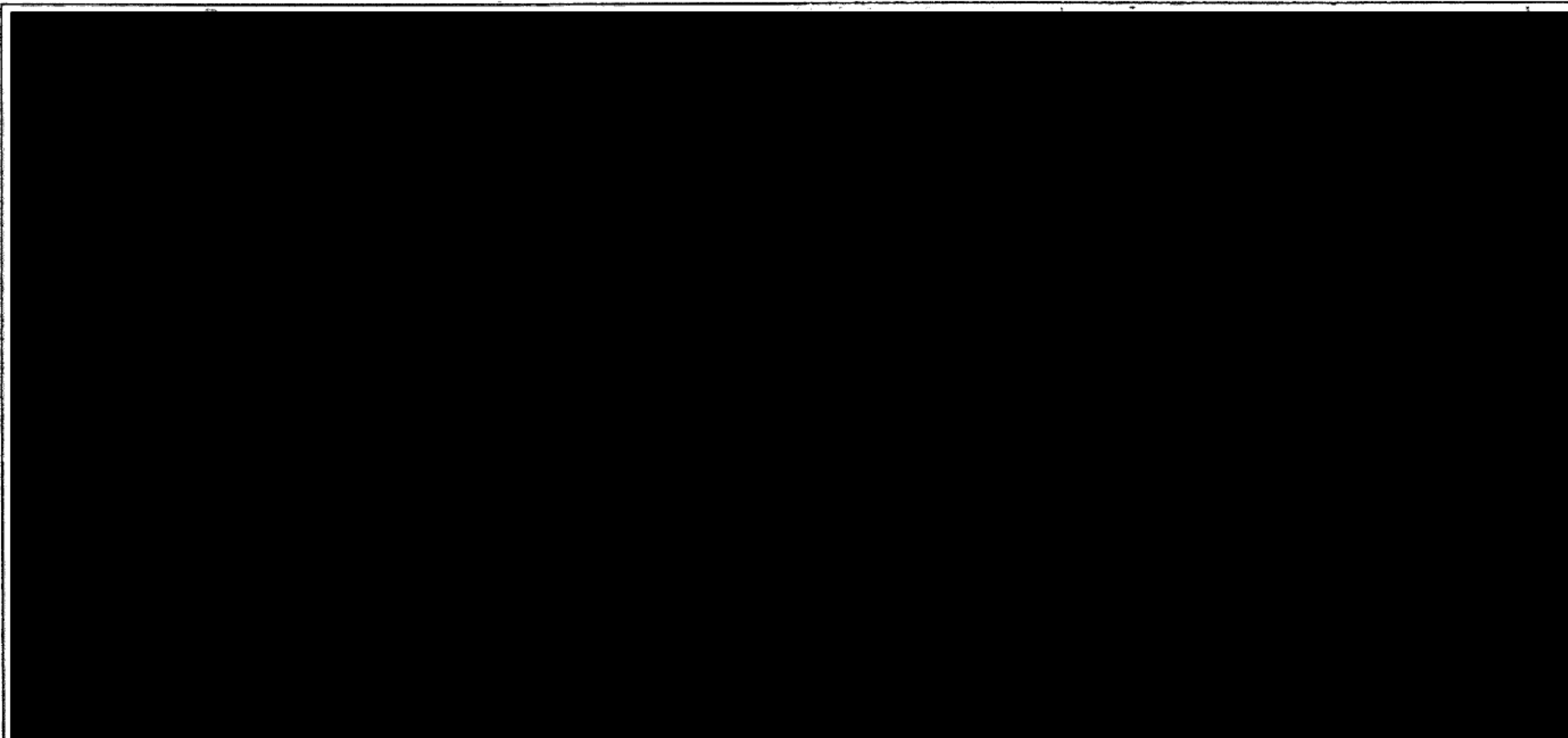


1. LEAN GAS, NORMAL CASE

FILE PLOT06.PLOT, SPOOLED AT 15:45:56 ON 04 AUG 1987 BY HFJ.



