項目	所要資材（鉄鋼材比）			所要資金（十円）			備考
	第一期	第二期	合計	第一期	第二期	合計	
土地整地費	一〇	〇	一〇	一、五〇〇	〇	一、五〇〇	

(二) 建物及機械基礎

項目	所要資材（鉄鋼材比）			所要資金（十円）			備考
	第一期	第二期	合計	第一期	第二期	合計	
水性ガス発生装置	一五	五四〇	五五五	一三、六五〇	一五、三六〇	二九、一〇	第二期増築屋根壁補修
発生炉ガス装置	一〇	〇	一〇	三、四四〇	〇	三、四四〇	同右
一酸化炭素変性装置	一八	九八	一一六	三、八八〇	五、一〇〇	八、九八〇	同右
アンモニア合成装置	六〇	五〇	一一〇	三、〇三〇	二、一〇〇	五、一三〇	同右第二機械台及更
受電所	一〇	〇	一〇	八〇〇	〇	八〇〇	同右第二期増築
用水設備	五五	〇	五五	七〇〇	〇	七〇〇	同右
発電所	三五	〇	三五	一、〇〇〇	〇	一、〇〇〇	第一期屋根壁補修
機械工作工場	五〇	〇	五〇	二、〇〇〇	〇	二、〇〇〇	第二期新設
倉庫	五〇	〇	五〇	三、〇五〇	〇	三、〇五〇	同右
その他	一〇七	一一	二一九	九、八〇〇	一三九〇	十、九四〇	
合計	三五〇	八〇〇	一、一五〇	七七〇〇	四五八五〇	一二三五〇	

(三) 機械設備

項目	所要資材（鉄鋼材屯）			所要資金（千円）			備考
	第一期	第二期	合計	第一期	第二期	合計	
水性ガス発生装置	一〇〇	九〇三	一〇〇三	三九〇〇〇	二九八〇〇	二五八〇〇	
発生炉ガス装置	八〇	〇	八〇	八〇〇〇	〇	八〇〇〇	
一酸化炭素変性装置	七四	三七六	四五〇	三三五〇〇	五五三〇	七八七三〇	
炭酸ガス洗滌装置	一五	三五	四〇	三五八〇〇	六五〇〇	三三五〇〇	
一酸化炭素除去装置	一〇	二二五	二三五	六〇〇〇	三六九〇〇	三三九〇〇	
アンモニア合成装置	一五五	一四五	三〇〇	五〇〇〇〇	四〇〇〇〇	九〇〇〇〇	
受電及配電設備	七三	五二	一二五	一七〇〇〇	一三〇〇〇	三七〇〇〇	
用水設備	三〇	〇	三〇	三〇〇〇	〇	三〇〇〇	
発電所	一〇〇	〇	一〇〇	二九五〇〇	〇	二九五〇〇	
輸送設備	一六〇	四〇	二〇〇	四一一〇〇	一六五〇〇	五七六〇〇	
工作機械	四〇	〇	四〇	一〇〇〇〇	〇	一〇〇〇〇	
その他	一三三	四四	一六七	三〇〇〇	一六〇〇	三六〇〇	
合計	九五〇	一八〇〇	二七五〇	三三四九〇〇	三五六三〇	五三一四三〇	

(四) 総計

五ノ二 塩安肥料製造設備

(一) 土地

項目	所要資材（鉄鋼材ヒ）			所要資金（千円）			備考
	第一期	第二期	合計	第一期	第二期	合計	
土地	一〇	〇	一〇	一五〇〇	〇	一五〇〇	
建物及機械基礎	三五〇	八〇〇	一一五〇	七七〇〇	四五八〇	一二三五〇	
機械設備	九五〇	一八〇〇	二七五〇	三四九〇〇	二九六五〇	五二四三〇	
その他（予期し難き費用）	九〇	〇	九〇	三五九〇〇	一七六二〇	四三五二〇	
合計	一四〇〇	二六〇〇	四〇〇〇	三三〇〇〇〇	二六〇〇〇〇	五九〇〇〇〇	

(二) 建物及機械基礎

徳山市大字徳山八三五五番地
徳山曹達株式會社工場内

室名	所要資材（鉄鋼材ヒ）			所要資金（千円）			備考
	第一期	第二期	合計	第一期	第二期	合計	
濃縮液沪過室	〇	〇	〇	〇	二〇〇〇	二〇〇〇	曹達工場の施設の使用（一〇〇%完成）
蒸発室	五〇	〇	五〇	一四〇〇〇	三〇〇〇	一七〇〇〇	加里工場のその使用（六〇%完成）

(三) 機械設備

室名	所要資材（鉄鋼材ヒ）			所要資金（千円）			備考
	第一期	第二期	合計	第一期	第二期	合計	
蒸溜廃液沪過装置	〇	〇	〇	〇	〇	〇	曹達工場の（二〇%見込）使用
反応沪過装置	四九五	三三・五	八三・〇	一八四〇	一〇九五	二九三五	監督建及加里工場一部
炭酸石灰乾燥装置	四七・〇	〇	四七・〇	一三六〇	〇	一三六〇	同　右
濃縮蒸発装置	四八一・六	四〇〇・五	八八一・一	四四一五〇	二九二八〇	七三四三〇	同　右
塩安晶出分離装置	二八三	七〇・四	九八・七	六四八〇	五三〇〇	一一七八〇	同　右
塩安乾燥装置	六二六	七三・六	一三五・二	三〇〇三	三五四〇	六八四〇	同　右
冷却装置	〇	一・三	一・三	〇	六〇	六〇	同　右
配管設備	九〇	五・〇	一四・〇	二〇〇〇	一〇〇〇	三〇〇〇	曹達工場のみの使用
その他	二八〇	〇	二八〇	七三〇	四七一五	五八〇五	新設
合計	九五〇	五八三・三	一三七八・三	一四四六〇	三五〇〇〇	四九四六〇	

反応沪過室							
乾燥室	五〇	〇	五〇	七四〇〇	二〇〇〇	九四〇〇	加里工場の（六二%見込）使用
合計	六〇	六〇	一二〇	九六二〇〇	三〇〇〇	九九二〇〇	新設
	二六〇	六〇	三二〇	三七六〇〇	一〇〇〇〇	三七六〇〇	

(四) 総　計

室名	所要資材（鉄鋼材屯）			所要資金（千円）			備考
	第一期	第二期	合計	第一期	第二期	合計	
建物及機械基礎	一六〇・〇	六〇・〇	二二〇・〇	二七六〇〇	一〇〇〇〇	三七六〇〇	
機械設備	六九五・〇	五八三・三	一二七八・二	六七四〇〇	四五〇〇〇	二二四〇〇	
繰越償却	〇	〇	〇	五〇〇〇	五〇〇〇	一〇〇〇〇	
合計	八五五・〇	六四三・三	一四九八・五	一〇〇〇〇〇	六〇〇〇〇	一六〇〇〇〇	

大収支計算書

大ハニーアンモニア集個計算書

項目	アンモニア月産一一六〇屯			アンモニア月産二二二〇屯			備考
	原単位	単価円	金額円	原単位	単価円	金額円	
コークス	一・一七屯	六〇〇〇	一四三四〇	二・〇〇六屯	六〇〇〇	二四〇四〇	
石炭	五・〇〇屯	二〇〇〇	一〇〇〇〇	九・五〇屯	二〇〇〇	一九〇〇〇	蒸気用及発電用 四二〇〇カロリー
電力	八三〇KWH	一・五円	一四三五	一五九〇KWH	一・五円	二八五五	十五万屯発電機一基 七三五〇発電量二四〇〇
補修及消耗費			五七五〇			七六五〇	
労務費			六五〇〇			八六〇〇	六五〇人及八五〇人
経費			四四五〇			五九二〇	

項目	塩安日産 一五〇瓲			塩安日産 三〇〇瓲			備考
	原単位	単価 円	金額 円	原単位	単価 円	金額 円	
アンモニアガス	〇・三八〇瓲	四八、八七五	一三、六八五	〇・三八〇瓲	四八、八七五	一三、六八五	
蒸汽	二・九〇〇瓲	七〇〇	二、〇三〇	二・九〇〇瓲	七〇〇	二、〇三〇	
石炭	〇・一六六瓲	二、〇〇〇	三三二	〇・一六六瓲	二、〇〇〇	三三二	
電力	六六KWH	一・七五	一一六	六六KWH	一・七五	一一六	
補修及消耗品費			五二四			五二四	
労務費			五五九			四五三	

六ノ二、塩安肥料原価計算書

註一、償却費は五万瓲相当分三億三千万円　十万瓲相当六億九千万円とし十年償却として算出する

二本計算に於て借用品賃貸料は帳簿価格を五万瓲相当分一、二〇〇万円、一〇万瓲相当分一、五〇〇万円として評価倍率を一〇倍として其の六%を以て賃貸料とす

項目	一四
原料	一、〇二〇
償却費	二、三六〇
金利	二、五七〇
輸送賃	四五〇
小計	四八、八七五
	六九三
	二、六六〇
	二、八九〇
	四五〇
	四一、九二二

(一)　大ノ三、曹達灰原価計算書

経費	三一〇						
償却費	一九八						
金利	五〇〇						
小計	一八、二五四						
控除（回収塩）	一四三八	五三六〇	一三四〇	一五八〇五	三四四	一七二	二三三
合計	一六、八一六	五、七五二	〇、二五〇屯				
							一四、四六五

註、塩安製造に於いて回収塩が副生され、原価計算は塩安と回収塩の所産品計算法を適用し、塩安一に対し回収塩〇、二五の従量比率に依り算定する。

曹達灰原価計算書

曹頭の説明書に述べた如く塩安を製造する場合は単に塩安の価格になる許りでなく曹達の製造原価も低下するのであります。

尤も塩安を製造した場合には曹達用の原塩、石灰石「コークス」蒸汽電力及労力が減少しますが一方塩安濃縮用として曹達で減少した蒸汽より余計多量の蒸汽が必要です。

此等の関係を明瞭にする為に塩安の原価計算書のみでなく塩安の原価計算をも併記します。

(一)　日産一五〇屯の場合

項目	塩安を製造しない場合			塩安を製造する場合			備考
	数量	単価 円	金額 円	数量	単価 円	金額 円	
原塩	一・六七〇	三〇八〇	五、一六四	一・六七〇	三〇八〇	五、一六四	
アンモニア	五キロ	五、〇〇〇	三五五	五キロ	四、八〇〇	三四四	
石灰	一・三〇〇	六〇〇	七八〇	一・三〇〇	六〇〇	七八〇	
コークス	〇・一九〇	六〇〇	一一四	〇・一九〇	六〇〇	一一四	
石炭	〇・三〇〇	四、八〇〇	一、四四〇	〇・三〇〇	四、八〇〇	一、四四〇	
汽業	三・五〇〇	七〇〇	二、四五〇	三・五〇〇	七〇〇	二、四五〇	
電力	三〇〇KWH	一・五五	三五〇	三〇〇KWH	一・五五	三五〇	
労賃			一、八〇〇			一、八〇〇	
補修費			一、八〇〇			一、八〇〇	
減価償却費			一、八〇〇			一、八〇〇	
固定資産税							
小計			一八、三一四			一八、三一四	
回収塩水				〇・三五〇	五〇	一七五	
小計						一八、一三九	

(三) 日産三〇〇トンの場合

項目	数量	単位	掘安を要しない場合 単価	掘安を要しない場合 金額	掘安を要する場合 単位	掘安を要する場合 単価	掘安を要する場合 金額	備考
鉱石	一・六五〇	千トン	三〇・〇〇	四九五〇	五キロ	四九・三〇	二四六五	
アンモニア	五キロ	千トン	五〇〇〇	二五〇〇	五キロ	五〇〇〇	二五〇〇	
石灰石	二・三〇〇	千トン	六〇・〇〇	一三八〇	六〇	六〇・〇〇	一三八〇	
コークス	〇・一九〇	千トン	六〇〇〇	一一四〇	六〇	六〇・〇〇	一一四〇	
石灰	〇・三〇〇	千トン	四八〇〇	一四四〇	四八〇	四八・〇〇	一四四〇	
珪素	三・三〇〇	千トン	七〇〇〇	二三一〇	七〇	七〇・〇〇	二三一〇	
電力	三〇〇	KWH	一・七五	五二五	一〇〇	一・七五	五二五	
労務費	一・四九三	千円						
修繕費	一・〇三二	千円						
補給品費	〇・三〇〇	千円						
小計	一・六九二	千円						
包装費	一八五〇	千円						
減価償却費	四〇〇	千円						
回収価値		千円						
合計	一・六九二	千円			五三〇	一・三四〇	一・八九二	

七

六ノ四　一ヶ月収支計算書

(一) 塩安日産一五〇㌧の場合（曹達灰日産一五〇㌧）

項目	数量(㌧)	支出之部 原価(円)	金額(千円)	収入之部 販売価格(円)	金額(千円)
塩安肥料	四、一七〇	一六、八一六	七〇、一二二	一七、四四〇	七二、七二四
曹達灰	四一七〇	一四、六〇六	六〇、九〇七	一五、〇〇〇	六二、五五〇
合計			一三一、〇二九		一三五、二七四
差引利益金					四、二四五（含税金）

(二) 塩安日産三〇〇㌧の場合（曹達灰日産三〇〇㌧）

塩安肥料	八三四〇		一四、四六五		一七、四四〇
曹達灰	八三四〇	一三、一六九	八二九	一五、〇〇〇	一四五、四四九
合計			一〇九、四六七		一二五、一〇〇
差引利益金					二七〇、五四九

四〇、〇八二（含税金）

但し現在曹達灰には相当補給金が付いてありますが本計画の如く合理化された場合は補給金も或程度削減されるものと思はれますが一応現在価格によって算出しました。

資金計画書

所要資金

七　資金の調達方法

項目	第一期計画	第二期計画	合計（千円）
アンモニア工場建設資金	三三〇、〇〇〇	三六〇、〇〇〇	六九〇、〇〇〇
塩安工場建設資金	一〇〇、〇〇〇	六〇、〇〇〇	一六〇、〇〇〇
運転資金	五〇、〇〇〇	一七〇、〇〇〇	二二〇、〇〇〇
合計	四八〇、〇〇〇	五九〇、〇〇〇	一〇七〇、〇〇〇

八　着工及竣工の時期

項目	着工	竣工
第一期工事	御許可の日	着工後十ヶ月
第二期工事	同上	着工後一年六ヶ月

九　資料

以上

寫

指導證明書

今般山口縣玖珂郡和木村並ニ岩國市裝束ニ跨ル元陸軍燃料廠跡ニ於テ
ンモニアー製造工場ヲ設立シコレヲ主原料トシテ弊礦山工場ニ於テ副
ネタ製造致シ以テ
一、一ノ肥料ソーダー工業ノ維持確立
二、廉價ナル窒素性肥料ノ增産
リ經濟自立ノ國策ニ寄與シタキ念願デアリマスカラ貴廳ノ御指導ニ
フ關リ工場ヲ設立スル事ヲ御證明下サル樣御願申上マス
昭和二十四年十二月二十日

山口縣礦山市大字礦山八三五五番地
礦山曹達株式會社
取締役社長 蔭山如信

右ノ通リ相違ナキコトヲ證明ス

昭和二十四年十二月二十日

山口縣玖珂郡和木村長　村上泰
岩國市長　津田龍彌
山口縣知事　中田謙吉

閣閣閣

FLOW SHEET OF AMMONIA SYNTHESIS

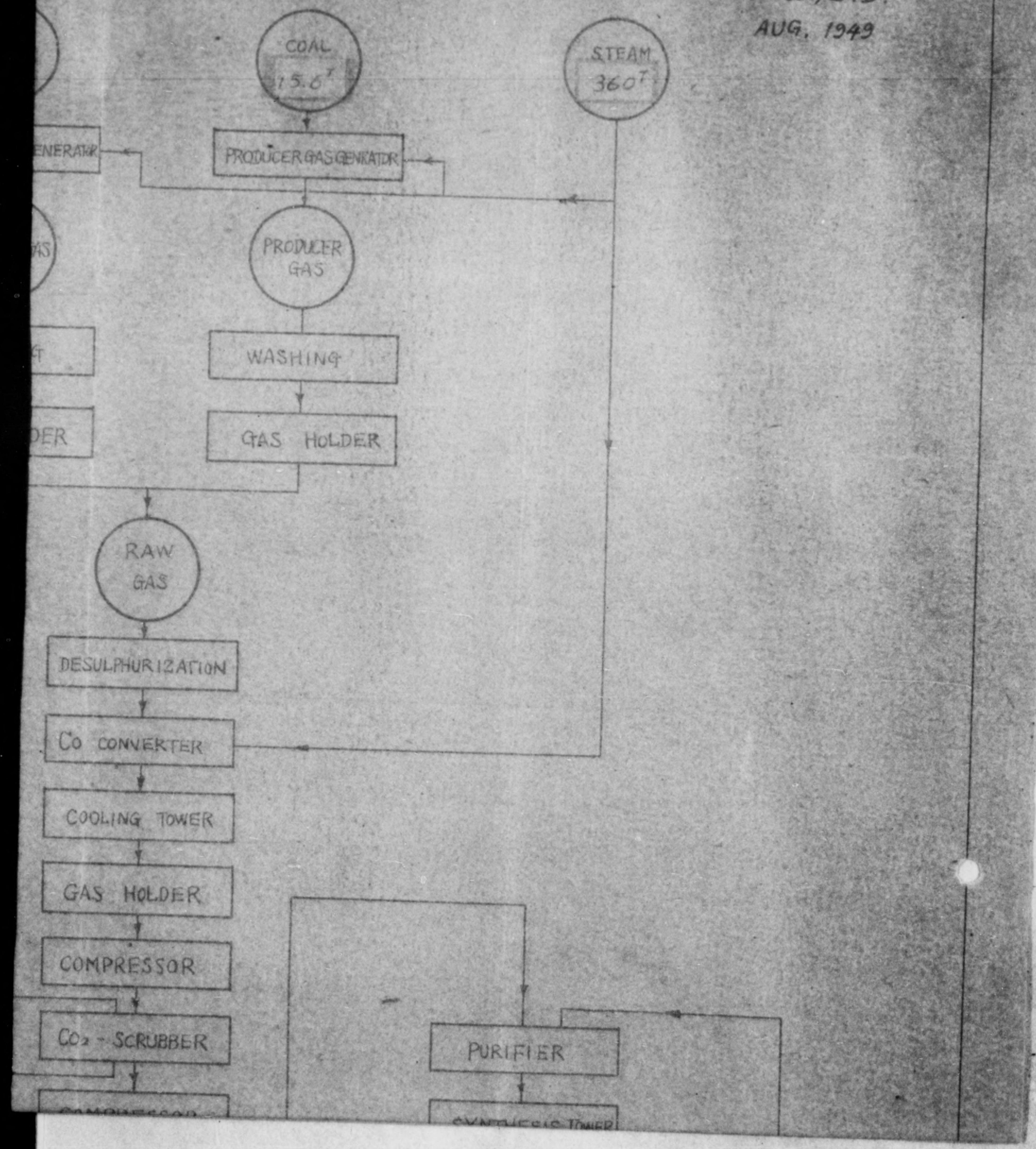
(40 TONS PER DAY)

