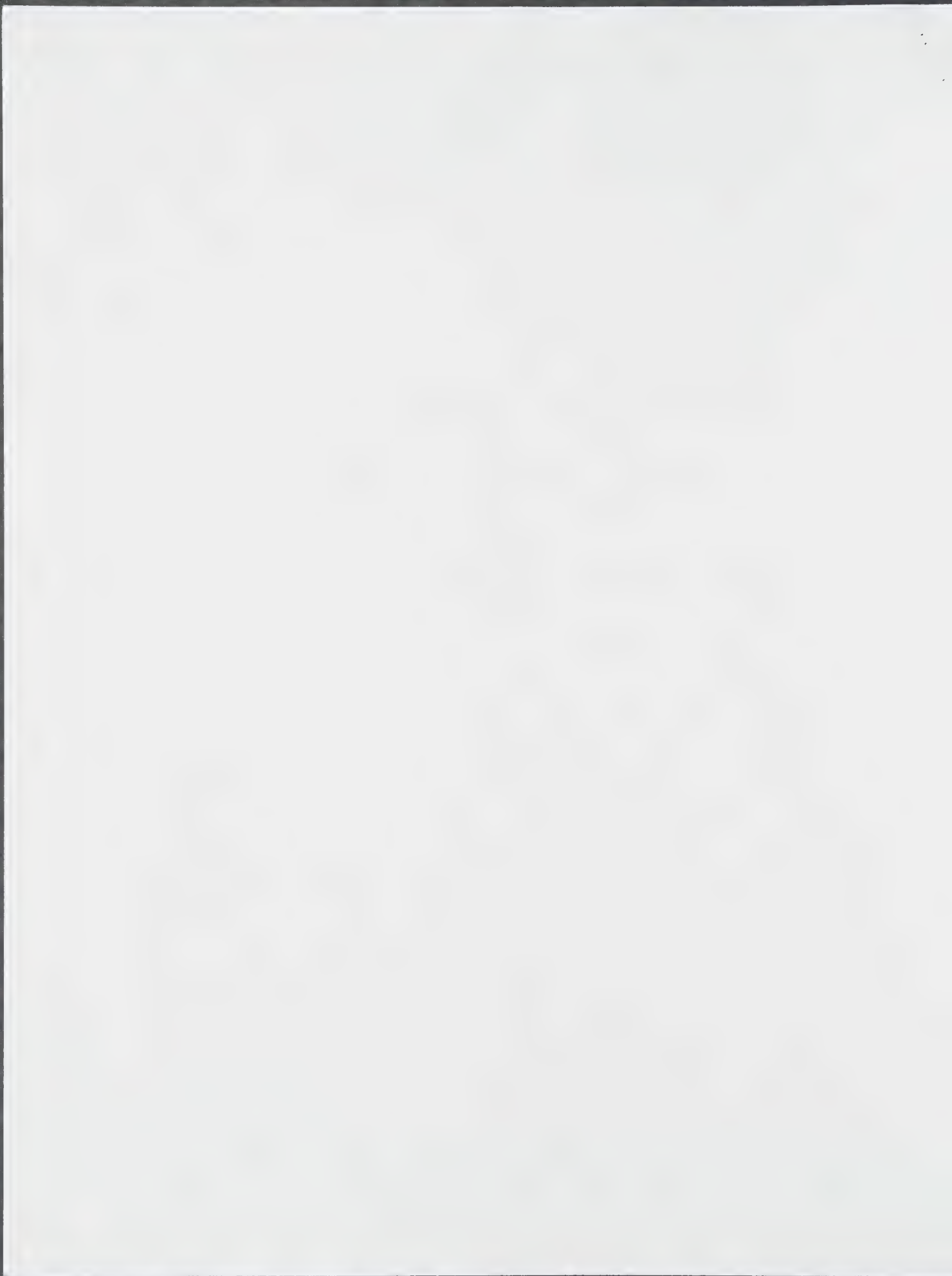
Lastly, for your information, I mentioned to Bill Hall that I had received a note from you and he asked that I send you his regards. By the way, Bill was instrumental in the launch of Pureflame.

I look forward to your report.

Sincerely,



Peter Sarvos  
Advisor - Aviation/Thermoshell  
Commercial Marketing



4

MEMORANDUM

DATE: January 16, 1991

TO: Mr. Peter Sarvos  
Advisor - Aviation/Thermoshell  
Commercial Marketing  
FAX: 403 269 7625

FROM: Bram Verhoeff  
Senior Staff Research Chemist (Oakville) - retired  
243 Indian Grove, Toronto, Ont. M6P 2H4  
FAX: 416-368-5445

RE: Ferrocene in furnace oil

Further to my memo of November 1, 1990, the expected breakdown of my furnace took place this weekend, apparently due to an overdose of ferrocene.

The serviceman did a wonderful job of keeping us warm over the weekend.

When contacted on Monday by Mr. Sevakian, Manager of Toronto Thermoshell, he claimed never to have heard about my correspondence with you. Later that day he ordered the serviceman to clean the furnace, i.e. destroy the evidence and leave everything till Calgary people could examine it.

I took the appropriate samples and examined them. The process is quite clear to me and shows a high concentration of ferrocene had passed through the furnace. But when my analysis showed that 44% of the deposit was acid-insoluble, silicious material, originating from the heat shield of the furnace, I examined the furnace further. The lower part of the furnace is exceedingly hot. I will make sure that no combustible material will be near the outside surface of the furnace.

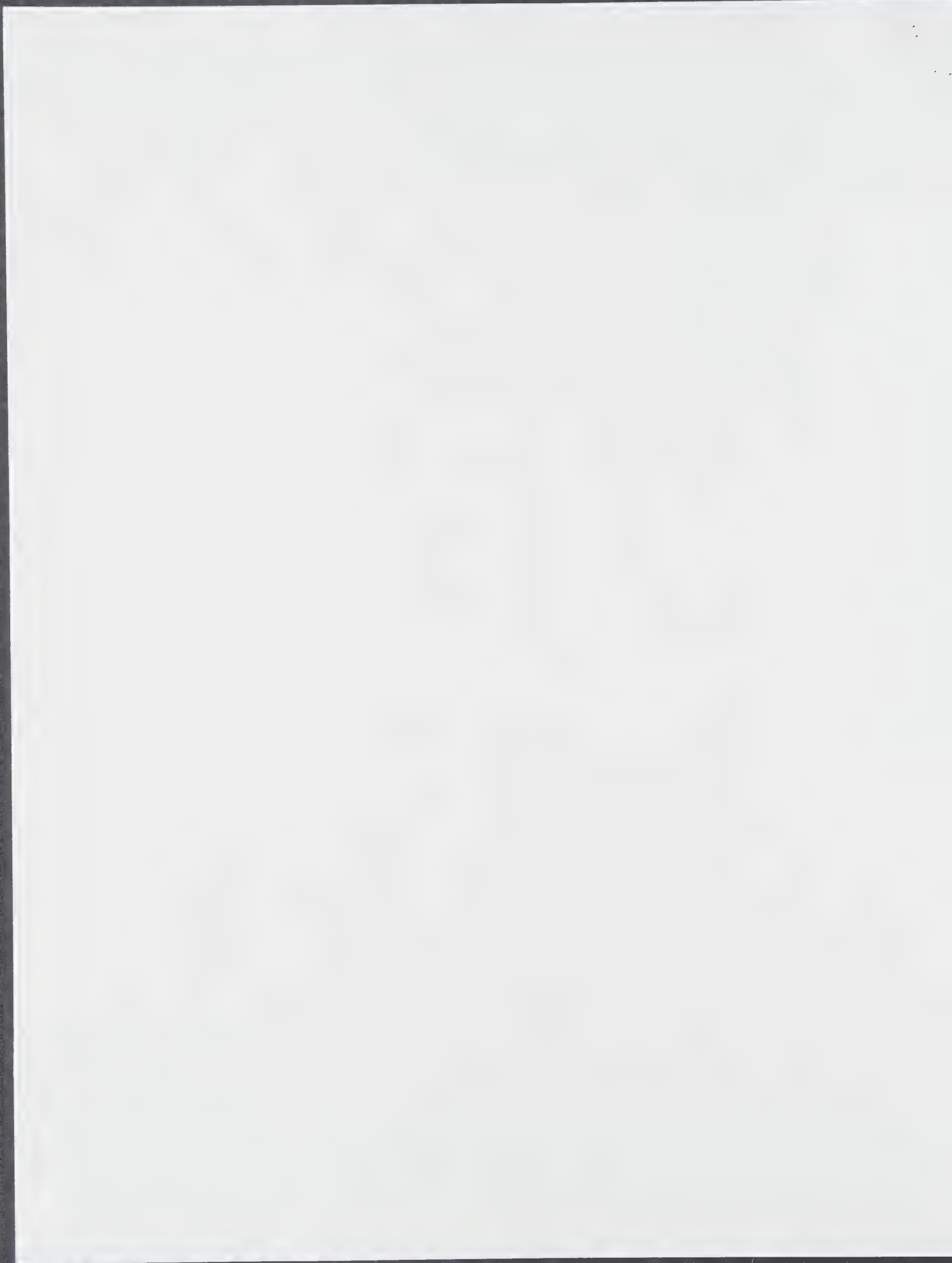
I will convey this information to my insurance agent in connection with increased fire danger.

A.V.

TX CONFIRMATION REPORT \*\* AS OF JAN 16 '91 12:11 PAGE.01

OFIA 416 368-5445

DATE	TIME	TO/FROM	MODE	MIN/SEC	PGS	STATUS
01	1/16	12:11 SHELL MARKETING CLGY	UF--S	00"25	01	OK



5

MEMORANDUM

DATE: January 17, 1991

TO: Mr. Peter Sarvos  
Advisor - Aviation/Thermoshell  
Commercial Marketing  
FAX: 403 269 7625

COPY: Mr Sevakian  
Manager Thermoshell Toronto  
FAX: 665 5161

FROM: Bram Verhoeff  
Senior Staff Research Chemist (Oakville) - retired

RE: Ferrocene in furnace oil

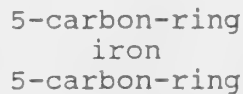
This morning at 10:45 hrs. the furnace clicked on but it took 10 seconds to light, resulting in a smoke puff which filled my basement. At 14:00 hrs. I came downstairs and the red light was on. The furnace started immediately after pressing the button, but because of the presence of 30 seconds worth of oil pumping great clouds of smoke developed.

We are getting close to the weekend again and I would like to have this problem solved without educating yet another serviceman about what is going on. Please instruct Mr. Sevakian to have the original serviceman: Jack Etter, look after our furnace.

The ferrocene concentrate which fell to the bottom of the tank may not all have been processed by the burner. It may be necessary to pump out the lower part of the tank.

P.S.

The ball-shaped soot particles which I collected on Monday were put in a bottle. The content smells strongly aromatic, which is not surprising as the structure of ferrocene:



must absorb aromatics preferentially. This is in sharp contrast with the green/picture of your introductory literature.

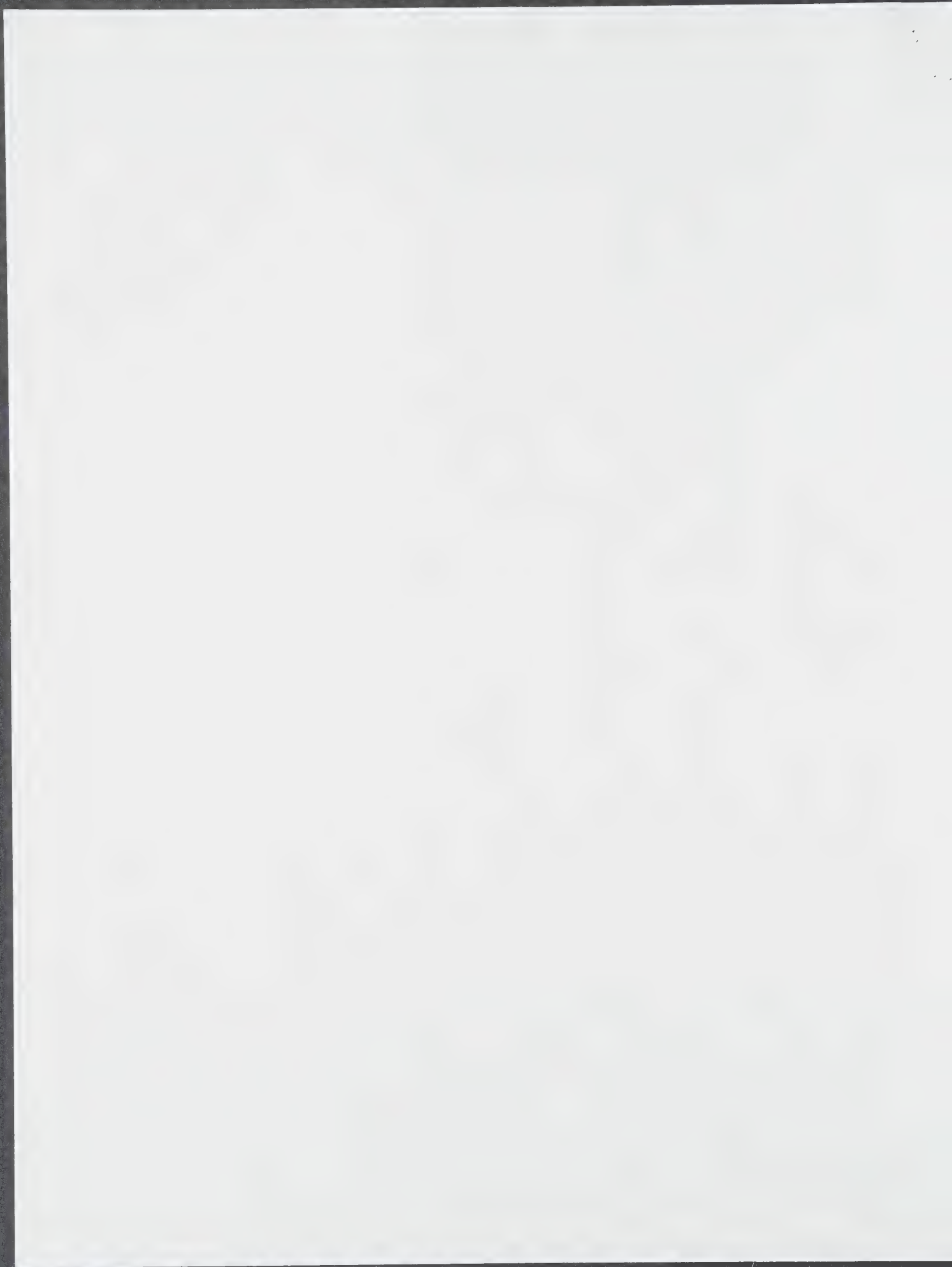
AV

\*\* TX CONFIRMATION REPORT \*\* AS OF JAN 17 '91 15:25 PAGE.01

OFIA 416 368-5445

COMMAND #61

	DATE	TIME	TO/FROM	MODE	MIN/SEC	PGS	STATUS
01	1/17	15:23	SHELL MARKETING	CLGY	UF--S	00"39 02	OK
02		15:24	SHELL ODC 665 5161		UF--S	00"38 02	OK





6

MEMORANDUM

DATE: January 18, 1991

TO: Mr. Peter Sarvos  
Advisor - Aviation/Thermoshell  
Commercial Marketing  
FAX: 403 269 7625

FROM: Bram Verhoeff  
Senior Staff Research Chemist (Oakville) - retired  
243 Indian Grove  
FAX: 416 368 5445

RE: Ferrocene in furnace oil

There seems to be little communication between yourself, Mr. Sevakian and the serviceman at Toronto Thermoshell. I sent a copy of my memo of yesterday to Mr. Sevakian, but it we had to call him to make sure we could get heat for the night.

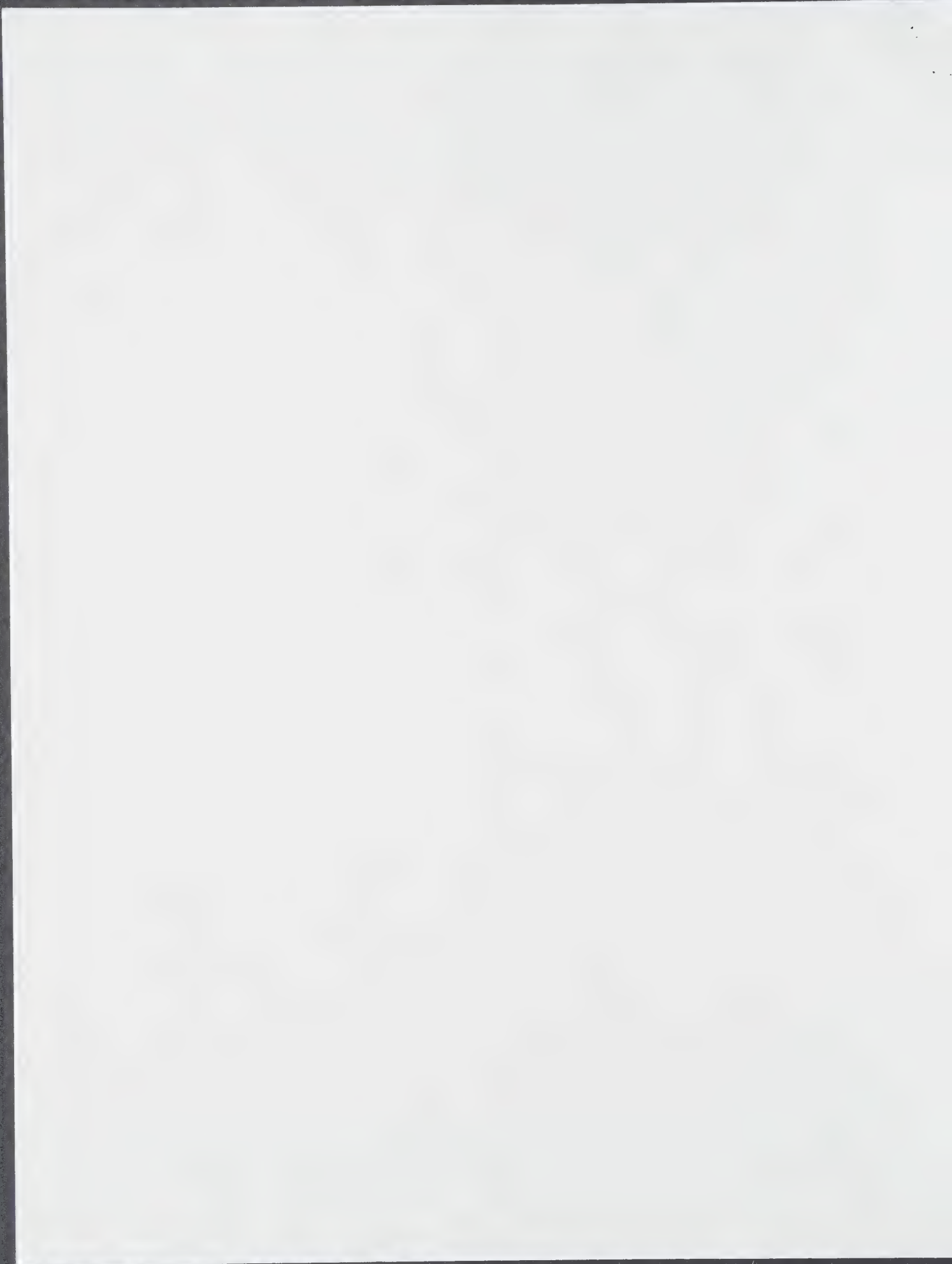
When the serviceman came after dinner, he changed the nozzle, measured the pressure and we talked about the position of the spark gap and how the spark could be "blown out". I did not believe him but suddenly the spark sound disappeared but also the flame was snuffed out. I must certainly not be the only one for he told me about other similar experiences. Well, he got my furnace going and I am keeping my fingers crossed.

He informed me that the right side of the firewall has completely disappeared!

I have the stainless steel nozzle which he replaced and it contains a brass filter. The fuel from the steel fuel tank sees white metal in the filter, then a copper tube, a steel pump and finally the brass and stainless steel of the nozzle. As all these metals are electrically grounded, the fuel makes oxidizing and reducing voltage jumps! I was thinking of this when I wrote my memo in November, but I was most concerned about the pumps and the nozzles of an aircraft: I only have a cold house, an aircraft engine failure would mean a post mortem.

Yet your answer of November 26 seems to say: no aluminum, no problem and I brazed myself for a disaster.

After the second oil delivery in December I had a number of red button starts, but a quiet Christmas with our grandchildren. About the third delivery you know, but I was not aware that the additive is added as a concentrate during delivery. When you look at the lunchpail shape of the furnace oil tank your realize that what goes down will never go up and high concentrations of Ferrocene increases the conductivity of the fuel oil. The cloud of fuel droplets will accept electrons from the left and right electrodes.



7

As the transformer is centre grounded, the left and the right electrodes reach alternating minus 5000 V to ground and spew out electrons which do not harm if they reach the other plus 5000V electrode, but if they spark to the conducting fuel in the nozzle, they add to the electron inventory of the fuel-air system. (As the fuel droplets are round and move away from the spark the reverse flow of electrons, in other words oxidation is not very likely as electrons prefer to exit from sharp points.) As any chemist knows adding electrons is reduction and withdrawing electrons is oxidation. If this divided spark occurs the energy put out by the transformer is therefore deducted from the combustion energy and is probably the cause of the hollow balls of carbon and aromatics which I recovered from the tubes of my furnace.

I have always wondered why the spark stays on when a flame is confirmed after 30 sec. delay. It would be a simple test to hook up the relay so that it switches off the transformer. If for some other reason the flame goes out the pump will stop.

The advantages would be:

1. less electric use
2. better chance at complete combustion
3. less soot formation
4. no electron additions i.e. no reduction

Shell may want to patent this energy saving device and if you do so, please put it in my name.

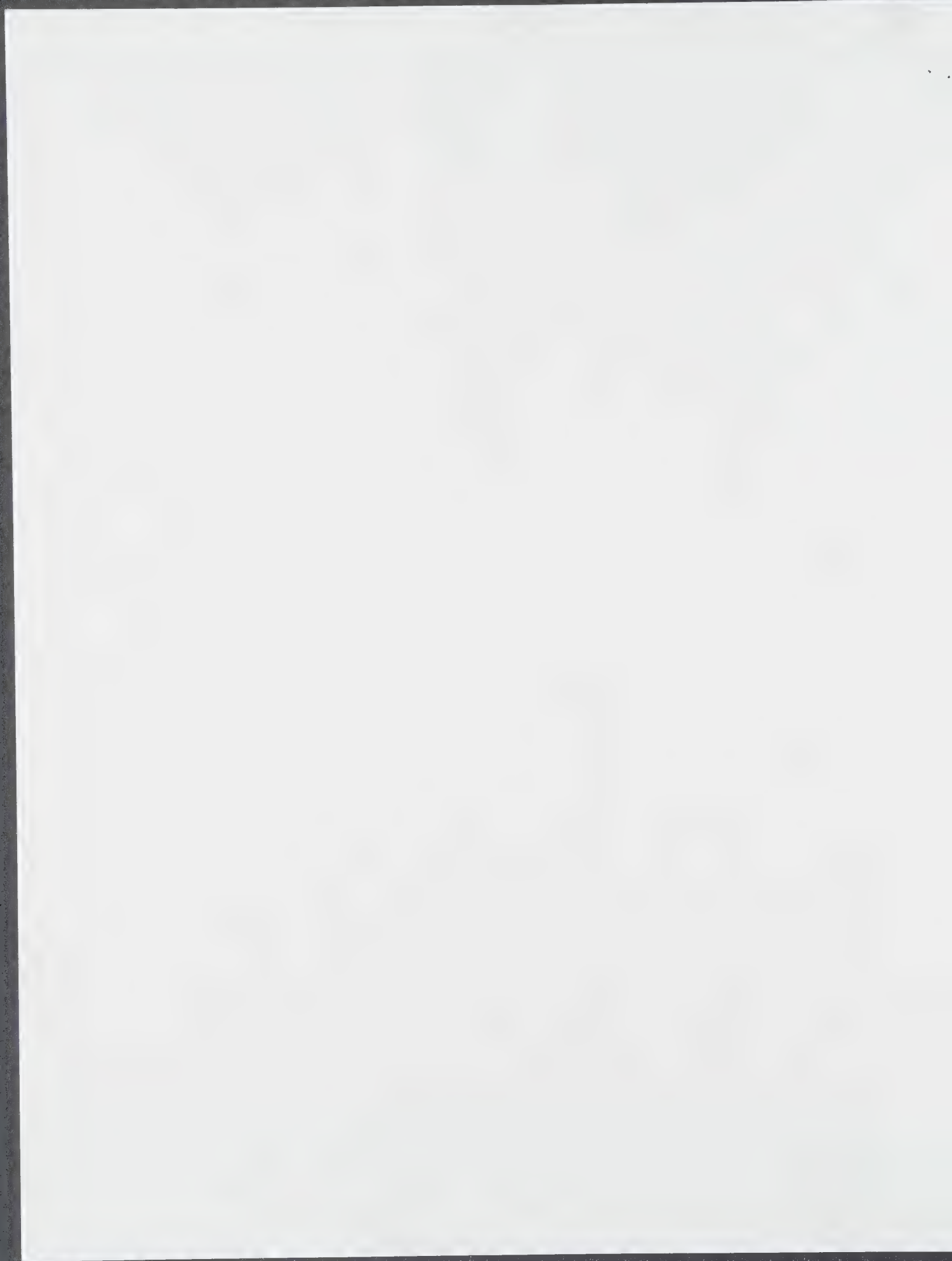
Finally I hope that somebody will visit me soon to assess the damage done to my furnace and my basement by Ferrocene which I would have rejected if somebody came to my door asking: Do you want Ferrocene in your furnace oil?