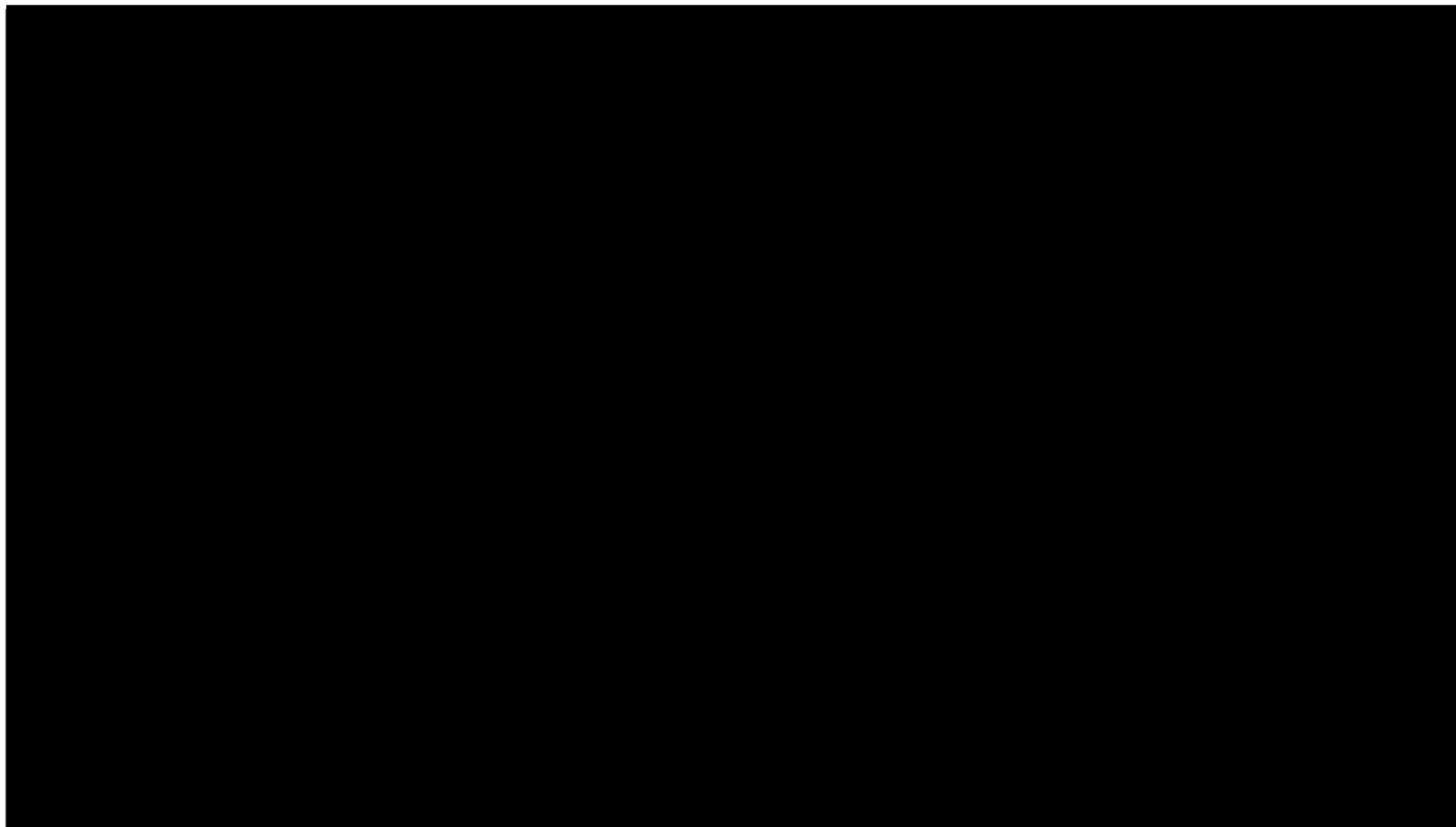
FROM 1522

POS.	1		POS.	2		3		4		5		6		7		8	
COMP.	Nm3/h	MOL %	COMP.	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %
O ₂																	
N ₂																	
CO ₂																	
C ₁																	
C ₂																	
C ₃																	
C ₄																	
C ₅																	
C ₆																	
C ₇																	
3 DRY TOTAL	51066																

Confidential-Attorneys' Eyes Only

Topsoe_0018097

TUE 04 AUG 15:45:56



Efficiency = 94.5%

- PS (111)P
- PRESSURE kg/cm²
- TEMPERATURE °C
- FLOW m³/h (10°C, 750mm Hg)
- FLOW kg/h
- DUTY 10⁴ kcal/h
- kW

CALL NO. 43102 AND 43140

REV.	DESCRIPTION	DATE	BY	CHECK	APP.
1	GENERAL REVISION	850514	PSA/BOM		
2	GENERAL REVISION	850130	PS/VL	PSA	CSK

HALDOR TOPSOE A/S
COPENHAGEN
DENMARK

3FFED
AOMLA FERTILIZER PROJECT
1350 MT/D AMMONIA PLANT
FRONT END LEAN GAS
FLOW SHEET, SOR - NORMAL CASE

Rev	841101	Rev	MS/TH	DATE	APP.
Rev	196270	Rev	41		
Rev	25526	Rev			
Rev	196297	Rev			

FILE PLOT08.PLOT, SPOOLED AT 09:57:36 ON 05 AUG 1987 BY HFJ.

2

05 AUG 09:57:37

POS.	1		2		3		4		5		6	
COMP.	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %
H ₂												
N ₂												
CO												
CO ₂												
Ar												
CH ₄												
H ₂ O												
2 DRY TOTAL												

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Topsoe_0018099

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FILE PLOT02.PLOT, SPOOLED AT 15: 44: 40 ON 04 AUG 1987 BY HFJ.

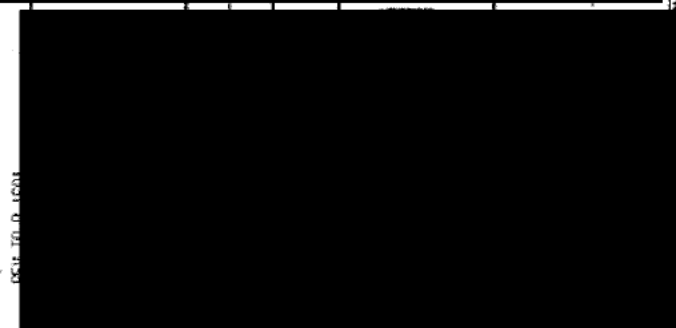
10



TUE 04 AUG 15: 44: 40

572425

POS.	1		2		3	
COMP.	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %
H ₂						
N ₂						
CO						
CO ₂						
Ar						
CH ₄						
H ₂ O						
Σ DRY						
Σ TOTAL/MW						