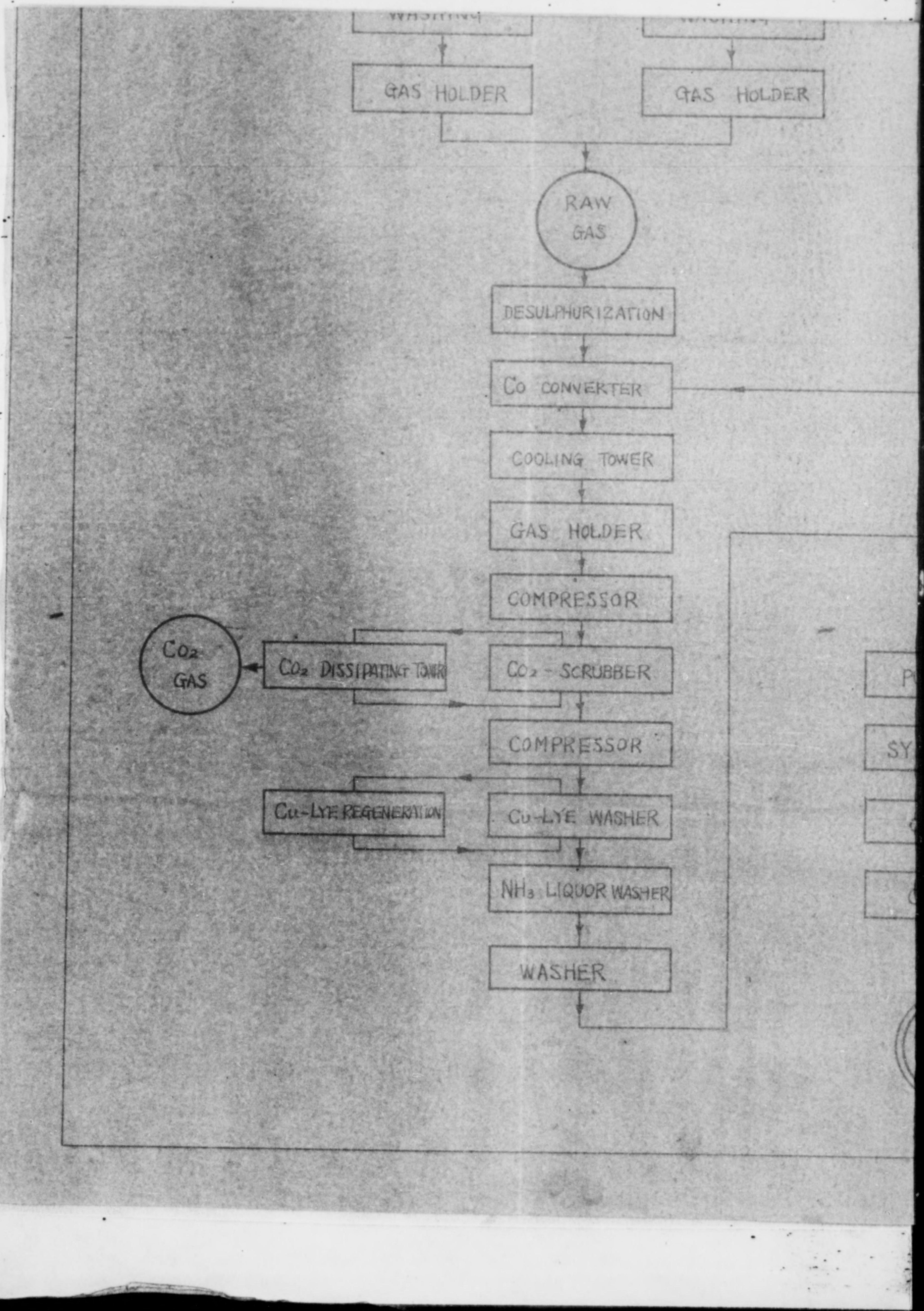
SHEET OF AMMONIA SYNTHESIS PROCESS

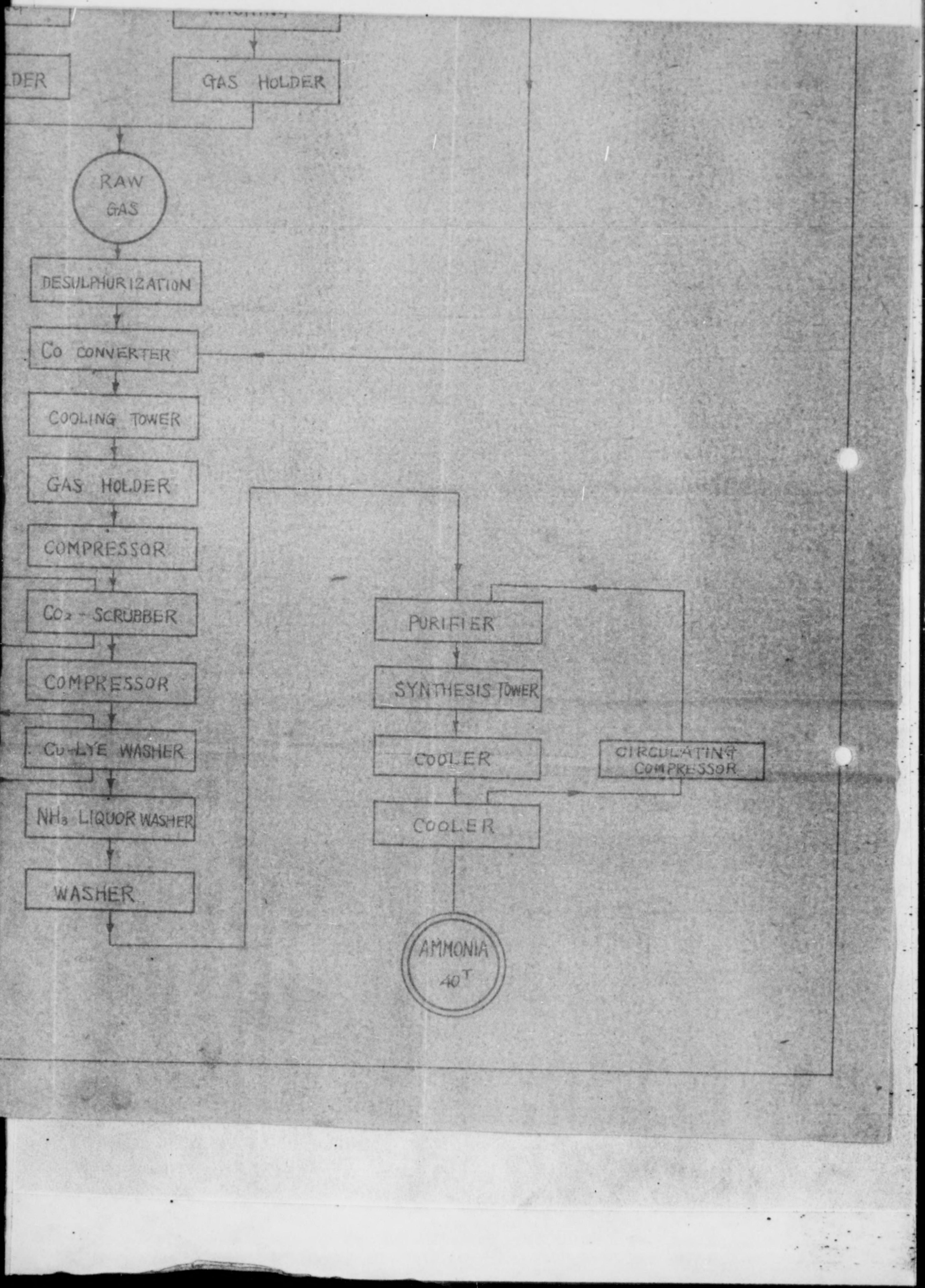
(40 TONS PER DAY)

TOKUYAMA SODA CO., LTD.

AUG. 1949

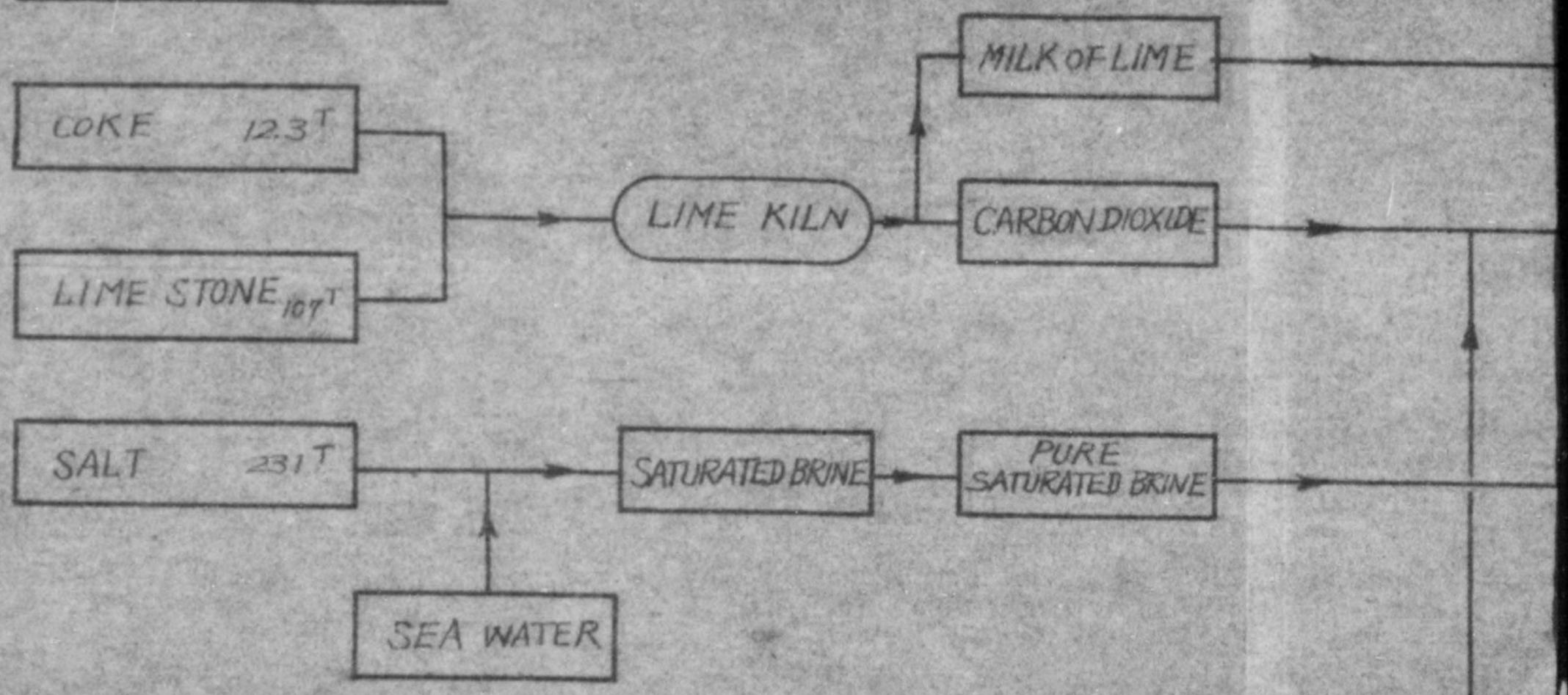




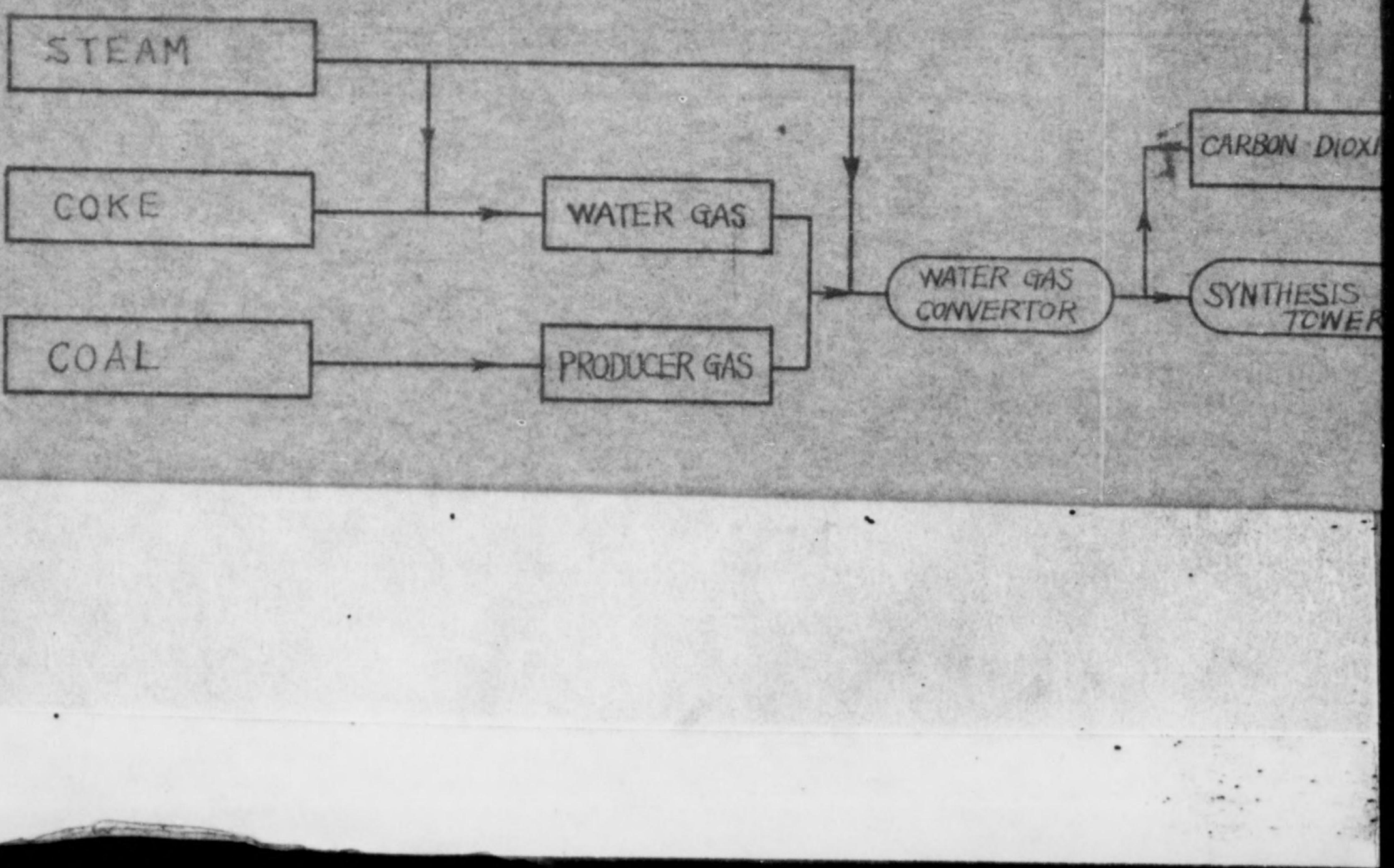


FLOW SHEE

SODA ASH PLANT

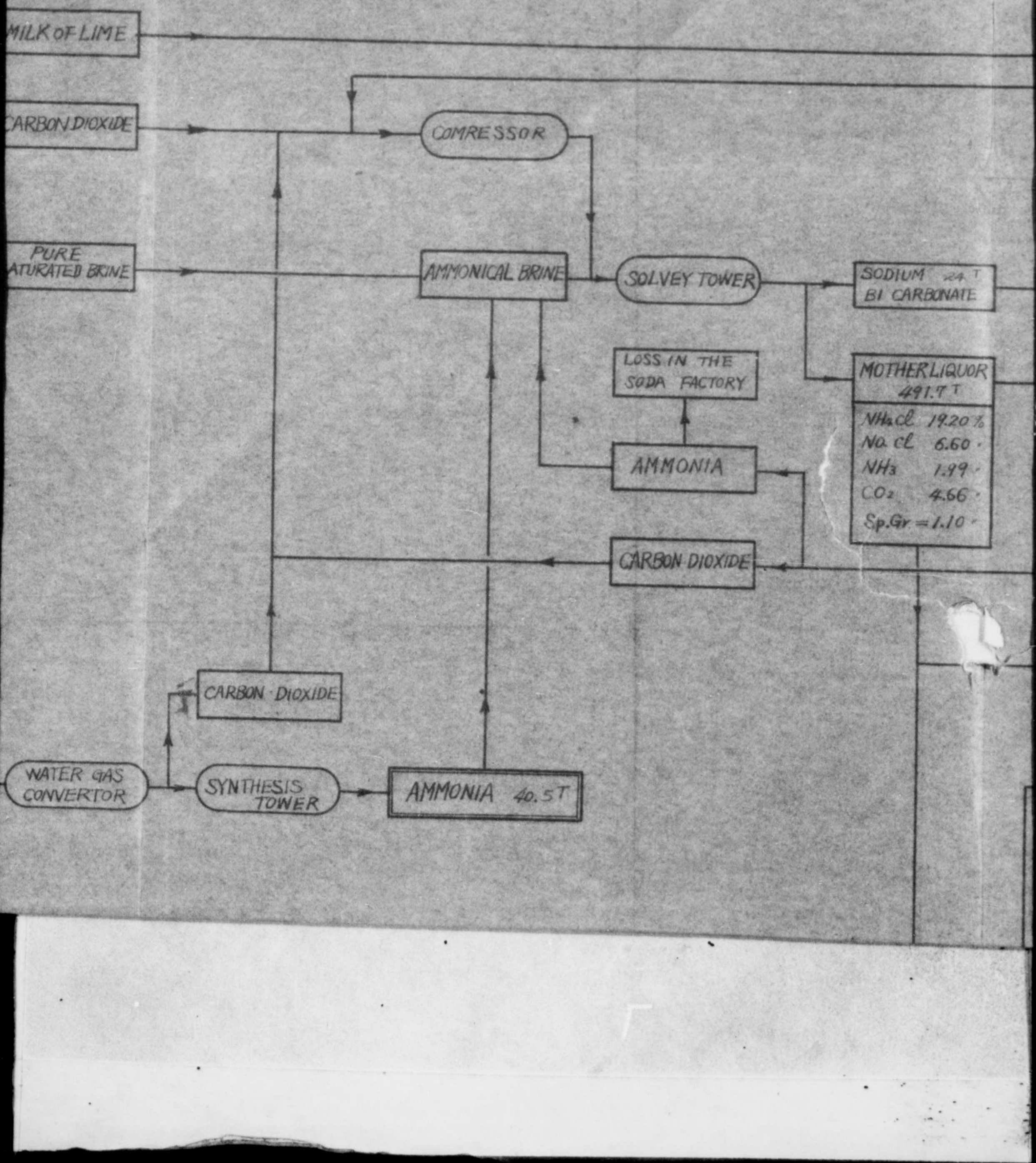


AMMONIA PLANT



FLOW SHEET OF AMMONIUM CHLORIDE F

(150 TONS PER DAY)



ONIUM CHLORIDE FERTILIZER

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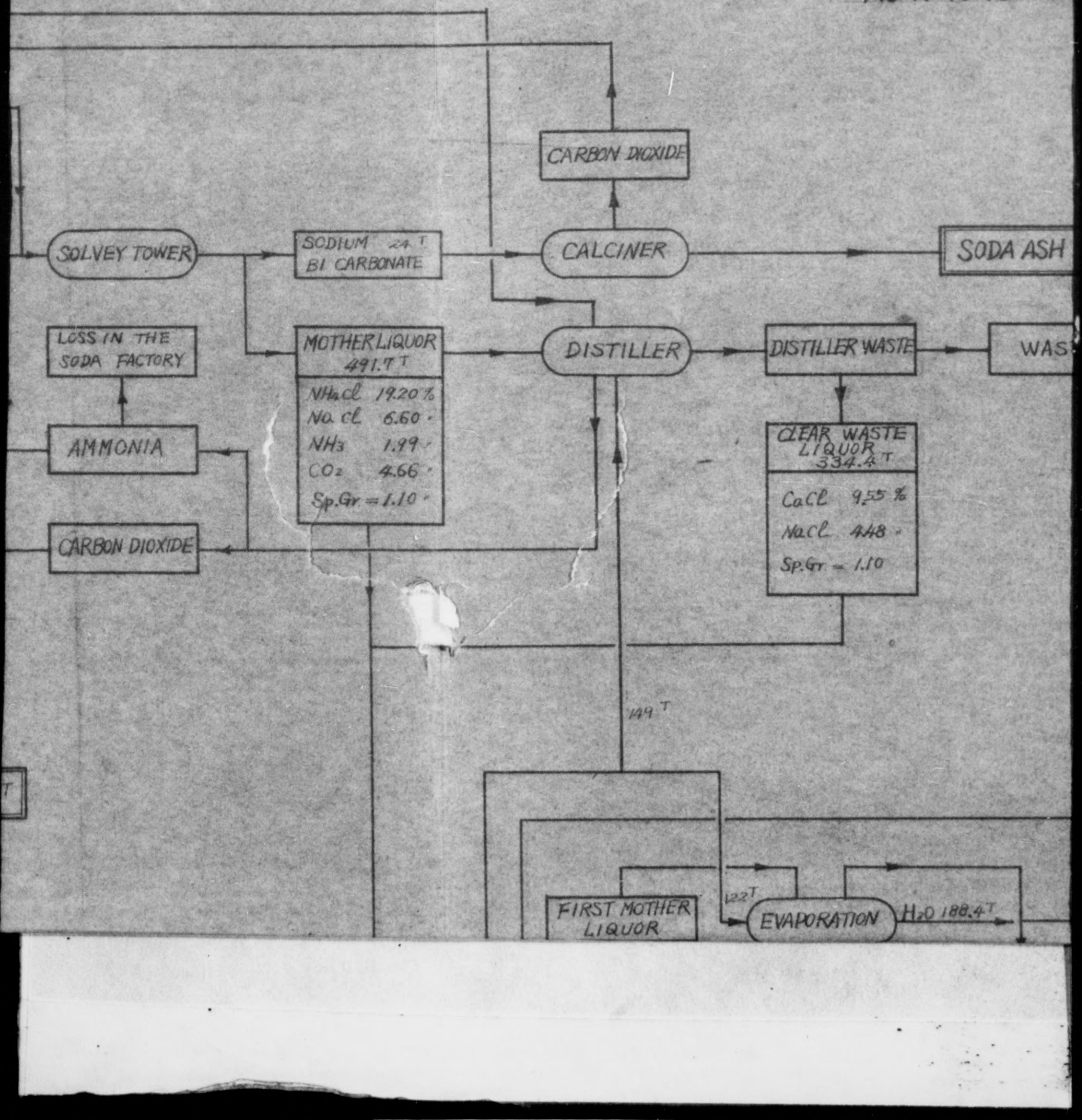
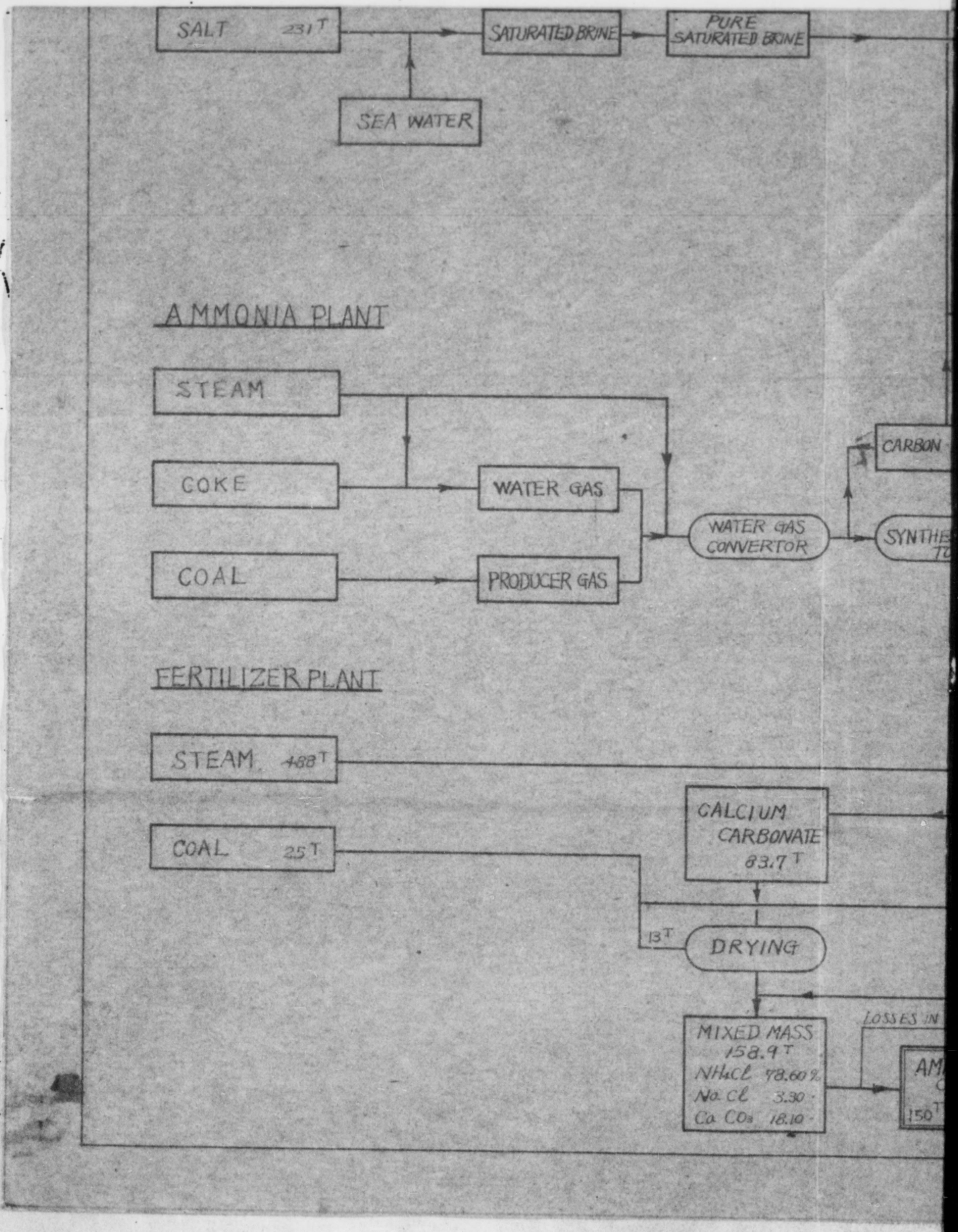
TOKUYAM SODA CO., L