I have had a sample and literature on this compound (it was first made in 1951) since 1960 and I know it well. I expected a call from my old colleagues, instead the deliveries continued. I decided to wait for the disaster to happen and record it. It was worse than I had anticipated. I can't for the life of it see how this additive would aid combustion and I would like to see on what evidence Ottawa gave this glowing report. I saw Jack Etten take the sample. The large sootballs would never enter the quarter-inch tube.

When I was doing testing for dirt in aviation turbine fuel for the Avro Arrow, Ray Davies taught me to mount the testtube against the direction of the flow and to pull the sample so that the flow inside and outside the testtube is the same.

When you see sootballs on the white sheets which I spread throughout the furnace room on Sunday you realize that between the black dots there is whiteness.

When I was forcefully retired at the end of 1983 I parked my car in those last days next to the rusting remains of the pride of my



(8)

career: \$ 200,000 worth of spraydrying equipment. I had intended to work on the development of catalysts. In my notebooks (which Shell has) there is a design of a blue cyclone burner, based on knowledge acquired from work on the spraydryer. I went to the Thermoshell terminal on Keele Street early 1982 and acquired a number of burners and it was the intension to use my old furnace with its easily removable burner for burning raw fuel with several alkaline compounds to neutralize the sulphur.

Now that I am cut off from Shell I continued my work with charcoal and I am happy to say that I found a catalyst which converts the nitrogen of the air into ammonia which not only produces neutral ammonium carbonate and sulphate but extra energy as ammonia production is an exothermic reaction.

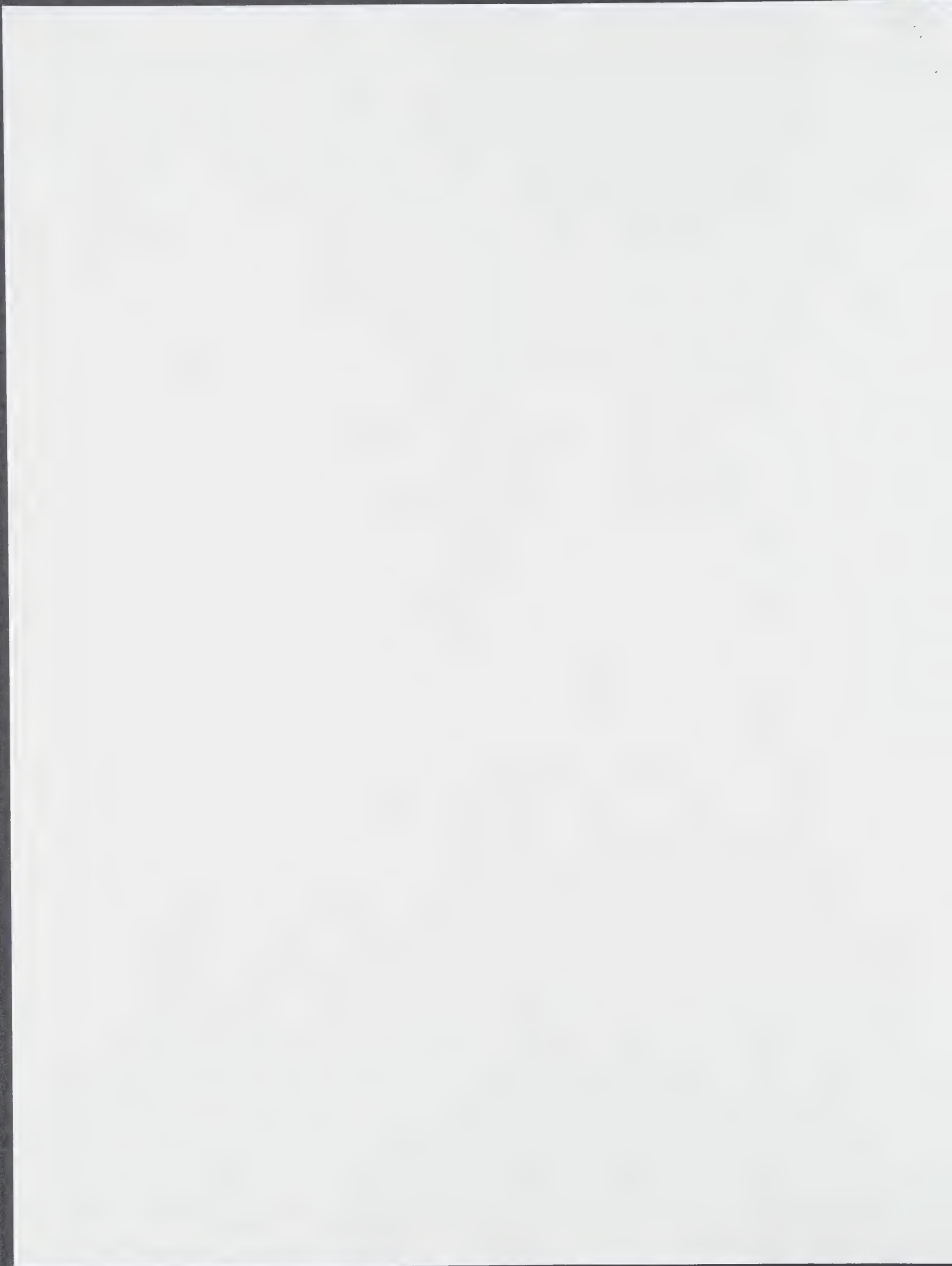
I will write to the Dutch minister of the environment in Dutch as I want to reveal this as a Dutchman rather than a Canadian.

AV

\*\* TX CONFIRMATION REPORT \*\* AS OF JAN 18 '91 12:12 PAGE.01

OFIA 416 368-5445

DATE	TIME	TO/FROM	MODE	MIN/SEC	PGS	STATUS
01	1/18	12:11 SHELL MARKETING	CLGY UF--S	01"25	03	OK



9

BY FAX

June 3, 1991

6 pages

To: Editor  
Globe and Mail

From: Bram Verhoeff  
243 Indian Grove, Toronto, M6P 2H4

Re: Oil well and engine fires

On Saturday, June 1, 1991, you published on page A15 the Frederic Neema/Reuter picture of a wellhead "minutes after his team extinguished another of the blazes...."

The worker's only protection are his hard hat and his safety boots and he is handling a pick-ax (steel) on a wellhead (steel) which under normal refinery circumstances is a no-no because of the possibility of sparking.

Red Adair is obviously using the method I suggested in my fax to my vice-president (Research) of Shell Canada on March 4, 1991, namely by "pumping" electronics into the oil stream.

I wonder why your science writers did not catch the anomalies in this picture.

On page A16 is the article on the Thai air disaster.

My idea of snuffing out a hydrocarbon fire by adding electrons would work better than conventional fire extinguishers.

I never received acknowledgement of receipts of my fax to Mr. Vassie.

Maybe the Globe and Mail could find out from Red Adair the origin of the new technology.

\*\* TX CONFIRMATION REPORT \*\*

AS OF JUN 3 '91 13:15 PAGE.01

OFIA 416 368-5445

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**LONG, HOT FIGHT** — A member of the Red Adair firefighting team hacks at the base of a gushing Kuwaiti oil well minutes after his team extinguished another of the blazes started by the retreating Iraqi army. At least 135 out of more than 500 well fires have been put out.

(FREDERIC NEWMAN/Reuters)

# Outcry over Argentine girl's death brings action

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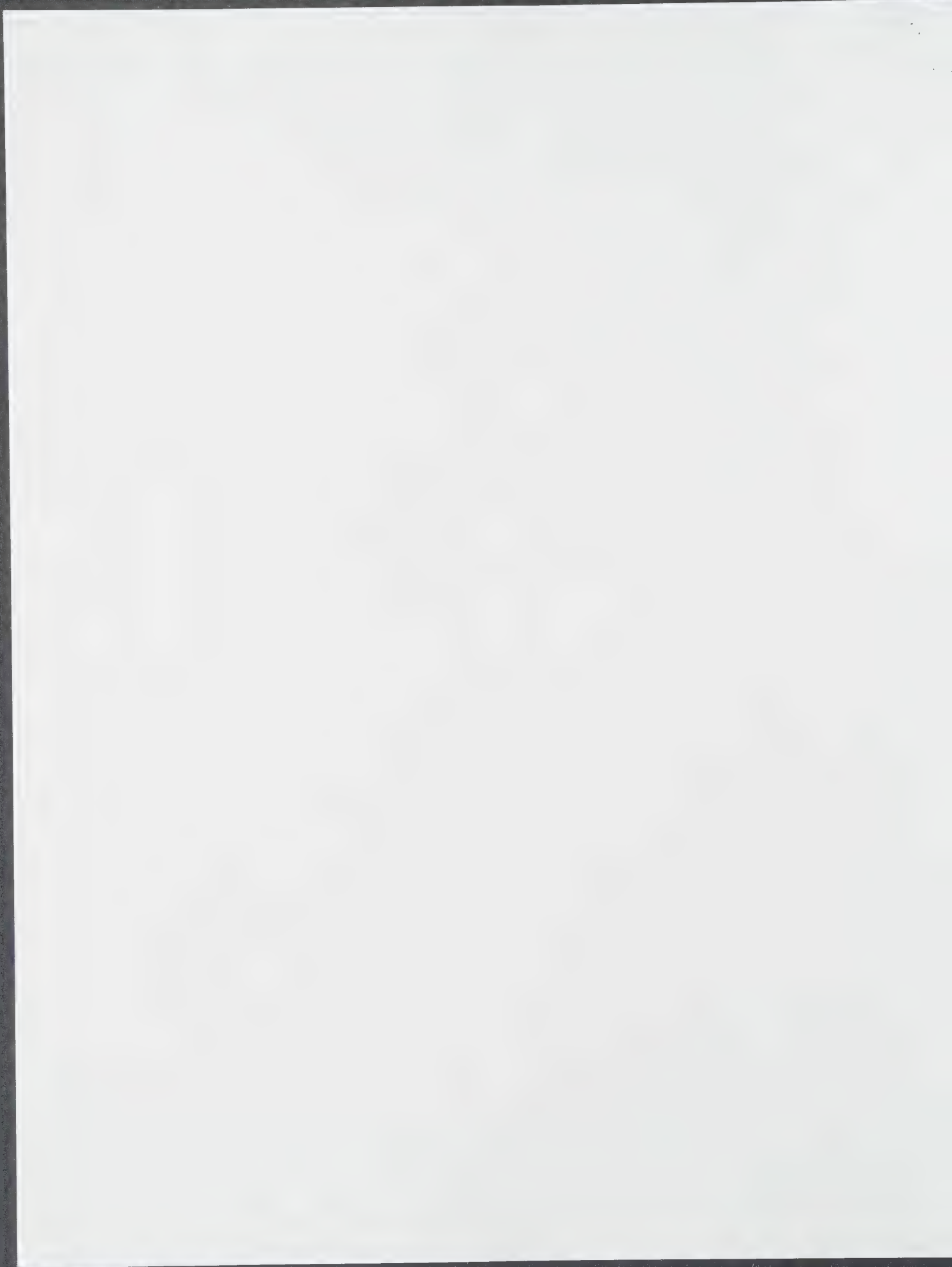
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call  
6) 585-2222  
(604) 685-0308  
14) 982-3050

# Pilot scribbled 'fire' on chart before jet crash

## Engine blaze suspected as likely cause of Thai disaster that killed 223

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Reuters News Agency

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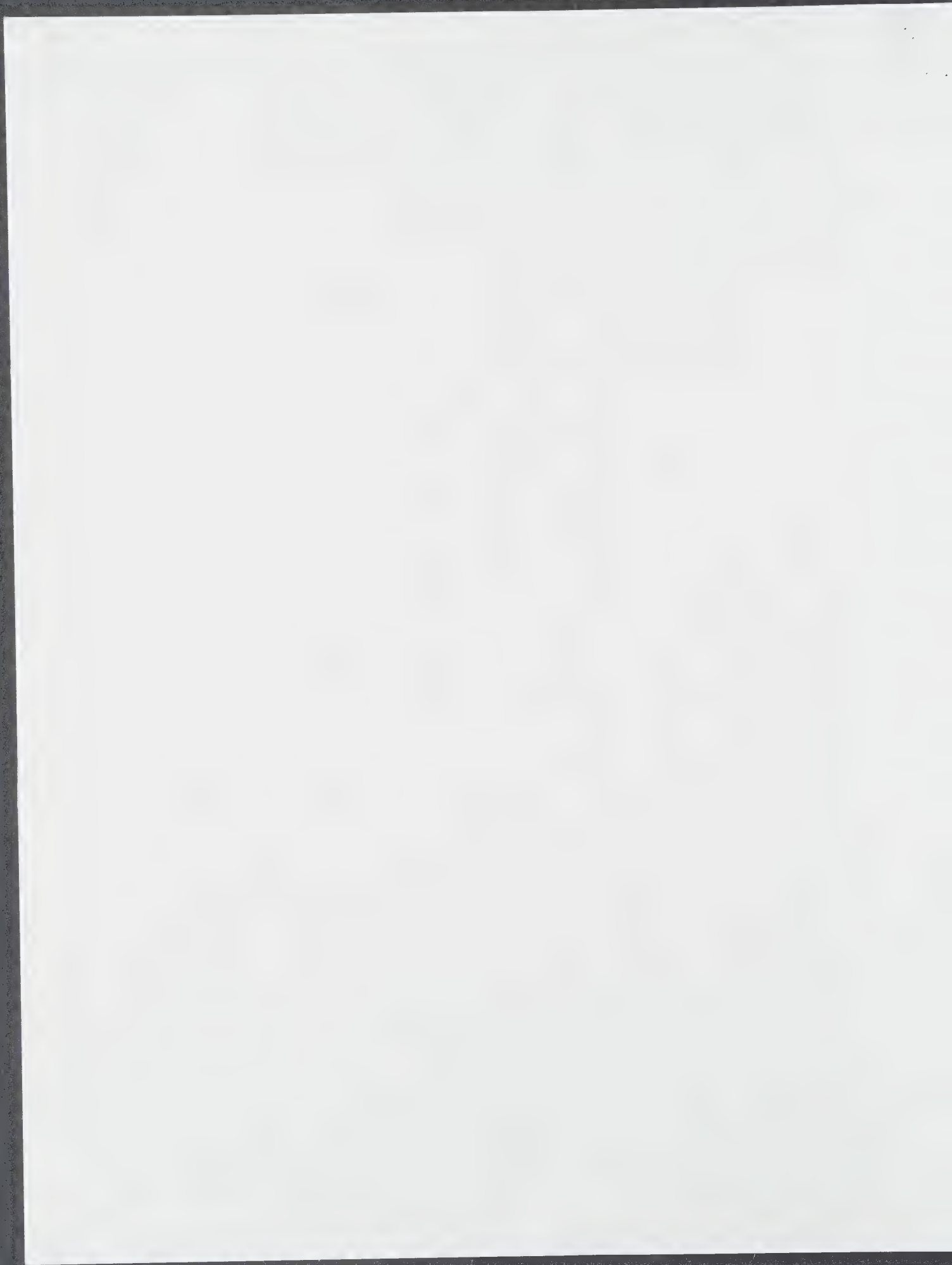
The Globe and Mail, Saturday, June 1, 1991

INTERN



**LONG, HOT FIGHT** — A member of the Red Adair firefighting team hacks at the base of a gushing Kuwaiti fire. At least 135 out of more than 500 well fires have been extinguished.

# Outcry over Argentine girl's death



(12)

date: March 4, 1991

to: Mr Gary Vassie  
Vice President, Research  
Shell Canada  
FAX 403 269 7625

From: Bram Verhoeff  
Senior Staff Research Chemist (retired)  
FAX 416 368 5445

re: Oil spills & Well fires

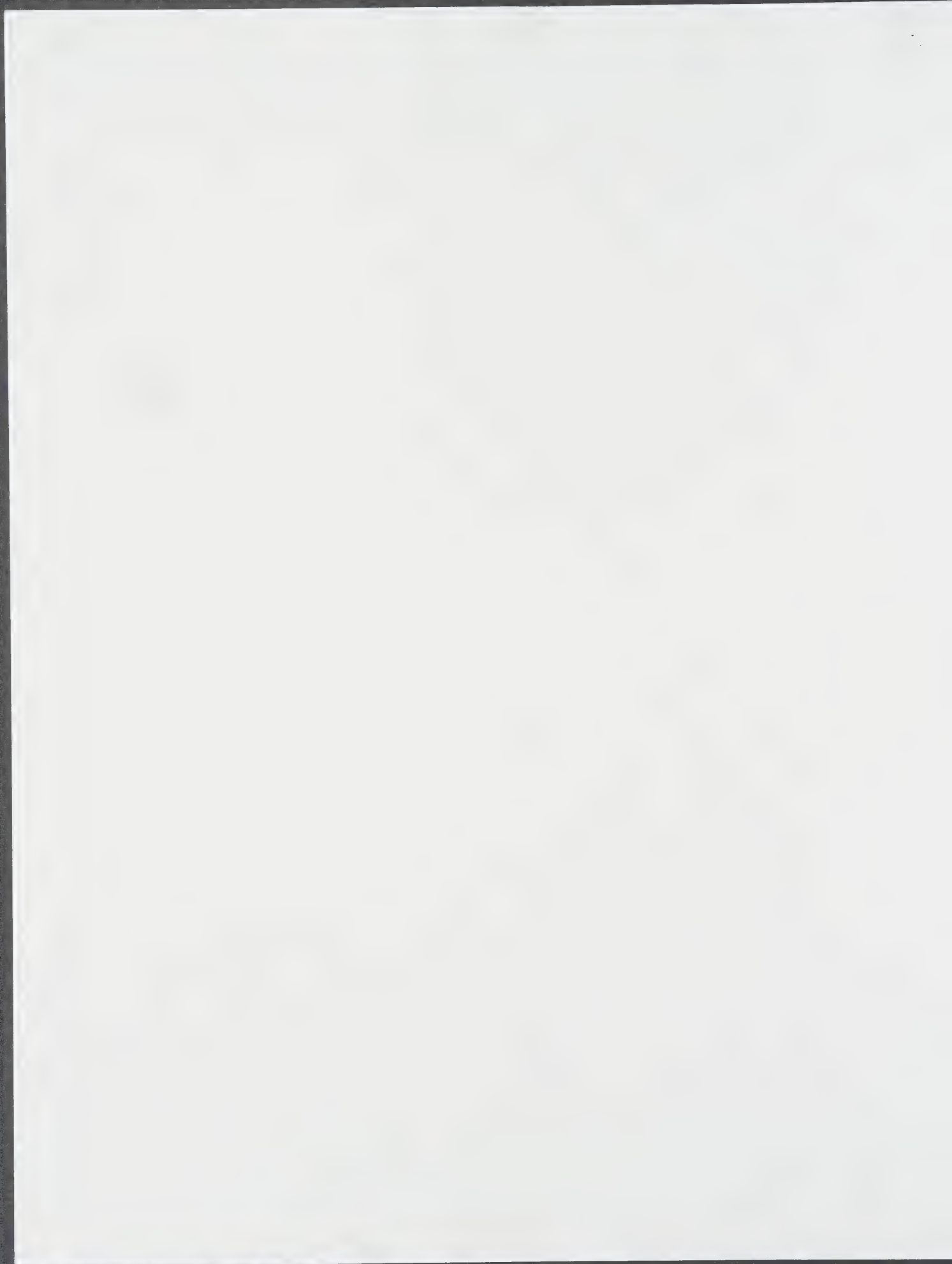
In 1973 during the first Arabian Oil crisis I was asked by Dr Gerry Shane, Director Research, to look into a clay problem which had surfaced with the Syncrude Tarsand Project. Not only did my research lead to an entirely new method of separation but I also concluded that we had in the oilsands a source of a superior lubricating oil which would make us independent from the Light Arabian Crude to which we were assigned by The Hague in order to reserve the previously used Venezuelan Crude which was reserved for the US. I don't think that this good news had reached the President when he announced that Shell Canada was no longer interested in Tarsand Exploration.

As the Topological Separator was, in my view, salvageable from the debris I asked Dr Shane permission to apply for a patent for the separator only. I had uses in mind for it's use for cleaning of oil spills, removal of organics from drinking water, enhancement of gas-liquid reactions. In my patent application I made 20 claims which included as the last claim it's use as a Tarsand separator and I was later shown an American patent in my name and assigned to Shell Internationale Research Maatschappij and I went on to other areas of interest.

Shell Canada suddenly terminated my career in August 1982 with no prospect of joining another Oil Company and I spend the rest of my life in a scientific wilderness having no Curriculum Vitae then my successes in Shell Canada Research.

In 1984 I brought this dormant technology to the attention of Brian Mulroney when before the election he claimed that he would solve all of our problems by supporting Canadian research.

I got a nice letter (attached) and a Christmas card from Mulroney but a few months later I got a brush-off from Tom Siddon (later of Fisheries and Indian Affaires fame). In 1988 when Mulroney was up for re-election I wrote him again but this time he did not even acknowledge receipt of my letter. I tried to reach Lucien Bouchard when the Valdez disaster took place but he was obviously too busy with his Bloc Quebecois plans to pay any attention to the environment.



(13)

Next came the Gulf Super Oil Spill. Having had no success with Canadian politicians I decided to write to the Dutch minister of the environment: Alders, in my native language. I told the minister about my research and that I had intended to use my "schuimspaan stuw" not only for oil spill clean-up but also for my old ideal of cleaning up the Rhine river as well as the removal of hydrocarbons from the surface of the contaminated groundwater in the most Qwestern part of the Low Countries. Again I have not heard from that minister!

