Note: This is a reference cited in *AP 42, Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources.* AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

REPORT OF
AIR EMISSIONS TESTS
FOR
KIRBY FOREST INDUSTRIES
SILSBEE OSB PLANT

Silsbee, Texas
February 24, through March 6, 1992

Performed By:
Environmental Monitoring Laboratories
Ridgeland, Mississippi
(601-856-3092)

ENVIRONMENTAL MONITORING LABORATORIES, INC.

P.O. Box 655 * 224-B Hwy 51 North
Ridgeland, Mississippi 39158

(601)856-3092

April 24, 1992

Subject: Louisiana Pacific Corporation's Kirby Forest Industries
Silsbee, Texas OSB Plant

During the period February 24, 1992, through March 6, 1992, Environmental Monitoring Laboratories conducted air emissions tests for Kirby Forest Industries' OSB facility in Silsbee, Texas. Testing was performed to determine emissions of particulate (PM), PM_{10}, VOC, HCHO, and CO emissions from five OSB dryers and five press vents stacks in accordance with requirements of the Environmental Protection Agency.

A summary of stack test results in pounds per hour:

	PM	PM10	VOC	HCHO	CO
Dryer No. 1	15.9	17.9	41.8	0.16	14.9
Dryer No. 2	15.3	14.6	39.0	0.22	17.4
Dryer No. 3	13.2	14.6	45.4	0.39	3.80
Dryer No. 4	14.2	17.5	38.0	0.50	11.3
Dryer No. 5	15.9	15.7	39.4	0.35	4.10
Press Vent 1	1.01	----	9.92	0.53	1.82
Press Vent 2	0.79	----	14.4	0.40	1.91
Press Vent 3	0.45	----	9.58	0.73	1.86
Press Vent 4	1.21	----	9.23	0.54	1.77
Press Vent 5	0.70	----	8.29	0.39	1.62

The project was coordinated by Dr. James T. Boswell of Louisiana Pacific Corporation. Dr. Boswell was also responsible for acquiring and documenting plant operating records during test periods and descriptions and illustrations of processes and process flow. Daniel G. Russell of Environmental Monitoring Laboratories coordinated testing efforts and was responsible for the collection and analysis of all but PM_{10} and formaldehyde samples. The PM, VOC, and CO sampling was performed by the field team of Daniel G. Russell, Rodney Moore, and Brad McKnight. Sample custody was limited to Mr. Russell. Formaldehyde sampling was done by Industrial and Environmental Analysts (P.O. Box 12846, RTP, North Carolina). The formaldehyde testing and reporting was coordinated by Mr. Jeffrey Burdette and conducted by a field team headed by Mr. John Sokash. PM10 sampling was performed by Armstrong Environmental, Inc. (4747 Irving Boulevard, #204, Dallas, Texas 75247). That testing was coordinated and reported by Mr. Tom Armstrong of Armstrong Environmental.

Plant and process operation was supervised by Mr. Ed Knight, plant manager. Mr. Mike Hudson and Mr. Mike Weindorfer of MEC Company were present to assist in coordinating dryer operation with testing. Environmental Protection Agency representatives Mr. Richard Ida, Mr. Al Bandur and Mr. Al Nugent (of MRI) were present to observe testing and plant operation.

Following is a report of the test.

REPORT OF AIR EMISSIONS TESTS
FOR KIRBY FOREST INDUSTRIES
SILSBEE OSB PLANT
SILSBEE, TEXAS
FEBRUARY 24, THROUGH MARCH 6, 1992

CONTENTS

1.0	Test Results	page 1
2.0	Source Description	11
3.0	Test Procedures	12
4.0	Data Reduction	13
5.0	Nomenclature	36
6.0	Calibration Procedures	37
7.0	Sample Train Configurations	38
8.0	Stack Configurations	41
9.0	Appendices	46

A. Sampling and Analytical Data
B. Calibration Data
C. VOC/CO Recorder Trace
D. 02-24-92 Test of No. 1 Dryer

REPORT CERTIFICATION

I certify that I have examined the information submitted herein, and based upon my inquiries of those directly responsible for obtaining the data or upon my direct acquisition of the data, I believe the submitted information is true, accurate and complete.

Signed _____

Daniel G. Russell

1.0 Test Results: The following tables present the measured flow parameters and test results for three separate emissions samples for each of 5 OSB dryer stacks and each of 5 press vents at Kirby Forest Industries in Silsbee, Texas during the period February 24, through March 6, 1992.

1.1 No. 1 Dryer:
1.1.1 PM, CO, VOC test: The results reported here are from the second of two tests done on Dryer No. 1. The first set of tests (done on 2-24-92) was rejected when it was discovered that the thermal oil heater exhaust was not directed to the dryer as has been intended. Data from the first test is provided in this report as Appendix D. Calculations from that test are found in Section 4.0.