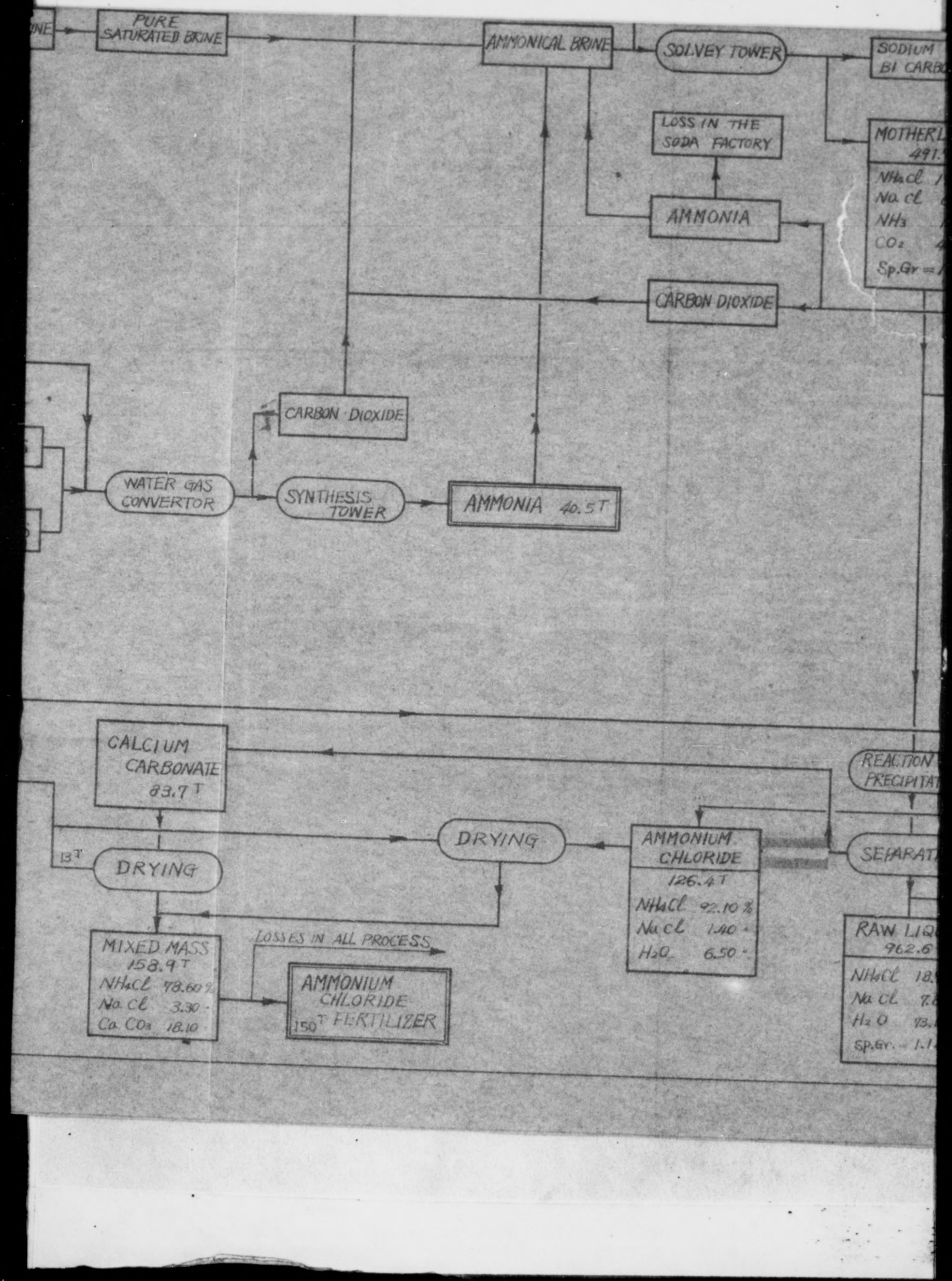
AUG. 1949

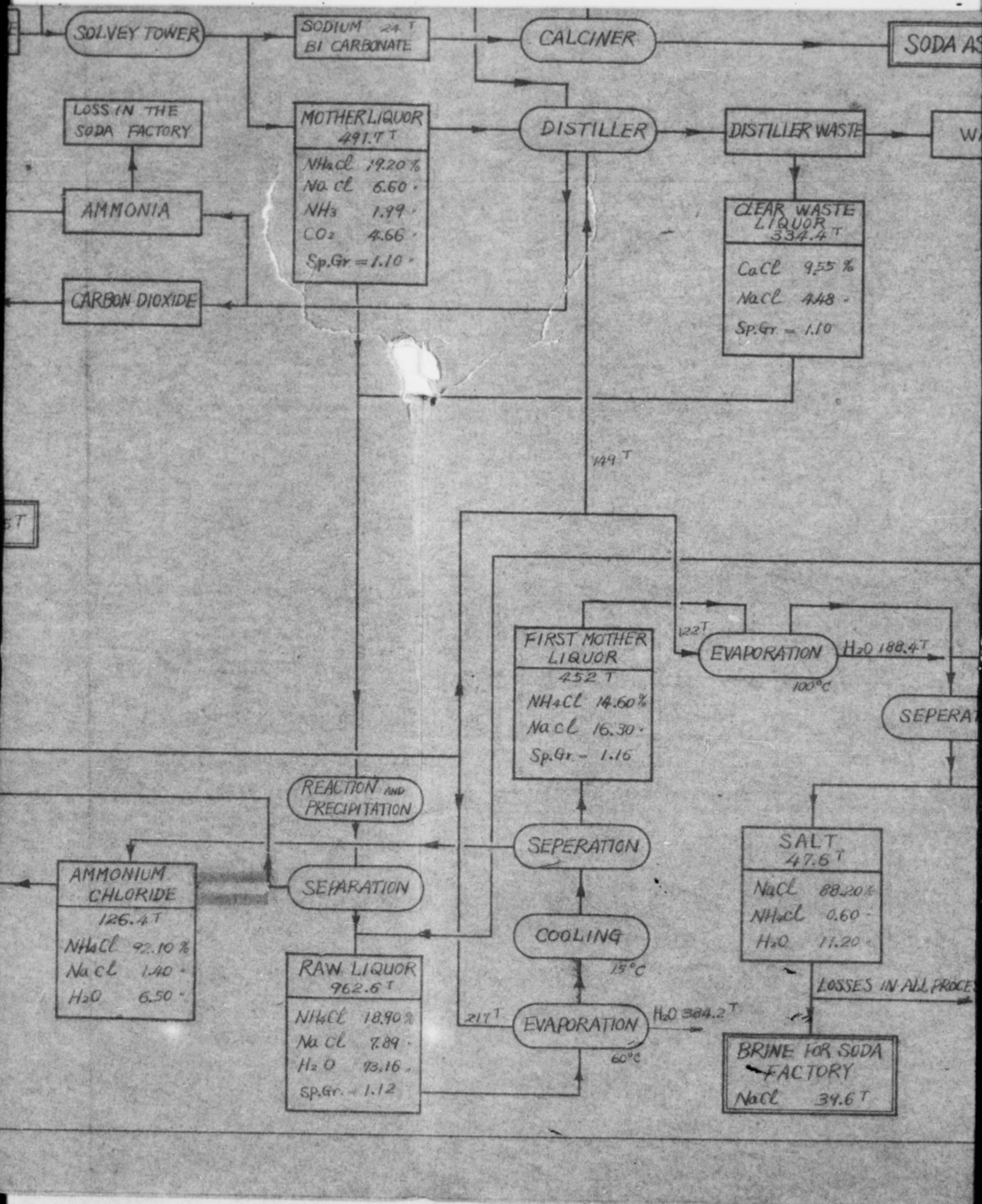


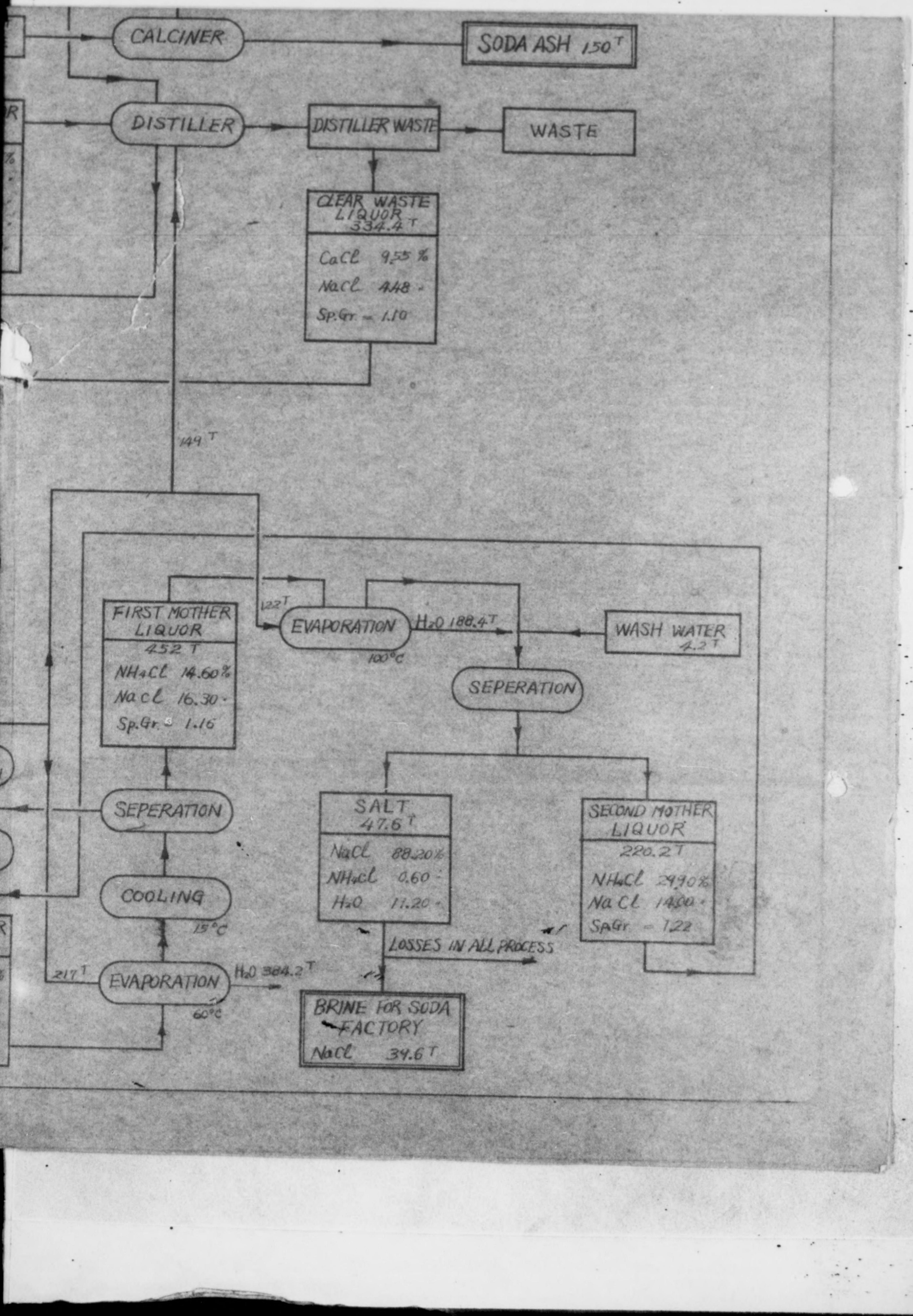
FERTILIZER

TOKUYAM SODA CO., LTD
AUG. 1949









ORIGINAL

45-5
ser II

TOKUYAMA SODA CO., LTD.

Tokuyama, Jan. 31, 1950

To : The Commander,
Chugoku Civil Affairs Team
Kure City

Sir,

Enclosed please fined herewith a copy of the application which we have sent in to the Japanese Government for their permission to grant us the temporary use of a part of the former Iwakuni Army Fuel Depot (located in Iwakuni City and Waki-mura, Kuga-gun, Yamaguchi-ken) for the manufacture of ammonia in order to meet national aim of increasing the production of nitrogenous fertilizer as well as establishing soda industry by Solvay-method.

We should be very grateful to you, if you would be kind enough to extend to us all possible assistanses for the realization of our hopes.

Yours faithfully,

Yukinobu Kageyama, President

COPY

Application to Borrow the State-owned
Property for Temporary Use

Mr. Hayato Ikeda, Minister of Finance

Mr. Hoitaro Inagaki, Minister of International
Commerce & Industry

Gentlemen :

We hereby apply to borrow a part of the former Iwakuni Army Fuel Plant in Yamaguchi Prefecture for the manufacture of ammonia as per documents attached herewith.

Tokuyama Soda Co., Ltd.,

8355 Tokuyama City

Yukinobu Kageyama, President

I. Reason for Application

II. Object of the Projects

III. Extent of the Application

IV. Attached Documents

I. Reason for Application

We are now engaged in making soda by ammonia-soda process with imported salt. 75% or the salt is converted to soda but the balance is wasted. Out of converted portion of the salt, sodium content is utilized while chlorine is not. On the other hand, ammonium sulphate is partly imported due to the shortage of pirites. Sulphuric acid contained in ammonium sulphate has no fertilizer value.

Our researches on ammonium chloride date back to more than ten years ago. Now that fertilizer value is verified to be no less than that of ammonium sulphate, we intend to manufacture on industrial basis the ammonium chloride by way of utilizating salt in ammonia-soda industry, and economizing sulphuric acid in ammonium sulphate industry.

In the present manufacturing process of soda, ammonium chloride is produced in the Solvay tower. It is at present distilled, and the recovered ammonia is used over and over again. The liquor coming out of Solvay tower is filtered and condensed. Then ammonium chloride is made and salt is completely recovered: of course, ammonia must be supplied as required. This results in the saving of coal and limestone for the manufacture of soda. In order to make ammonium chloride our an industrial scale, it is necessary to own the equipment of ammonia synthesis. It so happens that the hydro-cracking equipment of the former army plant can be used for ammonia synthesis. That is why we make an application hereby.

Out of the former hydro-cracking equipment, what is necessary for ammonia synthesis is listed in the attached particulars.

With some renovation inside the high pressure cylinders, the equipment can turn out 50,000 tons ammonium chloride a year without further alteration.

A flow sheet is herewith attached to show how the equipment is converted to carry out ammonia synthesis.

Since we are convinced that the manufacture of ammonium chloride is the best way of rationalization of soda and fertilizer industries, we are anxious to have upon permission to use the former hydrocracking equipment for a source of ammonia.

II. Object of the Projects

Manufacture of ammonia

First project : to make 13,200 tons ammonia a year

Second project: to make 26,400 " " " "

III. Extent of Application

(A) Land as per attached layout of former Iwakuni fuel plant

(B) Building as per attached layout of former Iwakuni fuel plant

(C) Machines Equipment what is under "For 50,000 tons" in the Particulars of Machines & Equipment of the Projects.

Plan for

Synthetic Ammonium Plant

and

Ammonium Chloride Fertilizer Plant

Tokuyama Soda Co., Ltd.

September, 1949

Contents

I. Significance of the project

A. History of the project

It is needless to say that the manufacture of ammonium chloride fertilizer is essential to the economical management of ammonia soda industry as is widely known to the experts concerned. Realizing the importance of this project, this company had made necessary preparation to build synthetic ammonia plant by 1939, when the development of Sino-Japanese incident made it impossible to purchase the main machines. In consequence, the project had to be abondoned.

Since 1936, we have a number of our laboratory staff engaged in the experiments of manufacturing ammonium chloride and ascertaining its fertilizer effect. In July, 1941 we received bounty from the Ministry of Commerce & Industry to build a pilot plant. Various researches were made while we put out 150 tons between February and May, 1942, with the plant of 2 tons per day.

We first tried Schreib process. By keeping free ammonia at 3% and by cooling mother liquor with salt, precipitating ammonium chloride was easily obtained.(1) There was, however, a problem because the filtrate, after ammonium chloride is filtered out, contained too much ammonium chloride and other impurities to make sodium bicarbonate therefore. We, therefore, tried later the evaporation process. Corrosion is the problem in this process. By our basic researches on corrosion, we discovered that the addition of phosphates could successfully prevent the corrosion in manufacturing, for which we have a patent pending.(2)

We also have a patent with regard to moisture-absorbing problem of ammonium chloride.(3) By granulating, the surface area of ammonium chloride can be made much less and hygroscopy can be

decreased. By way or preventing the solidification of ammonium chloride, the addition of calcium carbonate has been contrived. The addition of calcium acid phosphates also serves this purpose.

Since the end of the war, our soda plant was rehabilitated and at the same time this project had been closely examined before we formulated this project.

Although we have no equipment for making synthetic ammonia, we have ascertained that, by utilizing idle equipment of former army fuel plant at Iwakuni, we can complete the equipment for manufacturing synthetic ammonia. This is why the synthetic ammonia has been included in this project.

B. Fertilizer effect of ammonium chloride

Since 1941, researches in the fertilizer effect of ammonium chloride were made at the Imperial University of Tokyo.(4) We also made experiments at Tokuyama on 1,000-tsubo land as well as pots in a laboratory to ascertain the fertilizer effect of ammonium chloride and its blended fertilizers.(5)

With regard to paddy, which is the main agricultural product in Japan and for which the majority of fertilizer is consumed, ammonium chloride is considered a more perfect fertilizer than ammonium sulphate by the Japanese scholars' circle. Frequently, ammonium sulphate has its sulphate reduced to sulphide and consequently does paddy a serious harm. On the other hand, chlorides strengthens the stems and leaves of plants and helps resist bacilli, insects and storm. This applies to other plants, especially textile plants where strength is required. Dr. Russel of England is also agreed with us and says that chlorides are better in areas where rain-fall is much.(6) In Japan whose rain-fall is more than

that of England, ammonium chloride is considered no less effective than ammonium sulphate.

(1) "Manufacturing method of ammonium chloride" in the Laboratory Report of Tokuyama Soda Co., Vol.

(2) Japanese patent pending for manufacturing method of ammonium chloride from mother liquor of ammonia soda process with the use of phosphates.

(3) Japanese patent for manufacturing method of granulated ammonium chlorids.

(4) "Experiments of fertilizer effect of ammonium chloride" in the agricultural Department Report of Imperial University of Tokyo, Vol. II

(5) "Researches in the fertilizer effect of ammonium chloride" in the Laboratory Report of Tokuyama Soda Co., Vol. II

(6) "Plant nutrition and crop production," by Dr. Russel.

II. Synopsis of the project

A. Synthetic ammonia

The synthetic ammonia plant requires a capacity of 13,200 tons per year to produce 50,000 tons fertilizer when the usual loss of ammonia in soda plant is taken into account. The high pressure hydro-cracking equipment in the former army fuel plant at Iwakuni remains entirely intact through the bombing. With some minor repair job, the conversion to synthesis of ammonia can be accomplished at no big amount of expense. This plant may be used as ammonia synthesis plant with small reconstruction, rearrangement of pipes and repairing of machines and buildings. The capacity of the plant, as for ammonia, is estimated 40 tons per day under present condition. If we maltiply twice the capacity of crude gas plant, we can produce 80 tons per day ammonia. Tnis corresponds to 100,000 tons of 20.6% nitrogen fertilizer.