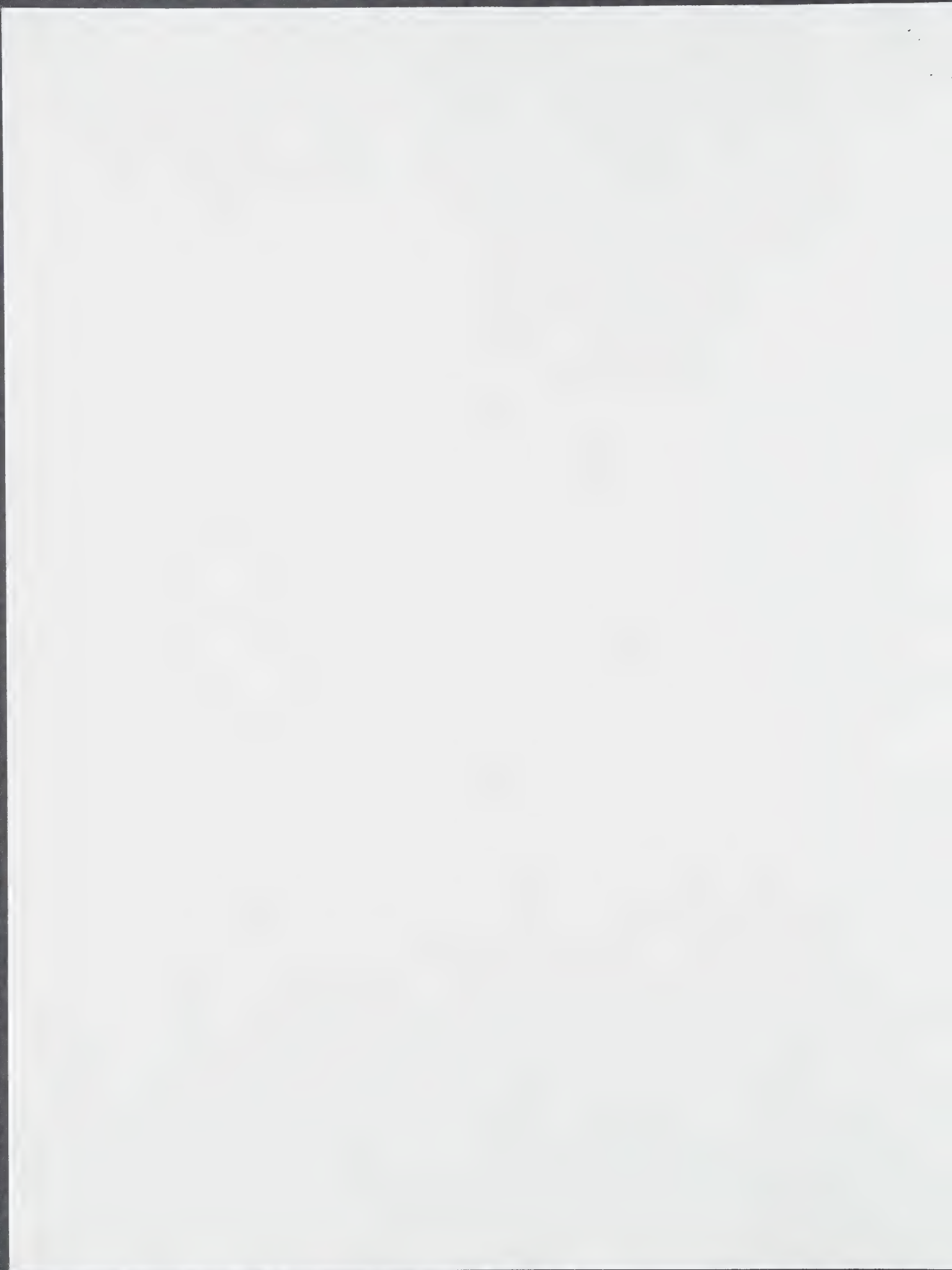
You must have heard from Pter Sarvos that I had objections to the un-scientific introduction of Ferrocene in Pureflame furnace oil. My last FAX to him was written in the night from Thursday Jan 17 to Friday Jan 18 and was typed and faxed by my wife on Friday morning. While writing that memo I discovered the mechanism of the chemically reducing action of a stream of electrons supplied by the ignition spark. Later that day Tom Evenden of Thertmoshell came and I asked him to move the spark gap as far back as possible to avoid the spark being "snuffed out" not by the blower as Shell people believed but by the stream of electrons pouring into the conducting fuel droplets. This solved my problem and I hope not to receive any more Ferrocene containing furnace oil. During start-up, however, a buzzing effect takes place as in a U-1 engine which creates a puffing overpressure in the exhaust pipe which was noted by Tom Evenden as lack of draft in my chimney.

Which brings me to the point of this FAX:

Shell should experiment using a heavy current of electrons to snuff out the burning oil wells in Kuwait. A heavy conductor carrying a negative potential as against the well head steel being positive. Once in place a current of electrons may reduce the droplets in a similar fashion as in my furnace!

P.S. On Januari 22 Prof Peter Preston of Heriot-Watt University in Edinborough, Scotland spoke to the graduate students of Prof Brook of the university of Toronto about Organometallics and Coordination Compounds in Organic Synthesis. He called the Ferrocene polymerisation reactions "fun-chemistry" and showed that highly carcenogenic Poly-nuclear Aromatics are formed. I was the only one in the audience who did not think that this was "fun-chemistry": the soot-balls formed in my furnace are filled with highly aromatic fluid. The Combination of conductivity created by the addition of Ferrocene (a polymerisation catalyst) and a stream of electrons convets the unsaturated components of the fuel into aromatics.

On Saturday of that same week I heard an interview by Jay Ingram of CBC Querks & Quarks of Prof Moscovitz of the U of T. He was speaking about 60-Carbon sootspheres called

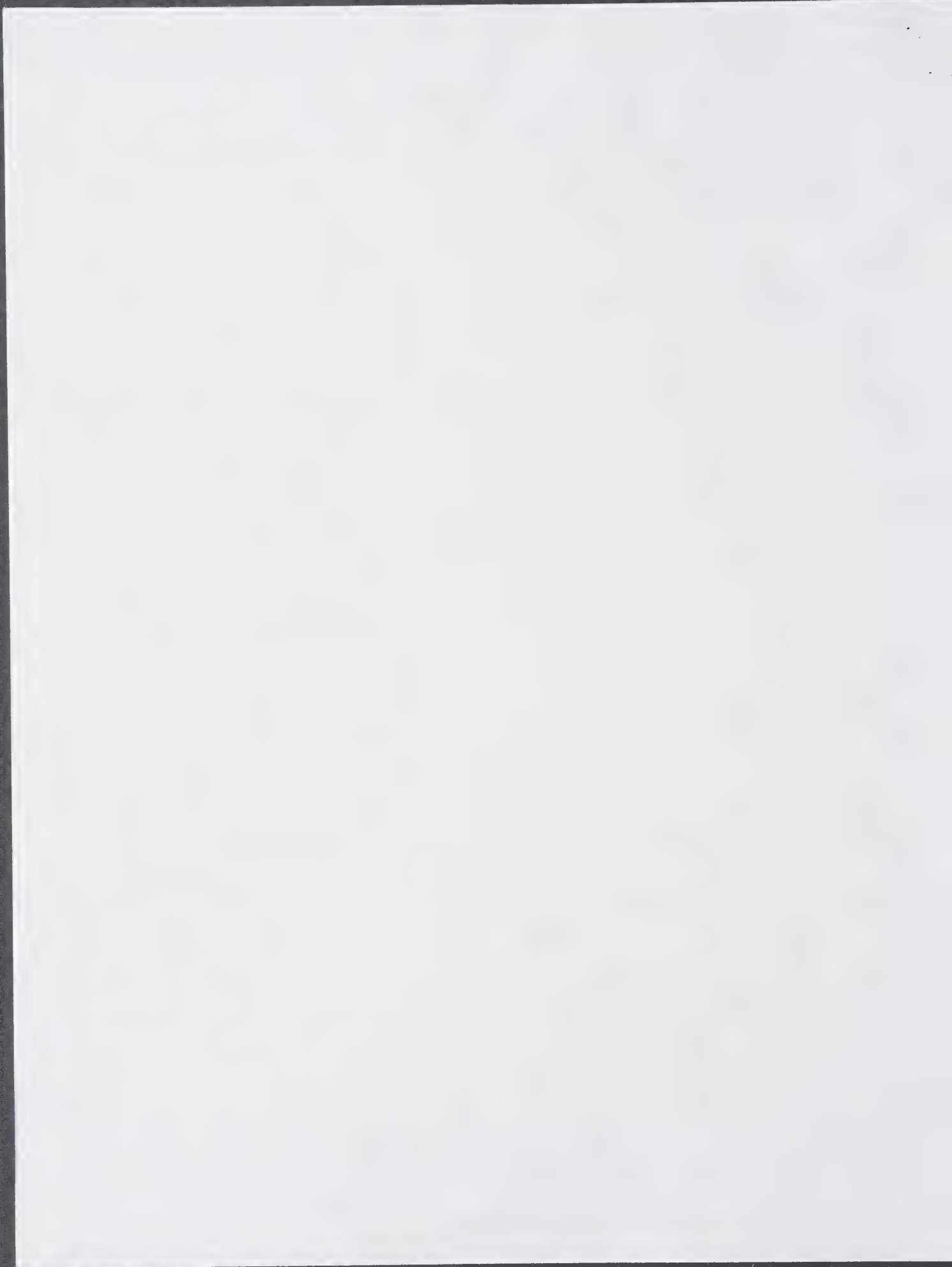




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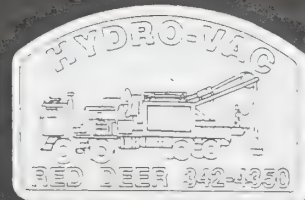
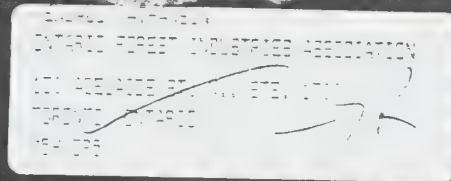
Geodisites ~~of~~ Buckminster-Fuller's geodesic domes and  
popularly called "Buckey Balls". I think that we have in  
the soot-balls infinite "Buckey Balls": the ultimate  
poly-nuclear.  
I will make samples available to both professors.  
AU

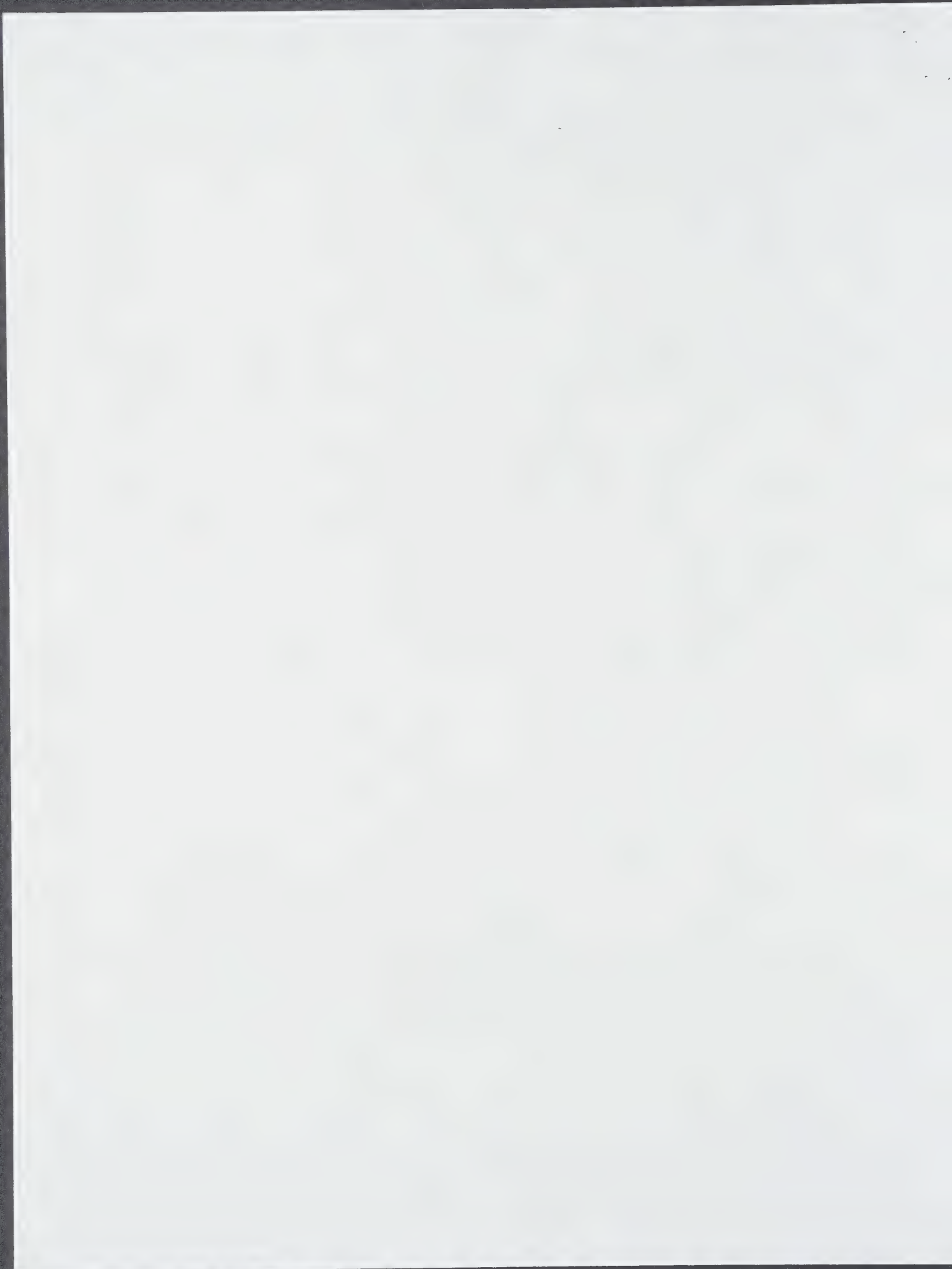


# ALBERTA OIL & FORESTRY REVIEW QUARTERLY

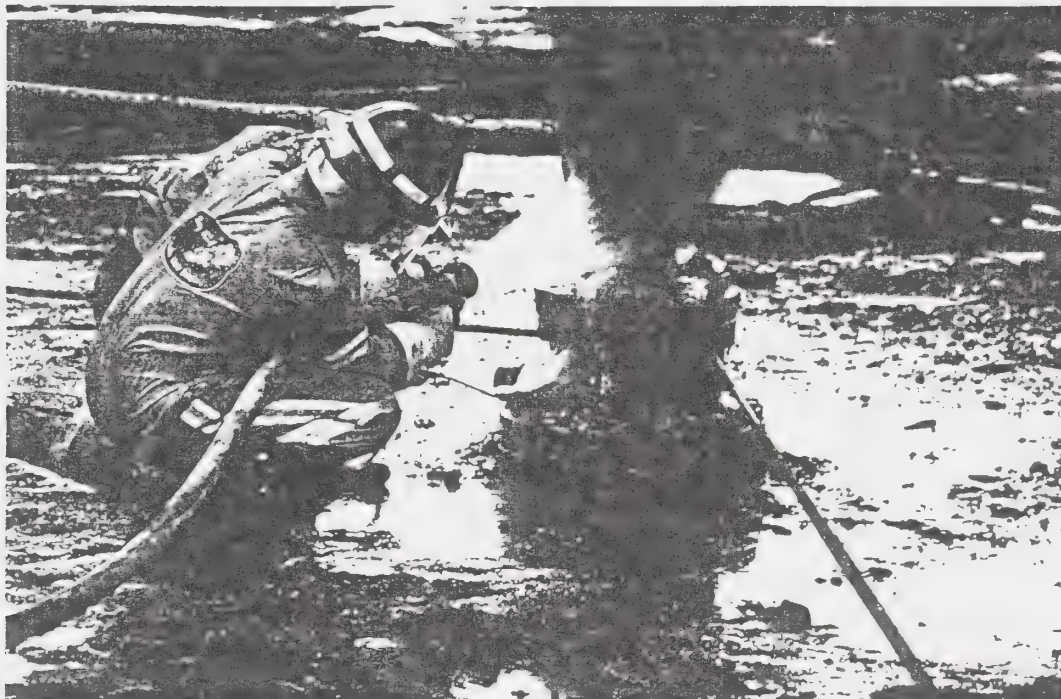
15

Volume 3, Number 3  
Summer 1991





# DOWN UNDER



## Risky Business

While one firefighter cuts the bolts off the wellhead, another hoses down the well.

# Kuwait: A Nation In Flames

In the aftermath of war there is an environmental disaster to clean up

*Special To Oil & Forestry By Kevin Blades*

For most people the war in the Middle East was over this spring when Iraq capitulated to the military superiority of the Allies. But for Mike Miller and his company, Safety Boss, the real war had just begun.

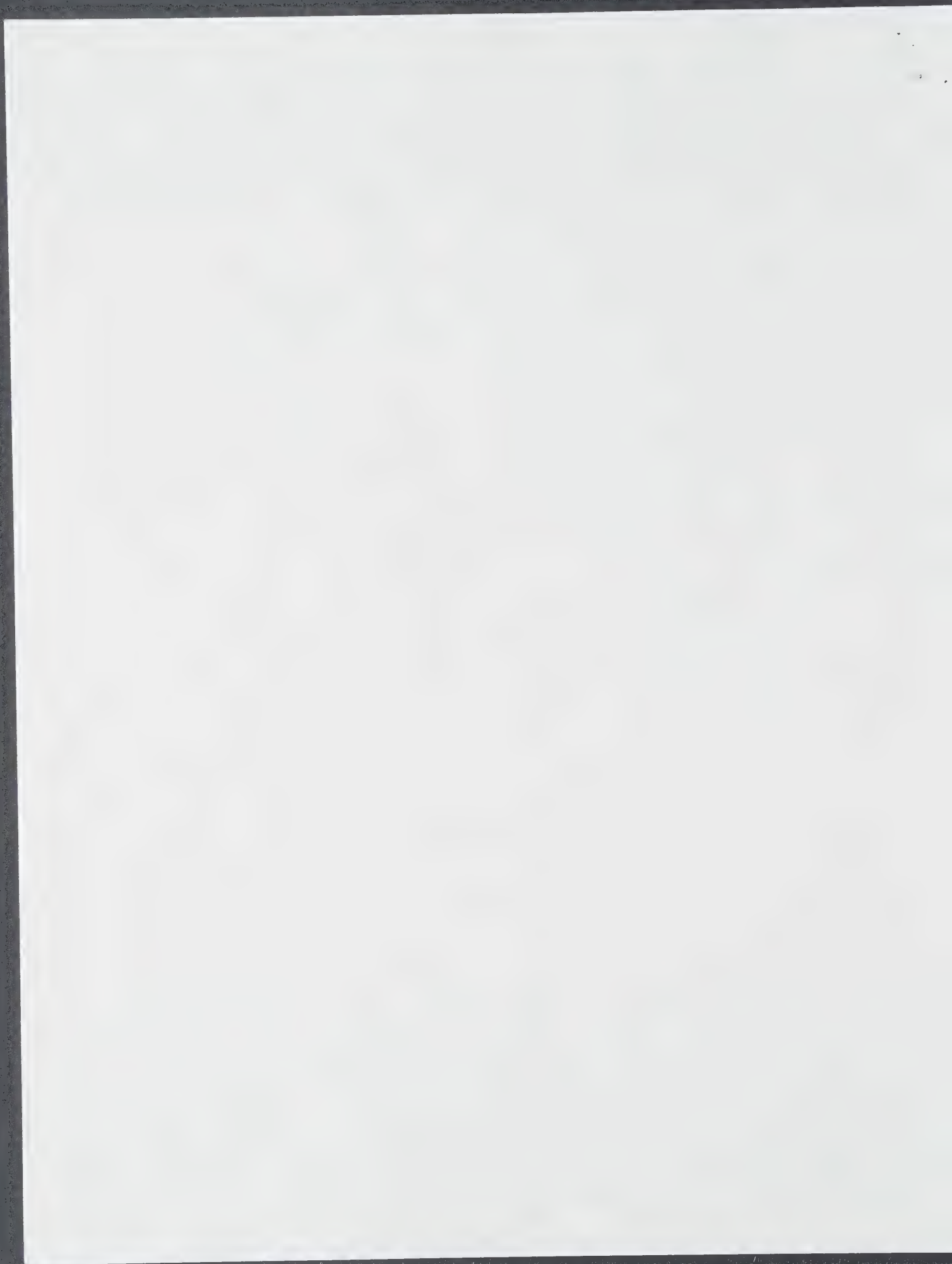
Safety Boss is a company that extinguishes well fires and in Kuwait the ravages of a retreating Iraqi army gave Miller more work than he ever thought he would see in a lifetime.

In late March and early April Miller, his personnel and his equipment were flown out of the Calgary International Airport in a C-5 Hercules to fight the fires raging in Kuwait. In early June, Miller was back and describing his experiences to an audience of 450 at the Calgary Convention Centre.

Miller donated the proceeds from the luncheon to the Alberta Children's Hospital Burn Unit.

Right from the start the operation was unique. The equipment loads on the C-5 were two of the heaviest ever taken on the aircraft. The shipments contained three crews, three fire trucks and enough support equipment for a year in Kuwait.

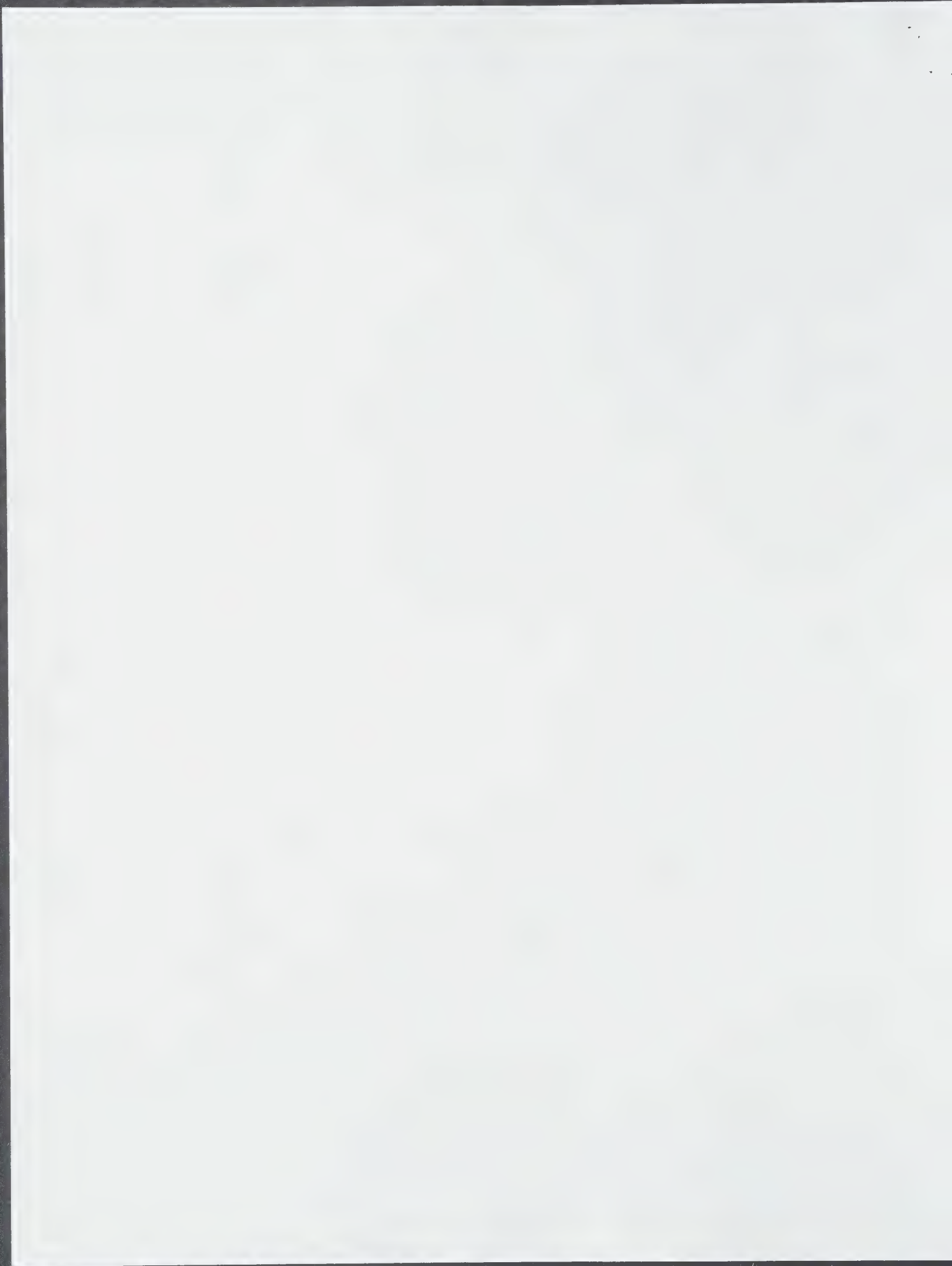
While preparing to land in Kuwait the airplane was engulfed in the thick, black smoke that is the airspace over Kuwait. Visibility was very limited until the airplane was fifty feet off the tarmac, Miller told the audience. Getting off the airplane was just about the last time Miller was clean until after he left Kuwait.





