PETAWAWA WORKS

CHALK RIVER, Ontario,
January 16th, 1947.

Dr. W.B. Lewis,
Director,
National Research Council,
Atomic Energy Division,
CHALK RIVER, Ontario.

Re: Our File: Essential Material
- Polymer.

Dear Dr. Lewis:

The attached sheet indicates the quantity of low-grade Polymer stocks which are on hand at the plant at the present time.

You will note that 35 lbs. are still contaminated with Uranyl Nitrate. This material has not been recovered as yet and it is not planned to undertake the recovery immediately since it entails setting up a vacuum oven for which no space is available in the laboratory until Building 112 is ready for use.

The total also includes 18½ lbs. of material which were issued to Dr. Sargent for experimental work in the ZEEP Department.

All material listed in this iventory, with the exception of Drum T7 weighing 296.0 lbs., is American Polymer.

We trust this statement gives you the required information.

Yours truly,

DEFENCE INDUSTRIES LIMITED,

W.H. Thomas

Chief Chemist.

W.H.Thomas:jk
c.c. G.W.Hatfield

LOW-GRADE POLYMER INVENTORY.

The quantities listed below constitute the low Polymer stocks on hand at this date.

Location	Description	Net Wt. in lbs.	Mol % D
Bldg.102	Sample residues	9.25	99.75
Bldg. 102	" "	19.0 (a)	97.0
Bldg. 102	Recovery	20.0	90.0
Bldg. 102	Drum D110	364.0 (b)	90.6
Bldg. 102	" D111	360.6 (b)	90.8
Bldg. 102	" T7	296.0 (c)	93.4
Bldg. 105	Residues	18.25(d)	97.
Bldg. 102 & 105	to be recovered	35. (e)	90.
Total weight		1122.10	
Total weight available to date		1087.10	(1122.10 - 35.0)

(a) Tare weight of container estimated at 28 lbs.

(b) U. S. net weight used minus samples removed.

(c) Original Norwegian material

(d) Issued to Dr. Sargent.

(e) This figure is estimated. It includes material held in Uranyl Nitrate(Drum T25) and material held in cotton wool.

GWH
6652

Cw file
Uppsat.

NATIONAL RESEARCH COUNCIL
CANADA

CHALK RIVER, ONTARIO.
27 January, 1947.

Defence Industries Limited,
Chalk River, Ontario.

ATTN: DR. M. H. THOMAS

Dear Sirs: RE-CONCENTRATION OF LOW-GRADE POLYMER

It would seem most practicable to send drums D110, D111 and T7 to Trail for re-concentration. This would leave us with small amounts of low-grade polymer, which should probably be sufficient to meet any minor demands which may arise during the re-concentration process.

Contained in these drums, from your inventory, there are 724.6 lbs. of American polymer and 296.0 lbs. of Norway material. I note that this amount is less than the 753 lbs. of 90.5% purity quoted by Col. Nielsen, and even when the 20 lbs. are recovered and 90% polymer is added, this is still short of that amount. I presume the difference represents losses by sampling, etc. since the 753 lbs. were supplied. If this is in agreement with your information you should take this letter as authority for arranging with Col. Nielsen to ship the three drums mentioned to Trail for re-concentration, on the understanding that we have from him that this will be undertaken at a nominal expense and with a probable loss of about 2% polymer.

I would like to be kept informed of the action being taken.

Yours sincerely,

WBL/DEA

W. B. Lewis.

Atomic Energy Project

CHALK RIVER, Ontario,
February 5th, 1947

Dr. W.B. Lewis,
National Research Council,
Chalk River, Ontario.

Dear Dr. Lewis: Our File: Essential Materials - Low-grade Polymer

In your letter of January 27th, you indicate Colonel Nielsen quoted 753 lbs. of 90.5% purity polymer as being on hand at the plant.

In the inventory submitted by Dr. N. Miller, February 5th, 1946, the quantity of 90.45% polymer which was shipped into the plant in drums D 110, D 111 is listed as 725.9 lbs. and this weight, minus sample taken in Montreal, was forwarded to the works on October 22nd, 1945. Where Colonel Nielsen gets his figure of 753 lbs. is unknown to me unless he includes the various miscellaneous stock of material which is listed currently on inventories as material yet to be recovered from both uranyl fluoride and cotton wool. He would be glad if you would determine the actual source of the 753 lbs. figure.

The writer has recently been in contact with Colonel Nielsen concerning arrangements for shipping drums D 110, D111 and T 7 to Trail and Colonel Nielsen is at present determining the most opportune time for making this shipment.

As soon as this information is in hand we will complete all arrangements for the shipment and inform you of these arrangements.

Yours truly,

NATIONAL RESEARCH COUNCIL

M.W. Thomas

Chief Chemist.

M.W.Thomas:gh

c.c. J.W.Hatfield,

K.F. Tupper.

HEAVY WATER INVENTORY

February 28,1947.