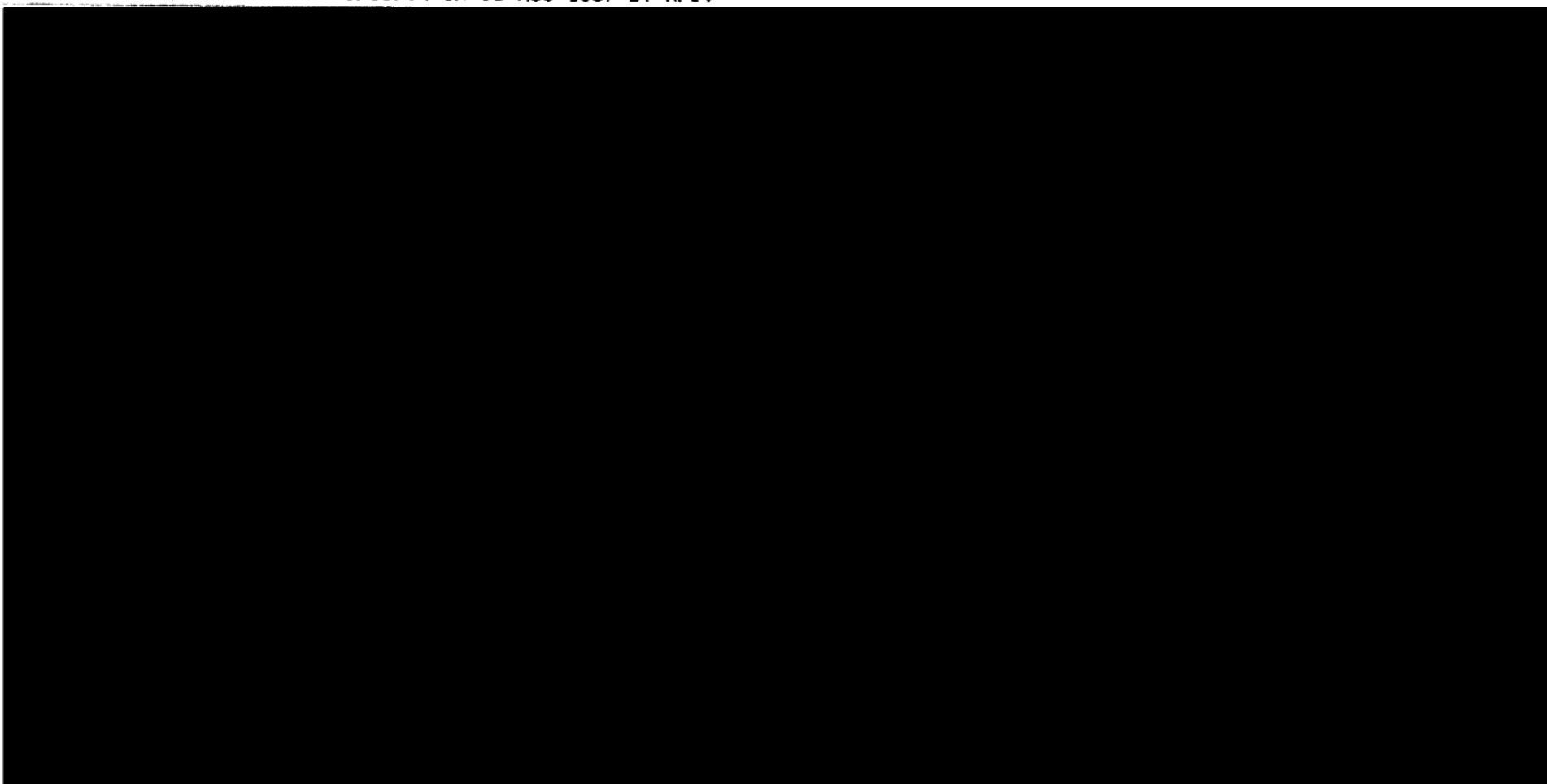


Confidential-Attorneys' Eyes Only

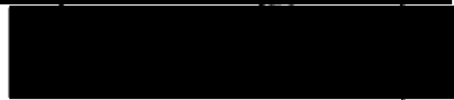
Topsoe_0018101

11

FILE PLOT10.PLOT, SPOOLED AT 09:58:04 ON 05 AUG 1987 BY HFJ.



POS.	1		2		3		4		5	
COMP.	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %
H ₂										
N ₂										
NH ₃										
Ar										
CH ₄										
TOTAL DRY										
MM										



REC-05 AUG 09 09:16

101 13

E 1514
MU-GAS CHILLER

-  POSITION
-  PRESSURE kg/cm²
-  TEMPERATURE °C
-  FLOW kg/h (10°C, 750mm Hg)
-  FLOW kg/h (100°C H₂)
-  DUTY 10⁶ kcal/h

 HALDOR TOPSOE A/S COPENHAGEN DENMARK		IN: 841101 DES: NT/MS CDO: SPS: F.L. 196276 REC. 41 JAP. 25526 REC. NO. 196506
177CO AQMLA FERTILIZER PROJECT 1350-MTPD AMMONIA PLANT AMMONIA SYNTHESIS LOOP-LEAN GAS FLOW SHEET, SOR - NORMAL CASE		101

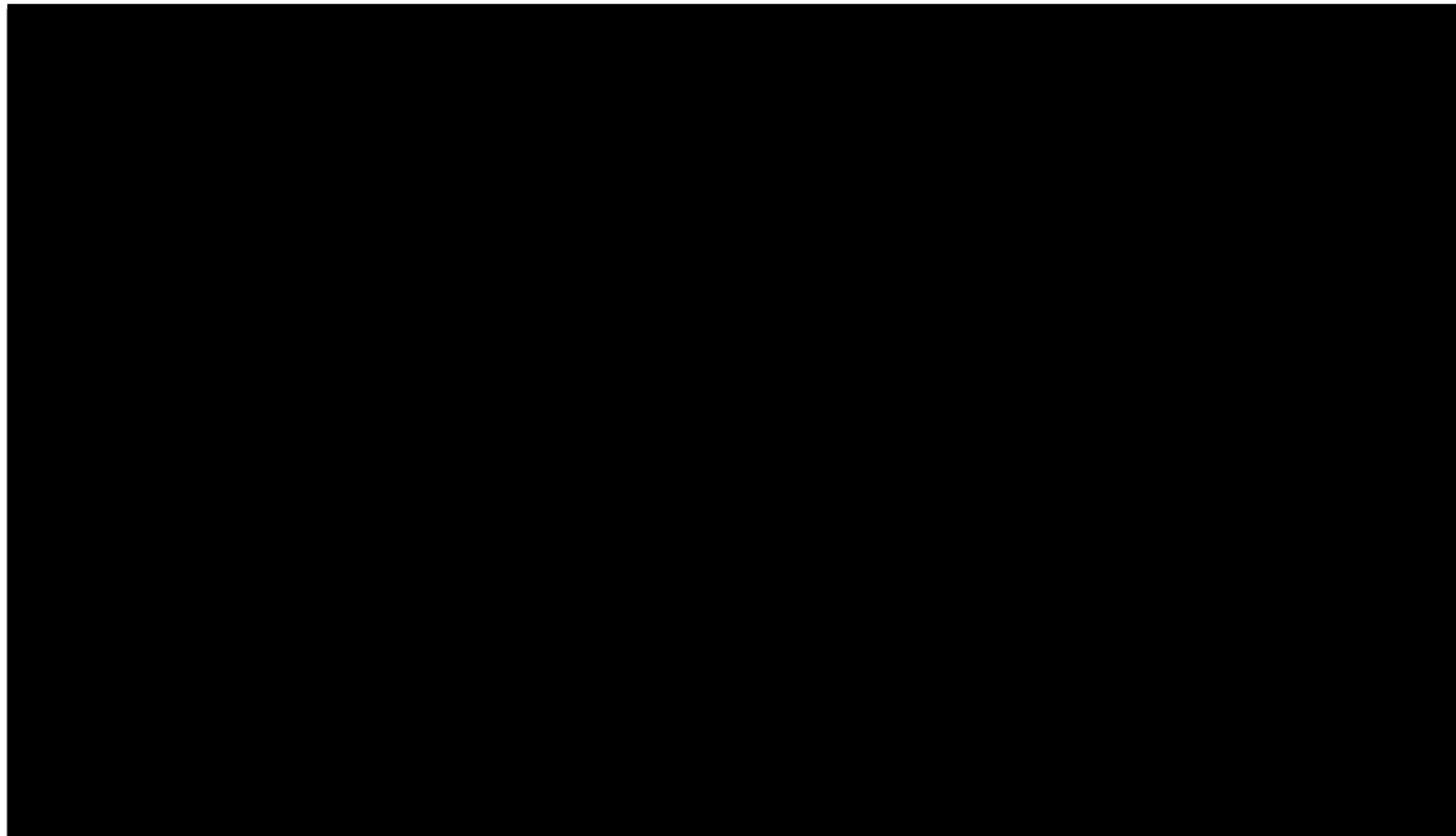
FILE PLOT13.PLOT, SPOOLED AT 09:58:44 ON 05 AUG 1987 BY HFJ.