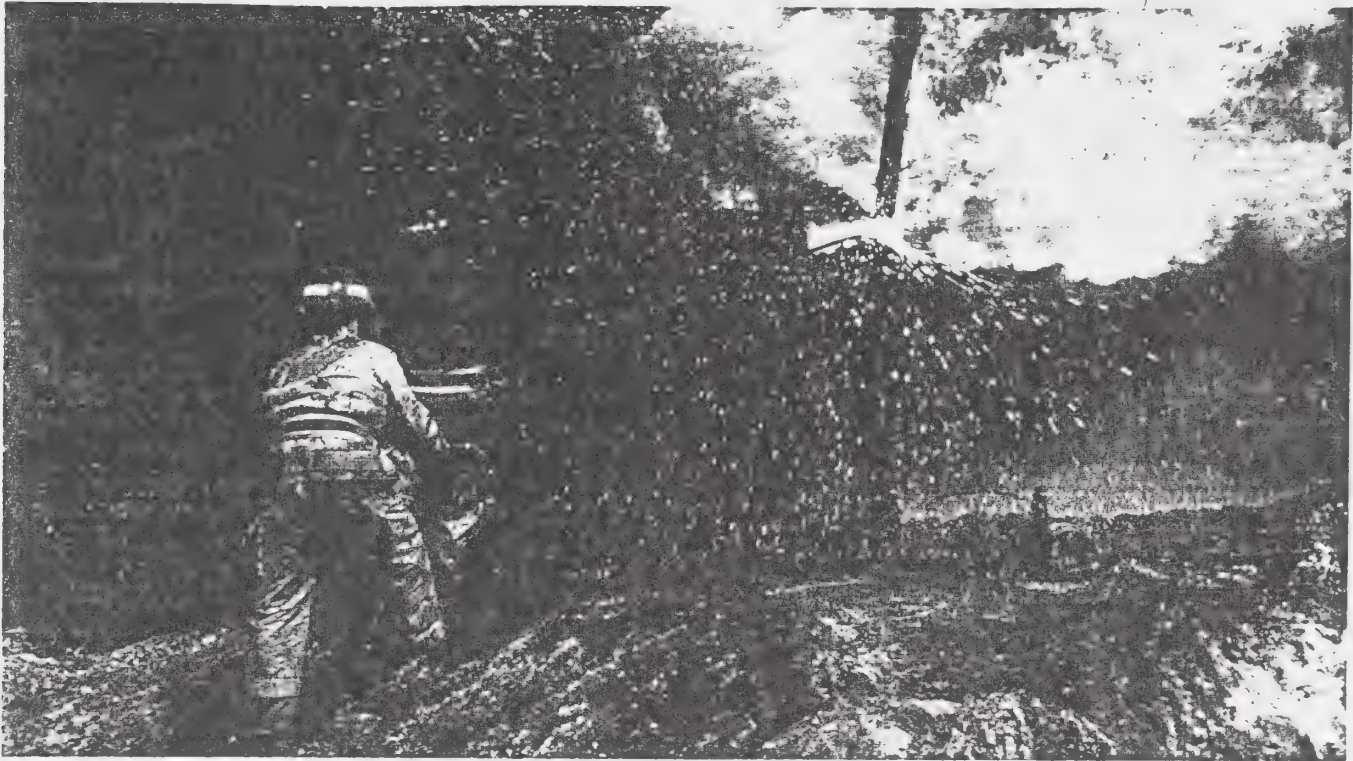
## **Risky Business**

While one firefighter cuts the bolts off the wellhead, another hoses down the well.





*see other enlargement 17*



### Hot Stuff

Using a magnesium lance a firefighter stands a safe distance away from the ferocious heat a damaged well while his partner stands by with a fire extinguisher.

After arriving, the firefighters drove off to the area where they had been assigned to put the fires out. On the drive out, the Canadian firefighters got a first-hand glimpse of the total destruction and vandalism the Iraqis had wrought upon the country they had occupied.

"It was amazing to see hundreds of fires everywhere you looked," Miller said. There were thousands of barrels a day being spilled onto the sands and being burnt. There is oil on everything."

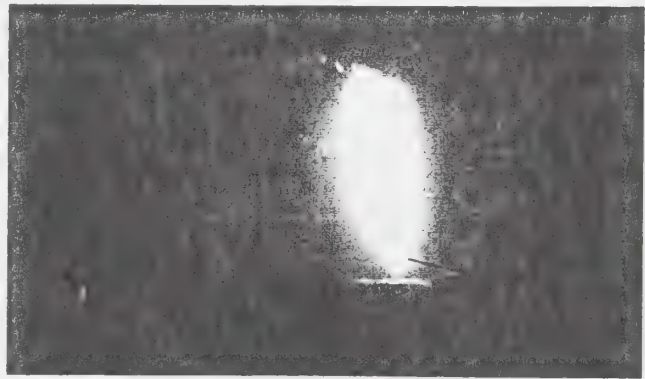
To highlight this remark Miller showed a series of slides: one showed a black desert with clean white tire tracks outlined on the sand. Another photograph showed a two-mile long lake of oil in the middle of which the flare of a burning well spewed its orange plume into the sky.

Miller estimated that this well will be a major construction job and take a number of months before being capped.

### A High Risk Job

Miller detailed his talk with descriptions of the numerous car wrecks caused by the oil on the roads and live munitions left lying around the desert. At one time, while scouting a well to be put out, Miller almost drove over a live cluster bomb that had been dropped by the Americans. It was so covered in oil that it had blended in with the ground. Only when he had parked right beside it did Miller realize what it was.

When the Iraqis were retreating not only did they blow up wells, but they also destroyed all the identification on the wells, Miller said. With close to 1,000 wells to cap, this



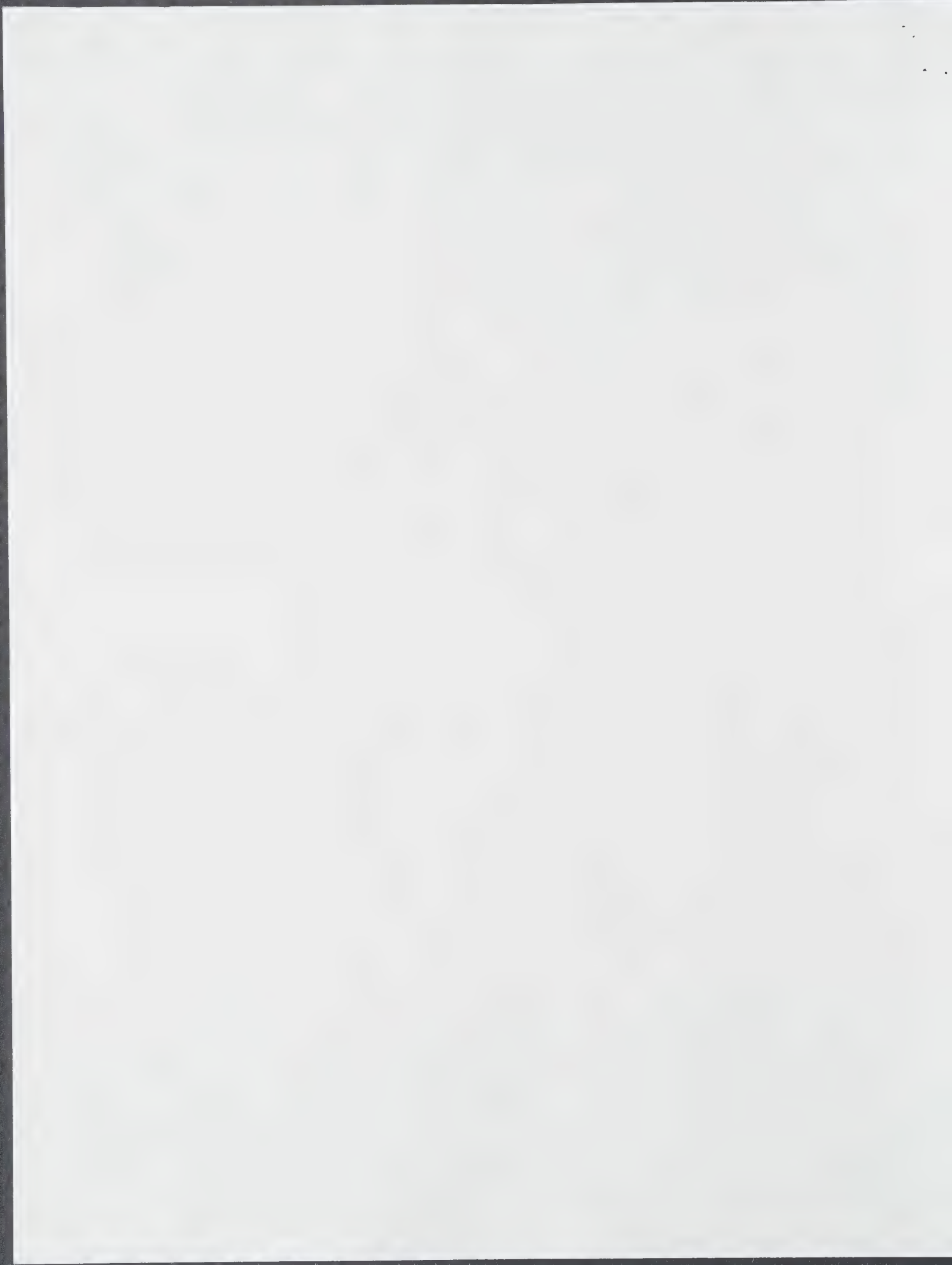
### Midnight At Noon

An abandoned Iraqi tank guards a burning well. Note truck tail lights, bottom left.

made things extremely difficult for the firefighters. Miller said that sometimes they would cap a well and it would turn out to be the wrong one.

Miller estimated that there are approximately 930 wells in need of work. Of these, 650 to 700 are burning and some of these are 20,000 - 40,000 barrel a day wells. The smoke from the burning wells has turned all of Kuwait into a smoking zone. It is so dark that in the middle of the afternoon vehicles are driving in nighttime conditions with a visibility of barely fifty feet. Miller's slides showed a pitch-black scene lit only by the bright orange flares jetting into the sky.

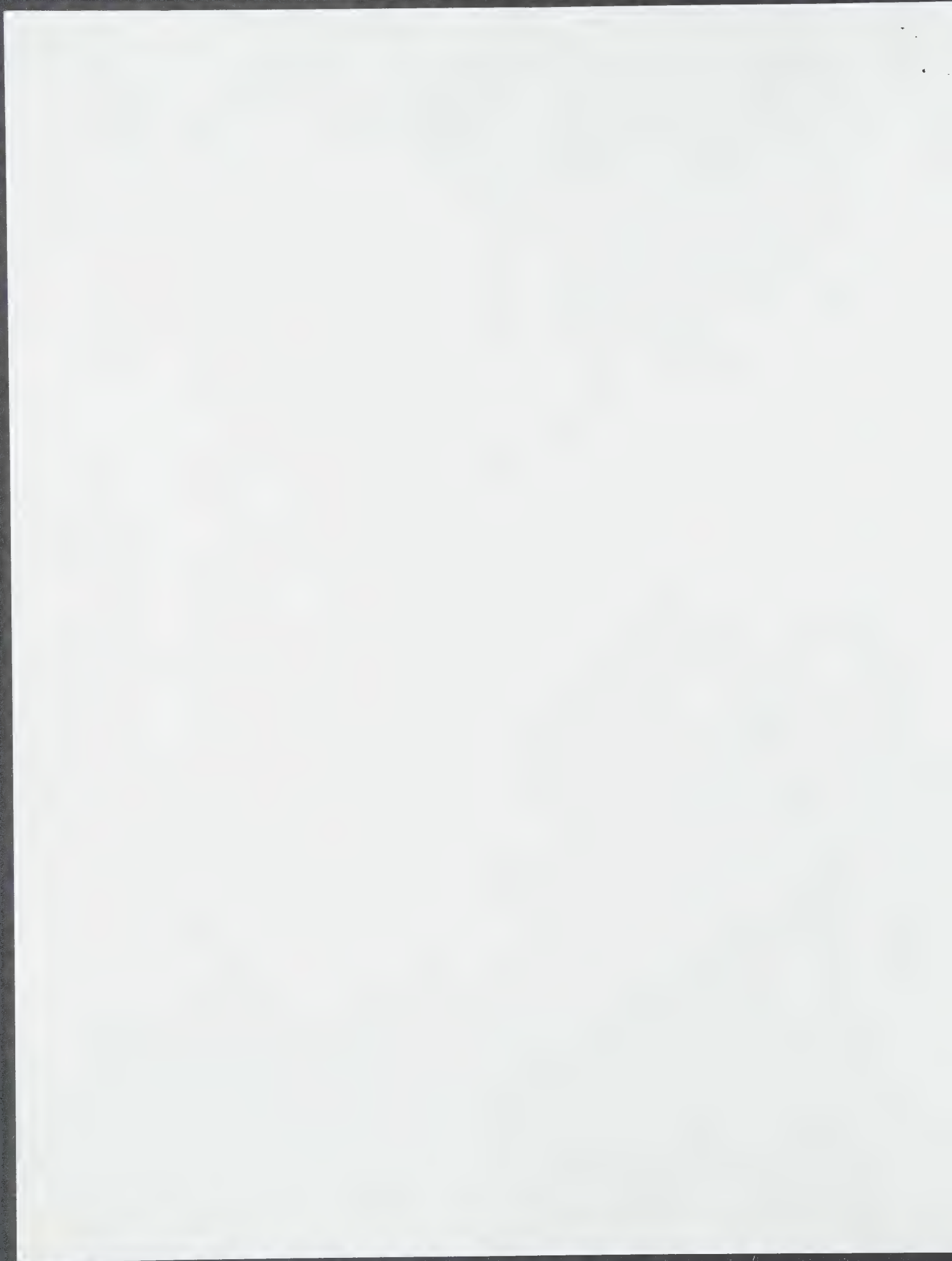
To combat and cap the burning wells Safety Boss developed a number of new techniques. Putting out the





### Hot Stuff

Using a magnesium lance a firefighter stands a safe distance away from the ferocious heat a damaged well while his partner stands by with a fire extinguisher.



fire is the easy part, Miller told his audience. It is the rest of the job that is difficult and dangerous.

Two firefighters dressed in full bunker suits will approach the well from the lee-side, one armed with a cutting torch and another with a fire hose continuously spraying the wellhead and his partner with water to protect him from the extreme heat of the well. The firefighter with the cutting torch will cut the wellhead below the damaged section while his partner sprays the surrounding oil with water to prevent ignition.

After this is accomplished the damaged well is capped and the flow of oil from it stopped.

How To "Trash" A Well

Sometimes this is done using whatever is available.

"We will use what we call 'trash' to stuff into the cracks and seals. Trash is literally that - polypropylene ropes, old gloves, whatever material comes that comes to hand," Miller said, adding, " This stuff has held under thousands of pounds of pressure."

After capping the well, it is on to the next one without much rest in between. In the time that Safety Boss has been in Kuwait, thirty-three wells have been capped by the company. These wells have been the easy ones, the ones that weren't burning at the time of inspection, Miller said. Now safety Boss is going to start work on the harder projects where, instead of a well capped each day, each well will take weeks or months to put out and cap- and there are hundreds of wells still burning.

"Normally, after putting out a fire it means a night out in the pub, but not in Kuwait," Miller said. To demonstrate his point, Miller showed a slide of the Kuwait skyline with several flares burning in the distance.

For entertainment between capping the wells, the crews have taken to exploring the bunkers and caches left by the retreating Iraqis. Guns, hand grenades, artillery shells, even a four-barrelled anti-aircraft cannon have made their way into the Safety Boss camp as mementos. One member even rescued a Russian six-track truck from the desert. The only problem with the truck was a dead battery.

A Long Way To Go

In a country woefully short of supplies and equipment this truck was a gold-mine for Safety Boss - it was drafted into use for transporting men and equipment until the Kuwaiti army commandeered it from the company for similar purposes.

Since discovering that there are working vehicles sitting around, members of the company have rescued and repaired other vehicles from the desert for their use.

In the confusion of postwar Kuwait the firefighters have managed to hang onto the vehicles long enough to accomplish some of the tasks facing them.

Miller estimated that the job in the ravaged country will last for a year, if not longer. Even with all the firefighting companies - old and new - coming into Kuwait, Safety Boss still has a lot of work ahead of them, Miller said. O&F



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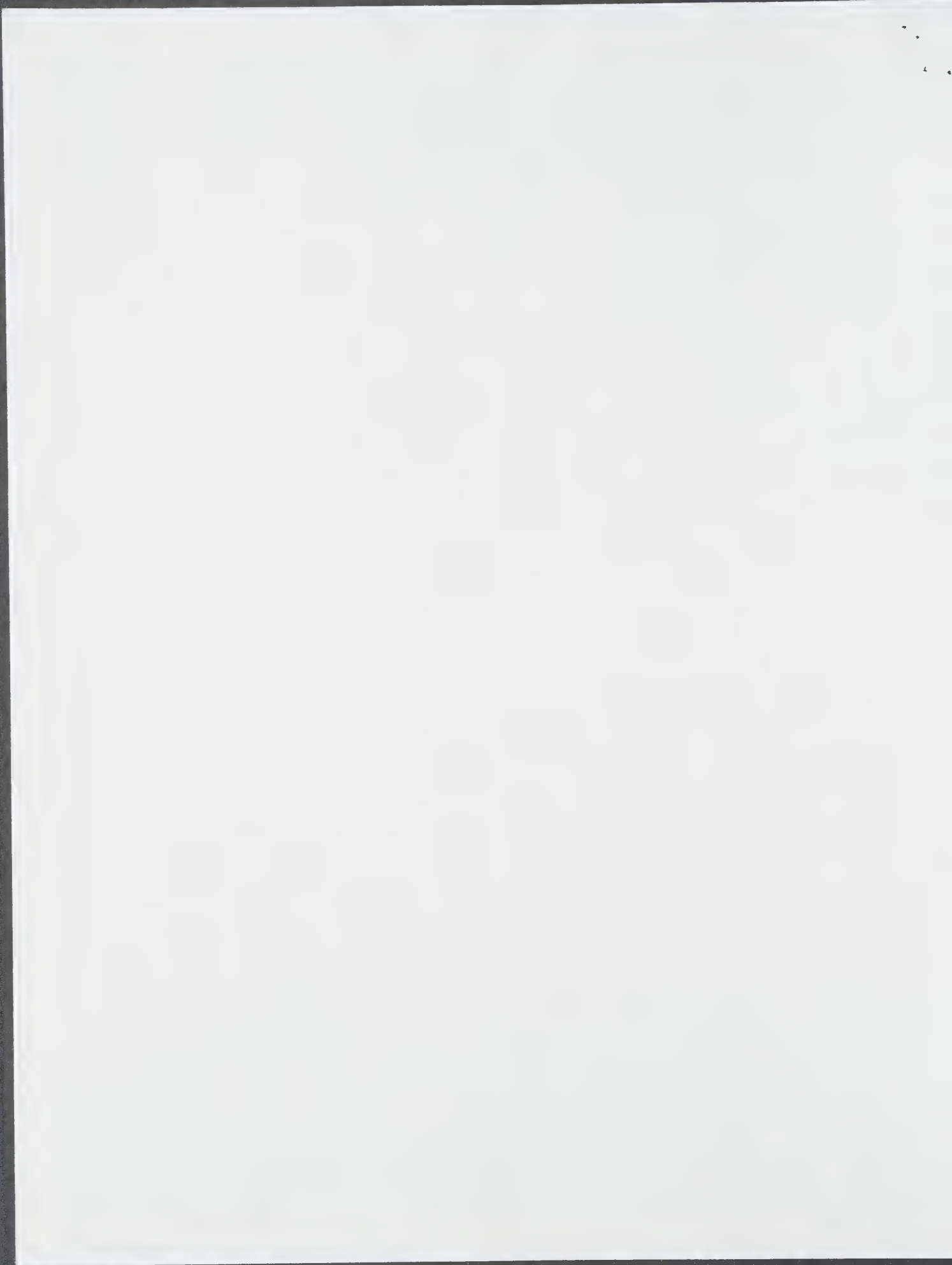
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October 6, 1992

Fax 470-2292  
7807

To: Thermoshell Inc. Markham  
From: A. Verhoeff, 243 Indian Grove, Toronto  
Re: Account 31112758

---

Please close the above account. I am changing to Consumers Gas heating.

The Consumers contractor claims that the fuel has to be removed (the fuel tank is build-in and would require major demolition).

When I capped the fuel line I took a 2 litre sample. It is red-brown and obviously polymerized. If the tank has to be emptied Shell may want to take the fuel back, I hate to have this oil fall in the hands of the competition.

Please confirm the cancellation of our account and indicate if the tank is better left full, filled with water or its fill cap outside sealed.

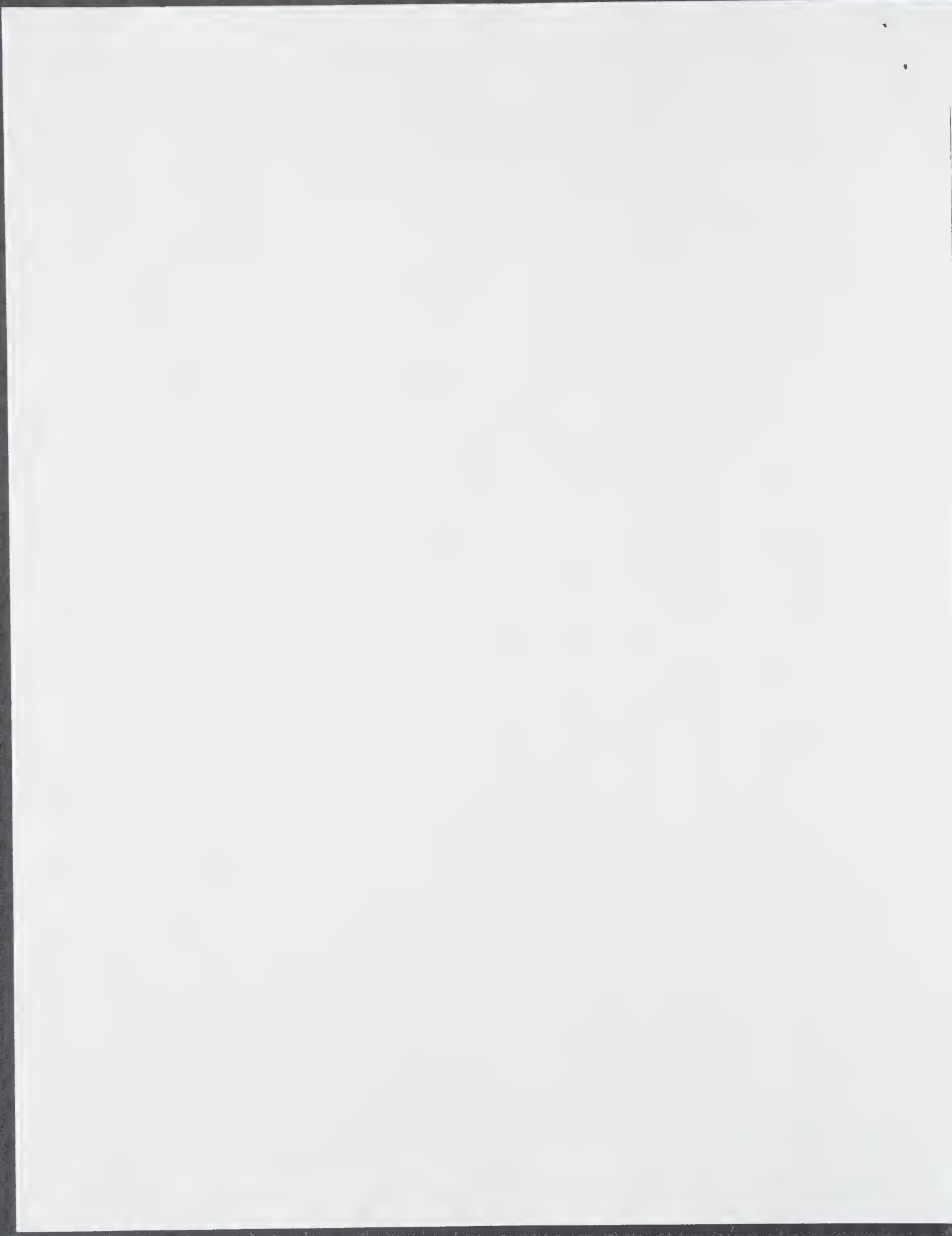
I will report my experience with Shell Furnace oil to Bill Hall in the Shell Canada office in Calgary.