SUMMARY

Item	Location	Net Weight	Actual Analyses Mol % D	Wt. Expressed as 99.84 Mol % D Material
1.	Bldg. 102	27,386.0	99.82 - 99.86	27,386.0
2.	" 105	11,415.5	99.74 -99.83	11,415.5
3.	Various Locations	95.9	90 to 99.84	92.9
4.	Bldg. 102	724.6	90.6 - 90.8	658.0
5.	" 102 etc.	33.0	99.8	33.0
	Total U.S. Material	39,655.1		39,585.4
6.	Bldg. 102	296.0		294.8
	GRAND TOTAL	39,951.1		39,880.2

DETAIL

Item 1 (Main Stock Bldg. 102)

Inventory Dec.31/46		26,941.5
Shipment From U.S.		5,839.4
		32,780.9
Shipment to U.S.		-5,390.2
		27,390.7
Samples removed		-4.7
		27,386.0

Item 2 (Z.E.E.P.)

Inventory Dec.31/46		11,417.1
Samples removed		1.6
		11,415.5

Item 3

	Inventory Dec.31/46		86.6
(a)	Bldg. 100		
	Item 1 this inventory	4.7	
	Bldg. 105 Samples #120, 247-1 & 2, 247 - 19 to 247 - 32	1.6	
		6.3	
	Issue(see (e))	.25	
		6.05	6.05
(e)	Bldg. 105 (Bldg. 100 to Dr. Littler)		.25
			92.90

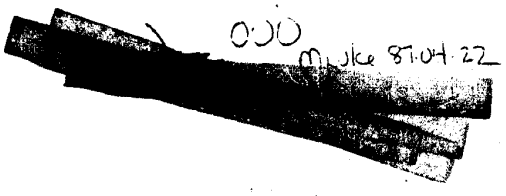
Item 4 - Unchanged.

Item 5 - Unchanged

Item 6

The 100 gm. sample sent to France is <u>not</u> included in the net weight of this drum.

J.A.Morrison,gh
March 17/47



Chalk River, Ontario,
March 18th,1947.

TO: Accounting Branch — Attention: Mr. W.J. Findlay

FROM: Operations Group Laboratory

Our File: Essential Materials - Polymer Inventory

Please find attached copy of the Heavy Water Inventory as of February 28th,1947. We hope that this will bring you up to date.

W.B. Lewis

J.A.Morrison:gh

cc: G.N.Hatfield,
J.A.Morrison

August 5th, 1947.

[redacted]

Colonel C.A. Nelson,
U. S. Administrative Representative,
CHALK RIVER, Ontario.

Our File: Essential Materials - Polymer.

Dear Colonel Nelson:

You will find below a table containing all the information on the eleven drums of heavy water which are being shipped to Trail this week.

Drum No.	Gross Wt.	Tare Weight	Net Weight	Isotopic Mol % D	Weight Expressed as 100 Mol % D Material	Conductivity. (10^{-5} mhos)
9-38	450.0	71.5(a)	378.5	98.7	373.6	2.30
D-33	534.75	105.75	429.0	99.10	425.1	1.78
35	559.25	105.5	453.75	99.00	449.2	2.16
29	539.0	107.75	431.25	98.82	426.2	2.45
D111	465.75	105.9(a)	359.85	91.0	327.5	0.84
D110	460.75	86.25(a)	374.5	87.0	325.8	1.24
D-71	536.25	108.5	427.75	98.54	421.5	2.66
D-43	524.75	106.75	418.0	99.07	414.1	1.54
D-44	380.0	107.0	273.0	99.30	271.1	1.68
D-32	533.5	107.0	426.5	99.48	424.3	2.05
T-7	395.5	105.5(b)	290.0	99.37	288.2	4.14
Total	5379.5	1,117.4	4,262.1		4,146.6	

(a) American tare weights.
(b) Montreal laboratory tare weight.

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It is requested that this material, 4,262.1 lbs. net, be concentrated to material having an isotopic content of 99.8 Mol % D, or better.

We trust that this information is what you require.

Yours very truly,

NATIONAL RESEARCH COUNCIL,

J. A. Morrison,
Assistant to Chief Chemist.

JAM:GH

CHALK RIVER, October 4th, 1947.

TO: Assistant Director, Engineering Division

FROM: General Superintendent of Operations

Our File: Polymer

We are informed by Dr. Thomas that in the polymer that will be coming back from Trail there is one drum of "French polymer". Dr. Lewis has informed Dr. Thomas that this material is to be held and divided evenly between the U.K. and Canadian Projects. The Canadian material to be held for experimental work and issued on written request.

Until such a time as we receive further information we propose to hold the "French polymer" in building 102. In this regard we would like to request that before any issues are made that we receive written authorization from you or the Director. Unless we hear further in this regard we will act in this manner.

J. W. Gilbert

FWGilbert:ps

c.c. Dr.M.H.Thomas