In view of the insufficient electric power in Yamaguchi Prefecture, we shall, in stead of electrolytic process, take up water.

gas process using coke for material, and copper lye process to refine the gas. Fauser system will be taken up at 300 atmospheric pressure to make synthetic ammonia. Our first project is a plant with a capacity to manufacture 40 tons of ammonia per day, equivalent to app. 50,000 tons in term of ammonium sulphate. The ammonia thus manufactured at Iwakuni is sent to soda plant at Tokuyama in the form of ammonia water and ammonium carbonate solution for soda manufacturing by our tank boat.

B. Ammonium chloride fertilizer

On top of existing equipment of ammonia soda process will be added ammonium chloride manufacturing equipment consisting of reaction tank, separator & drier for calcium carbonate; evaporator, crystallizer, separator & drier for ammonium chloride crystallization; evaporator, separator & drier for salt recovery. The existing equipment of our company can be utilized for most of those purposes.

III. Synopsis of the Method of Manufacture

A. Synthetic ammonia

Following is the method for making synthetic ammonia as adopted in this project.

Material hydrogen is made with P.G.C. water-gas producer using coke for its material. Water gas is then mixed with producer gas to make up the ratio of hydrogen and nitrogen 3 : 1. This crude gas is de-sulphurized by dry process. Hydrogen content is increased by converting carbon monoxide to carbon dioxide with P.G.C. converter. This concerted gas is compressed at 300 atmospheric pressure through copper lye washer and ammonia washer. Carbon monoxide and dioxide are absorbed in the course of refining process. The refined gas is made into ammonia through Fauser synthesis tower and the ammonia is put into tank boat and carried to soda plant.

B. Ammonium chloride fertilizer

Several methods are contrived to make ammonium chloride in ammonia soda process. In the present project, mother liquor is taken at as high concentration as possible after sodium bicarbonate is separated and most of such liquor will be used as material liquid for making ammonium chloride. A part of waste liquor distillation in the ammoniua soda process is added thereto so as free ammonia in the mother liquor is approximately in an equivalent portion with calcium chloride in the waste liquor. The free ammonia then turns into ammonium chloride and precipitated calcium carbonate gets crystalized. The calcium carbonate, after separated and dried, is mixed with finished ammonium chloride to keep it dry. After calcium carbonate is separated, the filtrate (mother liquor) is mixed with cycling liquid and boiled up to half its quantity and then cooled to 15°C to get precipitating ammonium chloride. After ammonium chloride is separated, the remaining liquid contains ammonium and salt in about the same proportion as in the original liquor. Therefore, it can be utilized with the mother liquor. This is what we have Patent No. 131341 for.

With an equipment to produce 150 tons soda ash per day, about 150 tons ammonium chloride can be manufactured, but we estimate the production of ammonium chloride at 125 tons per day. With the aforesaid calcium carbonate added, ammonium chloride fertilizer containg 20.6% nitrogen is manufactured at the rate of 150 tons per day.

IV. Characteristics of the Method of Manufacturing Ammonium Chloride Fertilizer under this project

There will be no objection to the manufacture of ammonium chloride fertilizer in view of scarcity of materials for making sulphuric acid, requirement for increased production of nitrogen fertilizer, and the necessity of complete utilization of chlorine and sodium

contents in salt used in ammonia soda industry.

Synthesis of ammonia is a well known industry and no explanation is necessary. Quite a few methods of making ammonium chloride are made public, each having merits and demerits. The characteristics of the method we are to take up follow :-

(1) No material salt of high purity is required as in Zahn process. The same quality of salt as is now used in ammonia soda plant well do.

(2) Ammonium chloride is crystalized when cooled to atmospheric temperature.

(3) The evaporation process has a disadvantage of corrosion of evaporators due to the decomposition of ammonium chloride. The free ammonia in the liquor is eliminated by the addition of a part of the distillation waste liquor to the mother liquor. The corrosion is remarkably decreased by the addition of phosphate, for which we have a patent pending. Thus corrosion problem is fairly settled in our company.

(4) Ammonia soda industry being a highly fabricated one, the manufacturing of soda will be put to a great disadvantage if complicated with additional cycling process of ammonium chloride. In our project, manufacturing of soda and manufacturing of ammonium chloride are independent of each other is operation.

(5) In our project, the rate of utilization of salt is set at app. 94% in consideration of its loss in cycling process and minimized steam consumption. The rate is theoretically 100%.

(6) In consideration of future use of recovered salt and Brine in the country, Schreib system or Zahn process requiring pure salt is not suitable.

V. Profit & Loss

A) Cost Calculation of Ammonia

Item	When production 40 tons per day			When production 80 tons per day			Remarks
	Quantity per ton	@	Amount in yen	Quantity per ton	@	Amount in yen	
Coke	2.5	7,050	17,625	2.5	7,050	17,625	
Coal	1.35	3,838	5,181	1.35	3,838	5,181	
Elec. power	3,200KWH	1.1	3,520	3,000	1.1	3,300	
Maintenance			5,000			4,000	
Labor			6,000			3,830	550 & 700 man/day
Overhead exp.			3,800			2,280	
Depreciation	2,050			2,050			depreciation in 10 yrs.
Interest	2,580			2,420			10% per annum
TOTAL	45,756			40,686			

B) Cost Calculation of Ammonium Chloride Fertilizer

Item	Quantity per ton	When production 150 tons per day @	Amount in yen	When production 500 tons per day @	Amount in yen	Remarks
	T					
Ammonia	0.264	47,000	12,408	41,700	11,009	Containing transportation Cost
Steam	2.9	720	2,088	720	2,088	for evaporation
Coal	0.1665	2,214	369	2,214	369	for drying product 3,800 Cal.
Elec. power	66 KWH	1.3	86	1.3	86	
Maintenance			533		400	
Labor			350		228	
Packing			850		850	
Overhead exp.			189		113	
Depreciation			149		110	
Interest			165		148	
TOTAL			17,187		15,401	

C. Cost Calculation of Soda Ash

a) When production 150 tons per day

Item	When ammonium chloride Fertilizer is not manufactured			When ammonium chloride fertilizer is manufactured		
	Quantity per ton T	@	Amount in yen	Quantity per ton T	@	Amount in yen
Salt	1.65	3,080	5,082	1.27	3,080	3,912
Ammonia	5 kg	56,400	282	5 kg	47,000	235
Limestone	1.50	590	885	0.713	590	421
Coke	0.19	7,050	1,340	0.099	7,050	698
Coal	0.30	5,200	1,560	0.30	5,200	1,560
Steam	2.50	720	1,800	0.553	720	398
Elec. power	200KWH	3.9	780	100KWH	3.9	390
Labor			1,900			1,467
Maintenance			1,624			1,291
Gen. exp.			200			118
Exp. of auxiliary dept.			710			413
Business exp.			700			410
Packing			1,850			1,850
TOTAL			18,313			13,163

b) When production 300 tons per day .

Item	When ammonium chloride fertilizer is not manufactured			When ammonium chloride fertilizer is manufactured		
	Quantity per ton	@	Amount in yen	Quantity per ton	@	Amount in yen
	T			T		
Salt	1.65	3,080	5,082	1.27	3,080	3,912
Ammonia	5 kg	56,400	282	5 kg	41,700	209
Limestone	1.50	590	885	0.713	590	421
Coke	0.19	7,050	1,340	0.099	7,050	698
Coal	0.30	5,200	1,560	0.30	5,200	1,560
Steam	2.50	720	1,800	0.553	720	398
Elec. power	200KWH	3.9	780	100KWH	3.9	390
Labor			1,032			815
Maintenance			,123			814
Gen. exp.			115			70
Exp. of auxiliary dept.			522			321
Business exp.			401			240
Packing			1,850			1,850
TOTAL			16,772			11,698

D. Estimated Profits per Month

a) Estimated Profits per Month (150 T/D)

Ammonium Chloride Fertilizer

4,170 tons sold @	¥21,300	¥88,821,000	
" " Cost "	"17,187	"71,670,000	¥17,151,000

Soda Ash

4,170 tons sold @	¥18,950	¥79,021,000	
" " cost @	¥13,163	"54,890,000	¥24,131,000
Profit subject to taxation ----------			¥41,282,000

b) Estimated Profit per Month (300 T/D)

Ammonium Chloride Fertilizer

8,340 tons sold @	¥21,300	¥177,642,000	
" " cost "	"15,401	"128,444,000	¥49,198,000

Soda Ash

8,340 tons sold @	¥18,950	¥158,043,000	
" " cost "	"11,698	" 97,561,000	¥60,482,000
Profit subject to taxation ----------			¥102,680,000

VI. Necessary Funds and Materials for Construction

A) Ammonia synthesis plant

Note : 1st project : 50,000 tons ammonium chloride fertilizer
2nd " : 100,000 " " " "

(1) Land

Item	Material (iron & steel) in ton			Required expense in 1,000 yen		
	1st	2nd	Total	1st	2nd	Total
Leveling	10	0	10	1,500	0	1,500

(2) Buildings and other structures

Item	Material (iron & steel) in ton			Required expense in 1,000 yen		
	1st	2nd	Total	1st	2nd	Total
Water gas plant	15	540	555	3,750	21,400	25,150
Producer gas plant	10	0	10	3,440	0	3,440
CO conversion plant	18	98	116	2,780	6,120	8,900
Synthesis plant	60	50	110	31,960	2,500	34,460
Cu-lye regeneration plant	5	55	60	440	3,250	3,690
Substation	3	0	3	2,150	0	2,150
Water station	5	0	5	270	0	270
Boiler room	80	1	80	2,400	0	2,400
Power generating plant	25	0	25	12,600	0	12,600
Machine shop	50	0	50	3,050	0	3,050
Storehouse	50	0	50	3,050	0	3,050
Miscellaneous	29	57	86	4,110	730	4,840
TOTAL	350	800	1,150	70,000	34,000	104,000

(3) Machines & equipment

Item	Material (iron & steel) in ton			Required expense in 1,000 yen		
	1st	2nd	Total	1st	2nd	Total
Water gas producer	100	903	1,003	8,000	71,000	79,000
Gas producer	80	0	80	9,600	0	9,600
CO converter	74	376	450	16,000	44,000	60,000
CO_2 removal	15	25	40	4,200	1,500	5,700
CO "	10	215	225	6,500	53,500	60,000
Ammonia synthesis	155	145	300	41,000	35,000	76,000
Electric facilities	75	52	125	20,000	8,000	28,000
Water facilities	20	0	20	2,800	0	2,800
Boiler facilities	100	0	100	20,000	0	20,000
Transportation facilities	160	40	200	32,000	12,000	44,000
Power generating plant	100	0	100	10,000	0	10,000
Miscellaneous	23	44	67	1,900	1,000	2,900
Machine shop	40	0	40	15,000	0	15,000
TOTAL	950	1,800	2,750	187,000	226,000	413,000

(4) Summation

Item	Material (iron & steel) in ton			Required expense in 1,000 yen		
	1st	2nd	Total	1st	2nd	Total
Land as in (1)	10	0	10	1,500	0	1,500
Building and other structure as in (2)	350	800	1,150	70,000	34,000	104,000
Machines and equipment as in (3)	950	1,800	2,750	187,000	226,000	413,000
Miscellaneous	90	0	90	31,500	10,000	41,500
TOTAL	1,400	2,600	4,000	290,000	270,000	560,000

B) Ammonium chloride fertilizer plant

(1) Land --- Tokuyama Soda Co., Ltd., 8355 Tokuyama, Tokuyama City.

(2) Buildings and other structures

Item	Material (iron & steel) in ton			Required expense in 1,000 yen		
	1st	2nd	Total	1st	2nd	Total
Distillation waste filtering plant	0	0	0	0	0	0
Evaporation plant	50	0	50	3,000	0	3,000
Reaction, filtering, drystalling plant	50	0	50	2,400	0	2,400
Drying plant	60	60	120	2,200	3,000	5,200
TOTAL	160	60	220	7,600	3,000	10,600

(3) Machines & equipment

Item	Material (iron & steel) in ton			Required expense in 1,000 yen		
	1st	2nd	Total	1st	2nd	Total
Reaction & filtering plant	49.5	32.5	82.0	1,840	1,095	2,933
Calcium carbonate drying plant	47.0	0	47.0	2,260	0	2,260
Evaporation plant	481.6	400.5	886.1	29,150	24,280	53,430
Crystallization & separation plant	28.3	70.4	98.7	1,480	2,310	3,790
Ammonium chloride drying plant	61.6	73.6	135.2	3,300	3,540	6,840
Refrigeration plant	0	1.3	1.3	0	60	60
Electric jobs	9.0	5.0	14.0	2,000	1,000	3,000
Miscellaneous	18.0	0	18.0	7,370	4,715	12,085
TOTAL	695.0	583.3	1,278.3	47,400	37,000	84,400

(4) Summation

Item	Material (iron & steel) in ton			Required expense in 1,000 yen		
	1st	2nd	Total	1st	2nd	Total
Buildings & other structures as in (2)	160	60	220	7,600	3,000	10,600
Machines & equipment as in (3)	695	583.3	1,278.3	47,400	37,000	84,400
Other misc. charge	0	0	0	5,000	0	5,000
TOTAL	855	643.3	1,498.3	60,000	40,000	100,000

IX. Funds

Funds required ;- (unit in 1,000 yen)

	1st project	2nd project	Total
For construction of ammonia synthesis plant	290,000	270,000	560,000
For construction of ammonium fertilizer plant	60,000	40,000	100,000
For operation	50,000	30,000	80,000
TOTAL	400,000	340,000	740,000

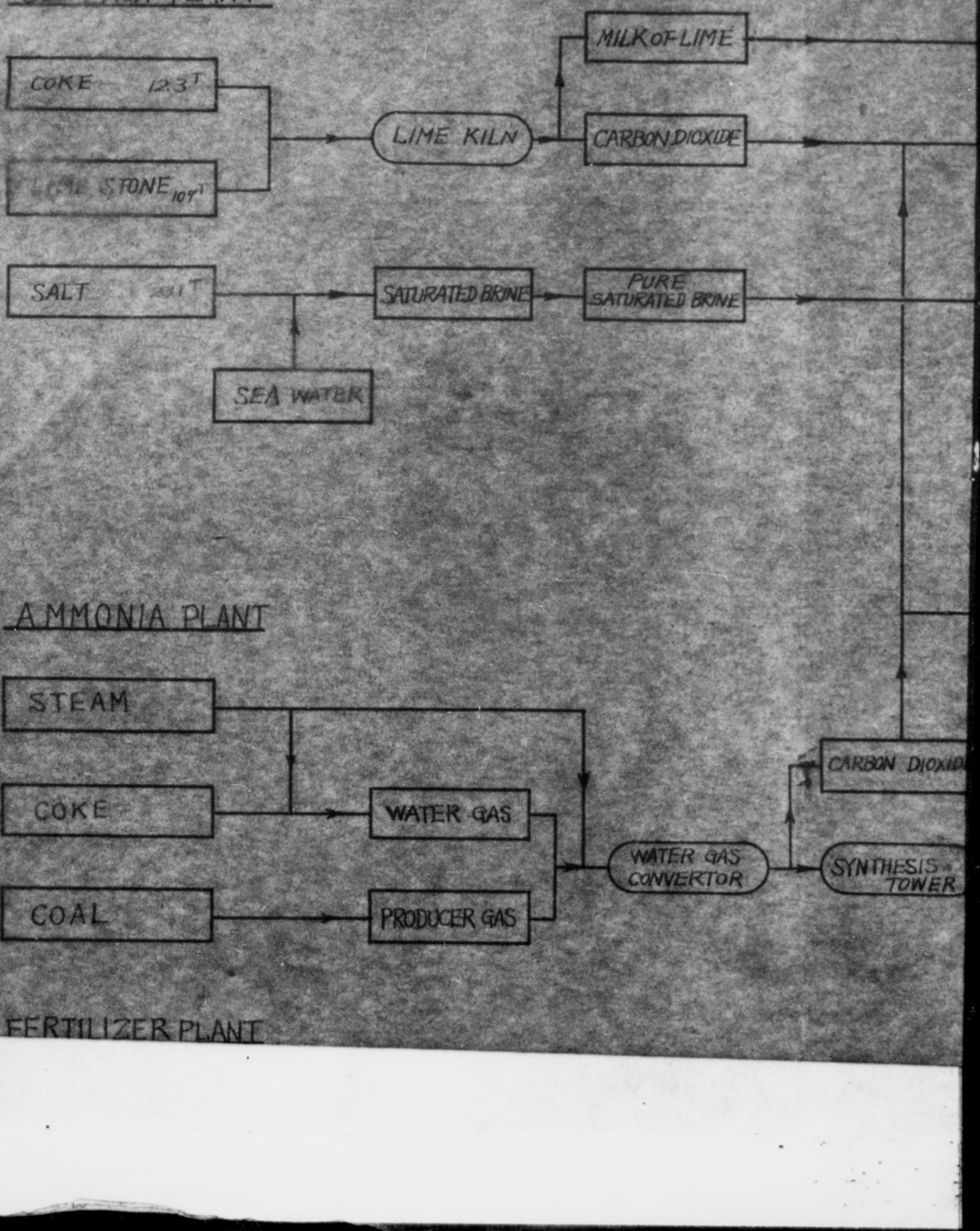
Method to raise the funds ;-

Construction to be financed by the counter part funds and operation by loar.

X. Time to start and finish the project

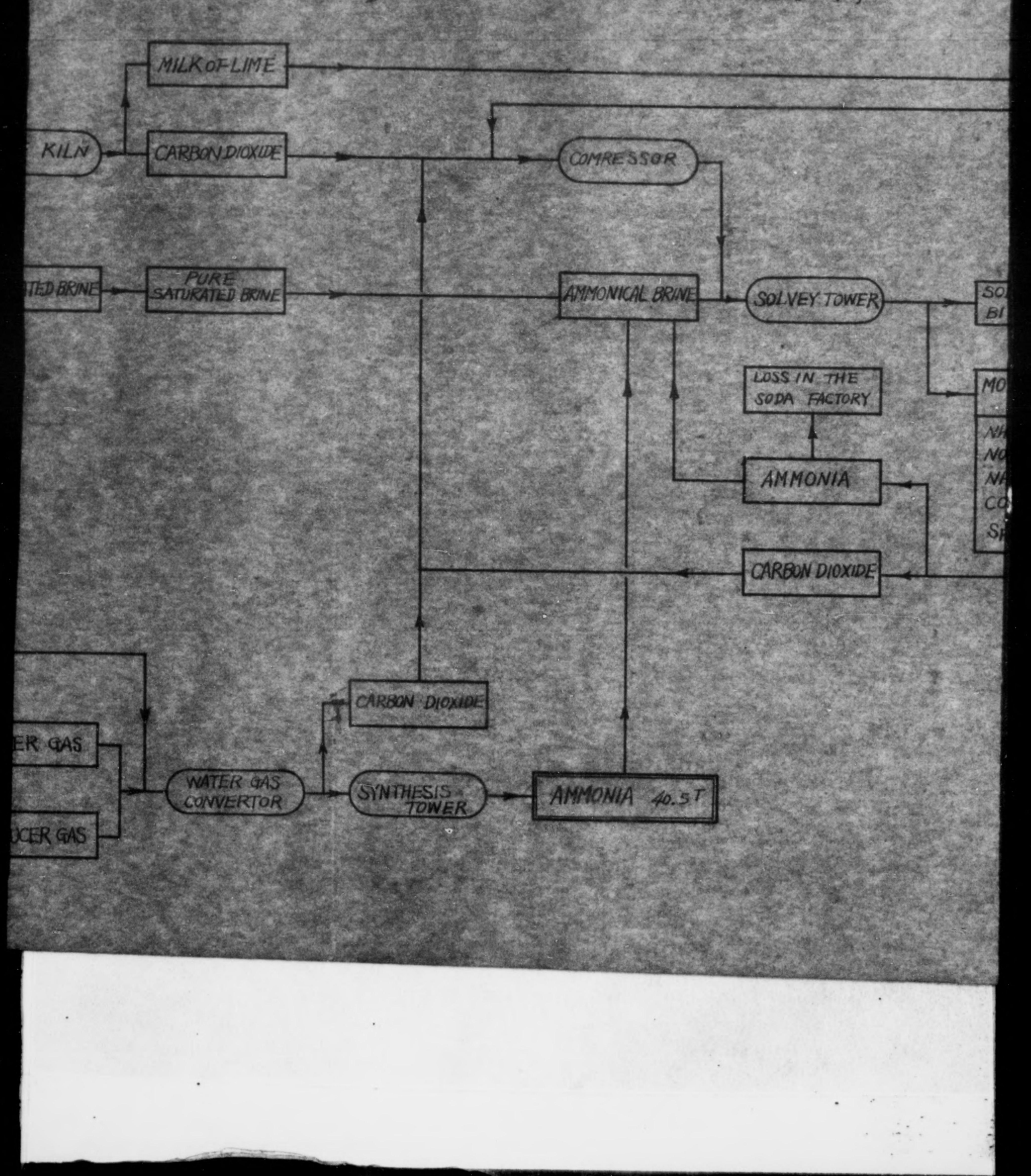
	1st project	2nd project
Time to start	as soon as permission granted	As soon as permission granted
Time to finish	In 10 months after start	In 18 months after start

FLOW SHEET



FLOW SHEET OF AMMONIUM CHLOR

(150 TONS PER DAY)