PDS.	1		2		3		4		5		6		7		8	
COMP.	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %
H ₂																
N ₂																
NH ₃																
Ar																
CH ₄																
TOTAL DRY																
MO																

Confidential-Attorneys' Eyes Only

Topsoe_0018105



- POSITION
- PRESSURE kg/cm²
- TEMPERATURE °C
- FLOW kg/h (10% - 7000 kg)
- FLOW kg/h
- DUTY 10 kg/h
- VV

SHALL FROM
AMMONIA ABSORPTION

REVISIONS 1965 AND 1967

▽					
▽					
▽	GENERAL REVISION	850514	PSA/BDN		
▽	GENERAL REVISION	850128	MS/ENJ	PSA	CSN
REV.	DESCRIPTION	DATE	BY	CHECK	APPROV.
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HALDOR TOPSOE A/S
 COPENHAGEN
 DENMARK

JFECD
 KOLA FERTILIZER PROJECT
 3350 KTEP AMMONIA PLANT
 AMMONIA REFRIGERATION/LEAN GAS
 FLOW SHEET, SOR - NORMAL CASE

NO. 841108	REV. MS/ENJ	DATE	BY
P.L. 196293		SHEET 4	
JFECD		PROJECT	
NO. 196507		SHEET 101	

15
 09 MAY 09 08 05
 101

FILE PLOT51.PLOT, SPOOLED AT 10:03:56 ON 06 AUG 1987 BY HFJ.