I can be reached at Fax 368-5445.

AV

\*\* TX CONFIRMATION REPORT \*\* AS OF OCT 6 '92 15:03 PAGE.01  
OF 1A

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# EMPLOYMENT AGREEMENT WITH SHELL CANADA LIMITED ("SHELL")

AL  
1

For the purposes of the conditions stated below, "Shell" where applicable includes Shell Canada Limited together with its associated, affiliated and subsidiary companies.

I have been given, have read and understand Shell's policy statement on the Employment Relationship and, in consideration of my employment by Shell I agree that:

(2)

## CONFIDENTIAL INFORMATION

1. (a) Neither during my employment nor at any time thereafter will I disclose or make personal use of any information belonging to Shell which I know or ought to know is considered by Shell to be confidential. Confidential information shall include, but not be limited to, trade secrets, formulae, processes, designs, engineering and scientific knowledge, information concerning exploration and land or lease acquisition programs, market knowledge, data and information confidential to associates, customers and suppliers, financial and statistical data, and production and other cost information.
- (b) Shell will not require of me, and cautions me not to disclose, information confidential to my previous employer(s) which I am obligated to protect.

## CONFLICT OF INTEREST

2. (a) Except as authorized in writing by Shell, I will not acquire during the period of my employment, either in my name or in the name of another, any interests in oil, natural gas, sulphur and related hydrocarbons, uranium, thorium or other minerals; or interests in any chemical venture; or any securities or rights in any organization which owns or trades in any such interests, except for securities listed on a recognized stock exchange.
- (b) I will make written disclosure of all such holdings which I may have at the date of employment with Shell.
3. Should any corporate or business undertaking or activity in which I now participate or hereafter become involved, on my own behalf, financially or otherwise, appear to present a possible conflict of interest under Shell's policy, I will promptly disclose the facts to my supervisor so that a determination can be made as to whether a conflict of interest does exist. I will take whatever action is requested of me by Shell to resolve any conflict which it finds to exist.
4. (a) If, during my employment or as a result of my employment, I make any invention relating to Shell's business, I will advise Shell, and upon Shell's request, assign to Shell my interest and rights in the invention. I will execute all necessary papers to enable Shell to secure patents in Canada and in other countries for the invention.
- (b) Should Shell declare in writing that it has no interest in the invention, I will be free to develop it for my own benefit.

## TERM OF EMPLOYMENT

5. Unless the employment offered me is for a fixed term, I understand that my services are engaged for an indeterminate period. I may terminate my employment by giving notice to Shell, or Shell may terminate my employment by giving me reasonable notice. Shell may terminate my employment for cause without notice and without payment in lieu of notice. These conditions are subject to the requirements of applicable labour legislation and collective agreements.

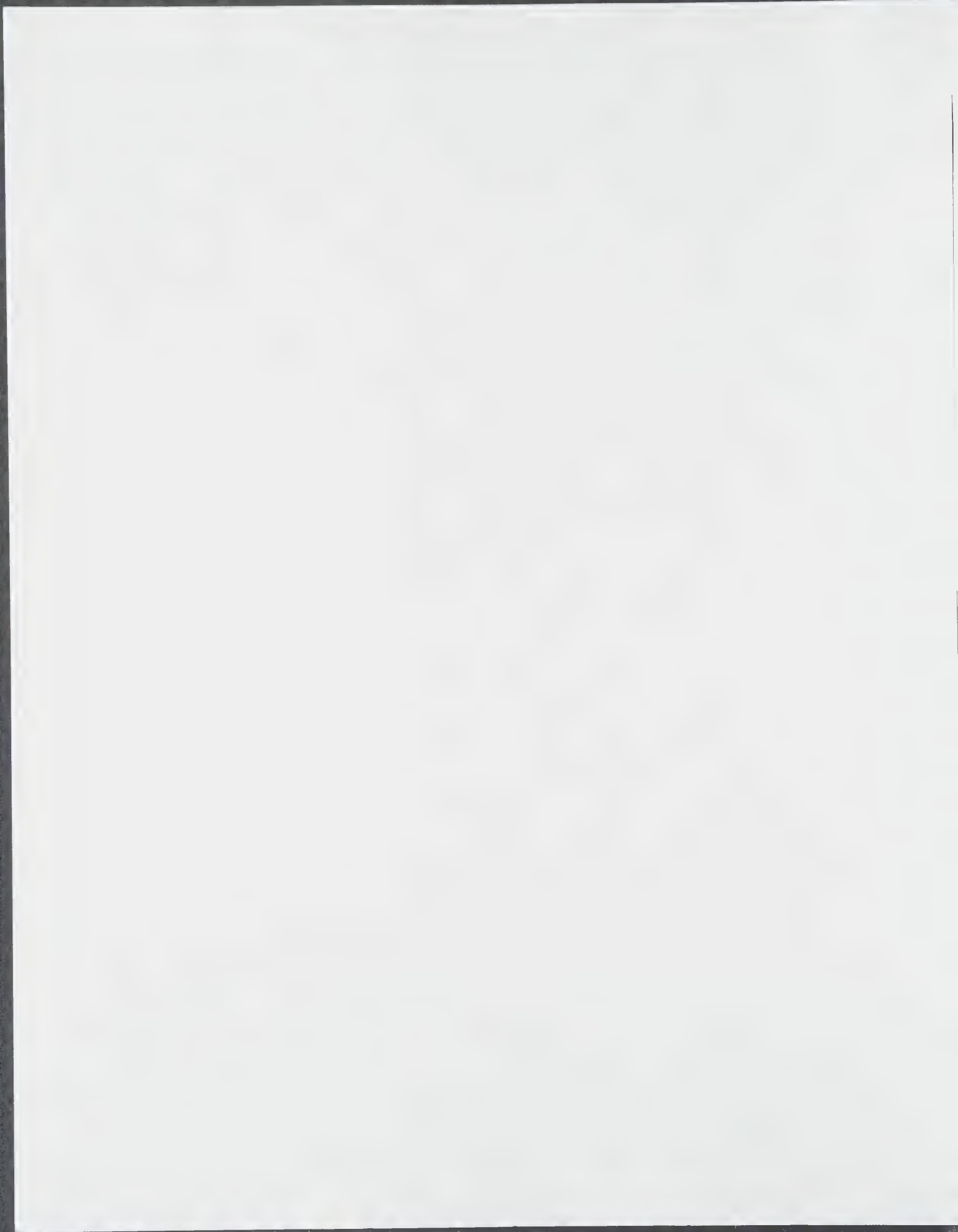
## ACKNOWLEDGED AND AGREED

WITNESSED

on \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_.

\_\_\_\_\_  
for Shell

\_\_\_\_\_  
Employee's Name (print)



Sometimes the atoms will not shift over to the other arrangement, even when they would find that arrangement more stable. Pure carbon is known in two crystal-line forms, graphite and diamond. Graphite is more stable than diamond at all temperatures, at ordinary pressure. But, fortunately for lovers of diamonds, they do not change spontaneously into graphite crystals. In a way not yet understood, some of the carbon in nature crystallized as diamonds, and now those carbon atoms are frozen in that arrangement and cannot shift over into the more stable arrangement (Figure 110).

# Crystals and Crystal Growing

BY

ALAN HOLDEN

AND

PHYLIS SINGER

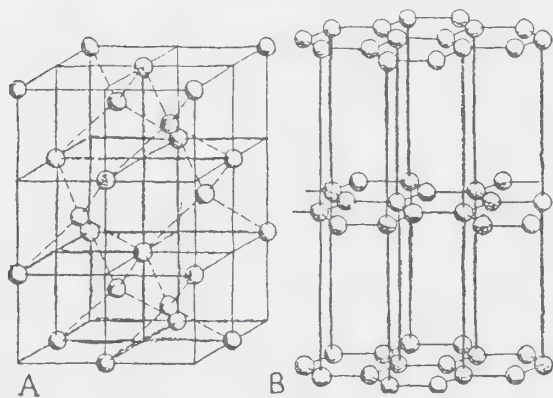
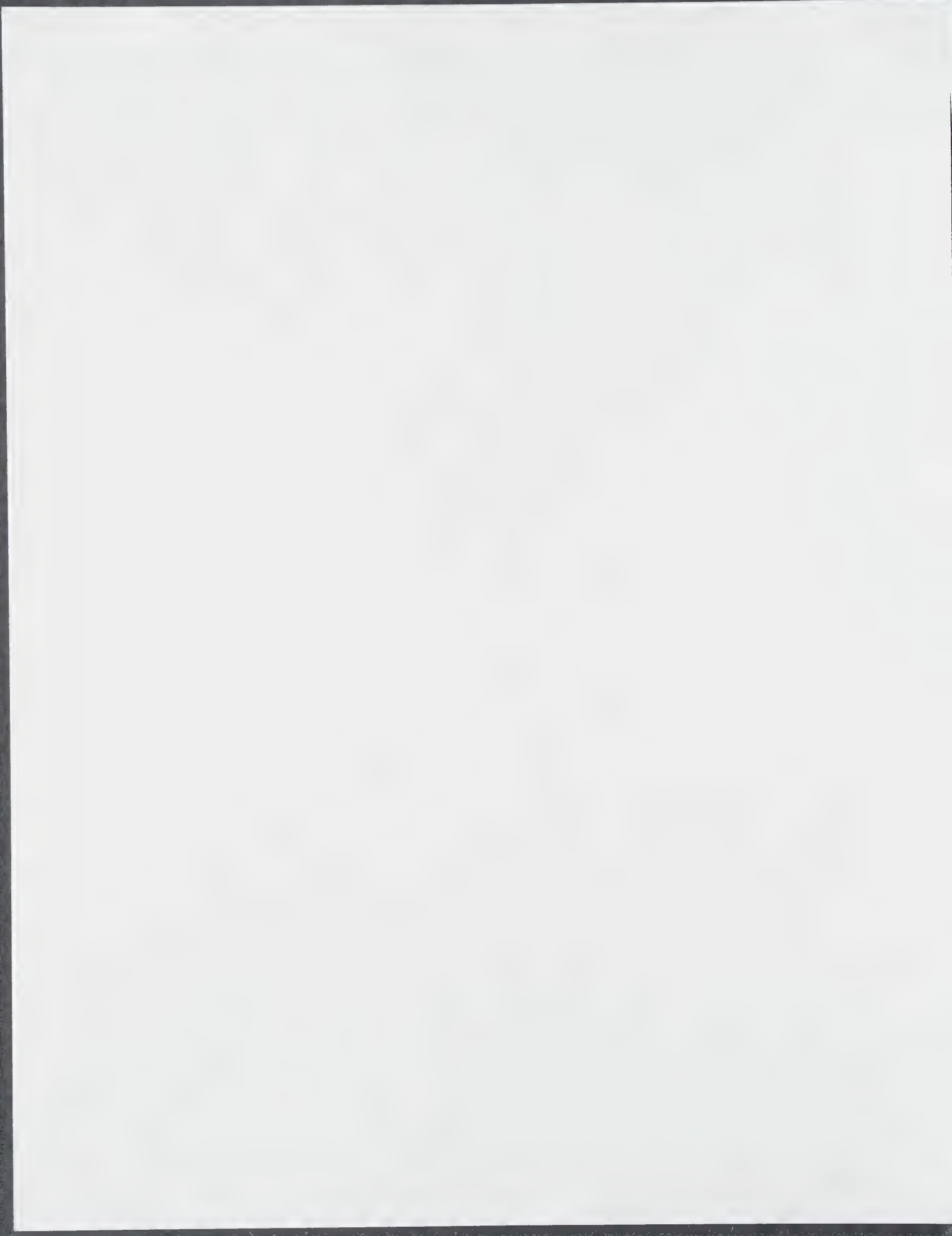


Fig. 110. Two CRYSTAL STRUCTURES OF CARBON. The arrangement of atoms in diamond (A) puts it in the cubic crystal system. Each carbon atom is tightly bonded to four others (Figure 96). You can think of any one atom as at the center of a regular tetrahedron, with four other carbon atoms at the four corners. In graphite (B) the carbon atoms are arranged in plane hexagonal nets; the crystal belongs to the hexagonal system. Each atom has only three near neighbors within its net, and the nets are spaced more than twice as far apart as the atoms within a net. Graphite cleaves extremely easily in the plane of the nets; diamond cleaves with much more difficulty but quite smoothly along "octahedral" planes.



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A 2

November 29, 1979

4

To B.W. RAYMOND

Subject COMMENTS ON CLAY COLLOID CHEMISTRY PAPER

This paper can only be described as exciting. It would appear that Mr. Verhoeff might well be on the verge of a breakthrough in describing the mechanism of separation, or rather - non separation.

Many of the phenomina described in the paper have been considered by other researchers but generally not as completely or lucidly.

Several research paths outlined in the paper should be pursued with vigour as they might well influence the extraction design. Among these are:

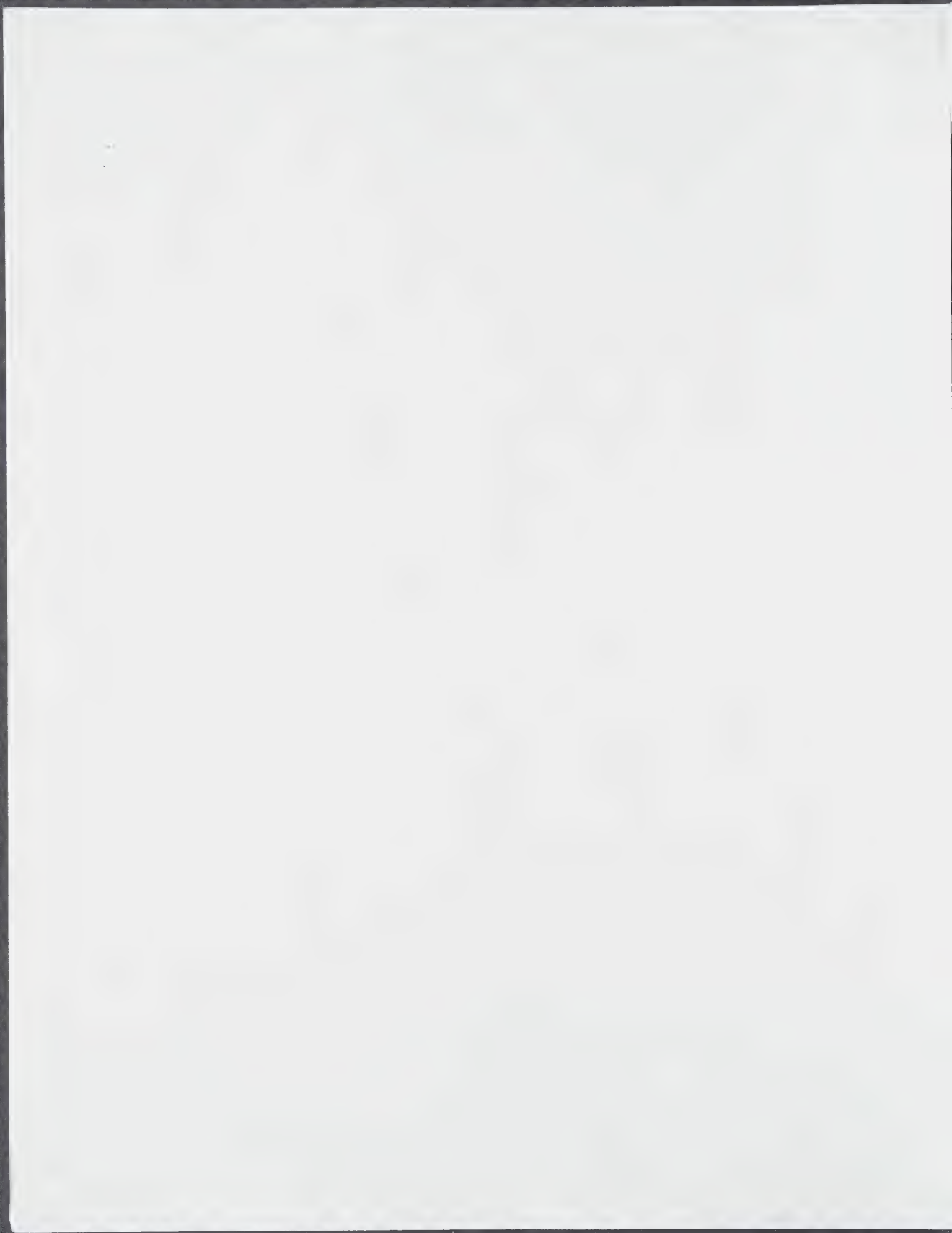
1. Quantify the effect of shear and specify boundaries of major effect on the oleophilic properties of the sheet silicates.
2. Quantify further the blanketing effect of the free cations on the molecular structure.
3. Investigate other (perhaps cheaper) cationic agents. This may be of particular importance as the price of caustic threatens to go out of sight.
4. Further investigation of possible chemical treatment of middlings, probably ignoring any chlorines or chlorinated hydrocarbons because of the adverse reactions in the upgrading plants.
5. Develop (if possible) some means of measuring, in a two or three phase solution, an accurate or trending measurement to predict processability. One means might be to measure the anionic or cationic charges in solution.

As a matter of interest, the directional impact of the theories advanced in this paper fit entirely with the single best extraction process tried to date - in the opinion of the observer.

Respectfully Submitted

  
M. R. Farries, P. Eng

MRFav



ZCZC TT0232

PP HHAG

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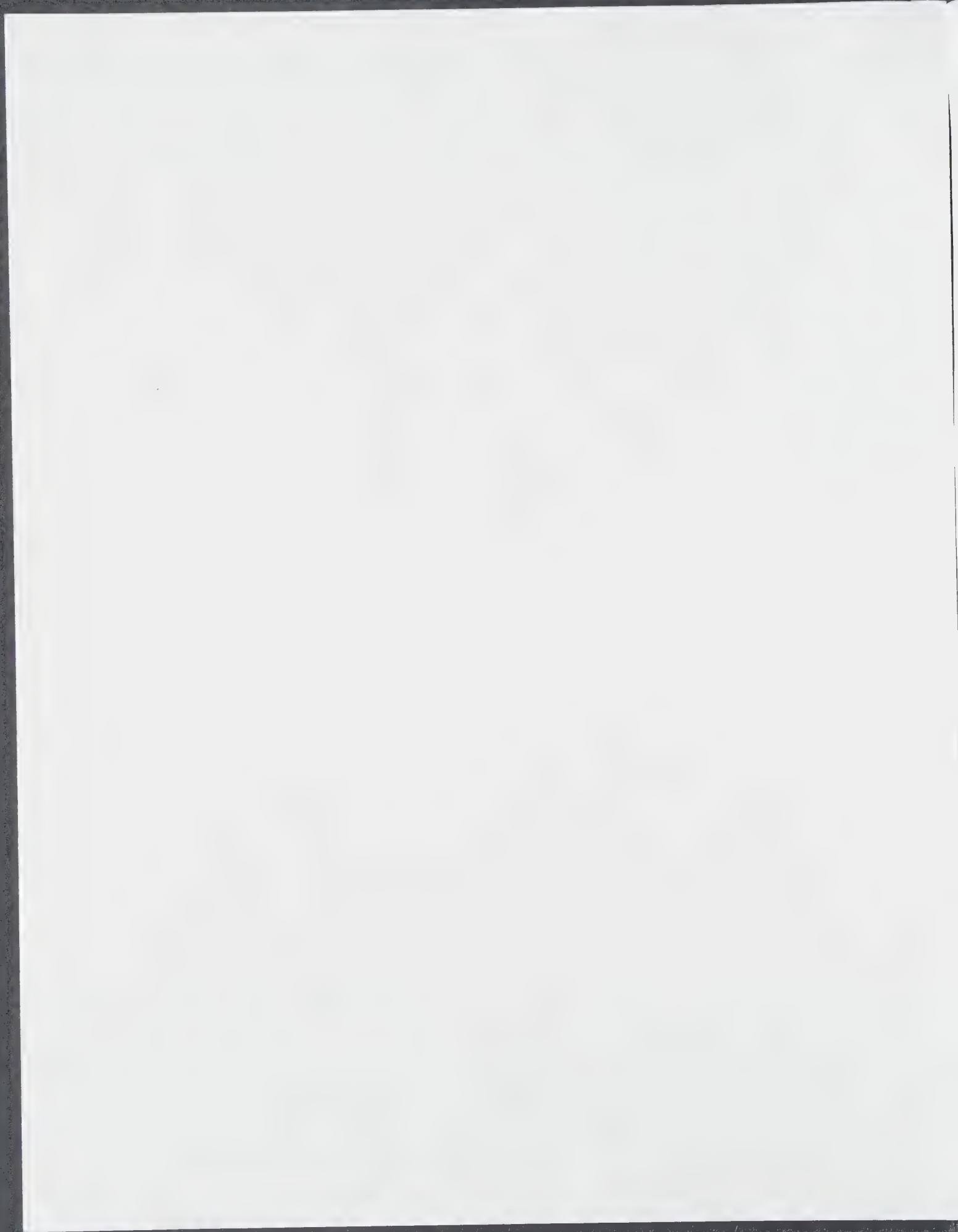
*-> A. Verbeeff*

*Files - PD.3*

*This is reference the report on Clay Colloid Chem. / Tar Sands sep*

*DS*

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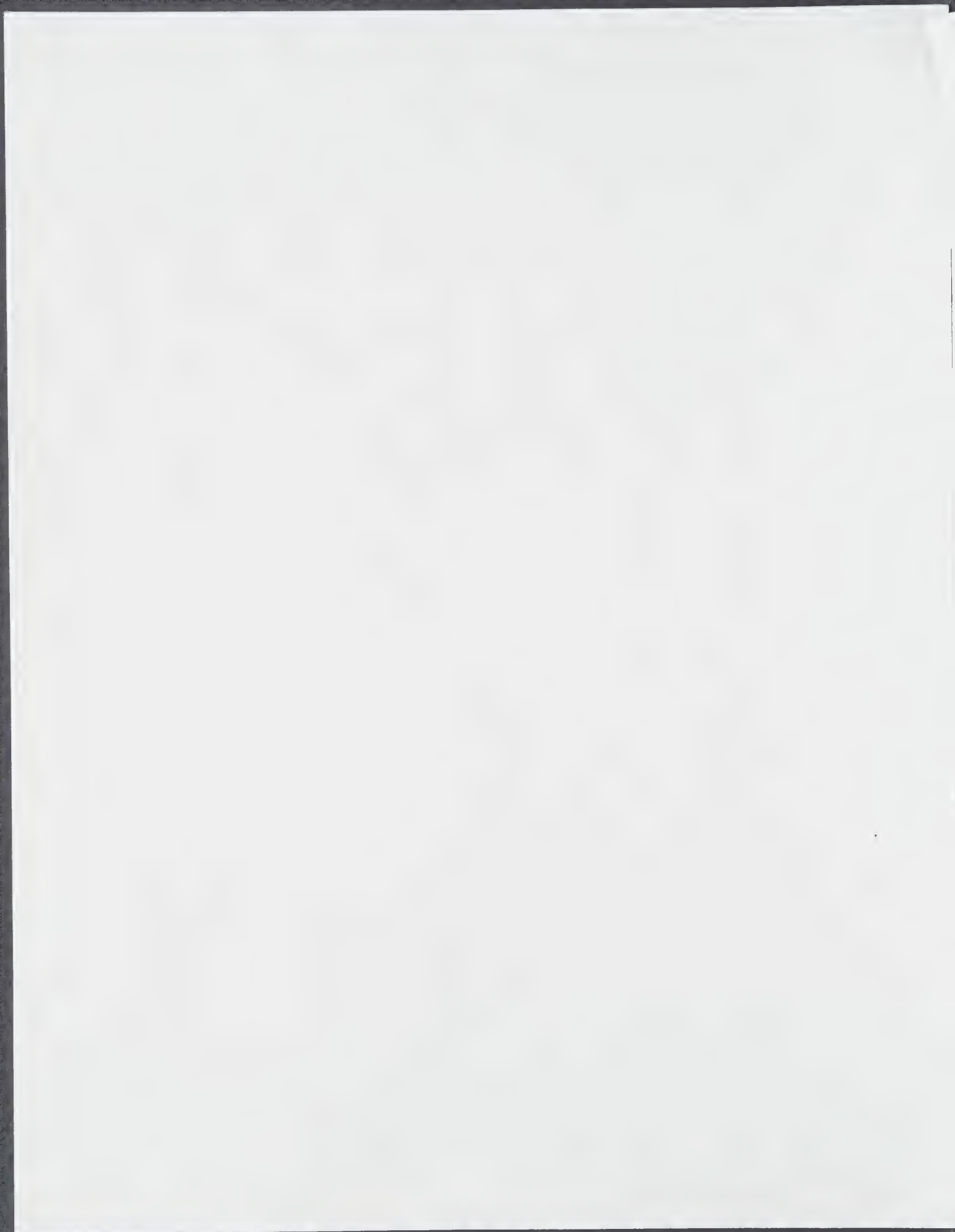


Drillhole for carrying out reaction (both biological and chemical) under a head  
of water.