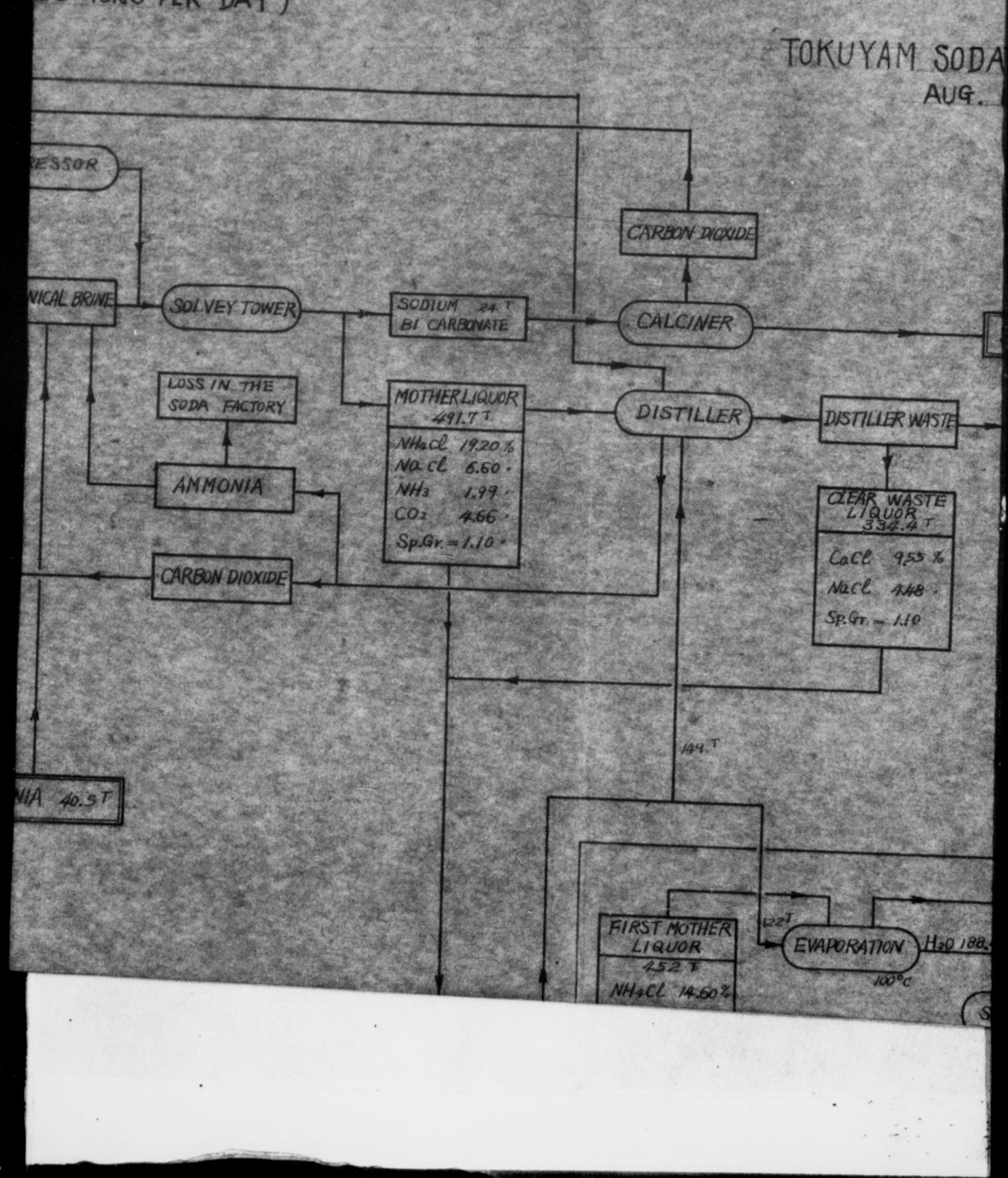


AMMONIUM CHLORIDE FERTILIZER

(50 TONS PER DAY)

TOKUYAM SODA

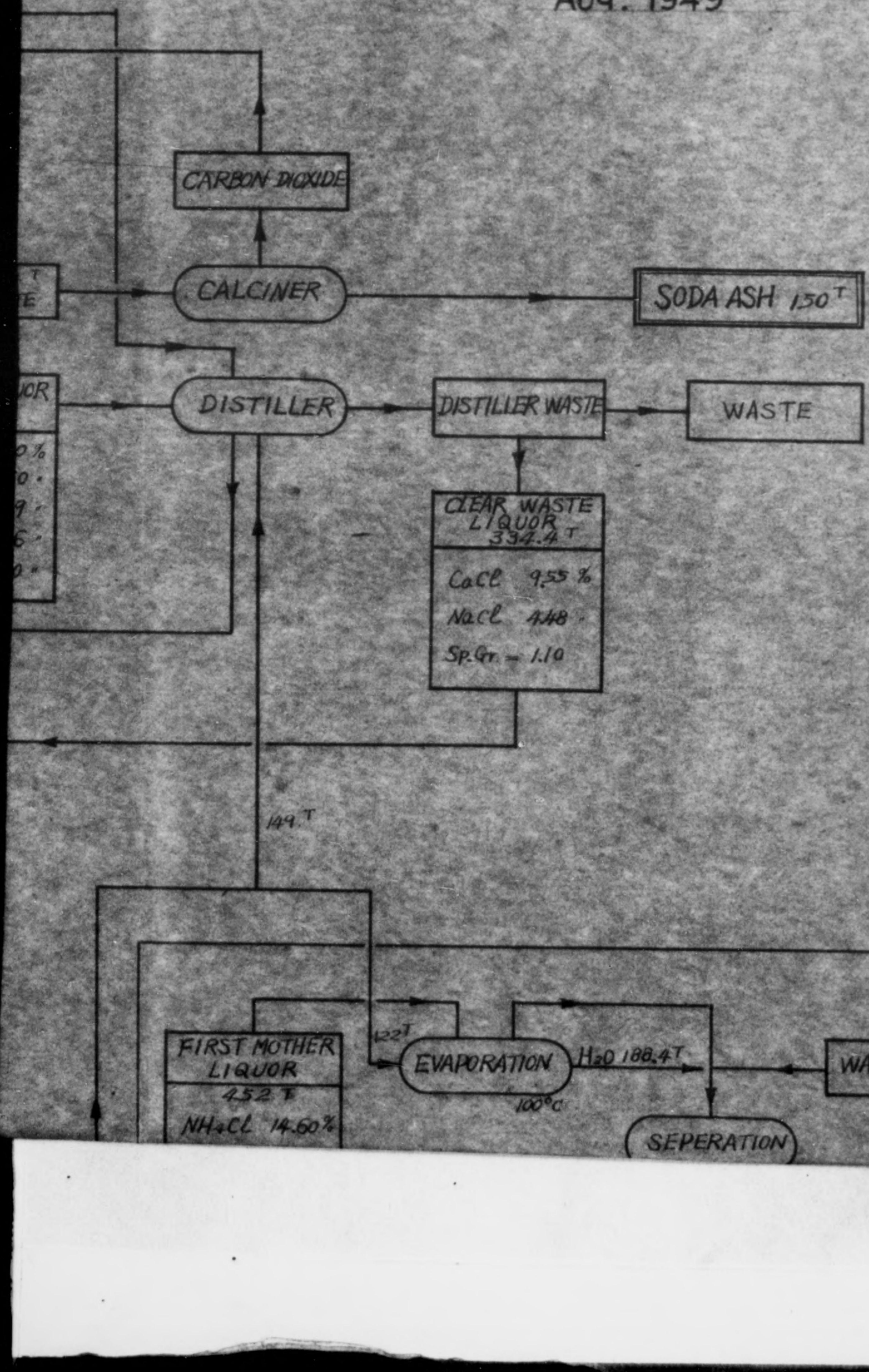
AUG.