16

THU, 06 AUG 10:03:56



POS.	1		2	
COMP.	Nm3/h	MOL %	Nm3/h	MOL %
NH ₃				
H ₂				
N ₂				
A-				
CH ₄				
H ₂ O				
TOTAL				
PSI				

TEMPERATURE °C
 FLOW Nm3/h (10°C, 760mm Hg)
 FLOW kg/h
 DUTY 10³ kcal/h

CALC.NO. 39625 AND 39700

REV.	DESCRIPTION	BY	CHK	DATE	APP.
1	GENERAL REVISION				
2	GENERAL REVISION				
3	GENERAL REVISION				

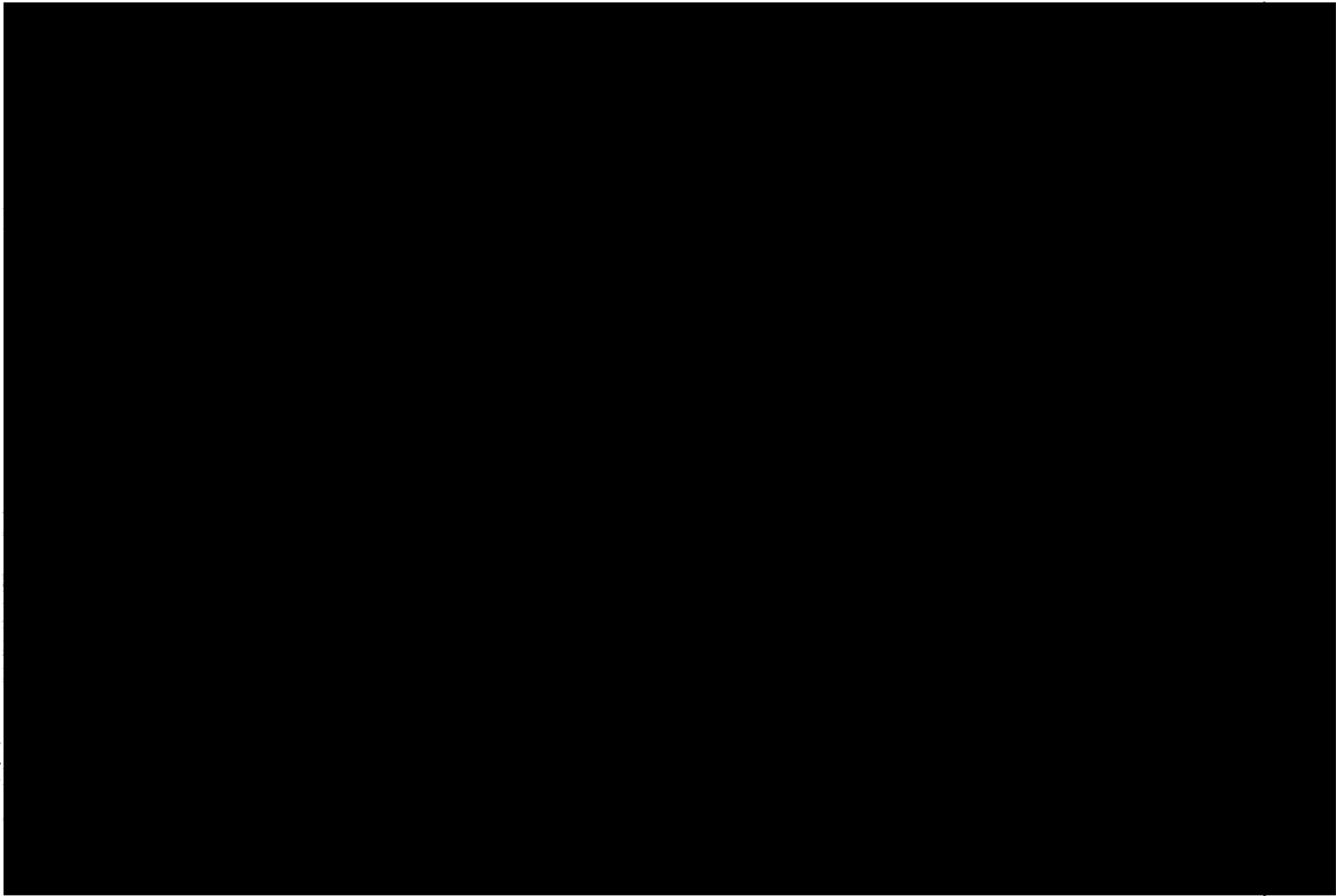
HALDOR TOPSOE A/S
 COPENHAGEN
 DENMARK

IFCCO
 ADMIA FERTILIZER PLANT
 1350 MTPD AMMONIA PLANT
 AMMONIA ABSORPTION LEAN GAS
 FLOW SHEET, SOR - NORMAL CASE

STN	850124	MS/VL	DESL	APP.
FILE	397505	REV.	41	
REV.	25528	DATE		
NO.	396414	REV.	2	

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Topsoe_0018107



FILE PLOT59.PLOT, SPOOLED AT 11:44:28 ON 06 AUG 1987 BY HFJ.

18

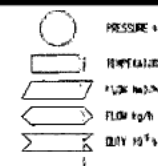
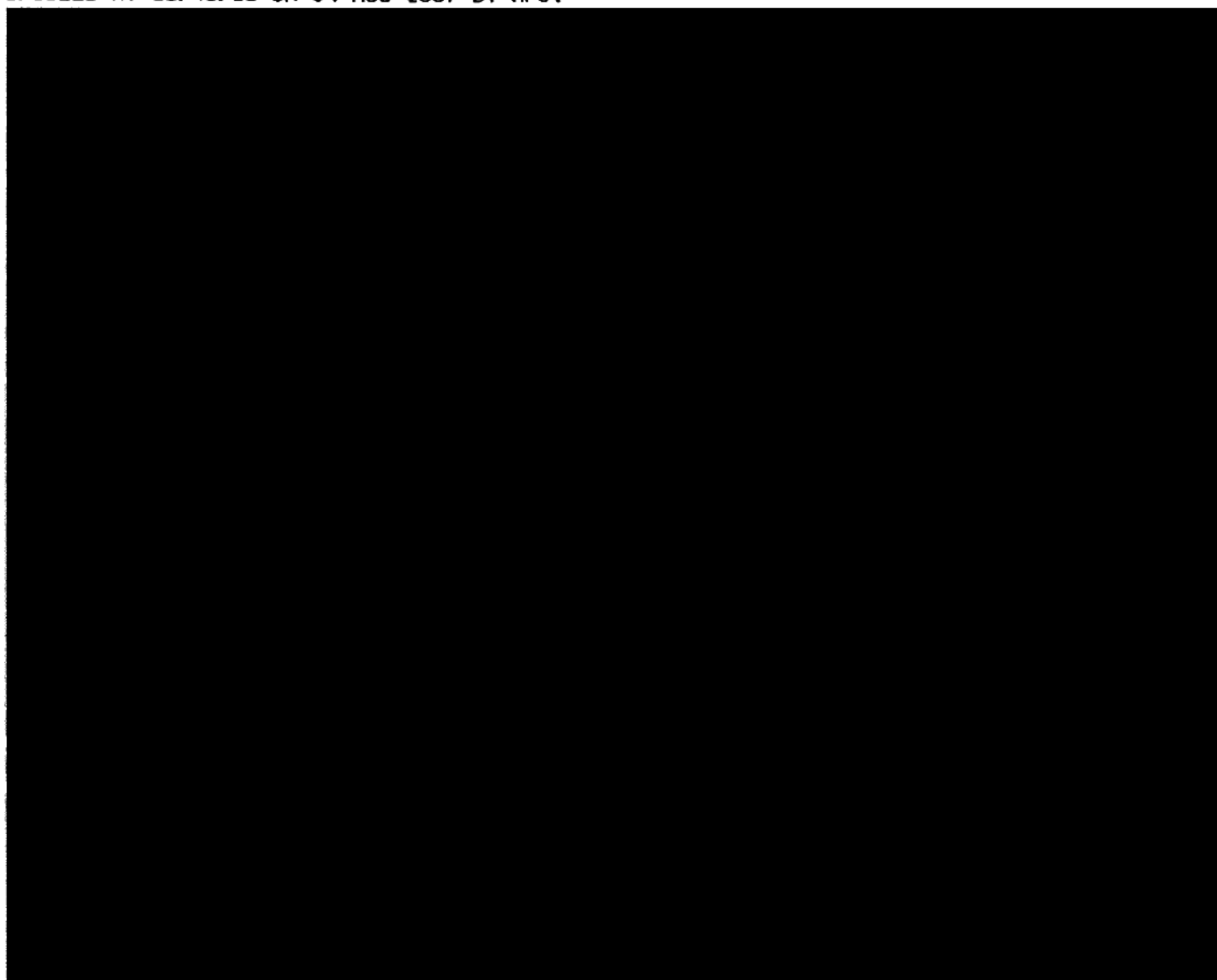
THU 08 AUG 11:44:28