This project is hard to define and it may be possible to combine our efforts with those of a University were the work maybe carried out by fourth year students. Therefor if we turn this budget case around and say how much money could be sunk into such an exploratory project we could ask for proposals from Universities to carry out our project in cooperation with ORC people.

No hole, no project:      no budget no hole.







Minister of State

Ministre d'État

Science and Technology  
Canada

Sciences et Technologie  
Canada

Ottawa, Canada  
K1A 1A1

JAN - 3 1985

Mr. Bram Verhoeff  
243 Indian Grove  
Toronto, Ontario  
M6P 2H4

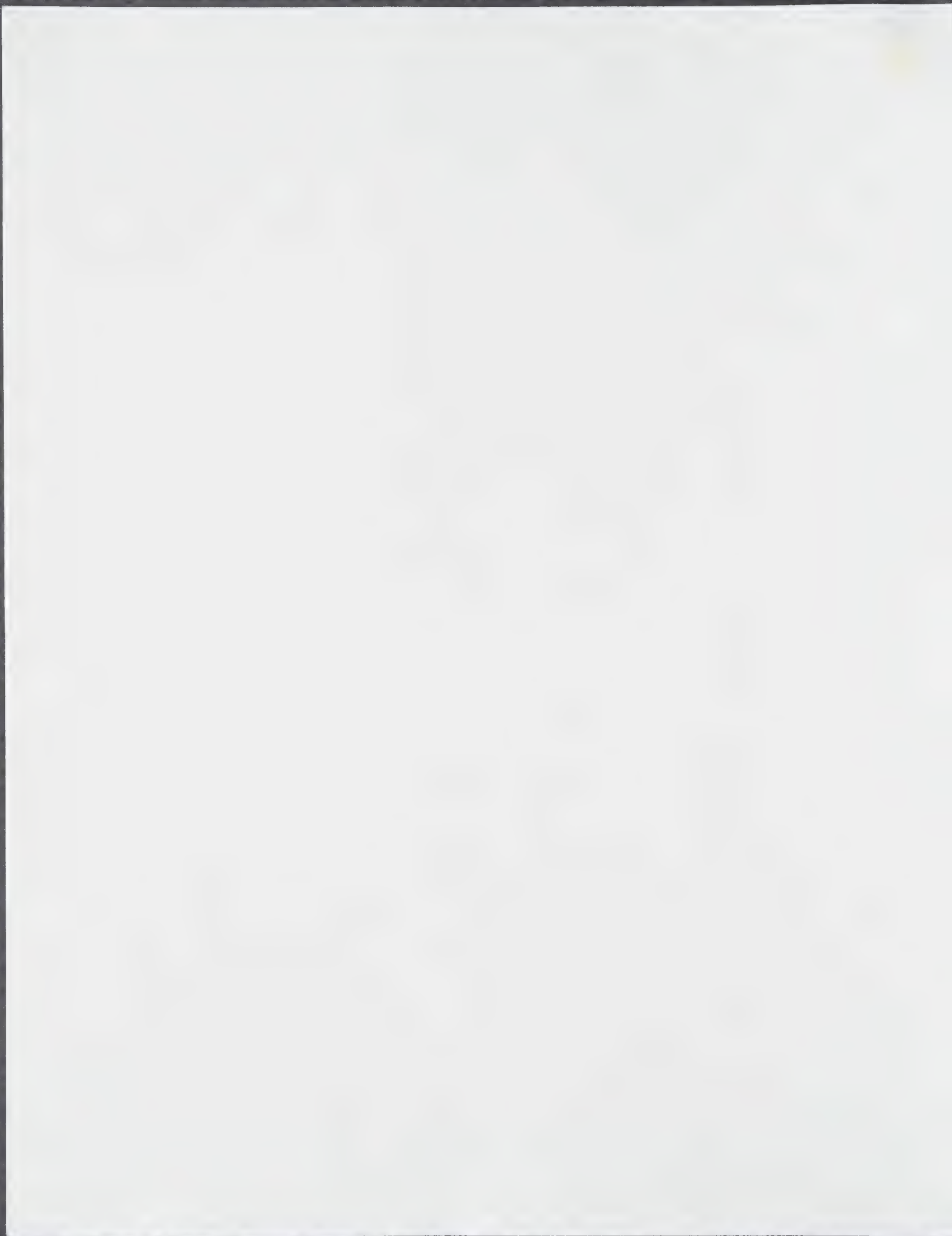
Dear Mr. Verhoeff:

I read with a great deal of interest your recent letter to the Prime Minister, in which you commented extensively on a range of research matters.

As the Minister of State for Science and Technology, I am committed to seeing that our research and technology efforts make a strong contribution to the economic renewal of our country. For this reason, I share your deep concern that the individual scientist or inventor must be encouraged and nourished as a vital national asset. His interests must be taken fully into account; and his viewpoints must be heard and appreciated.

It is quite apparent that your research work and recent discoveries span a number of fields. Without getting into the particulars of any one item, I would suggest you consider discussing your ideas with the appropriate technical persons in the following government bodies: the National Research Council of Canada, the Canada Centre for Mineral and Energy Technology, Atomic Energy of Canada Limited, and Canada Patents and Development Limited. I am sure that these organizations will be able to provide you with sound, technical advice on your work and with helpful suggestions on the most productive courses of action to follow.

Canada

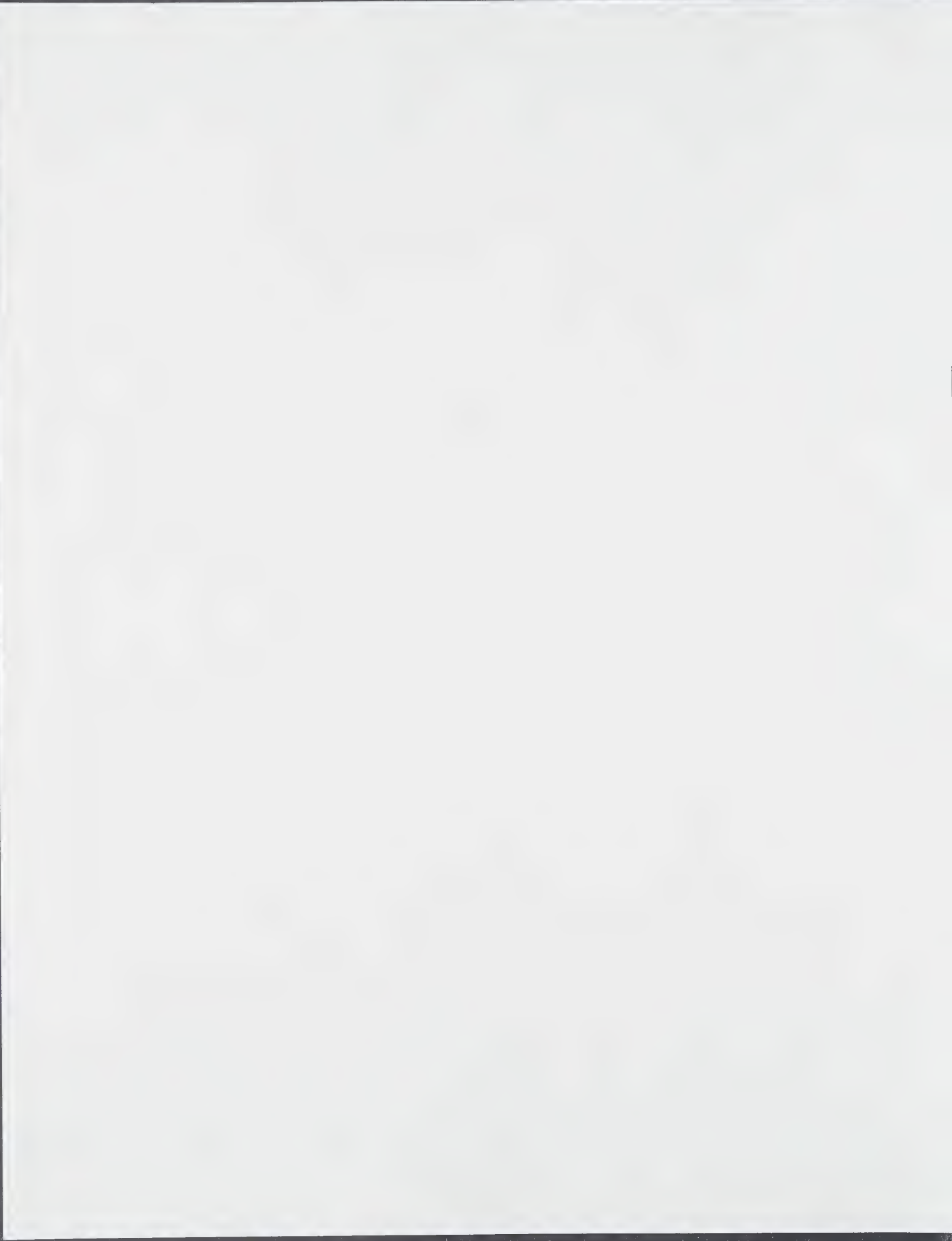


Thank you for allowing me the opportunity to have the benefit of your views and experiences. I am always encouraged when I learn of individuals, such as yourself, who take great personal initiatives in coming up with creative ideas to address our critical problems in science and technology. Let me wish you every success in pursuing your ideas and your work in the future.

Yours sincerely,

A handwritten signature in cursive script, appearing to read "Tom Siddon". The signature is fluid and elegant, with a long horizontal flourish at the end.

Honourable Tom Siddon, P.C., M.P.





University of Toronto

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**Research Board**

8

December 8, 1989

Mr. Bram Verhoef  
243 Indian Grove  
Toronto, Ontario  
M6P 2H4

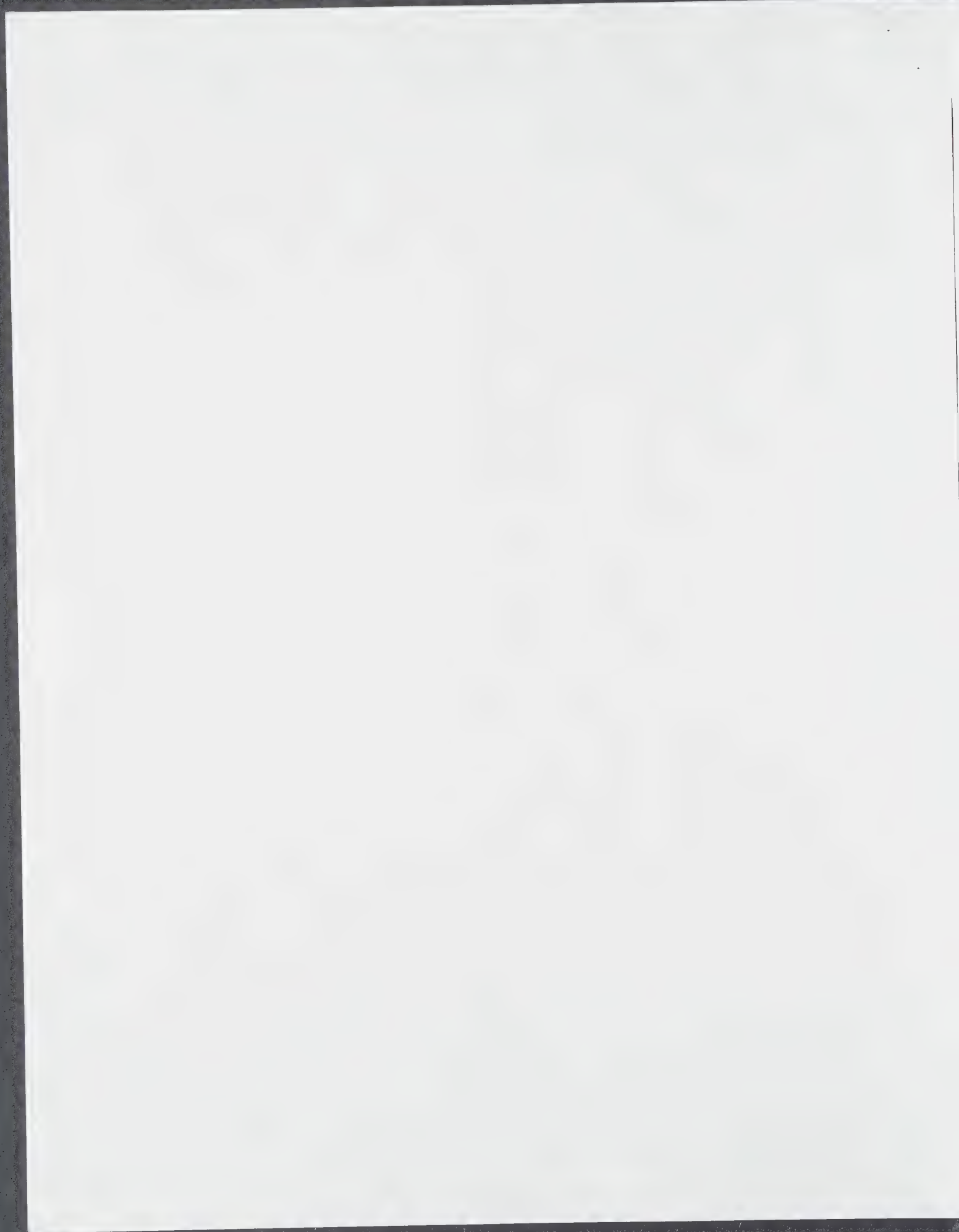
Dear Mr. Verhoef:

On behalf of Professor S. Waddams, I am writing to thank you for your submission to the Task Force on Ethical Conduct in Research.

Yours sincerely,

Pauline Burke  
Secretary to the  
Task Force

PB/jh





to: Professor S M Waddams  
Chair  
Task Force on Ethical Conduct in Research  
The Research Board  
Room 1338, Stroz Hall  
University of Toronto

Dear Sir,

I read your ad in the Bulletin which was directed at members of the University community, rather than the whole Canadian Research community.

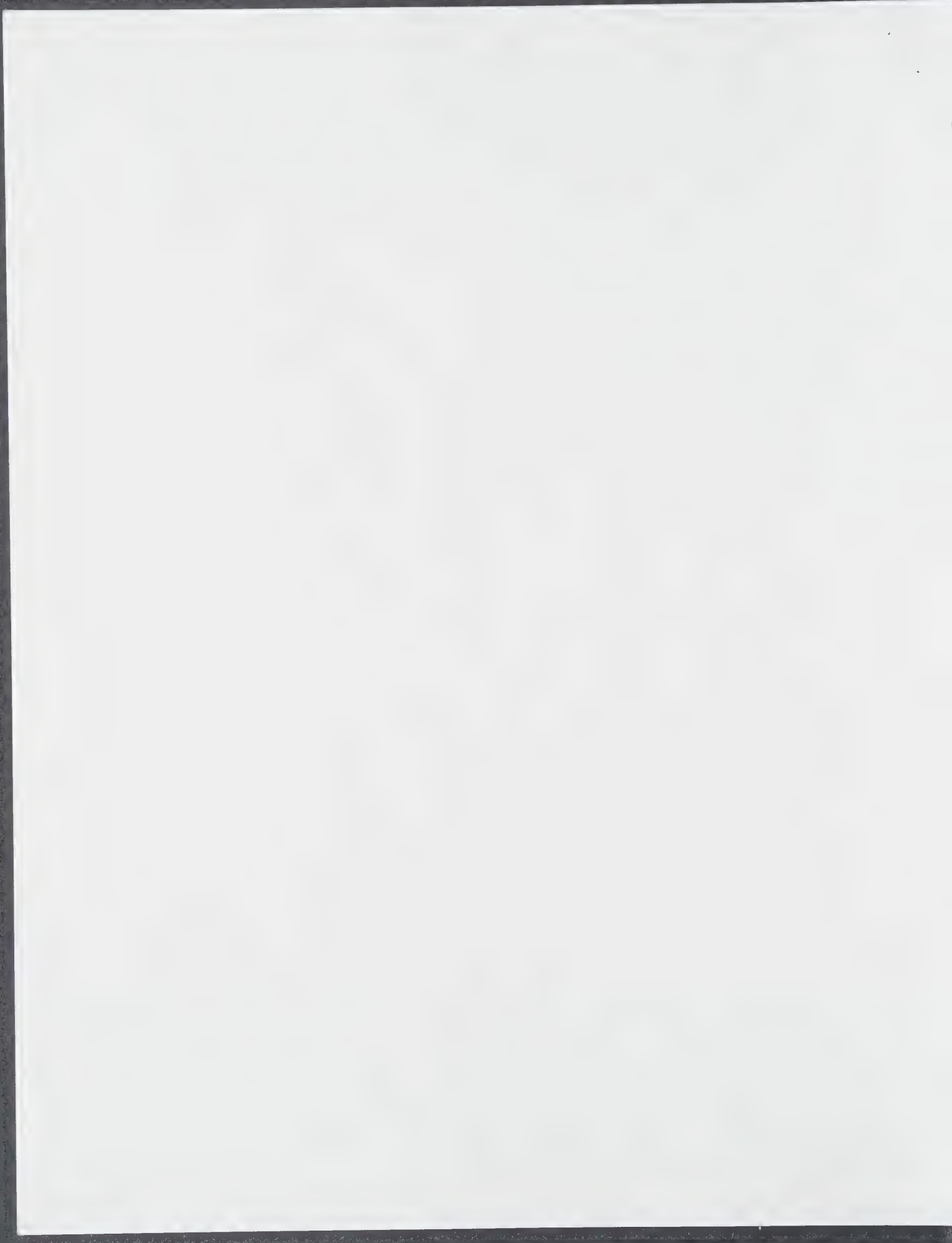
As I have been involved in Canadian Industrial Research since I came to this country in 1955, have had dealings with several of the professors in my capacity as Senior Staff Research Chemist with Shell, Canada Research and have two Canadian born sons who earned degrees in Engineering Science (Chemistry and Civil Engineering respectively) at the U of T I think I can contribute to the deliberations of the Task Force.

First of all: I attended all the Massey lectures given this year by University Professor Sheila Franklin on the subject of "The real world of Technology"

After the third lecture I realized that Professor Franklin had been selected for "The real world of technology" and relegated to the "Age of Incompetence" as the University of Toronto magazine put it in the summer issue 1988 page 18. As the article said "...whole for her support of feminism and radical politics" in 1987 Franklin was the first woman appointed to the Faculty of the Department of Metallurgy and Materials Science and in 1984 the first to be appointed an Associate Professor. Her radicalist views led her to museum

Let me superimpose on this remarkable the following sequence of events in the real world of technology as engineered by Ontario Hydro and Atomic Energy of Canada:

1. In April 1982 Hydro realizes that the neutron bombardment in the Pickering tubes converts Nitrogen to Carbon-14 (half-life 5000 years) which gets into the food chain and when deteriorating in a DNA chain neutrons may hit Nitrogen nuclei in the amino-acids converting the DNA chains to monstrosities. (I personally don't think that engineers think that far!)
2. Instead of choosing one of the noble gasses to fill the airspace their limited knowledge of chemistry leads them to choose Carbon Dioxide as an inert gas: it is in reality a very reactive gas. I have "burned" steelwool in Carbon Dioxide gas to form brittle cast iron loaded with Carbon.
3. The new boilers being built at Babcock & Wilcox were probably annealed in this newly found inert gas and warped adding to the cost but alarming nobody.
3. In August 1983 a tube burst over a 2 meter seam and is



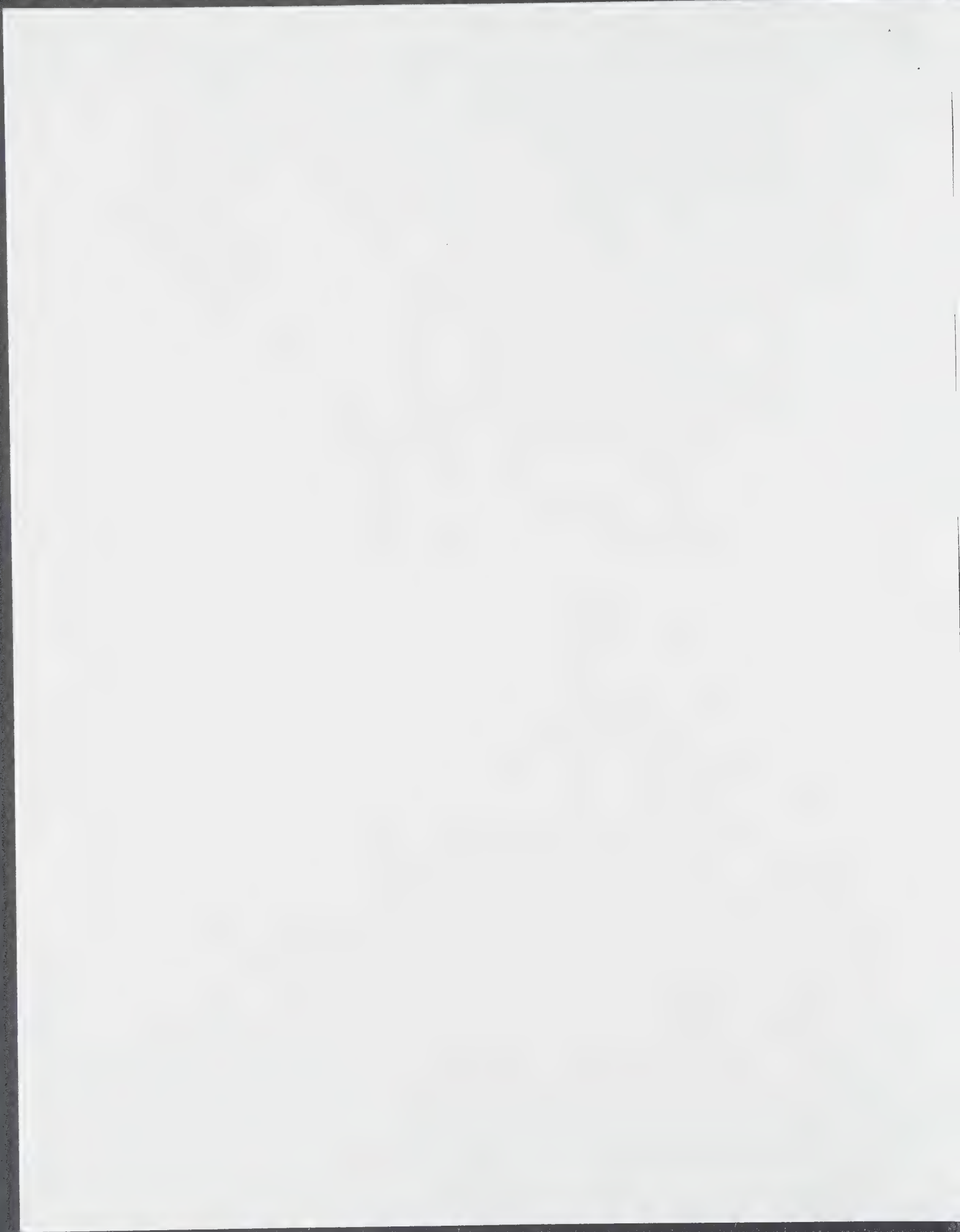
stone walled by Richard Furness, an obvious non-scientist and nobody from our own Toronto University is called to explain what happened not even "pacifist" Ursula Franklin or Ontario NDP leader Bob Rae whom I informed of the impending danger on April 30, 1982 in his office at Queens Park.