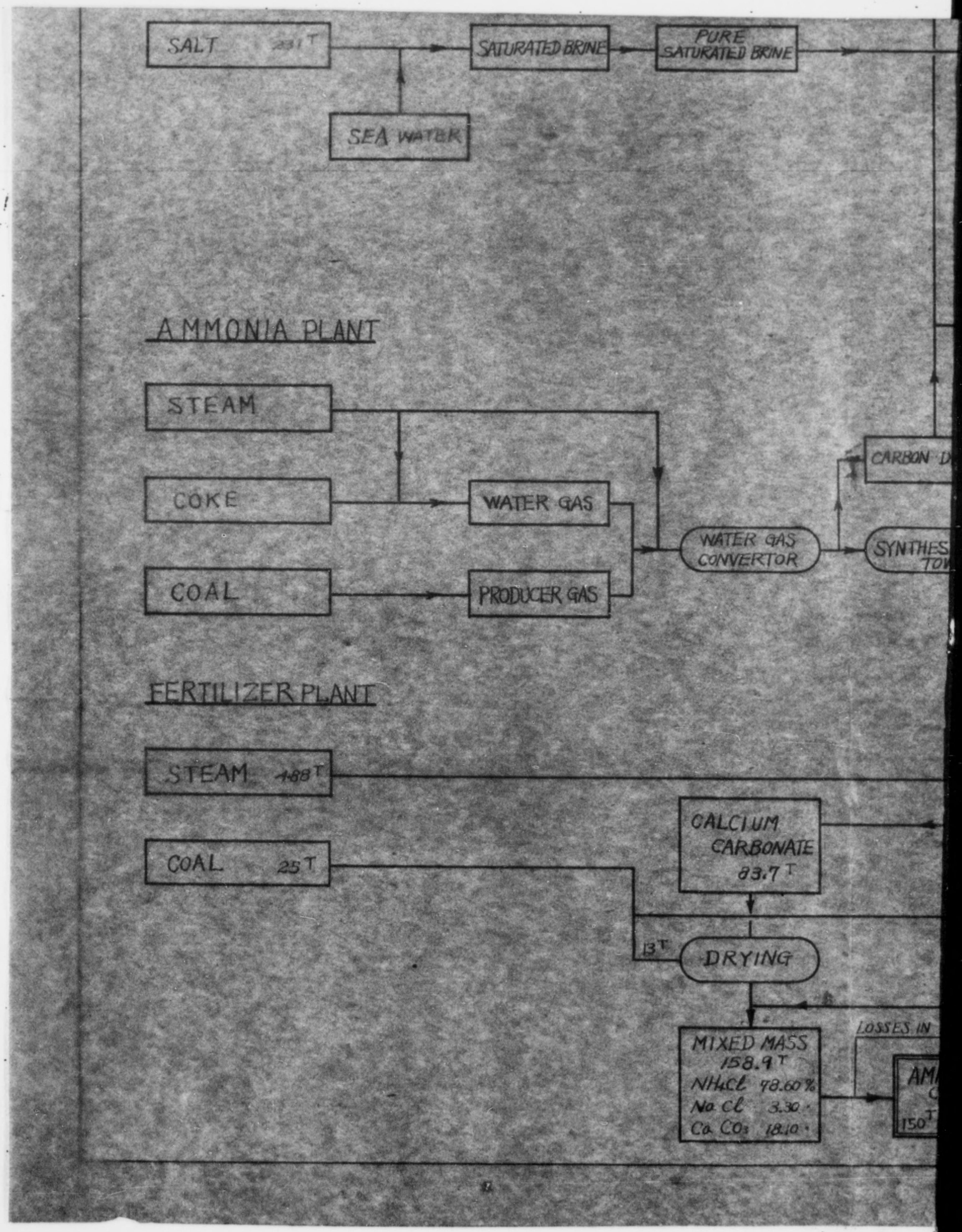


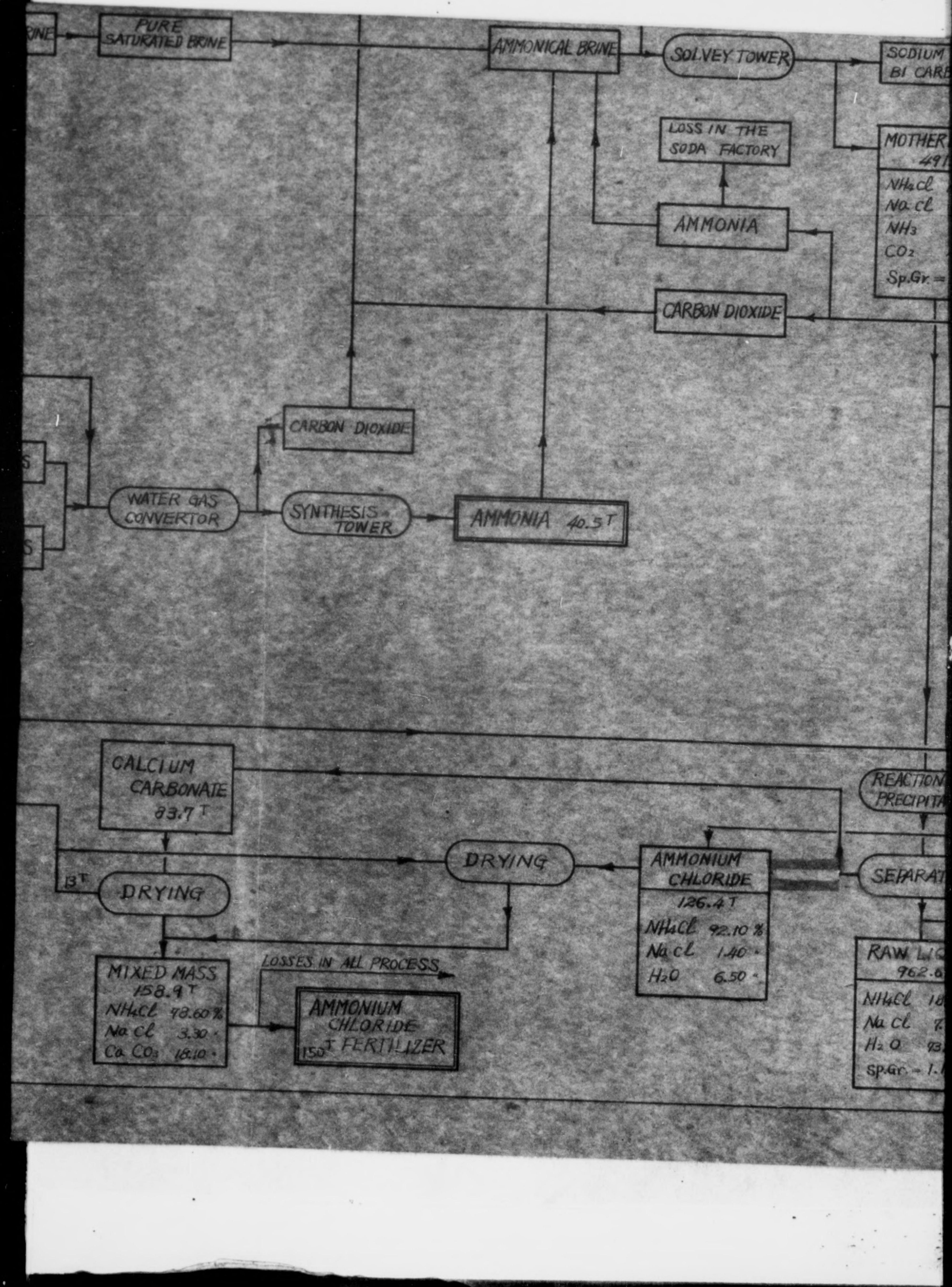
E FERTILIZER

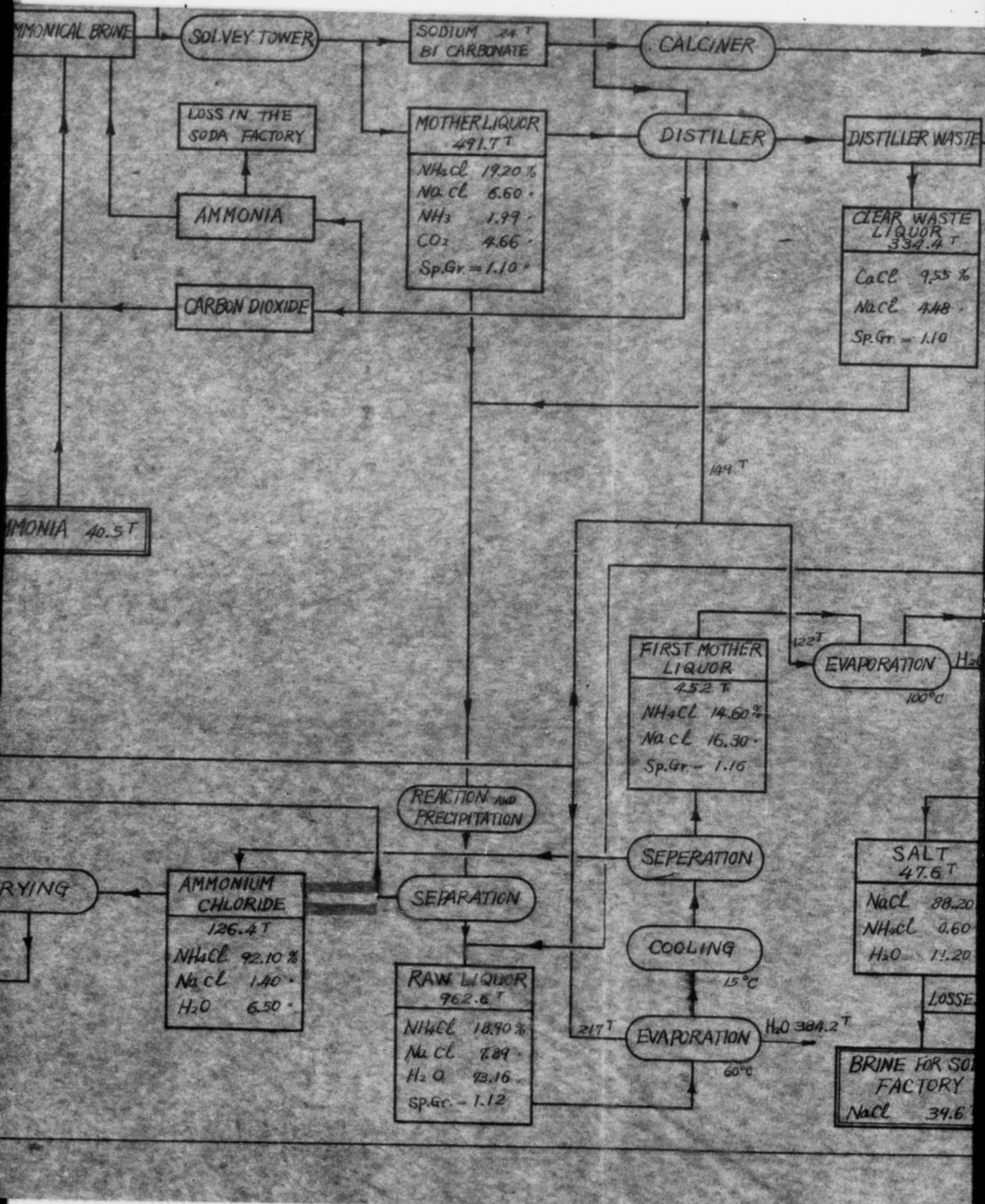
TOKUYAM SODA CO., LTD

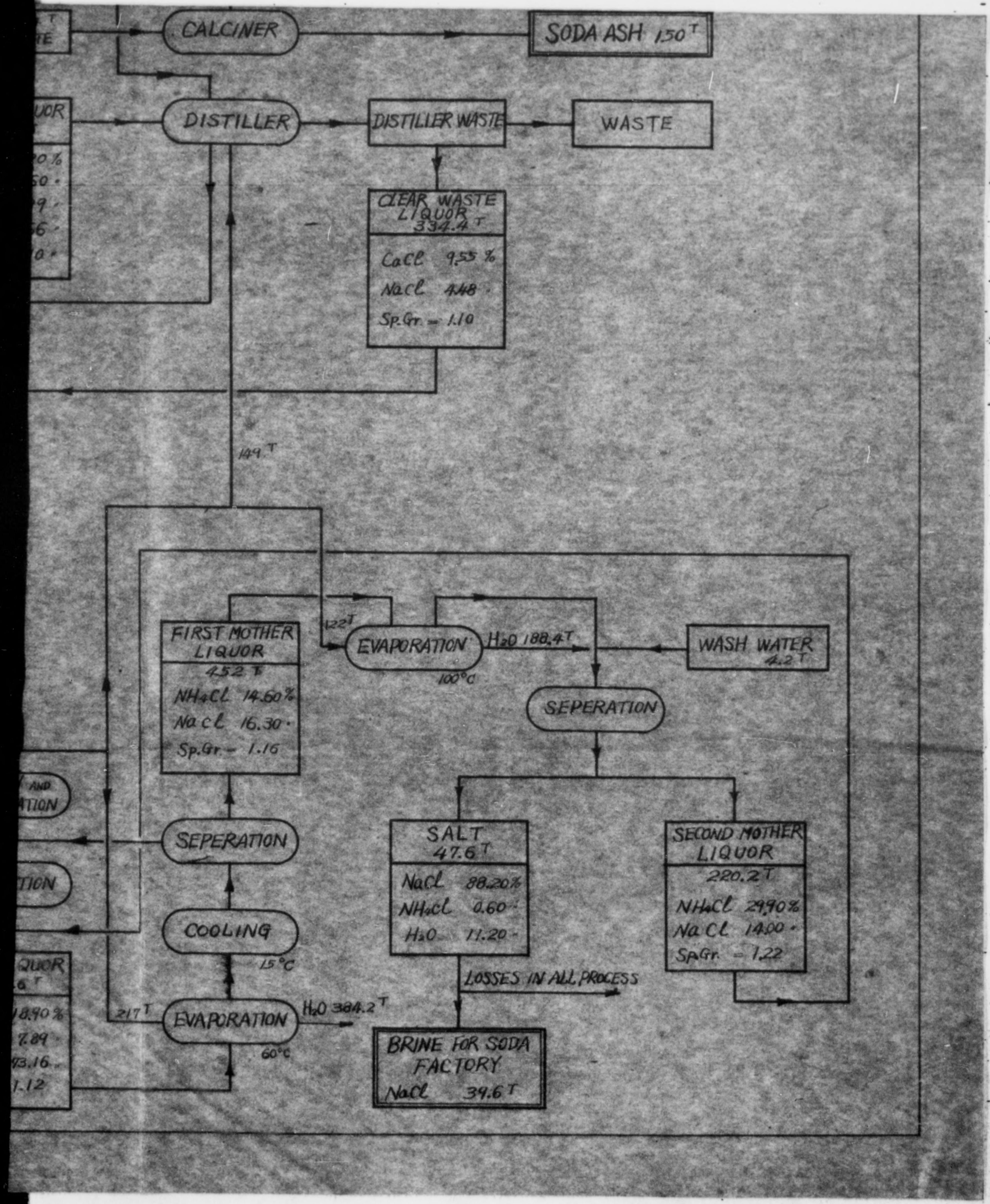
AUG. 1949





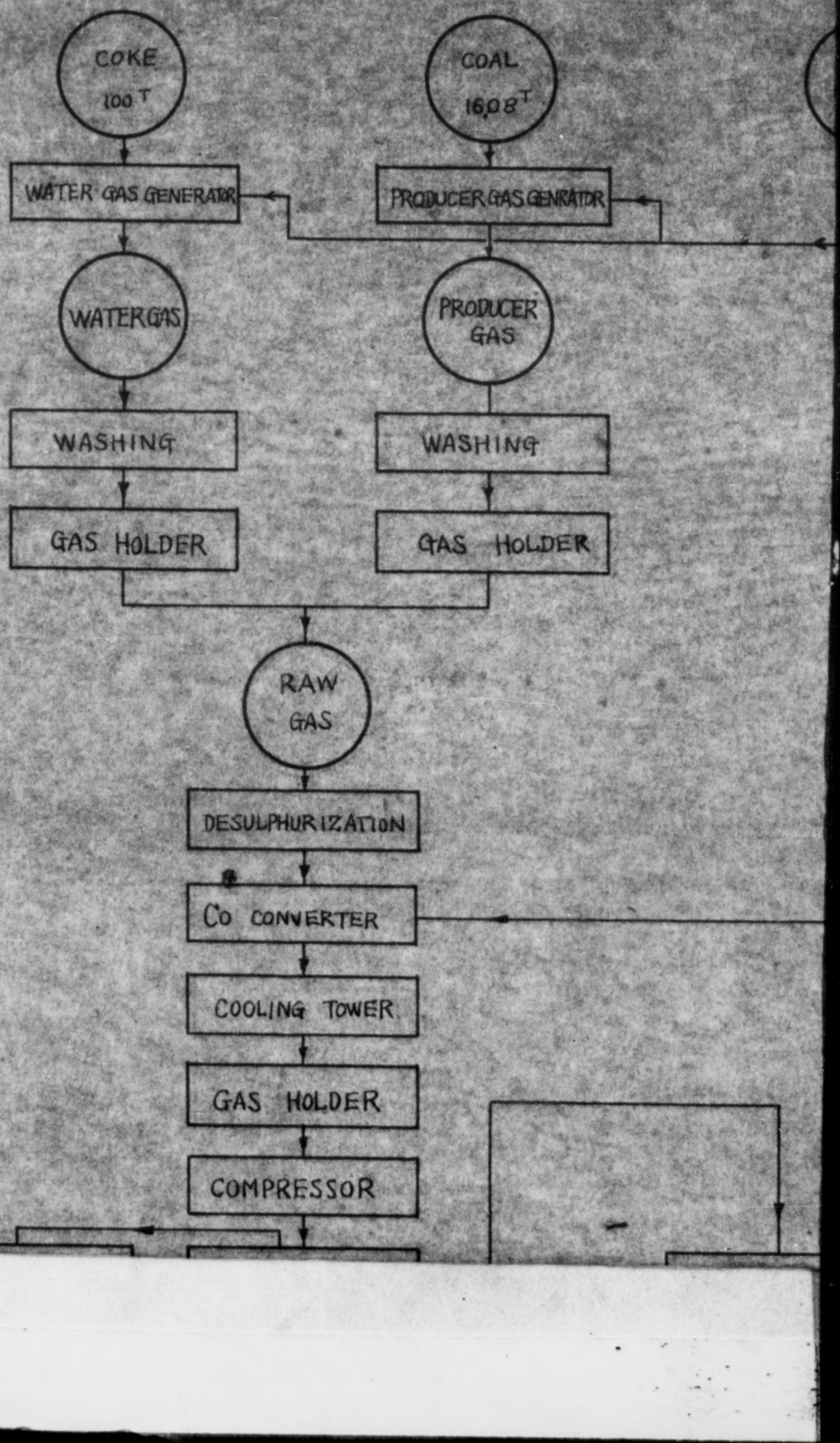






FLOW SHEET OF AMMONIA SYNTHESIS

(40 TONS PER DAY)

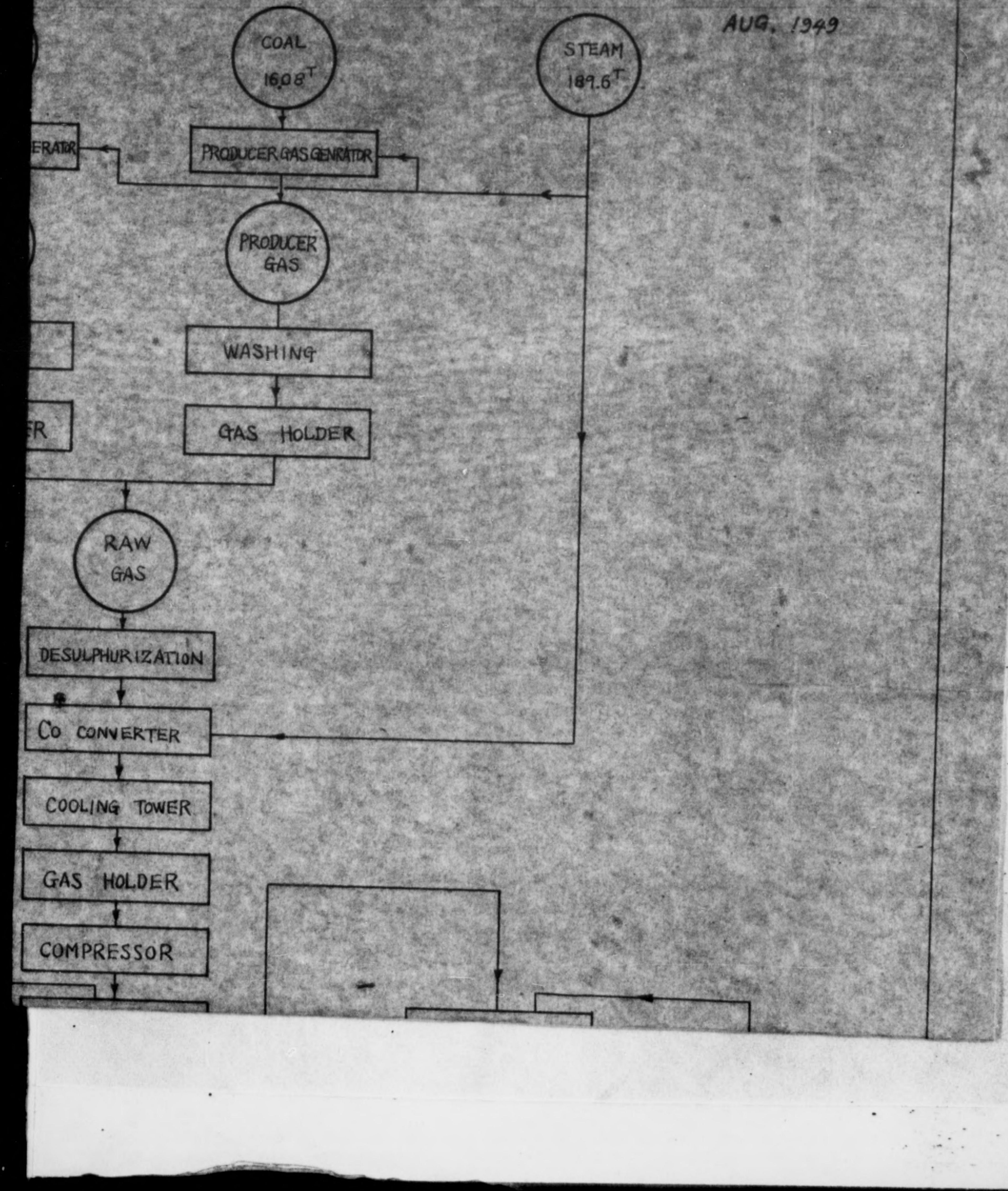


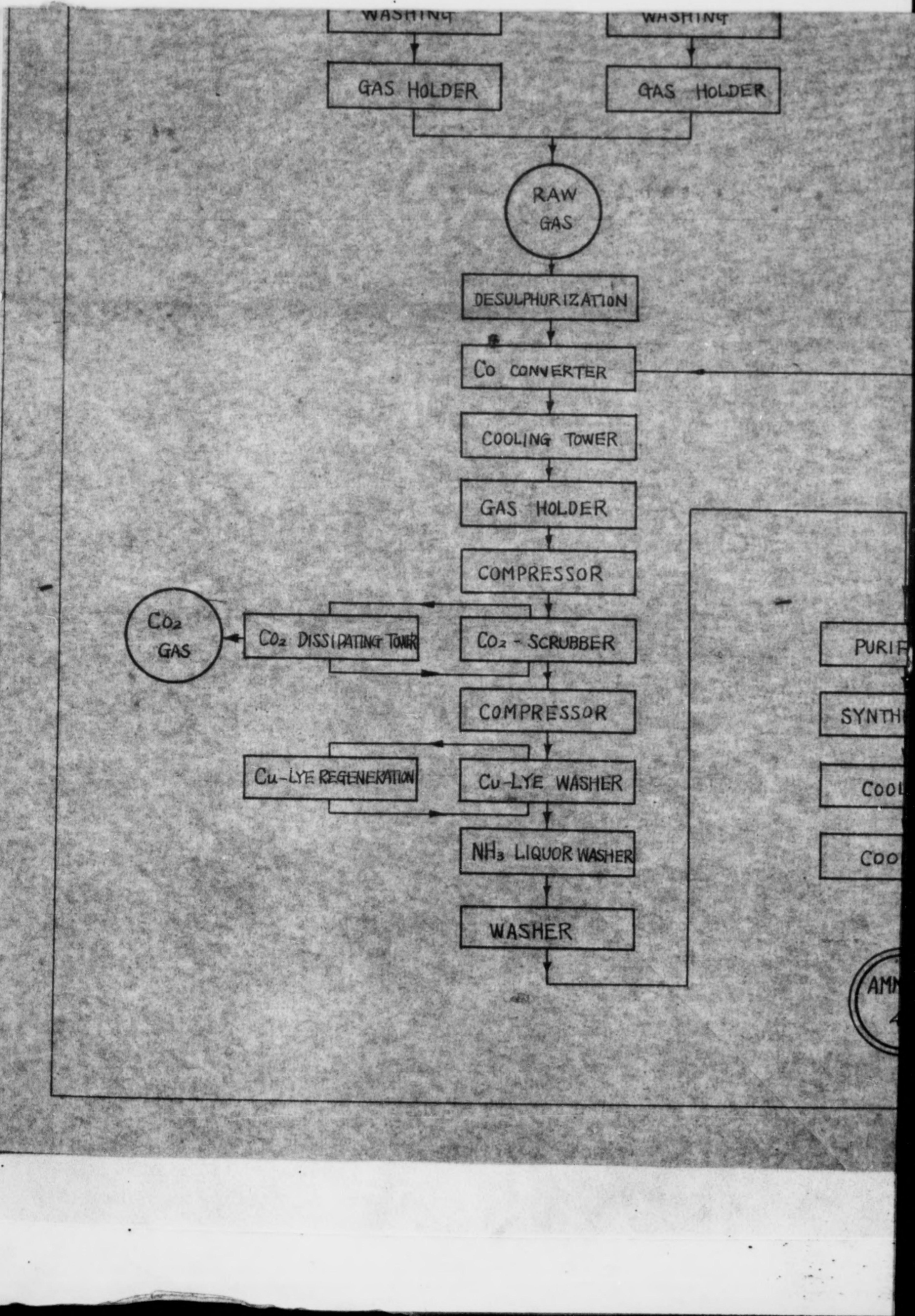
EET OF AMMONIA SYNTHESIS PROCESS

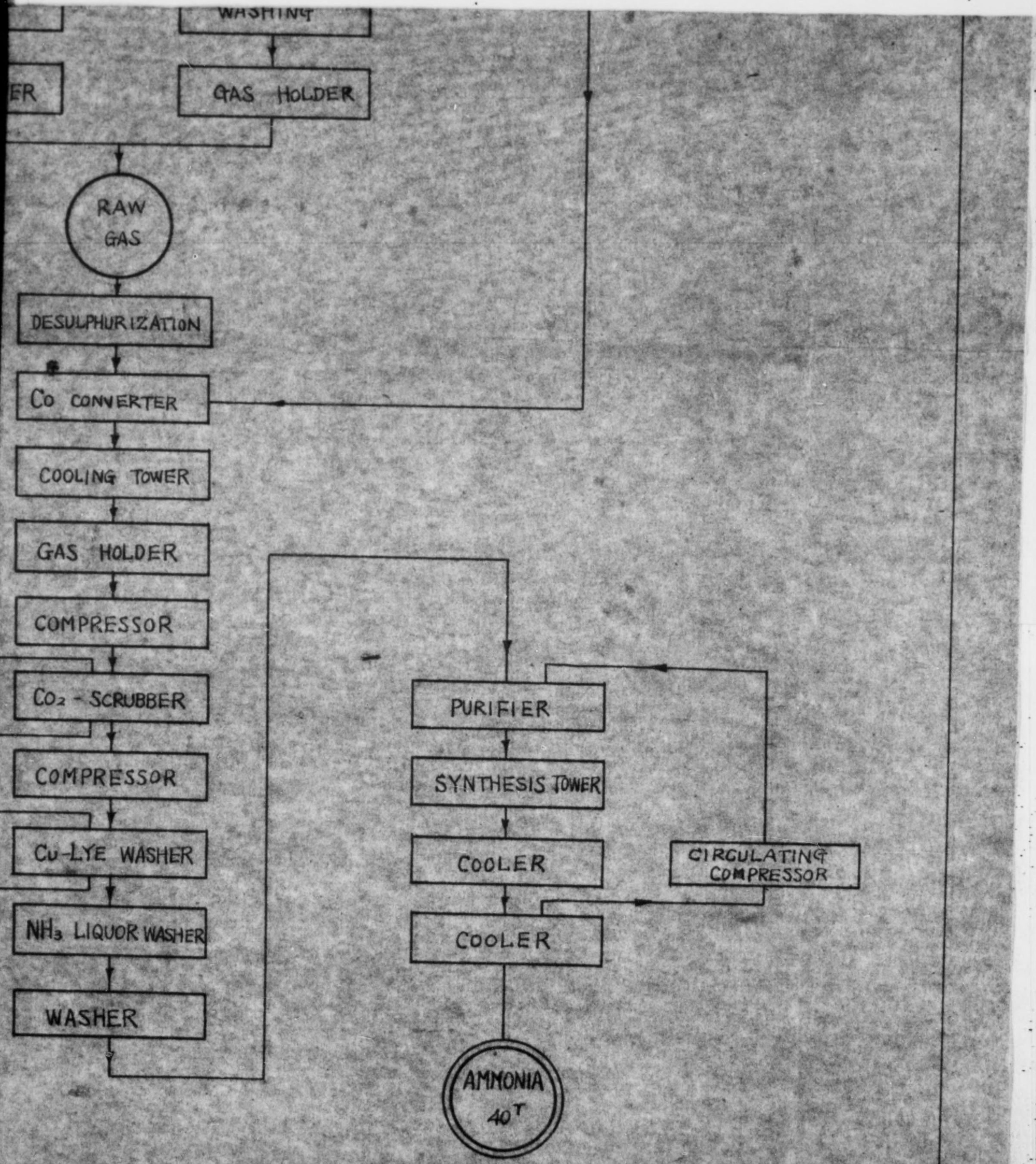
(40 TONS PER DAY)

TOKUYAMA SODA CO., LTD.

AUG. 1949





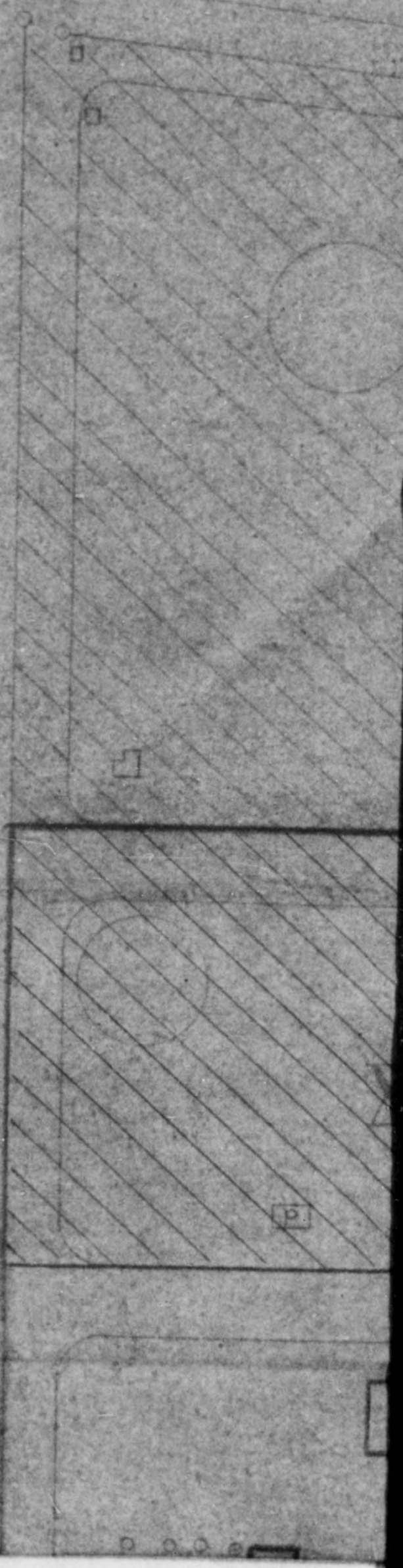


PLAN OF FOR

INV

使用

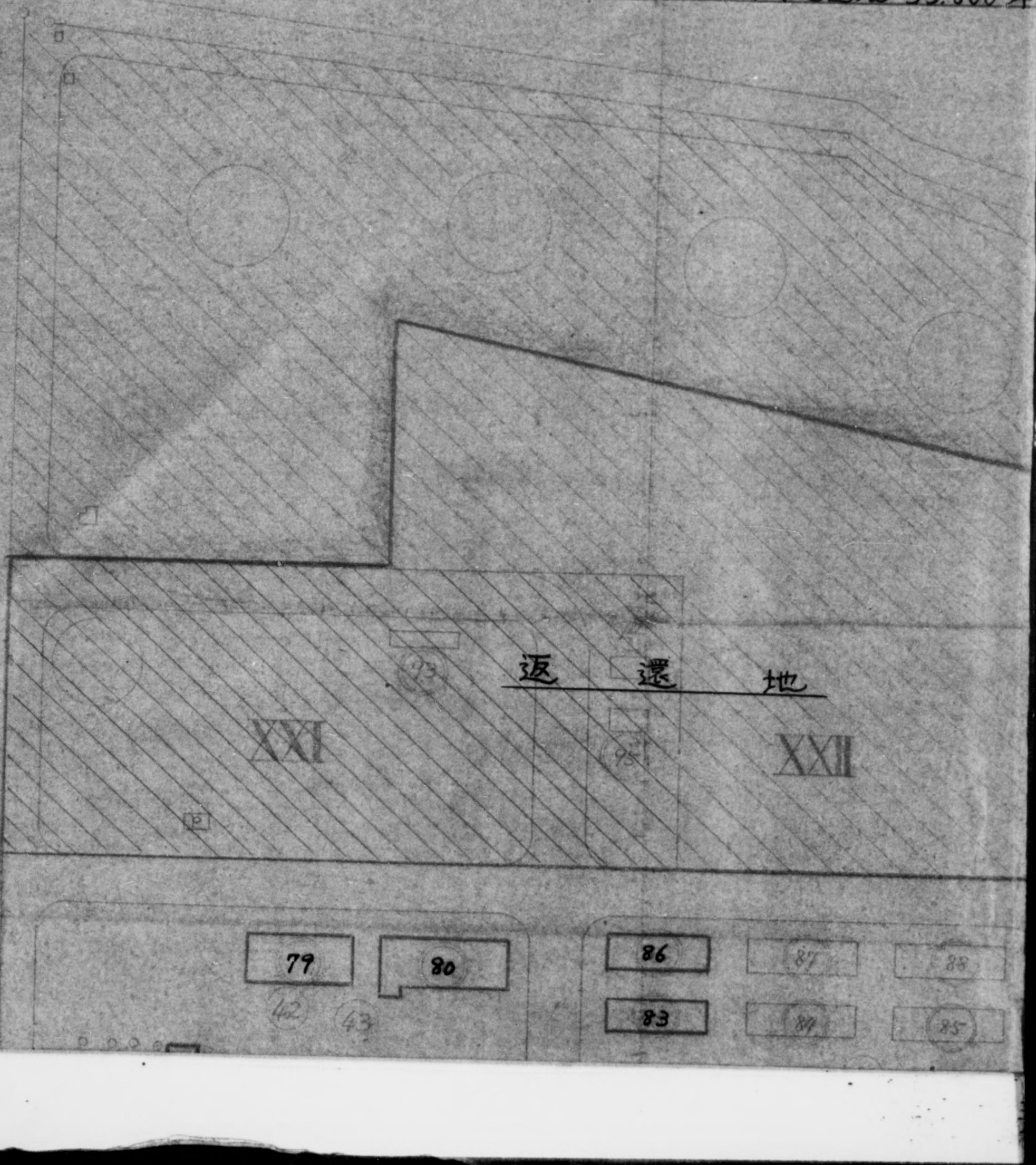
INVENTORY NO.	PLANT NO.	NAME OF PLANT
F1	/	LUBRICATING OIL PLANT
F1	5	VACUM DISTILLATION PLANT
F1	10	ACID WASHING PLANT
6	6	SOLVENT EXTRACTION PLANT (DUO-SOL)
7	7	DEWAXING PLANT (BARI-SOL)
F1	8	CONTACT RERUN PLANT
36	36	SOLVENT EXTRACTION PLANT (EDELEANU)
F1	499	DRUM CLEANING PLANT
F1	146	DRUM FILLING PLANT
F2	/	CRUDE OIL DISTILLATION PLANT
F2	21	NNO TIPE (2 UNITS)
3	3	CONTINUOUS GASOLINE TREATING PLANT
F3	34	HYDRO CRACKING PLANT
F4	25	WATER ELECTROLYSIS PLANT
F4	26	OXYGEN FILLING PLANT
F5	/	HYDROGEN PRODUCTION PLANT
F5	27	WATER GAS PLANT (P.G.C.)
F5	28	METHANE CRACKING PLANT (KOPPERS)
F5	29	CO CONVERTER
F5	31	CO REMOVING PLANT
F5	30	CO_2 REMOVING PLANT
F5	33	HYDROGEN PURIFICATION PLANT
F5	32	NITROGEN GAS SEPARATION PLANT
F5	27	LIQUID AIR SEPARATION PLANT