Confidential-Attorneys' Eyes Only

Topsoe_0018109

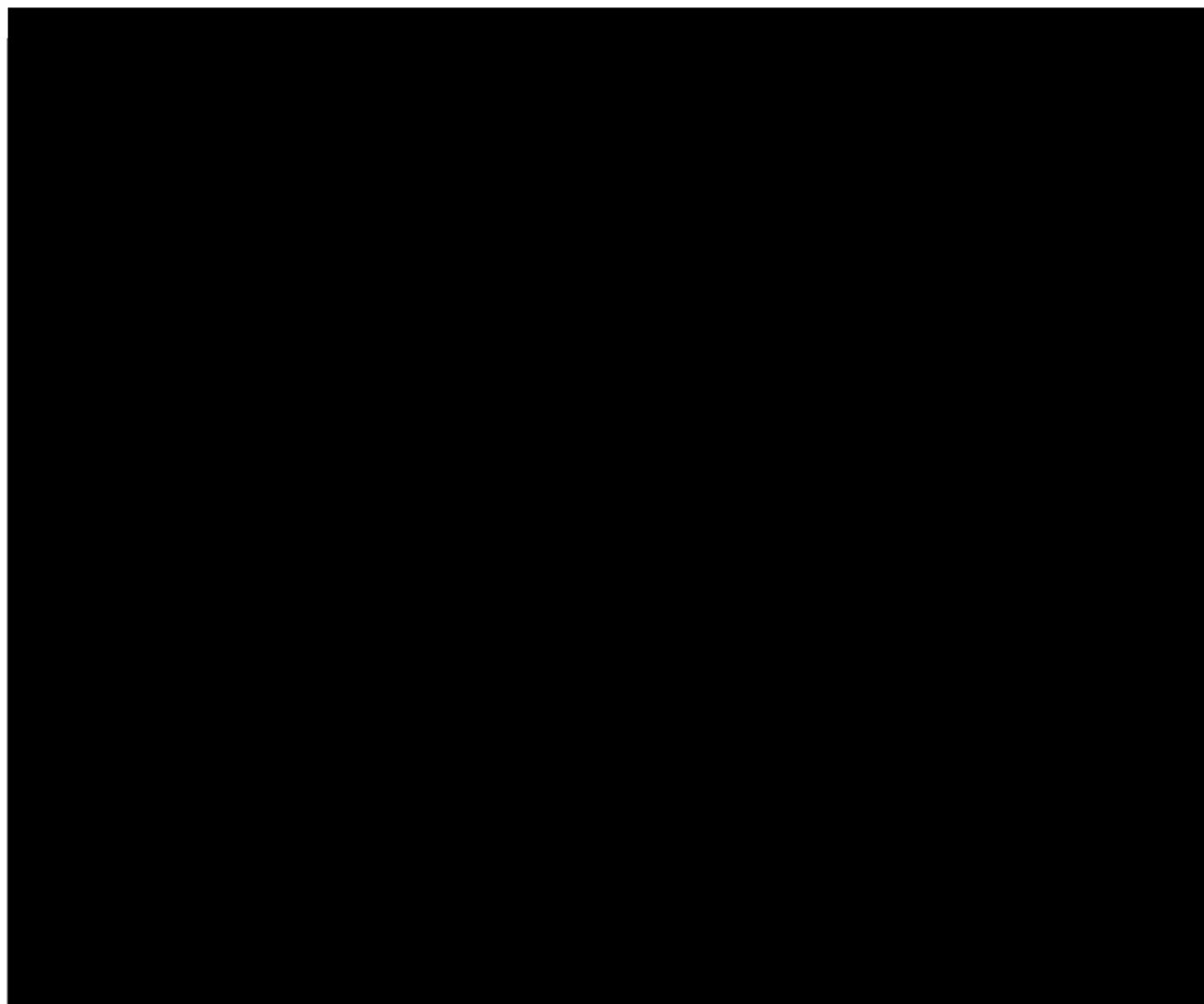
FILE PLOT04.PLOT, SPOOLED AT 15:45:16 ON 04 AUG 1987 BY HFJ.

20



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Topsoe_0018111



TUE 04 AUG 15:45:31

□ PRESSURE kg/cm² □ TEMPERATURE °C □ FLOW m³/h (10°C, 760mm Hg) □ kcal/h □ 10⁶ kcal/h	▽						 HALDOR TOPSOE A/S KØBENHAVN DENMARK	SK	Rev	VEL	SPL	
	▽							050124	HS/VL			
	▽	GENERAL REVISION	050515	PSA/BOM					PL	297504	RE	41
	▽	GENERAL REVISION	050130	HS/VL	PSA	CSN			JO	25526	FIGURE	
	REV.	DESCRIPTION	DATE	BY	CHKD.	APPR.	IFFCO ADOLA FERTILIZER PROJECT 1350 MT/D AMMONIA PLANT CONDENSATE RECOVERY & BFW DISTRIBUTION/LEAN GAS FLOW SHEET/SOR - NORMAL CASE		296413		▽	
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(10)

21

FILE PLOT15.PLOT, SPOOLED AT 09:59:20 ON 05 AUG 1987 BY HFJ.