4. One month later my sick-pay from Shell was withdrawn and I managed by the skin of my teeth to get my minimum pension in January 1984.

When I heard Ursula Franklin mention her troubles with CSIS and the plans for the University to get into Police Research instead of leaving that to the RMA in Kingston I put together several written questions and gave them to her at the fourth lecture\*. She came over to me at the last lecture and gave me a copy of the Police Research notice in the Bulletin and asked for my address. I have not heard from her since so in case she did not think of it herself I am submitting a copy of my questions on the ethics of technology to your Task Force.

"Free" at last in February 1984 I wrote in Dutch to Shell Canada Research's bosses in The Hague the "Shell internationale Research Maatschappij" about the matter of your U of T graduate engineer Almis Ledas putting his signature under my invention which was based on my knowledge of clay colloid chemistry and which he did not even understand. I had made that a joint patent application in order to stimulate him but after I had read his fourth year project on the electrolysis of seawater in which he measured different voltages over the surface of the same electrode (unnoticed by his professor I realized that he would never be capable of innovation himself. Their answer shows that the confidential direct line between me, the inventor and my company's patent agent had been interfered with by my Canadian management\*. (I am bringing this to your attention because of the lead article in the Bulletin of November 13, 1989 which says: " Under the old act the rightful inventor was the one to make the invention first. Now it is whoever is the first to file ( a patent application ) said Munsche". I know that the old law also said that it is unlawful to sign an invention which is not your own; is that the reason for the curtain of secrecy which has fallen over Research in general and Research at the U of T in particular?)

To return to U of T research carried out at the Shell Canada Research Centre in Oakville: My son Raymond studied Chemistry with Professor Graydon and I offered to supervise his fourth year project and therefore Professor Graydon visited the lab and we discussed the project which was on electrochemical catalysis of lubricating oil oxidation. The project was such a success that Professor Graydon asked me to supervise a masters degree project at the lab and my son rejected several job offers in order to prepare himself for the next degree at the U of T. Suddenly Shell's support was withdrawn and fearing that Shell had heard from Bob Rae that



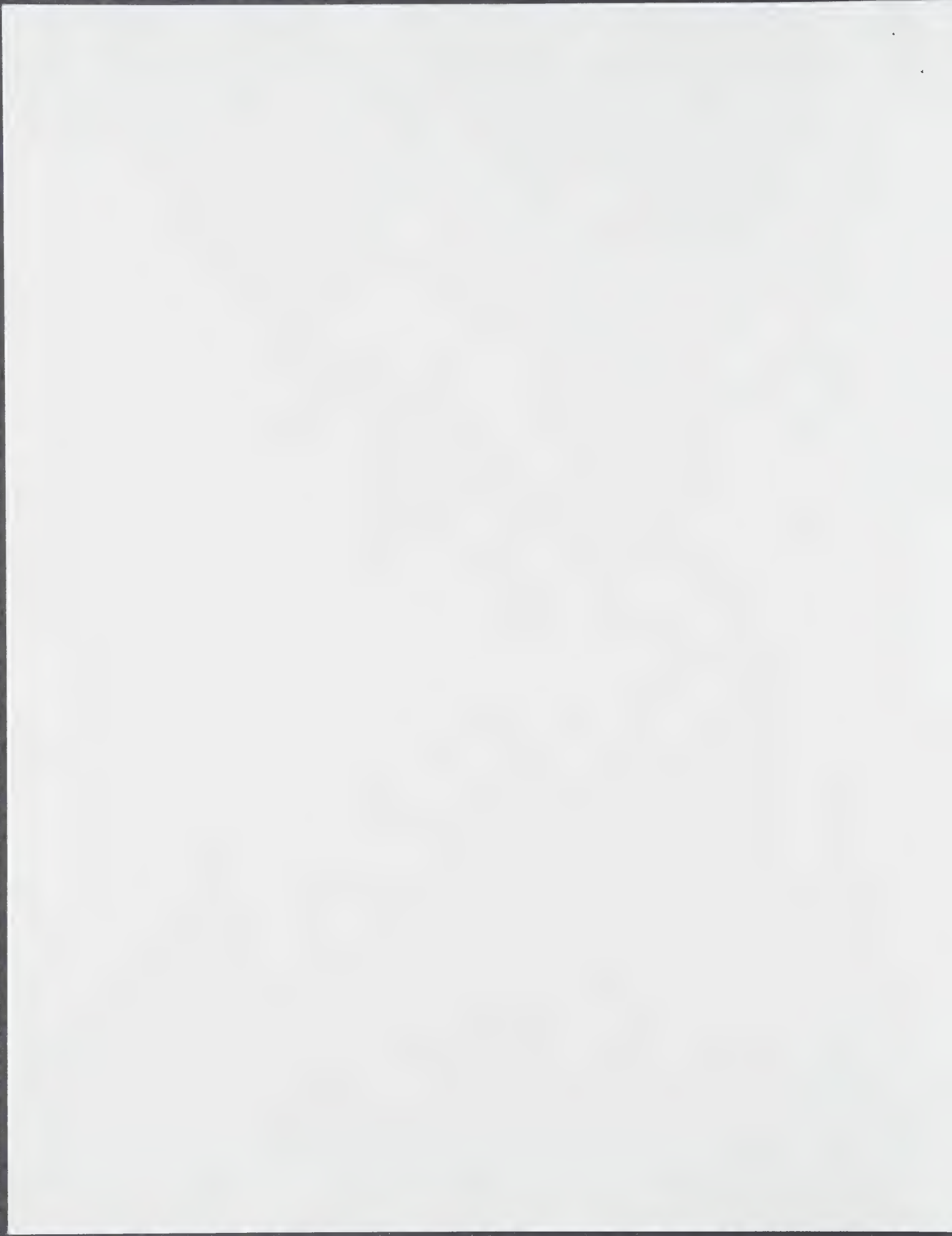
I was aware of the Pickering situation I phoned on a Friday evening the University of Waterloo coordinator for Masters Program who agreed to see my son the following Monday. The years at the U of W were the happiest years for my son and Shell reluctantly let him computerize the Hydrogenation pilot plant. While working on his project my son and I had a father and son patent application based on an idea by my son to use suspended leftover clay from Tarsand to catalysis the well known heavy oil upgrader such as the one planned for Lloydminster. The fate of that application was again that it was signed by a rather ignorant U of T graduate engineer and our names were removed.

Raymond considers the University of Waterloo his Alma Mater and as for Harley he finished his degree in Civil Engineering and via producing two consecutive Skule Night shows where free speech still reigns he went to the National Theatre School in Montreal and is now Technical Director at the National Arts Centre in Ottawa.

As I mentioned in my question to Ursula Franklin about the Candu reactor I offered my lost technology in Tarsand to Brian Mulroney in 1984 in order to support his claim that he would create jobs by supporting Canadian Research and the last thing I heard for the time being was the letter from Professor Tom Siddon dated January 1985\*. So when I heard U of T Professor J W Smith talk on the U of T student radio station about his invention which removes Hydrogen sulphide from gas streams I immediately recognized my contactor for which I had made 20 claims in my patent application of 1978 including very efficient gas-liquid contacting\*

I therefore went to the radio station on St George street and the friendly people let me hear the tape of their interview. There was no mistake: it was my technology! Next I went to the Research Board office but they had never heard of Professor J W Smith's research so I asked for the address of the Innovation office. There again nobody was available (probably warned from the Research Office so I left my card with the message and never heard from them also. But the J W Smith tape kept being run week after week: there was apparently not much real research going on. My son tried to contact the graduate students mentioned on the tape and I tried to get a list of the inventions of Professor J W Smith from the engineering library but to no avail. I got the wrong patent send to me at an exorbitant price, not from the patent office in Ottawa but following the guidelines of the Mulroney government from a company named "Micromedia Limited (and limited they are!) Finally my son did a patent search and apparently no such patent exists any more, I say anymore for the attached drawing\* was part of the patent which was when I saw it the standard issue American patent. Was it a fake or was it withdrawn?; as the inventor I certainly should have been notified!

After my first letter to Mulroney I thought I noted several other instances of use of my idea including recirculating



water for a fish farm and collecting the fishy amines in a separator and using it as fertilizer in a nearby orchard! so when Mulroney called the 1988 election I wrote him another letter\*.

This time an underling "answered" and said that he had referred the patent matter to Mr Harvey, that was in January of this year!

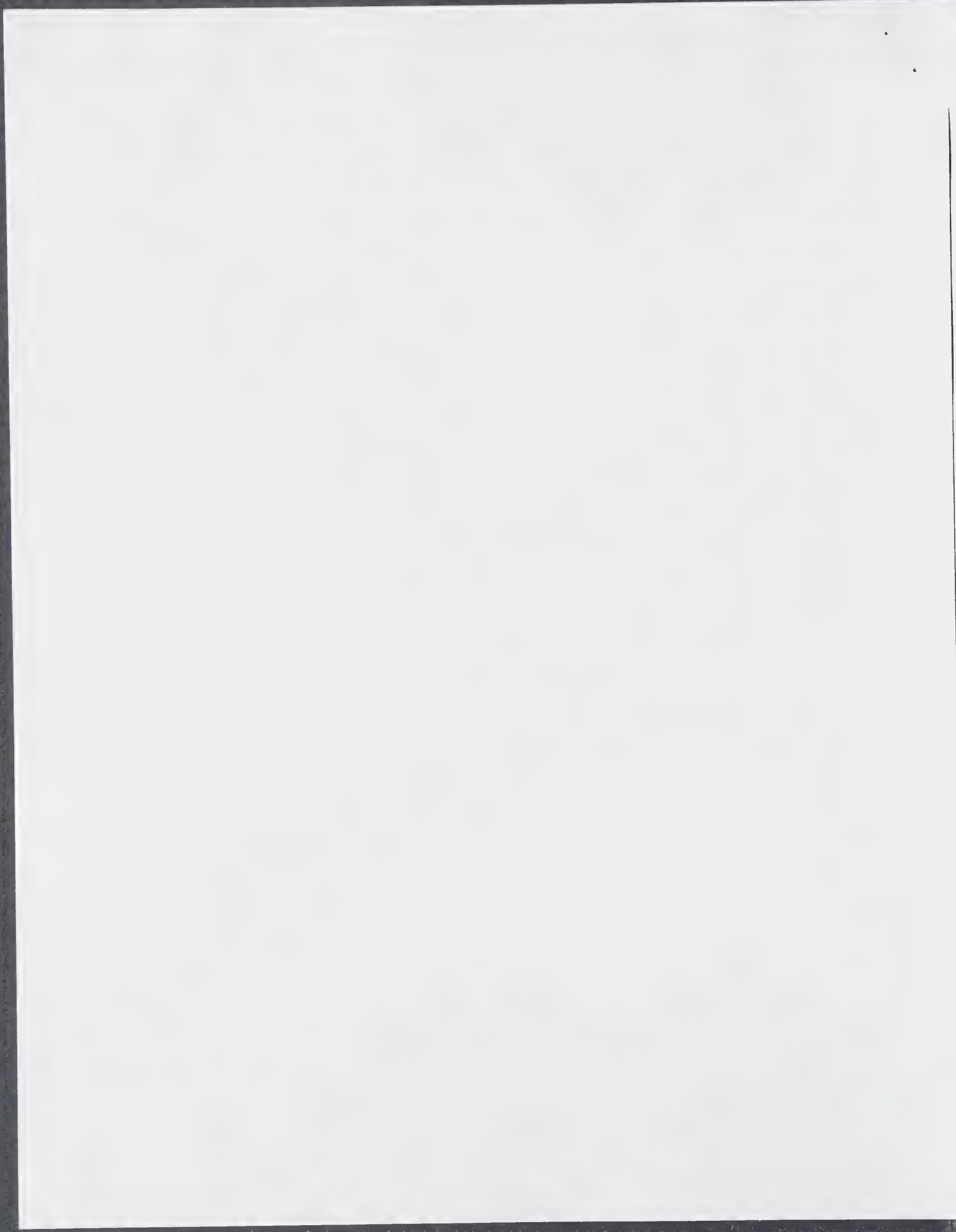
I find that the University of Toronto Research organization is never called upon to comment or clarify to Torontonians when strange phenomena take place such as:

\* In the case of the baby deaths in Sick Children Hospital the chemist's role was to run a test based on a physical phenomena (chromatography) and testify as to his test results; no bio-chemical tests were carried out on heavily drugged decaying infant cadavers to see if any compounds develop which run at the same speed through a chromatographic column as dyxogen (that is all you can say about chromatography results)

\* In the case of the chlorine disaster: McMurtry, a lawyer was in charge at the site and when the press asked him technical Questions he said: I'm not a chemist. I don't know how many people know that Mississauga was saved by the fact that the adjacent tankcar containing propane caught fire and drove the Chlorine gas upward. When the hearing took place it was again a lawyer's paradise any University professor would suggest that all Chlorine shipments should be buffered between two propane tankcars and that upon Chlorine gas detection a controled burn would be initiated which would prevent the Chlorine gas from spreading over the ground as it so dutifully did in the First World War. As an extra note: while driving back to Toronto from Oakville and listening to the reports about the hearing I realized that I drove beside a flatbed truck loaded with what appeared to be bottles of liquified Chlorine gas. The bottles were laying in open cradles without any fastening and in an accident would have gassed the bumper to bumper traffic coming home out of the city. I slowed down way behind the truck and only told my wife at home. Shouldn't there be a clearing house for knowledgeable warnings and what better than your own Research Board?

\* Two months ago there was an explosion on the Queensway in an abandoned fertilizer plant producing a yellowish cloud which moved over the Queen Elizabeth Highway and over Lake Ontario, people thought again of Chlorine and evacuated the buildings (instead of staying inside). I immediately thought of Ammonium Nitrate, an industrial explosive which you can buy in 25 pound bags in garden stores and, look it up yourself, has two way of exploding by impact and by heat, the latter producing copious amounts of Nitrous Oxides which apparently are only recognized by environmentalists when produced in small amounts by nasty Diesel engines. Even in the evening news the true nature of the blast was hidden and the doctor assured us that in any way it was not dangerous.

\* Then there is the case of Flammable metal stolen in





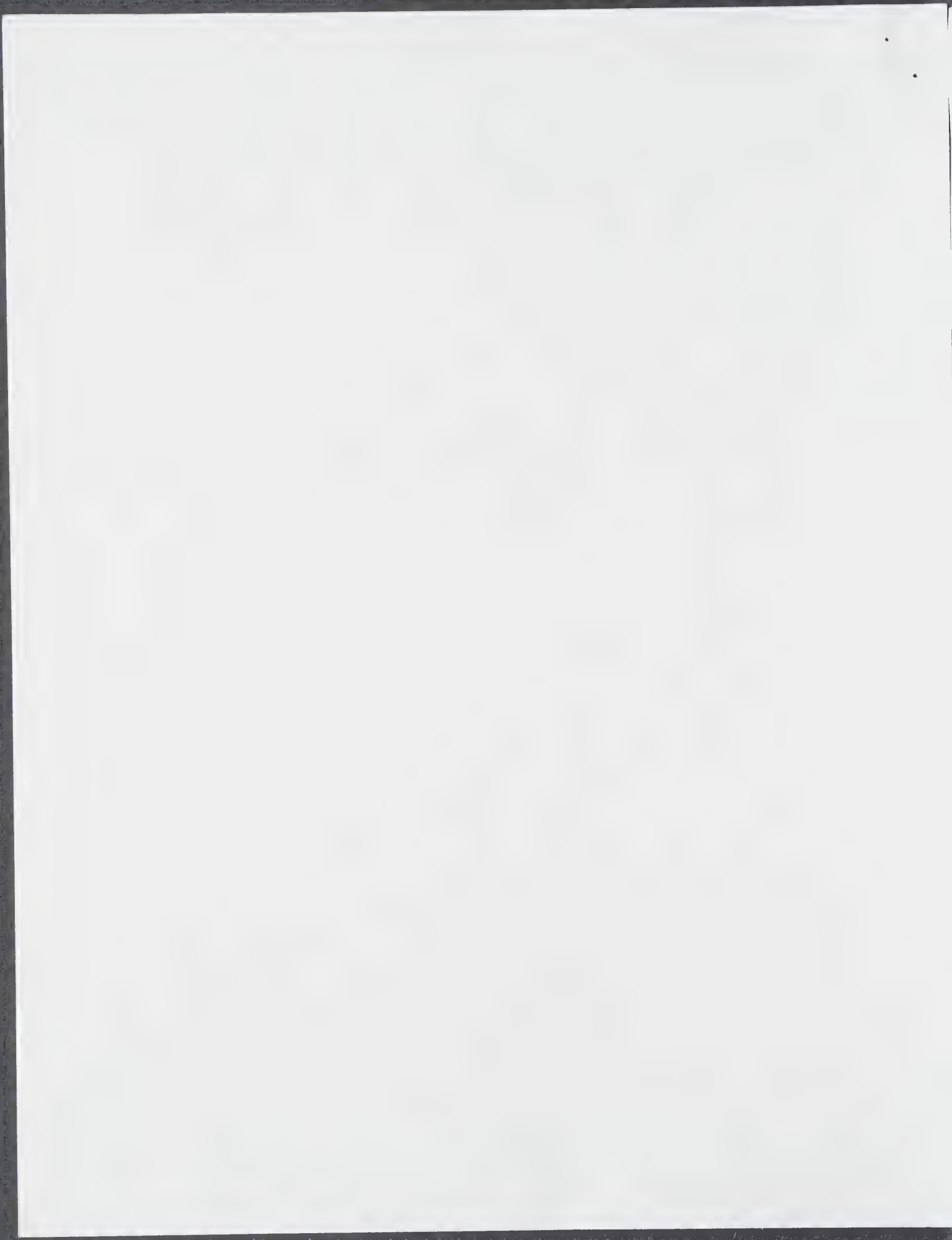
Brampton\* Look up under Zirconium in the Encyclopedia of Chemical Technology: It is only flammable as a very fine powder and should then be marked but as scrap metal it was obviously from a nuclear reactor as its major use is in containing Uranium pellets in the fuel rods. Questions: Where did the three ton Zirconium come from, where did Mississauga Metals intended to send it and where are the thieves sending it? Maybe a job for CSISMEN!

\* Re: the tape from Inspector Stroud. Remember the Ethyl Carbamate scare in our Ontario wines dreamed up by a disgruntled LCBO analytical chemist? I looked up a few of my books and found that physicians inject 3 gram amounts intravenously into patients for chemotherapy. So I went to the hearing office and asked to testify. I was interviewed by an investigator who recorded what I had to say and when his tape was full he said that when it was typed out that he would call me so that I could correct it. (He himself did not understand a word I had said and I asked him what his background was. He gave me his card: Inspector Stroud, OPP Homicide !?!? After a few days he phoned me and I recorded our conversation. I was never called back and the hearing fizzed out.

A few weeks later Inspector Stroud fell from a tractor on his farm and was killed. I did some more writing, the disgruntled analytical chemist (Ryerson graduate) is now the head of the LCBO testing lab and another scientist was sought to head Research. Look at the money they could have saved if they had approached the U of T Research Board!

\* For the time being ,finally, there was the Ontario Energy Board hearing into the take-over attempt of Union Enterprises by Unicorp. I applied to intervene\* and attended some thirty sessions, again only lawyers were allowed to speak even on scientific matters and again no U of T representation. There were apparently behind closed doors meetings and I was completely written out of the final report. The attached quote\* from page 3260 of the transcript obviously refers to my invention of reducing roasting. Vince Kerrio's letter speaks for himself\*.