N OF FORMER IWAKUNI ARMY FU

INDICATING INVENTRY NO. OF PLANTS

使用申請土地及建物　70.500坪（返還地 33.800坪



UNI ARMY FUEL DEPOT

TRY. NO. OF PLANTS

70.500坪（返還地 33.800坪を含まない）

SCALE 1/2000

N

還　　地

XXII

XXIII

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EL DEPOT

含まない)

SCALE 1/2000

N

36

XXIII

96

98

97

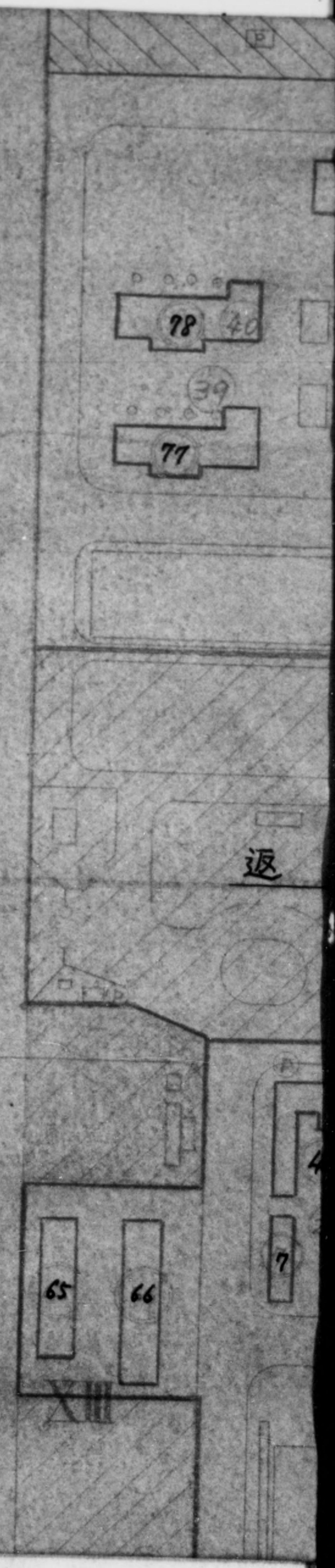
37

89

106

90

F5	29	CO CONVERTER
F5	31	CO REMOVING PLANT
F5	30	CO_2 REMOVING PLANT
F5	33	HYDROGEN PURIFICATION PLANT
F5	32	NITROGEN GAS SEPARATION PLANT
F5	27	LIQUID AIR SEPARATION PLANT
F6	43	ALCOHOL PLANT
F7	49	DRUM MANUFACTURING PLANT
/	/	CRACKING PLANT
22	22	NNC-THERMAL TYPE (2 UNITS)
11	11	CATALYTIC CRACKING PLANT (ARMY)
23	23	CATALYTIC CRACKING PLANT (NNK)
12	12	RERUN TOPPING PLANT
F8	4	CLAY TREATING PLANT FOR CRACKED GASOLINE
F8	48	CLAY DRYING FURNACE
35	35	HIGH PRESSURE HYDROGENATION PLANT
F9	/	ISO-OCTANE PLANT
18	18	GAS SEPARATION PLANT
20	20	PROPANE REFINING PLANT
17	17	NO.1 ISO-OCTANE PLANT
F9	40	BUTADIENE DEHYDRO POLYMERIZATION PLANT
19	19	SPECIAL EMULSION PLANT
F9	41	NO.2 ISO-OCTANE PLANT
49	49	CATALYST PLANT
F10	/	SYNTHETIC LUB OIL PLANT
F10	42	PLANT FOR DESTRUCTIVE DISTILLATION OF RUBBER
13	13	PARAFFINE CRACKING
14	14	OLEFFINE POLYMERIZATION PLANT
15	15	CONTACT RERUN PLANT FOR POLY PLANT
16	16	TANK AND PUMP FOR ABOVE PLANT
24	24	PITCH COKE PLANT
F11	38	PRODUCER GAS PLANT
F12	37	HIGH PRESSURE EXPERIMENTAL PLANT
F13	46	STEAM BOILER PLANT
F14	45	HIGH PRESSURE STEAM BOILER PLANT
F15	55	WATER FEEDING PUMP PLANT



AN·T
AN·T
CATION PLANT
EPARATION PLANT
RATION PLANT
RING PLANT
YPE (2 UNITS)
ING PLANT (ARMY)
ING PLANT (NNR)
PLANT
NT FOR CRACKED GASOLINE
RNACE
GGENATION PLANT
PLANT
G PLANT
PLANT
PLANT
PLANT
VE DISTILLATION OF RUBBER
NG
IZATION PLANT
ANT FOR POLY PLANT
R ABOVE PLANT
NT
ERIMENTAL PLANT
ANT
AM BOILER PLANT
P PLANT

79 80 86 83
42 43
78 40 XVIII
39 41 82
77 81
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返 還 地
6 10 4 5 27? 57 (STORED) II
7
65 66 XIII
13 41 11
38 6
35 36 34 30 32 21
16 25

使用申請地

XVIII
XVIII
I
II
(STORED)
III
IV
V
VI
IX
X
XI

申請地

Koa Oil Co.

F13	45	STEAM BOILER PLANT
F14	45	HIGH PRESSURE STEAM BOILER PLANT
F15	55	WATER FEEDING POMP PLANT
F16	50	SEA WATER PUMPING PLANT
F17	52	CRUDE OIL TREATING PLANT
F18	144	WASTE ACID TREATIG PLANT
F19	57	5GALS. CAN MANUFACTURING PLANT
F20	246	5GALS. CAN FILLING PLANT
F21	44	POWER STATION
	47	SUBSTATION

: Released Area

: Plant No.

: Building No.

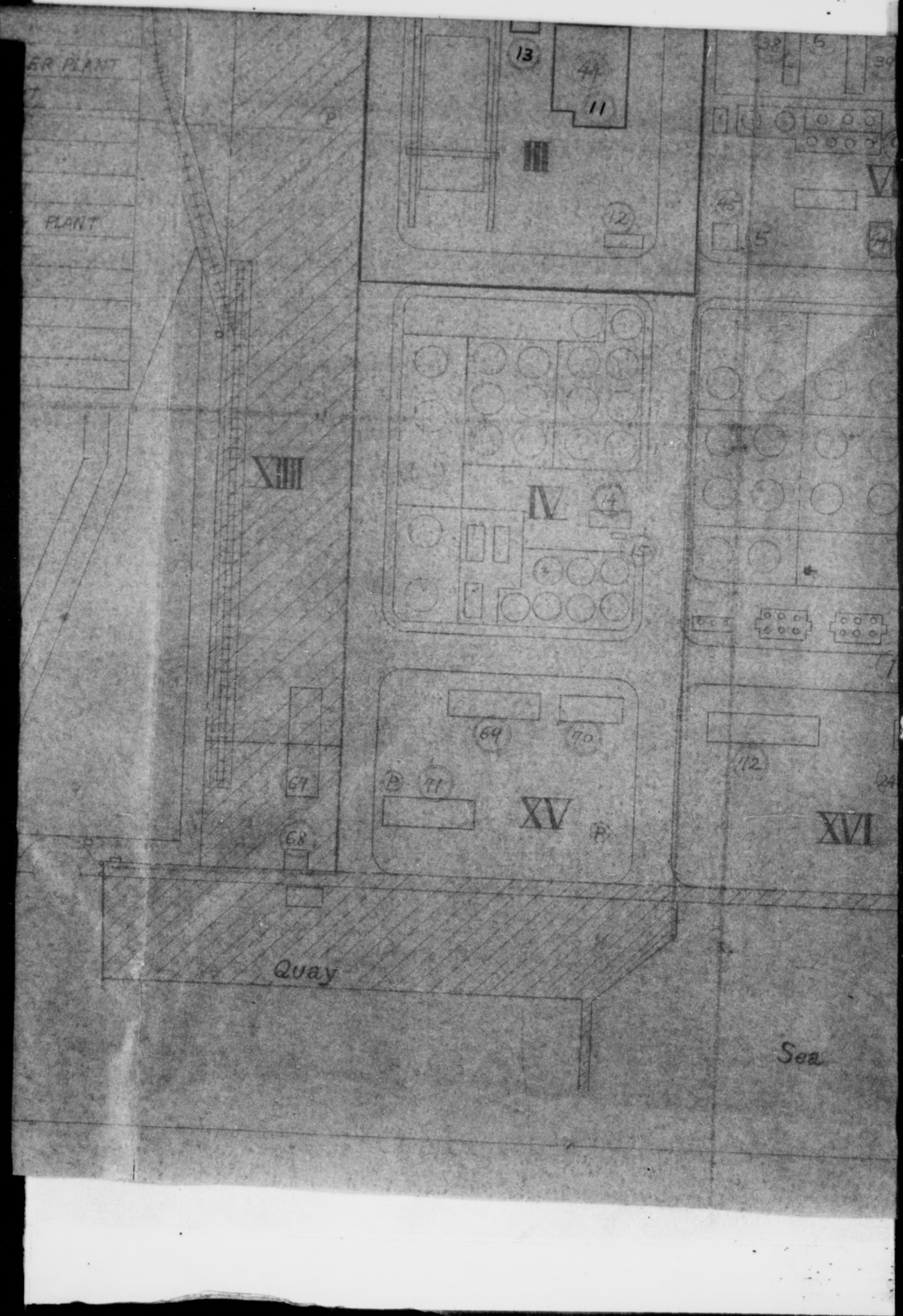
XIII

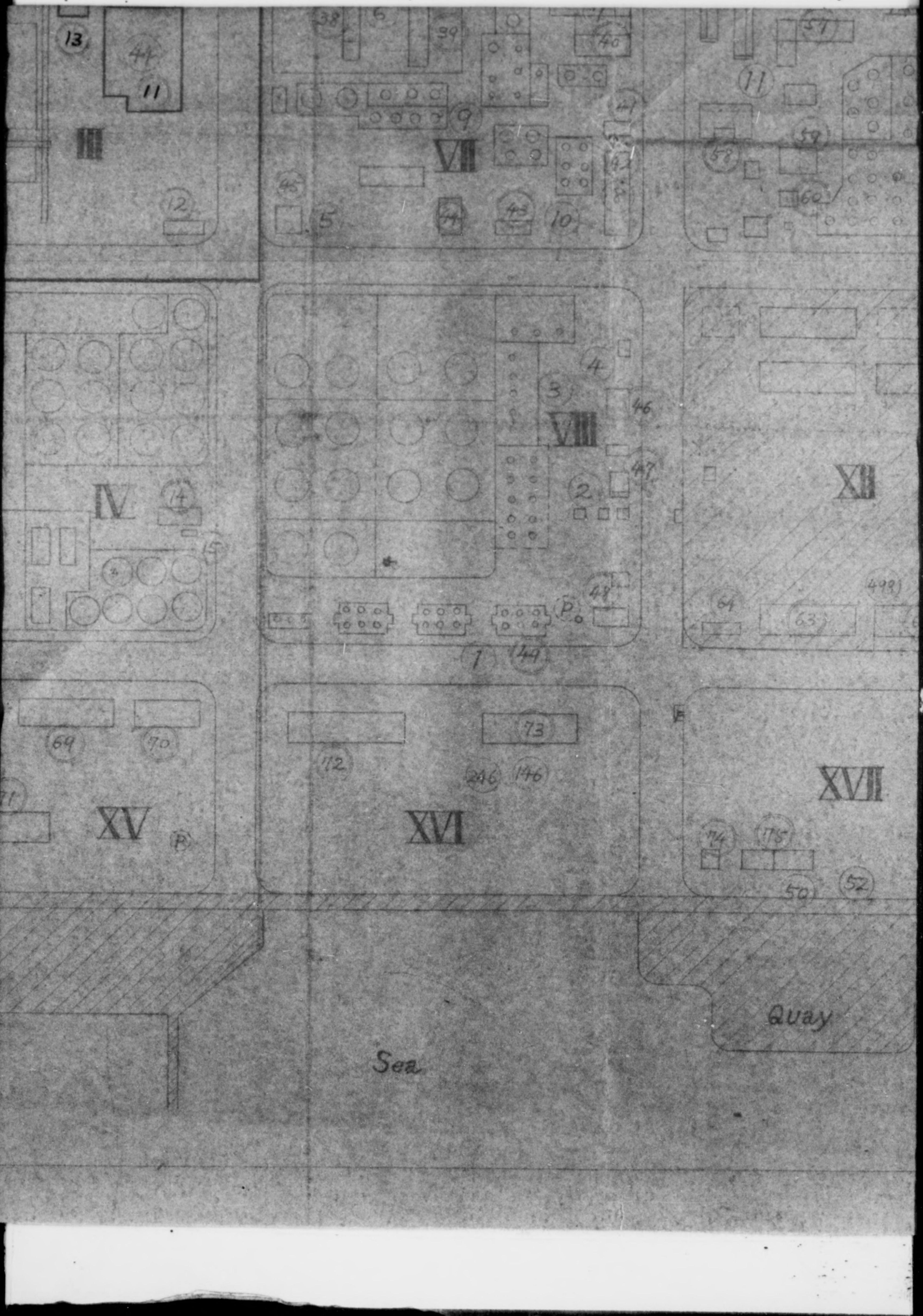
67

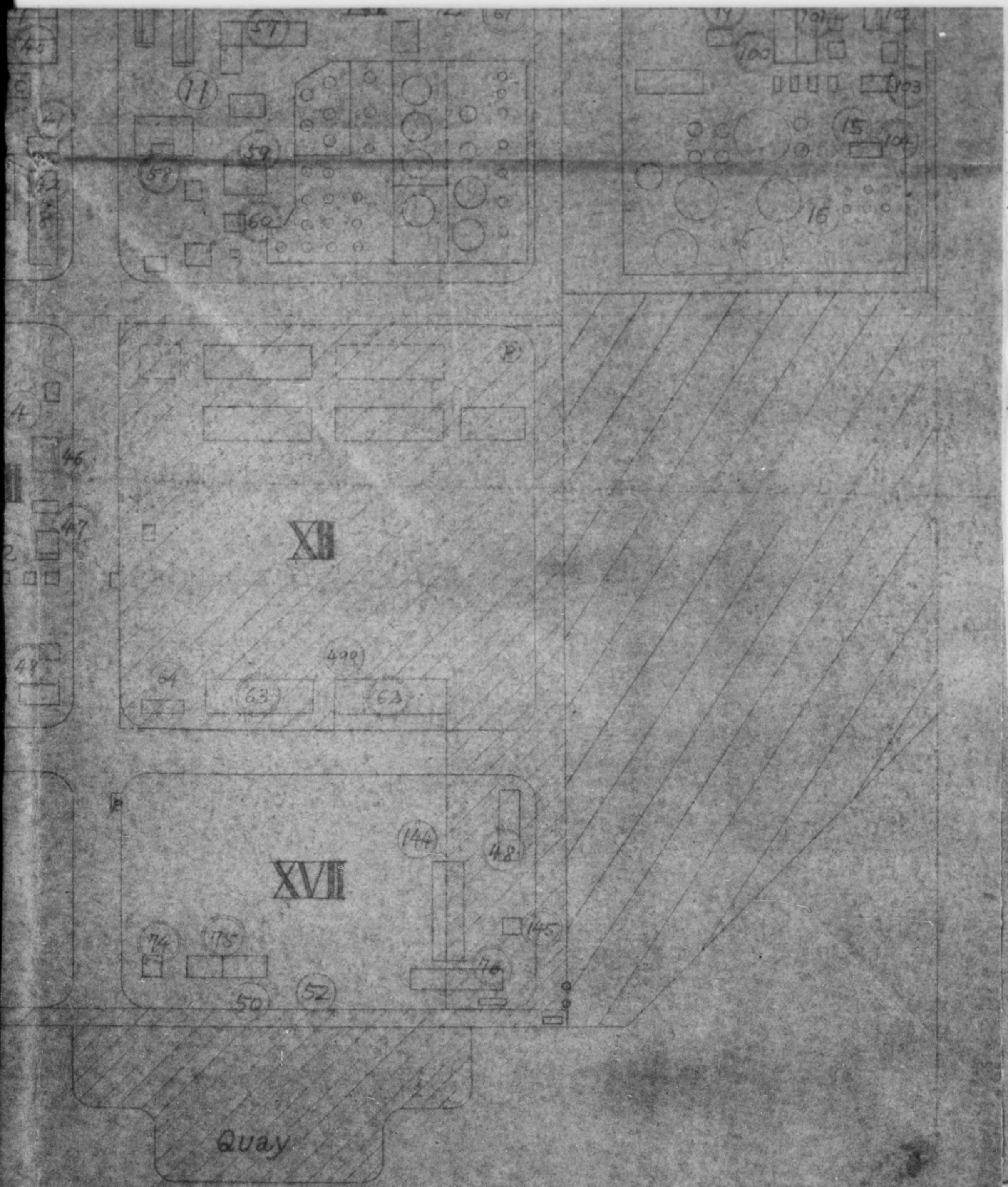
68

P

Quay







USE OF REPARATIONS INSTALLATIONS

for

Memorandum for Hiroshima Finance Bureau
CCAR 386.3 (D-St), 30 January, 1950

45-5
SEC. II

Arsenals

1. 45-5, Iwakuni Ex-Army Fuel Depot

2. 45-28, Ohshima Fuel Storage of
Hiroshima Ex-Army Ordnance
Supply Depot

No Corresponding Matter
for
45-6, Ex-Naval 11th Aircraft Arsenal
Iwakuni Factory

---

13 February, 1950

Iwakuni Property Custodian Branch
Hiroshima Finance Office

CORRECTION

THIS DOCUMENT
HAS BEEN REPHOTOGRAPHED
TO ASSURE LEGIBILITY

USE OF REPARATIONS INSTALLATIONS

for

Memorandum for Hiroshima Finance Bureau
CCAR 386.3 (D-St), 30 January, 1950

45-5
SEC. II

Arsenals

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No Corresponding Matter
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13 February, 1950

Iwakuni Property Custodian Branch
Hiroshima Finance Office

USE OF REPARATIONS INSTALLATIONS

45-5

IWAKUNI EX-ARMY
FUEL DEPOT

Annex 8: Application for VI

Annex 9: Permit for VII-4

Note:

Difference between the numbers of permit for Authorized Use and on the list in paragraph f shows either restored number of equipments because the equipments became unnecessary for the user or increased number because of additional evaluation when some of the equipments had been splitted into more than two items in counting.

USE OF REPARATIONS INSTALLATION

User : Salt-Making Factory of Hiroshima Tax Bureau
(Former Hiroshima Finance Bureau)

Address: Shozoku, Iwakuni-shi, Yamaguchi-ken.

a. Name and Code No. of Reparations Installation: 45-5, Iwakuni Ex-Army Fuel Depot.

b. Address of Installation: Shozoku, Iwakuni-shi, Yamaguchi-ken.

c. Copy of Conversion or Re-Conversion permit: See Annex 2

d. List of Items in Actual Production: Salt

e. A Copy of Application Giving Date of Submission if an Application for a new or Change of Present Conversion or Reconversion Permit is Pending Aproval from the Supreme Commander for the Applied Powers: None

f. List by Code Number and Name of Reparations Items in Authorized Use, giving Date and Issuing Headquarters of Letter of Authorization:

(1) Date of Permission; 20 Mar., 47 (Annex 3)
18 Mar., 48 (Annex 1)

(2) Permitting Authority; Yamaguchi M.G. Team (Annex 1 & 3)

(3) Code No. and Name of Reparations Items in Authorized Use;
(at present)

Code No.	Name of Machine
45-5-U433F5 "45-5-30(7)U"	Electric Fan
45-5-U434F5 "45-5-30(8)U"	do.
45-5-U435F5 "45-5-30(9)U"	do.
45-5-U436F5 "45-5-30(10)U"	do.
45-5-U437F5 "45-5-30(11)U"	do.
45-5-U438F5 "45-5-30(12)U"	do.