22

WED, 05 AUG 08:58:21

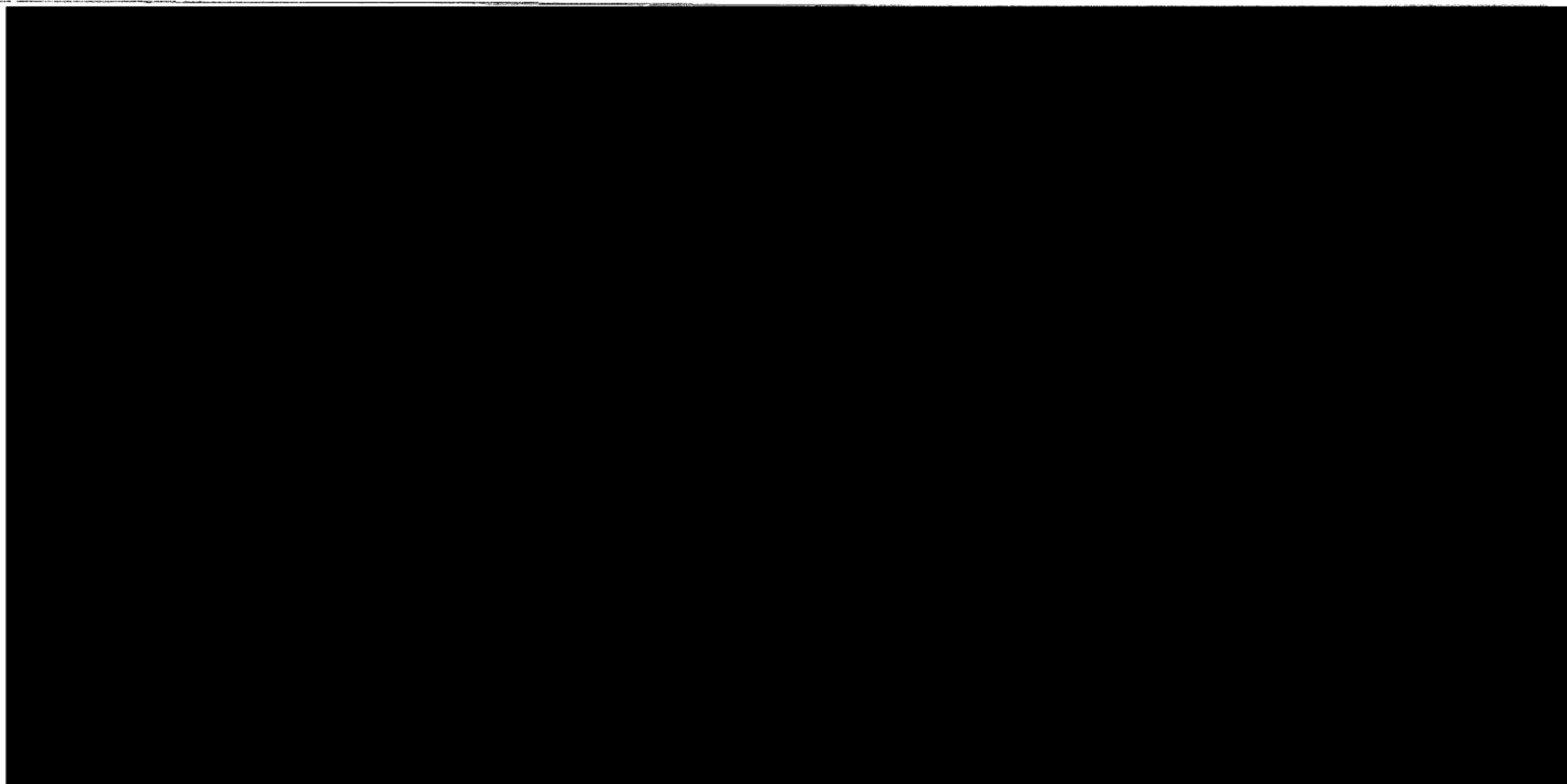
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Topsoe_0018113

 TEMPERATURE °C
 FLOW 10°
 FLOW 42/10

 HALDOR TOPSOE A/S COPENHAGEN DENMARK		SHEET 050130	UNIT HS/VL	DESIG. PSA	SYM. CSN
I.P. NO. 197508		REV. NO. 41			
GEN. NO. 25526		DES. NO. 196412			
IFCCO ADMA FERTILIZER PROJECT 1350 HTPD AMMONIA PLANT COOLING WATER/LEAN GAS FLOW SHEET, SOR - NORMAL CASE		101			

FILE PLOT00.PLOT, SPOOLED AT 08:34:00 ON 06 AUG 1987 BY HFJ.



POS.	1		2		3		4		5	
COMP.	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %	Nm3/h	MOL %
H ₂ N ₂ NH ₃ Ar CH ₄										
TOTAL (DRY) MW										



Confidential-Attorneys' Eyes Only

Topsoe_0018115

GACC# 1904 43065 AND 52237

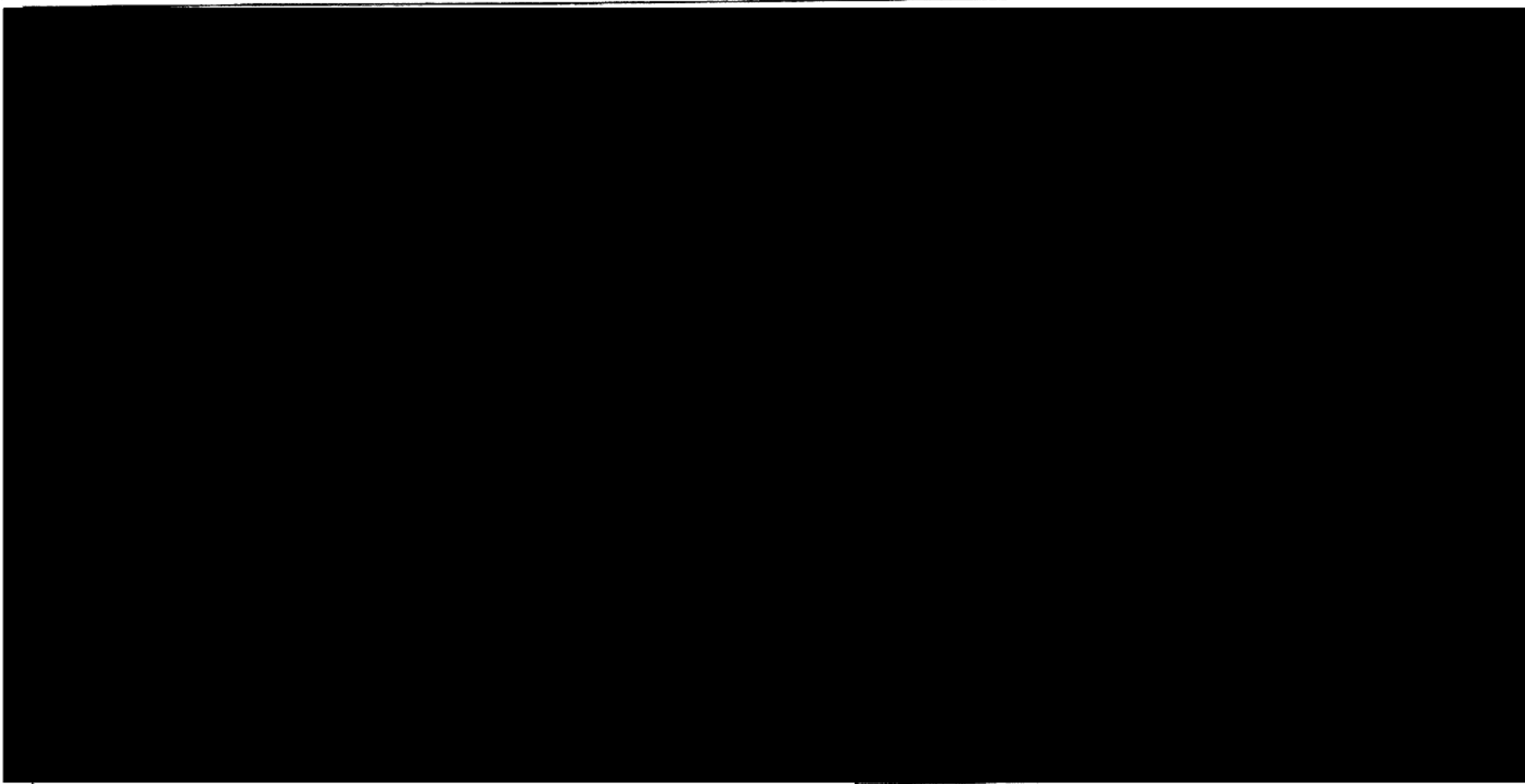
[illegible]