When I was ousted from Shell Research at to top of my career I did not want anything more than recognition for some contributions to the future of Canada in the area of energy supply and a save environment. I have attended 4 seminars arranged by the Pulp & Paper Centre where speakers were warned that although this was a private! meeting (\$300) they could not be protected from the press and Greenpeace. The speakers came from the States and mainly from the Scandinavian countries. No significant contribution was made by the U of T group (their contribution is mainly a staunch defence of Professor Rapson's method of combining Chlorine with Oxygen. The last session even included talks by born again PCB debunker Professor Bruce Ames who received a money price from a Pulp & Paper company. By not participating Toronto apparently earned itself to be called a Centre of Excellence. And yet the speakers in 5 events cut out of one



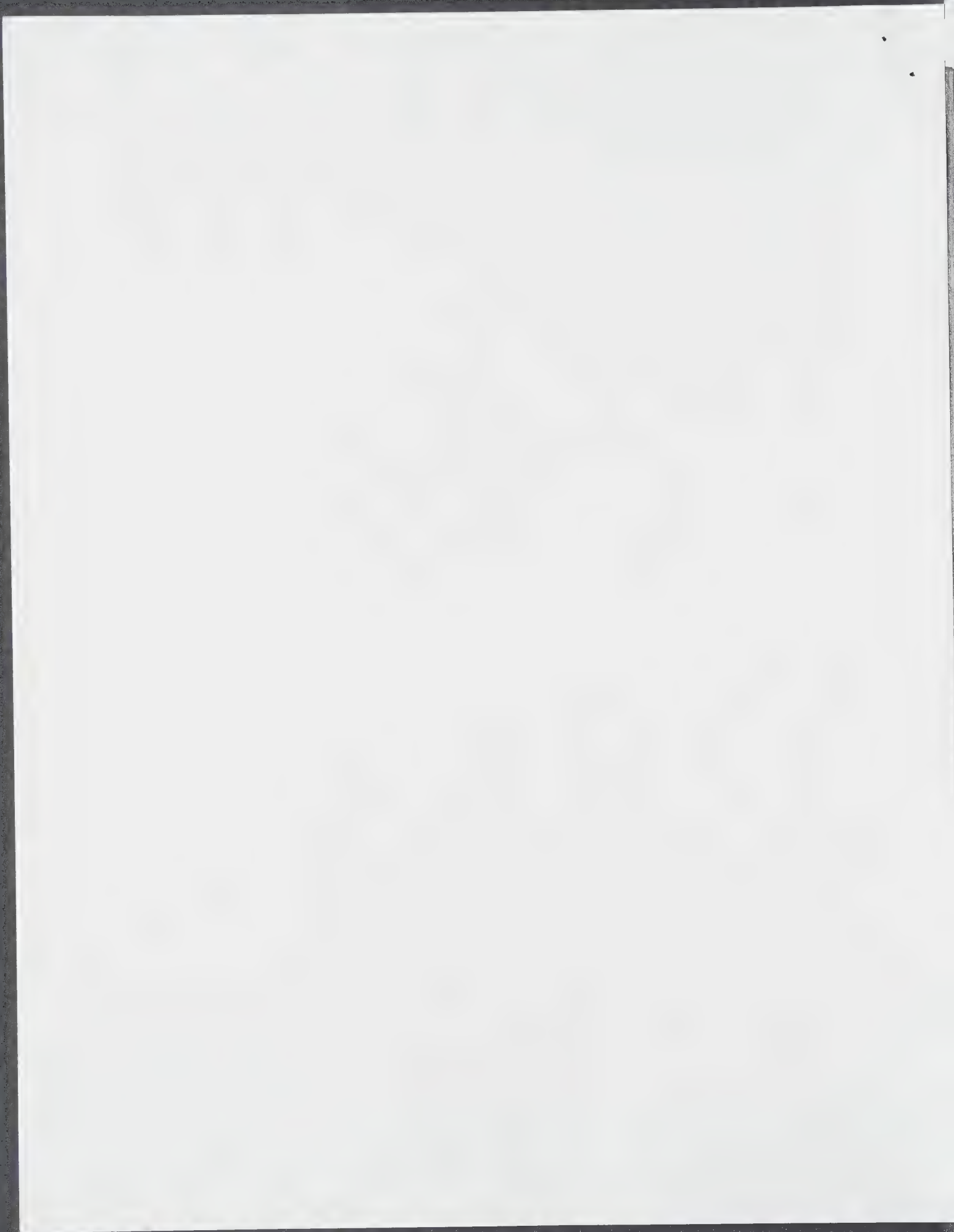
Bulletin\* all having to do with paper do not know about each others work and worries. If Chlorine is really God-given and unavoidable I have a method to make neutral rain by producing the base Ammonium in the flame thus producing neutral Chlorides, sulphites, sulphates, carbonates, etc which are fertilizers. If Chlorine rains down as chloride no harm is done. A recent article in Chemical & Engineering News\* about the explosion of a solid rocket fuel factory which produces Ammonium perchlorate. The debate was is it a fuel or is it an oxidizer? Any highschool student can tell you that it is both and that all the reaction products are gasses. The 30 million pounds of Chlorine gas a year alien to to upper atmosphere do probably more damage to the ozone layer and are not even contributing to the whiteness of paper.

Professor Reed does not believe that Chlorine will ever be replaced but I have two candidates: Potassium percarbonate and electrolytically produced perborate but who is listening?

I have successfully obtained cold fusion using ordinary water and Tantalum; induced gravity by a counterwound coil. But as the experience in the US shows the first requirement is a degree in physics from a good University even if the process involves only chemistry. Did President Truman decide that all nuclear phenomema could only be handled by physicists? I think I have evidence that Technicium is turned on and off by changing the oxidation state between 4 and 7. So why not Plutonium and Uranium? I also found some interesting properties in Potassium Carbonate solutions for the storage of heavy metals If the philosophy of the Bulletin is right anyone running to the patent office first is the real inventor. I hope I have not given too much away.

Yours truly.

Bram Verhoeff, 243 Indian Grove, Toronto M6P 2H4



CHEMISTRY OF POLYMERISATION AS APPLIED TO THE  
PREPARATION OF BUNA SYNTHETIC RUBBERS.

INTERVIEW  
with  
DR. BECKER.

Late of the Chemical Department of the Rubber  
Research Laboratories of the I.G.Farbenindustrie,  
Leverkusen.

Interviewed by

Dr.W.C. Davey	Dunlop Rubber Co.Ltd.
Mr.M.M. Heywood	Firestone Tyre & Rubber Co.Ltd.
Mr.F.A. Jones	Dunlop Rubber Co.Ltd.
Mr.D.W. Lancaster	Firestone Tyre & Rubber Co.Ltd.
Mr.E.O. Shead	P.B. Cow & Co.Ltd.

at

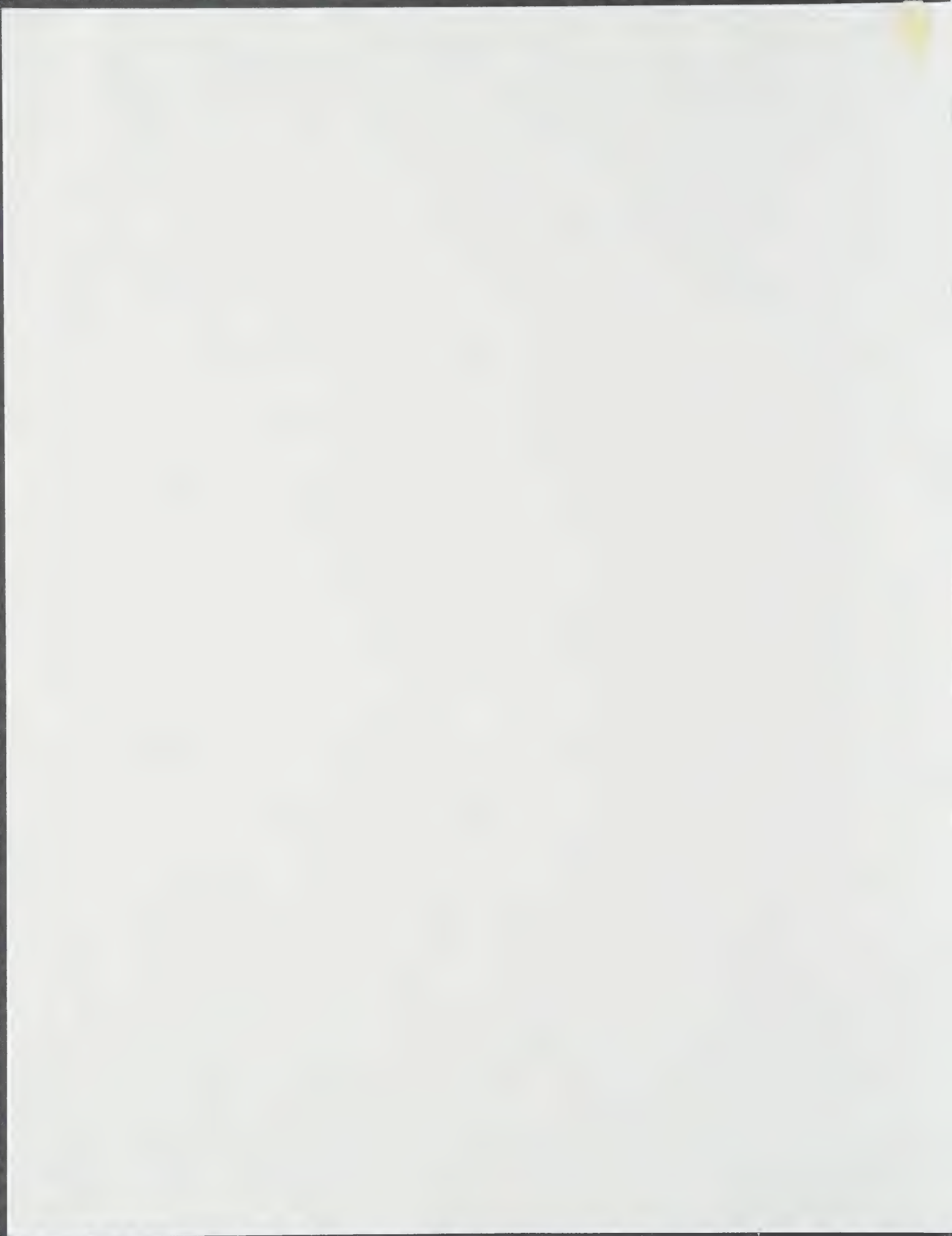
Beltane Schools, Queensmere Road,  
Wimbledon, London, S.W.19.

on

August 7th, 1946.

BIOS Target Number : C22/5232.

BRITISH INTELLIGENCE OBJECTIVES SUB-COMMITTEE  
32, Bryanston Square, London, W.1.



B.I.O.S. FINAL REPORT No. 800 (Interrogation Report No. 309)

ITEM No. 22

DUPLICATE

*Case*



*&*  
CHEMISTRY OF POLYMERISATION AS APPLIED  
TO THE PREPARATION OF BUNA SYNTHETIC  
RUBBERS  
INTERVIEW  
with  
DR. BECKER.

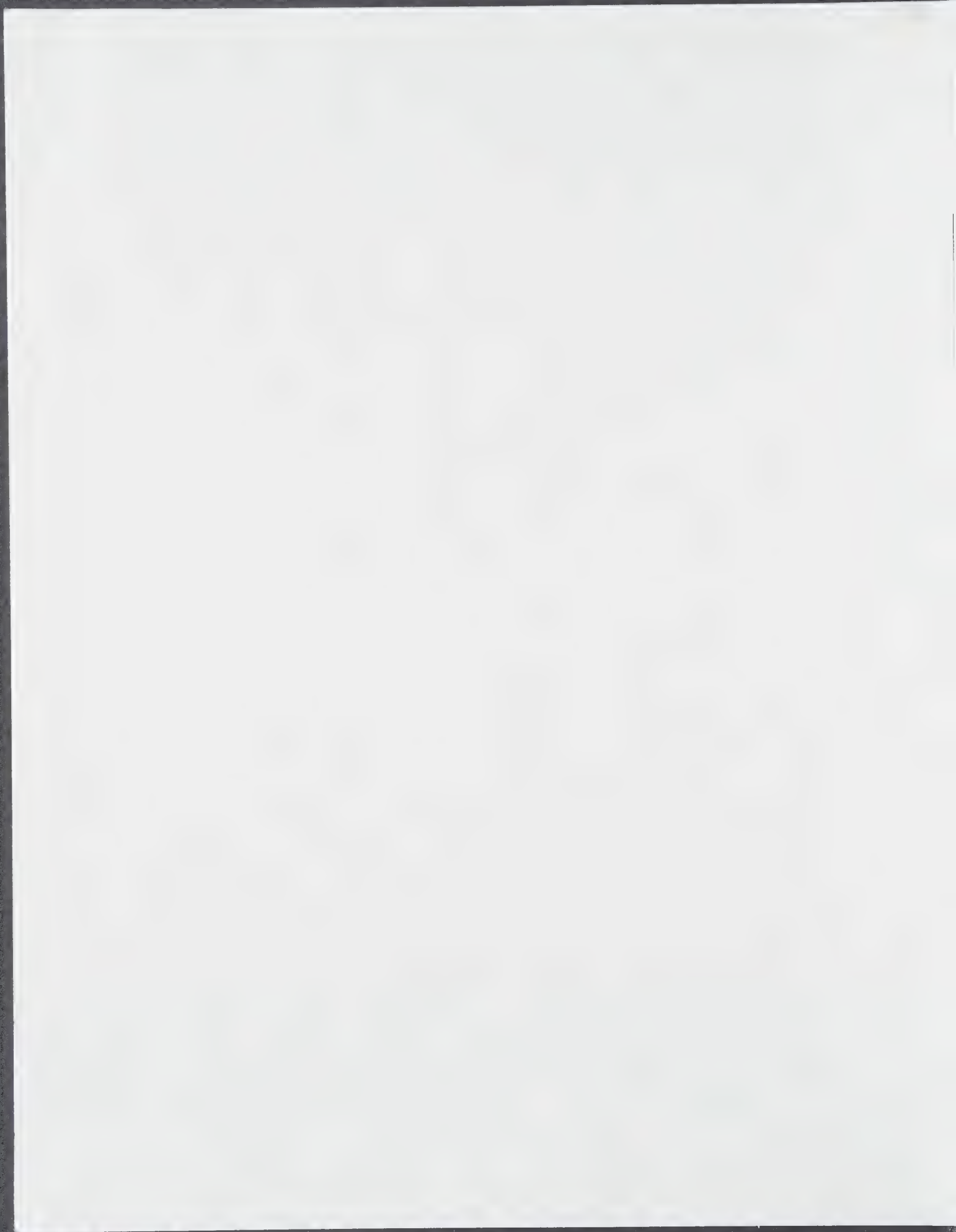
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This report is issued with the warning that, if the subject matter should be protected by British Patents or Patent applications, this publication cannot be held to give any protection against action for infringement.

BRITISH INTELLIGENCE OBJECTIVES SUB-COMMITTEE

LONDON—H.M. STATIONERY OFFICE







BY AIRMAIL

Mr. B. Verhoeff  
243 Indian Grove  
TORONTO  
Canada M6P 2H4

10

Your ref.:

11th April, 1984

Our ref.: RSPH/2

☎ (070) 772664

Dear Mr. Verhoeff,

We acknowledge receipt of your letter of 30.3.1984.  
The invention reported by you and Almis Ledas, (our internal reference K 9352) to which you referred, was in 1982 searched for novelty/ inventiveness and found unpatentable by us; a view shared by Shell Canada and hence no patent application was drafted or filed by us.

The other items raised in your letter seem to us to result from or to relate to the terms of the contract of employment between you and your former employer and to the Law governing this contract. Therefore we feel that that part of your letter could better be dealt with by Shell Canada, reason for which we have passed on your letter to them together with a copy of this letter.

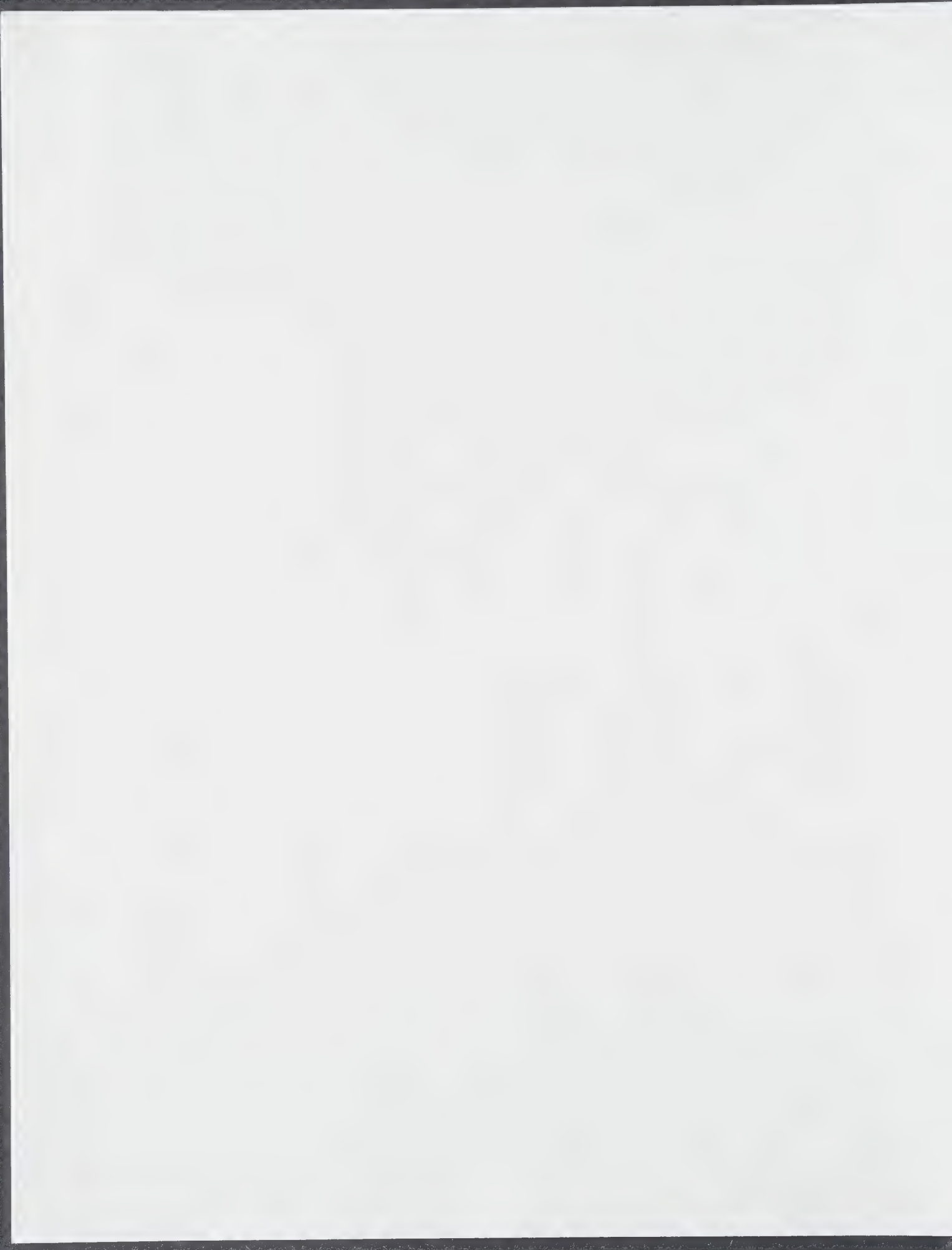
Yours faithfully,

Shell Internationale Research Maatschappij B.V.

A handwritten signature in dark ink, appearing to read 'A.T. Puister', is written over a faint, circular stamp or watermark.

A.T. Puister

cc. Shell Canada (General Manager Research)





BELLAIR  
RESEARCH CENTER

## SHELL DEVELOPMENT COMPANY

A DIVISION OF SHELL OIL COMPANY

3737 BELLAIRE BOULEVARD  
HOUSTON, TEXAS 77025

MAILING ADDRESS  
P. O. BOX 481  
HOUSTON, TEXAS 77001

September 30, 1974

Subject: Visit to Shell Canada  
Friday, August 23, 1974

Mr. G. Shane  
Shell Canada Limited  
P. O. Box 400, Terminal "A"  
Toronto, Ontario, Canada  
M5W 1E1

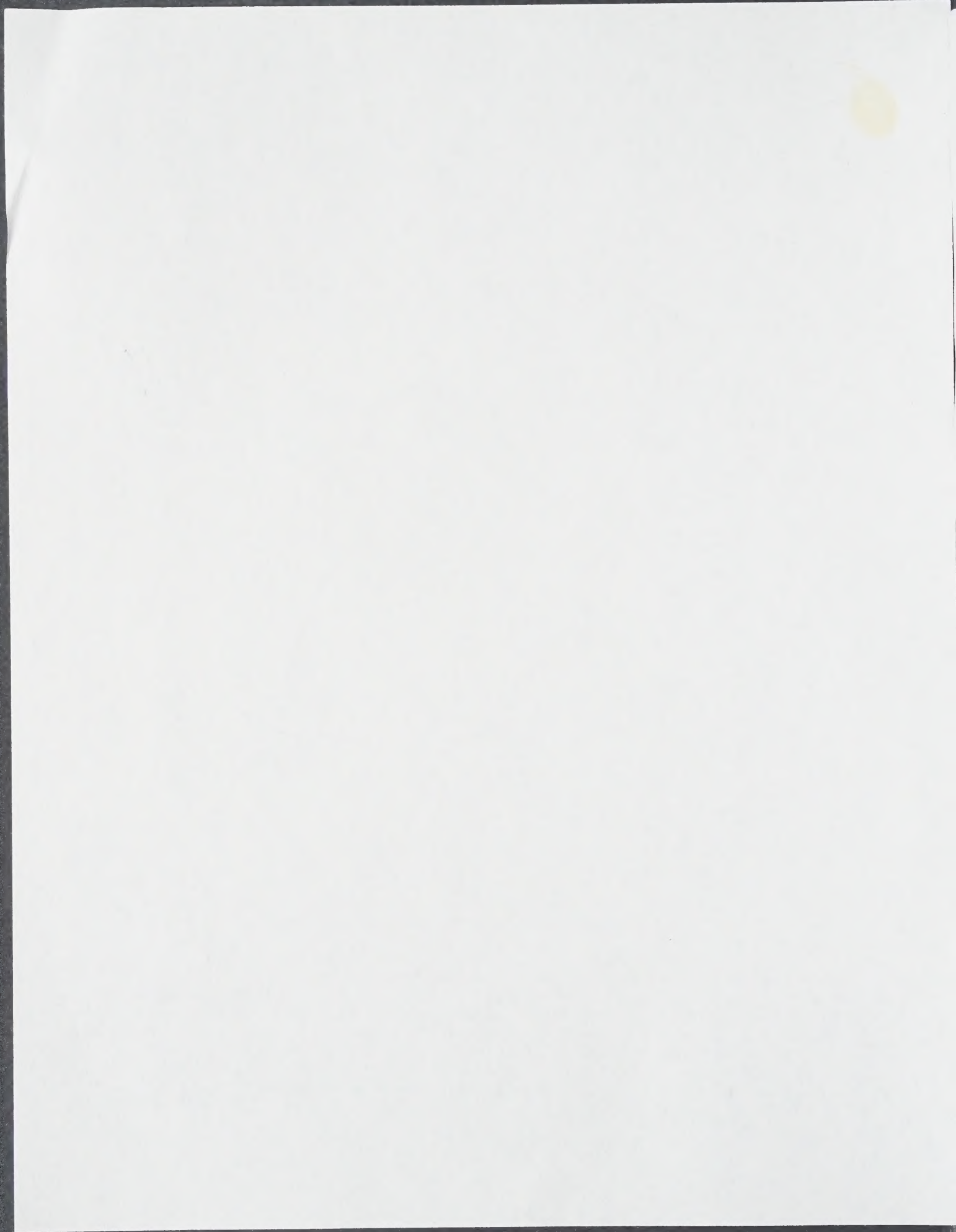
Dear Mr. Shane:

On Friday, August 23, a visit was made to Shell Canada Oakville Laboratories for the purpose of discussing their exploratory program on surface processing of Canadian tar sands. There a demonstration was given of the contacting process in batch form devised by B. Verhoeff.

The device consists of three troughs which overflow one to the other containing hot water. The water is circulated from the final trough to the initial trough to make the system one of total recycle. Tar sand, both in the presence of clay and in the absence of clay, was processed. In addition, a sample of tar sand in the presence of clay kneaded or worked to cause the clay and the oil to become intimately mixed was also processed. Significant differences between the various samples were noted and in particular the tar appeared to separate from the sand in order of increasing difficulty as follows: 1) tar sand without clay 2) tar sand with clay 3) tar sand kneaded with clay. All of these observations were made simply by contacting the sand with a significant quantity of water in the absence of caustic. In all cases the oil formed fine filaments which separated from the sand and rose to form a film on the water surface. While it is well known that in the laboratory contacting tar with hot water produces a relatively easy separation and that the significant problems are introduced by scale-up to commercial size, the concept was offered that by diluting the tar with an excess of hot water the separation process may be relatively insensitive to the level of agitation and mixing. This could, in principle, increase the possibility that the process is scalable to a commercial size.

It was recommended to the Oakville Labs that they carry out quantitative measurements in the laboratory of oil separation, oil recovery, residence time in the batch vessels, etc., and that they carry out a set of experiments which show the sensitivity of this process to levels of agitation, perhaps by inserting some sort of mixing device in the first stage of separation. It was further recommended that if these recovery data look promising and if the process is shown to be relatively insensitive to mixing, (that is to say, the concept that simple dilution in a large amount of water is the key step) that a bench scale continuous demonstration unit be considered at the Oakville Laboratory. Naturally, success in this step

11



Mr. C. Shane

2

would require further piloting and semi-commercial steps. It was agreed that Shell Canada would keep us informed of the laboratory results and that we would discuss the status at a later date.

Very truly yours,

*J. R. Street*  
J. R. Street, Director  
Corporate R&D - Engineering

cc: Shell Oil Company  
Mr. R. D. Mullineaux

Shell Development Company  
Mr. G. C. Hood

*JRS*

JRC