Code No.	Name of Machine
45-5-U439F5 "45-5-30(13)U"	Electric Fan
45-5-U440F5 "45-5-30(14)U"	Induction Motor
45-5-U442F5 "45-5-30(16)U"	do.
45-5-U443F5 "45-5-30(17)U"	do.
45-5-U444F5 "45-5-30(18)U"	do.
45-5-U445F5 "45-5-30(19)U"	do.
45-5-U450F5 "45-5-30(24)U"	do.
45-5-U142F10 "45-5-42(137)U"	Transformer
45-5-U143F10 "45-5-42(138)U"	do.
45-5-U144F10 "45-5-42(139)U"	do.
45-5-U44(3?) "45-5-44(33)U"	Turbine Pump
45-5-U44(188) "45-5-44(188)U"	do.
45-5-U47(42) "45-5-47(42)U"	Switchboard
45-5-U47(47) "45-5-47(47)U"	Height Voltage Switchboard
45-5-U47(48) "45-5-47(48)U"	Reactor
45-5-U47(49) "45-5-47(49)U"	do.
45-5-U47(50) "45-5-47(50)U"	do.
45-5-U438 "45-5-438U"	Induction Motor
45-5-U44(16) "45-5-44(16)U"	do.

Code No.	Name of Machine
45-5-U456 "45-5-456U"	Induction Motor
45-5-U439 "45-5-439U"	do.
45-5-U16F5 "45-5-27(55)U"	do.
45-5-129F3 "45-5-34(102)U"	Turbine Pump
45-5- 130F3 "45-5-34(102)U"	Induction Motor
45-5-U49(119) "45-5-49(119)U"	Discharging Tower
"45-5-43(35)U"	Turbine Pump
45-5-U613 "45-5-613U"	Push Car Trackage
45-5-U614 "45-5-614U"	Turn Table
45-5-U49(56) "45-5-49(56)U"	Shaft 1 1/2" (Part of Duplex Kettle)
45-5-U49(57) "45-5-49(57)U"	do.
Total:	36
11-36-15U "45-5-203U"	Induction Motor
11-36-16U "45-5-204U"	do.
11-36-17U "45-5-205U"	do.
11-36-18U "45-5-206U"	do.
11-36-19U "45-5-208U"	do.
11-36-20U "45-5-209U"	do.
11-36-21U "45-5-210U"	Turbine Pump

Code No.	Name of Machine
11-36-22U "45-5-21OU"	Induction Motor

Total	8
Grand Total :	44

g. List by Code Number and Name, of Reparations Item in Use without Permission for Authorized Use; None

h. List by Code Number and Name, of Reparations Item on Application for Authorized Use Permission Giving Date of Submission of Application to the Suppere Commander for the Allied Powers; None

USE OF REPARATIONS INSTALLATIONS

User : Hiroshima Railway Division

Address: Ujina-cho, Hiroshima city

a. Name and Code Number of Reparations Installation:

Iwakuni Ex-Army Fuel Depot, 45-5

b. Address of Installation:

Shozoku, Iwakuni-shi, Yamaguchi-ken.

c. Copy of Convession or Reconversion Permit:

See Annex 4 and Annex 1

d. List of Items in Actual Production

Coal loading and unloading

e. A Copy of Application Giving Date of Permission, if an Application for a New or Change of Present Conversion or Reconversion Permit is Pending Approval from the SCAP.

See Annex 5

Note: The Application has been forwarded through Japanese Channel, but it is not known when or whether the application had been submitted to the SCAP.

f. List by Code Number and Name, of Reparations Items in Authorized Use, Giving Date and Issuing Headquarters of Letter of Authorization.

1. Date of Permission: 18 Mar., 1948 (Annex 1)
2. Permitting Authority: Yamaguchi M.G.T.

3. Code No.	4. Name of Machine
45-5-U44(170) "45-5-44(170)U"	Jib Crane
45-5-U44(171) "45-5-44(171)U"	Overhead Travelling Crane
45-5-U44(172) "45-5-44(172)U"	No.1 Belt Conveyor
45-5-U44(173) "45-5-44(173)U"	No.2 Belt Conveyor

g. List by Code Number and Name, of Reparations Items in Use without Permission for Authorized Use.
List is attached to Annex 5 Listed items have been in Temporary Use with the approval of Yamaguchi CAT.

h. List, by Code Number and Name, of Reparations Items on Application for Authorized Use Permission, Giving Date of Submission of Application to the SCAP:

See Annex 5 and Note of paragraph e.

USE OF REPARATIONS INSTALLATIONS

User: Iwakuni City Hall (Water Supply Dept.)

Address: Imazu, Iwakuni-shi, Yamaguchi-ken

a. Name and Code No. of Reparations Installation:
45-5, Iwakuni Ex-Army Fuel Depot (Water Reservoir)

b. Address of Installation: Nishimi, Iwakuni-shi, Yamaguchi-ken

c. Copy of Conversion or Reconversion Permit: See Annex 6.

d. List of Items in Actual Production: City Water Supply

e. A Copy of Application, Giving Date of Submission, if an Application for a New or Change of Present Conversion or Reconversion Permit is Pending Approval from the Supreme Coamander for the Allied Powers.

None

f. List, by Code No. and Name of Reparations Items in Authorized Use, Giving Date and Issuing Headquarters of Letter of Authorization:

1. Date of Permission: 2 Apr., 48 (See Annex 6)

2. Permitting Authority: GHQ, SCAP (See Annex 6)

3. Code No. & Name of Reparations Items in Authorized Use (At present).

Code No.	Name of Machine
45-5-58(1)	Switchboard
45-5-58(2)	do.
45-5-58(3)	High Volatge Switchboard
45-5-58(4)	do.
45-5-58(5)	do do.
45-5-58(6)	Automatic Start Board
45-5-58(7)-1U	Turbine Pump
45-5-58(7)-2U	Induction Motor
45-5-58(8)-1U	Turbine Pump

Code No.	Name of Machine
45-5-58(8)-2U	Induction Motor
45-5-58(9)-1U	Turbine Pump
45-5-58(9)-2U	Induction Motor
45-5-58(10)-1U	Diesel Engine
45-5-58(11)-1U	do.
45-5-58(11)-2U	Speed Reducer
45-5-58(12)-1U	Diesel Engine
45-5-58(12)-2U	Speed Reducer
45-5-58(13)U	Switchboard
45-5-58(14)-1U	Sand Pump
45-5-58(14)-2U	Induction Motor
45-5-58(15)U	Switchboard
45-5-58(16)U	do.
45-5-58(17)-1U	Turbine Pump
45-5-58(17)-2U	Induction Motor
45-5-58(18)-1U	Turbine Pump
45-5-58(18)2U	Induction Motor
45-5-58(19)U	Switchboard
45-5-58(20)-1U	Centrifugal Pump
45-5-58(20)-2U	Induction Motor
45-5-58(21)-1U	Centrifgal Pump
45-5-58(21)-2U	Induction Motor
45-5-58(22)-1U	Blower
45-5-58(22)-2U	Induction Motor
45-5-58(23)U	Automatic Starting Panel

Code No.	Name of Machine
45-5-58(24)U	Automatic Starting Pannel
45-5-58(25)U	do.
45-5-58(26)U	do. do.
45-5-58(27)-1U	Air Compressor
45-5-58(27)-2U	Induction Motor
45-5-58(28)-1U	Piston Pump
45-5-58(28)-2U	Induction Motor
45-5-58(29)U	Water Pressure Tank
45-5-58(30)U	Filter Operating Machine
45-5-58(31)U	do.
45-5-58(32)U	do.
45-5-58(33)U	do.
45-5-58(34)U	do.
45-5-58(35)U	do.
45-5-58(36)U	do.
45-5-58(37)U	do.
45-5-58(38)U	Piston Pump
45-5-58(39)U	Medecine Filling Agitator
45-5-58(40)U	Automatic Starting Panel
45-5-58(41)U	Shatter Machine
45-5-58(42)-1U	Venturi Meter
45-5-58(42)-2U	Meter board for Venturi Meter
45-5-58(43)U	Lift Machine for Stop Plate
45-5-58(45)U	Transformer
45-5-58(46)U	do.

Code No.	Name of Machine
45-5-58(47)U	Transformer
45-5-58(48)U	do.
45-5-58(49)U	do.
45-5-58(50)U	do.
45-5-58(51)U	do.
45-5-58(52)U	do.
45-5-58(53)U	do.
45-5-58(54)U	do.
45-5-58(55)U	do.
45-5-58(56)U	Fuel Oil Tank
45-5-58(57)U	Sluice Valve
45-5-58(58)U	do.
45-5-58(59)U	do.
45-5-58(60)U	do.
45-5-58(61)U	do.
45-5-58(62)U	do.
45-5-58(63)U	do.
45-5-58(64)U	do.
45-5-58(65)U	do.
45-5-58(66)U	do.
45-5-58(67)U	do.
45-5-58(68)U	do.
45-5-58(69)U	do.
45-5-58(70)U	do.
45-5-58(71)U	do.
45-5-58(72)U	do.
45-5-58(73)U.	do.

Code No.	Name of Machine
45-5-58(74)U	Foot Valve
45-5-58(75)U	do.
45-5-58(76)U	do.
45-5-58(77)U	Sluice Valve
45-5-58(78)U	do.
45-5-58(79)U	do.
45-5-58(80)U	do.
45-5-58(81)U	do.
45-5-58(82)U	Stop Valve
45-5-58(83)U	do.
45-5-58(84)U	do.
45-5-58(85)U	do.
45-5-58(86)U	do.
45-5-58(87)U	do.
45-5-58(98)U	Sluice Valve
45-5-58(99)U	do.
45-5-58(100)U	do.
45-5-58(101)U	do.
45-5-58(102)U	do.
45-5-58(103)U	do.
45-5-58(104)U	do.
45-5-58(105)U	do.
45-5-58(106)U	do.
45-5-58(107)U	do.
45-5-58(108)U	do.
45-5-58(109)U	do.

Code No.	Name of Machine
45-5-58(110)U	Sluice Valve
45-5-58(111)U	do.
45-5-58(113)U	do.
45-5-58(88)U	Stop Valve
45-5-58(114)U	Atomos Wlave
45-5-58(115)U	do.
45-5-58(	16 pcs. of Sluice Valve
45-5-58(112)U	Sluice Valve
45-5-58(89)U	do.
45-5-58(90)U	do.
45-5-58(91)U	do.
45-5-58(92)U	do.
45-5-58(93)U	do.
45-5-58(94)U	do.
45-5-58(95)U	do.
45-5-58(96)U	do.
45-5-58(97)U	do.
	1 pc. of Sluice Valve
	10 pcs. of Stop Valve
	16 pcs. of Stop Valve
	13 pcs. of Stop Valve
	29 pcs. of Stop Valve
	Welded Pipe, underground
	do.
	do.
	Gas Pipe, underground

Code No.	Name of Machine
	Gas Pipe, Above ground
	do.
	do.
	do.
	do.

Total: 144 items

8. List by Code Number and Name of Reparations Items in Use without Permission for Authorized Use:

None

b. List by Code Number and Name of Reparations Items an Application for Authorized Use Permission, Giving Date of Submission of Application to the Supreme Commander for the Allied Powers:

None

USE OF REPARATIONS INSTALLATIONS

User: Iwakuni City Hall (Sluice Gate)

Address: Imazu, Iwakuni-shi, Yamaguchi-ken

a. Name and Code No. of Reparations Installation:

45-5, Iwakuni Ex-Army Fuel Depot (Sluice Gate)

b. Address of Installation: Shozoku, Iwakuni-shi, Yamaguchi-ken

c. Copy of Conversion or Reconversion Permit: None

d. List of Items in Actual Production:

Water Dranage (Oral Permission)

e. A Copy of Application, Giving Date of Submission if an Application for a New or Change of Present Conversion or Reconversion Permit is Pending Approval from the Supreme Commander for the Allied Powers:

None

f. List by Code No. and Name, Reparations Items in Authorized Use, Giving Date and Issuing Headquarters of Letter of Authorization.

1. Date of Permission: 18 Mar., 48 (Annex 1)

2. Permitting Authority: Yamaguchi MG Team (Annex 1)

3. Code No. and Name of Reparations Items in Authorized Use:

Code No.	Name of Machine
45-5-53(1)U	Centrifugal Pump
45-5-53(1)U	Induction Motor
45-5-53(1)U	Switchbox
45-5-53(2)U	Vacuum Pump
45-5-53(2)U	Induction Motor
45-5-53(2)U	Oil Switch
45-5-53(2)U	Switch Box

Code No.	Name of Machine
45-5-53(3)U	Handle and Screw Shaft for Lifting Sluice Gate
None	
45-5-53(3)U	Parts of Winch
45-5-53(3)U	Induction Motor
45-5-53(4)U	Axial Flow Pump
None	
45-5-53(4)U	Reduction Gear
45-5-53(4)U	Induction Motor
45-5-53(4)U	Starter
45-5-53(5)U	Transformer
45-5-53(6)U	do.
45-5-53(7)U	do.
45-5-53(8)U	Switchboard
45-5-53(9)U	do.
	Gate
	do.
	do.
	Pipe
	do.
	Sluice Valve
	Stop Valve
	do.
	Cock Valve
	Foot Valve
	Electric Wire
	do.
	Cable
Total:	31 Items

g. List, by Code No. and Name, of Reparations Items in Use without Permission for Authorized Use:

None

h. List, by Code No. and Name, of Reparations Items on Application for Authorized Use Permission, Giving Date of Submission of Application to the Supreme Commander for the Allied Powers:

None

USE OF REPARATIONS INSTALLATIONS

User: Iwakuni City Hall (Hashirajima Electric Light Cooperation)

Address: Hashirajima Island, Iwakuni-shi, Yamaguchi-ken

a. Name and Code No. of Reparations Installation:

45-5, Iwakuni Ex-Army Fuel Depot (Hashirajima Ex-Naval Search-light Stattion)

b. Address of Installation:

Hashirajima Island, Iwakuni-shi, Yamaguchi-ken

c. Copy of Conversion or Reconversion: See Annex 1

d. List of Items in Actual Production:

Electric Power for the benefit of islanders

e. A Copy of Application, Giving Date of Permission, if an Application for a New or Change of Present Conversion or Reconversion Permit is Pending Approval from the SCAP.

None

f. List, by Code Number and Name, of Reparations Items in Authorized Use, Giving Date and Issuing Headquarters of Letter of Authorization.

1. Date of Permission: 18 Mar., 48 (Annex 1)

2. Permitting Authority: Yamaguchi MGT

3. Code No.	4. Name of Machine
45-5-615(1)U	Diesel Engine
45-5-615(2)U	do.
45-5-615(3 & 5)U	A.C. Generator with Exiter
45-5-615(4 & 6)U	do.
45-5-615(7)U	Air Compressor with Gasoline Engine
45-5-615(8)U	Starting Accumulator

Code No.	Name of Machine
45-5-615(9)U	Oil Head Tank
45-5-615(10)U	do.
45-5-615(11)U	Switchboard
45-5-615(12)U	do.
45-5-615(13)U	Transformer
45-5-615(14)U	do.
45-5-615(15)U	Heavy Oil Tank
45-5-615(16)U	do.
45-5-615(17)U	Wing Pump
45-5-615(18)U	Strainer
45-5-615(19)U	do.
45-5-615(20)U	Oil Box
45-5-615(21)U	Steel Structure
	Gas Pipe, above ground
	Gas Pipe, underground
	Gas Pipe, above ground
	do.
	do.
	do.
	2 pcs. of Globe Valve
	3 pcs. of Three-way Cock
	1 pc. of Three-way Cock
Total:	28 Items

g. List, by Code No. and Name, of Reparations Items in Use without Permission for Authorized Use.

None

h. List, by Code No. and Name, of Reparations Items on Application for Authorized Use Permission, Giving Date of Submission of Application to the SCAP.

None

USE OF REPARATIONS INSTALLATIONS

Applicant: Iwakuni City Hall (Harbor Dept.)

Address: Iwakuni-shi, Yamaguchi-ken

a. Name and Code No. of Reparations Installation:

45-5, Iwakuni Ex-Army Fuel Depot

b. Address of Installatiin: (15th Distric t in Iwakuni Ex-Army Fuel Depot) Shozoku, Iwakuni-shi, Yamaguchi-ken

c. Copy of Conversion or Reconversion Permit: None

d. List of Items in Actual Production: None

e. A Copy of Application, Giving Date of Submission, if an Application for a New or Change of Present Conversion or Reconversion Permit is Pending Approval from the Supreme Commander for the Allied Powers:

See Annex 7 & 8.

Note: The application has been forwarded through Japanese Channed, but it is not known when or whether the application had been submitted to SCAP.

f. List, by Code No. and Name, of Reparations Items in Authorized Use, Giving Date and Issuing Headquarters of Letter of Authorization:

None

g. List, by Code No. and Name of Reparations Item in Use without Permission for Authorized Use:

List is attached to Annex 7. Listed Items have been in Temporary Use with the approval of Yamaguchi CAT.

h. List, by Code No. and Name of Reparations Items on application for Authorized Use Permission, Giving Date of Submission of Application to the SCAP:

See Annex 7 & 8 and note of Paragraph e.

USE OF REPARATIONS INSTALLATIONS

User & Address:

(1). Hashimoto Gumi Co. (Iwakuni-shi, Yam aguchi-ken)

(2). Fujimura Tekkosho (Iwakuni-shi, Yamaguchi-ken)

(3). Sanyo Kogyo Co., Ltd. (Former Kudamatsu Zosen Co.) (Kudamatsu-shi, Yamaguchi-ken)

(4). Fuji Kagaku Co., Ltd. (Tonda-cho, Tsuno-gun, Yamaguchi-ken)

(5). Ogori Nokigu Co., Ltd. (Ogori-cho, Yoshiki-gun, Yamaguchi-ken)

(6). Kanemoto Tekko Co. (Shimonoseki-shi, Yamaguchi-ken)

a. Name & Code No. of Reparations Installation:

45-5, Iwakuni Ex-Army Fuel Depot

b. Address of Installation: Shozoku, Iwakuni-shi, Yamaguchi-ken

c. Copy of Conversion or Reconversion Permit:

None of the companies has permit, because those are situated outside the Iwakuni Fuel Depot.

d. List of Items in Actual Production:

(1).	Hashimoto Gumi Co.:	Transportation (Oral Permission)
(2).	Fujimura Tekko-sho:	Machine parts (Oral Permission)
(3).	Sanyo Kogyo Co., Ltd.:	Soap, Solvent & Margarine (Oral Permission)
(4).	Fuji Kagaku Co., Ltd.:	Chemicals, baking powder & washing soda(see Annex 9)
(5).	Ogori Nokigu Co., Ltd.:	Flour milling machine & thrashers(Oral Permission)
(6).	Kanemoto Tekko Co.:	Farming tools (Oral Permission)

e. A Copy of Application, Giving Date of Submission, if an Application for a New or Change of Present Conversion or reconversion Permit is Pending Approval from the Supreme Commander for the Allied Powers:

None

f. List by Code No. and Name, of Reparations Items in Authorized Use, Giving Date and Issuing Headquarters of Letter of Authorization:

(1). Date of Permission: 13 Mar. 1948 (See Annex 1)

(2). Permitting Authority: Yamaguchi MG Team (See Annex 1)

(3). Code No. & Name of Reparations Items in Authorized Use(At present)

Code No.	Name of Machine
Hashimoto Gumi Co.	
45-5-376U	Winch
Fujimura Tekkosho	
@ 45-5-379U	Plate Bending Roll
@ 45-5-345U	Lathe
Sanyo Kogyo Co., Ltd.	
45-5-386U	Wooden Sive Machine
45-5-389U	Fan
45-5-390U	do.
45-5-392U	Centrifugal Pump
45-5-393U	Tablet Machine
45-5-394U	do.
45-5-395U	do. do.
45-5-396U	Crusher
45-5-397U	do.
45-5-499(60)U	Drum Can Adjuster
45-5-391-1U	Air Compressor

Code No.	Name of Machine
Sanyo Kogyo Co., Ltd. (Continued)	
45-5-39/-2U	Air Receiver (for above)
Fuji Kagaku Co., Ltd.	
@ 45-5-U200F4 "45-5-25(191)U"	Drainage Still
@ 45-5-U201F4 "45-5-25(192)U"	Drainage Cooler
45-5-U282F3 "45-5-34(270)U"	Centrifugal Separator
@ 45-5-37(56)U	Electric Furnace
@ 45-5-37(63)U	do.
@ 45-5-47(27)U	Transformer
45-5-47(59)U	Electric Meter Board
45-5-47(60)U	do.
45-5-49(54)U	Kneading Machine
45-5-49(55)U	do.
45-5-49(71)U	Vessel with Agitator and Steam Jacket
@ 45-5-49(85)U	Tablet Machine
@45- 5-49(87)U	do.
45-5-49(97)U	Kneader
45-5-49(98)U	do.
45-5-49(69)U	Vessel with Agitator and Steam Jacket
@ 45-5-49(92)U	Tablet Machine
Ogori Nokigu Co., Ltd.	
45-5-357U	Power Press
45-5-403U	Shearing Machine