IFCO
KONLA FERTILIZER PROJECT
1350 MTPD AMMONIA PLANT
AMMONIA SYNTHESIS LOOP, LEAN GAS
FLOW SHEET, SOR - NORMAL, CASE TO UREA

SALE	REMARK	ON OF	APPRO
850513	PSA/MF		
T-S. NO. 136276		REC. OF. 41	
BIB. NO. 25526		STANDARD	
BIB. NO. 197672		REV.	

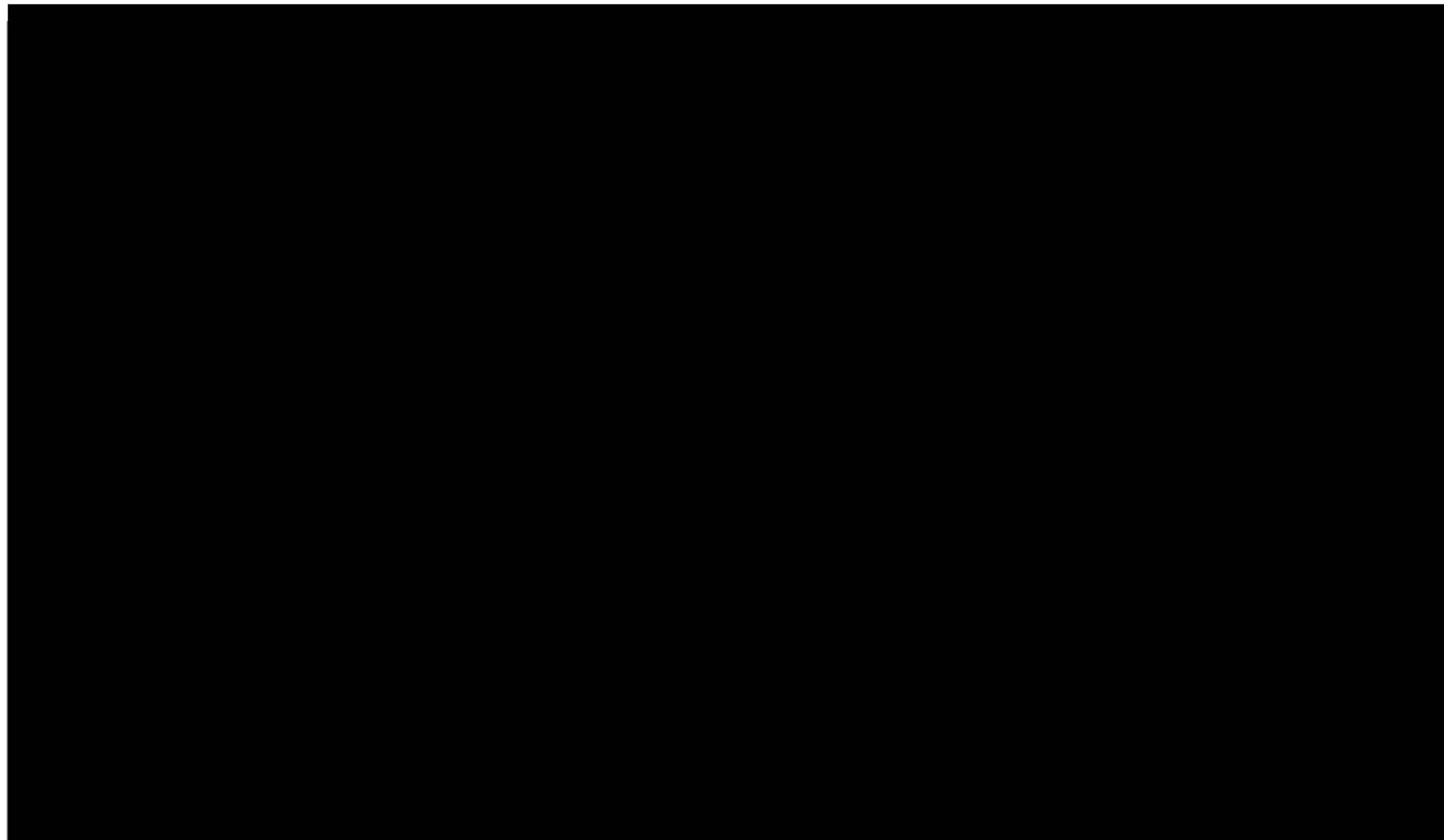
FILE PLOT02.PLOT, SPOOLED AT 08:34:28 ON 06 AUG 1987 BY HFJ.

26



THU, 06 AUG 08:34:31

POS.	1	2	3	4	5	6	7	8
COMP.								
H ₂								
N ₂								
CH ₄								
Ar								
CH ₄								
TOTAL CRY								
MM								



PRESSURE kg/cm² TEMPERATURE °C FLOW kg/h TYP. 750kg/h FLOW kg/h DUTY 10⁴ kcal/h RH				HALVORSEN A/S COPENHAGEN DENMARK		No. 850513 Date 15/04/08 P.L. 196289 Rev. 41 Job No. 25626 No. 197673	
TFFCO ADNA FERTILIZER PROJECT 1350 NIPD AMMONIA PLANT AMMONIA REFRIGERATION/LEAN GAS FLOW SHEET - NORMAL CASE 10 UREA				101			