Run. No.		1	2	3	avg.	
Date		02-26-92	02-27-92	02-27-92	------	
Time start		1545	0904	1042	------	
Time end		1703	1009	1213	------	
PM EMISSIONS	#/hr.	15.9	13.8	15.6	15.1	- FRONT HALF
PM EMISSIONS	gr/dscf	0.060	0.051	0.059	0.057	
CPM EMISSIONS	#/hr.	0.92	0.69	0.91	0.84	- CONDENSIBLE
CPM EMISSIONS	gr/dscf	0.003	0.003	0.003	0.003	
PMt EMISSIONS	#/hr.	16.8	14.5	16.5	15.9	- TOTAL
PMt EMISSIONS	gr/dscf	0.063	0.054	0.062	0.060	
CO EMISSIONS	#/hr.	12.2	18.5	14.1	14.9	
CO EMISSIONS	ppmv	90	135	105	110	
VOC EMISSIONS	#/hr. as C	42.6	36.8	46.0	41.8	
VOC EMISSIONS	ppmv as C	735	628	801	722	
VOLUMETRIC FLOWRATE	acfm	45252	45623	44652	45176	
VOLUMETRIC FLOWRATE	dscfm	30965	31344	30693	31001	
VELOCITY	ft./sec.	78.4	79.0	77.4	78.3	
STACK TEMPERATURE	degrees F	188	185	187	186	
MOISTURE	%	15.9	16.0	15.7	15.9	
SAMPLE RATE	%isokinetic	98	101	99	100	

1.1.2 PM_{10} sampling: (Performed and reported in detail by Armstrong Environmental)

Run. No.		1	2	3	avg.
Date		03-05-92	03-05-92	03-05-92	------
Time start		0949	1216	1446	------
Time end		1118	1426	1654	------
PM10 EMISSIONS	#/hr.	17.4	18.4	17.8	17.9
>PM10 EMISSIONS	#/hr.	0.60	0.55	0.56	0.57
PM10 EMISSIONS	% of total	96.67	97.10	96.95	96.90

1.1.3 HCHO sampling: (Performed and reported in detail by Industrial and Environmental Analysts)

Run. No.		1	2	3	avg.
Date		03-03-92	03-03-92	03-03-92	------
Time start		1307	1550	1728	------
Time end		1445	1700	1832	------
HCHO EMISSIONS	#/hr.	0.26	0.14	0.10	0.16
HCHO EMISSIONS	ppm	2.03	0.95	0.64	1.21

1.2 No. 2 Dryer
1.2.1 PM, CO, VOC test:

Run. No.		1	2	3	avg.
Date		02-25-92	02-25-92	02-25-92	------
Time start		1342	1608	1825	------
Time end		1444	1711	1935	------
PM EMISSIONS	#/hr.	18.8	12.1	11.6	14.2
PM EMISSIONS	gr/dscf	0.071	0.046	0.044	0.054
CPM EMISSIONS	#/hr.	1.02	1.23	1.20	1.15
CPM EMISSIONS	gr/dscf	0.004	0.005	0.005	0.004
PMt EMISSIONS	#/hr.	19.8	13.4	12.8	15.3
PMt EMISSIONS	gr/dscf	0.075	0.051	0.049	0.058
CO EMISSIONS	#/hr.	14.7	22.8	14.6	17.4
CO EMISSIONS	ppmv	110	170	110	130
VOC EMISSIONS	#/hr. as C	44.3	37.4	35.4	39.0
VOC EMISSIONS	ppmv as C	774	650	621	682
VOLUMETRIC FLOWRATE	acfm	45623	45699	45085	45469
VOLUMETRIC FLOWRATE	dscfm	30586	30740	30472	30599
VELOCITY	ft./sec.	79.0	79.2	78.1	78.8
STACK TEMPERATURE	degrees F	189	184	186	186
MOISTURE	%	16.7	17.0	16.4	16.7
SAMPLE RATE	%isokinetic	104	100	104	103

1.2.2 PM_{10} sampling: (Performed and reported in detail by Armstrong Environmental)

Run. No.		1	2	3	avg.
Date		03-05-92	03-05-92	03-05-92	------
Time start		0922	1151	1412	------
Time end		1124	1350	1615	------
PM10 EMISSIONS	#/hr.	17.2	14.5	12.0	14.6
>PM10 EMISSIONS	#/hr.	0.71	0.87	0.53	0.70
PM10 EMISSIONS	% of total	96.04	94.34	95.77	95.38

1.2.3 HCHO sampling: (Performed and reported in detail by Industrial and Environmental Analysts)

Run. No.		1	2	3	avg.
Date		03-02-92	03-02-92	03-03-92	------
Time start		1621	1829	0916	------
Time end		1740	1940	1022	------
HCHO EMISSIONS	#/hr.	0.17	0.10	0.40	0.22
HCHO EMISSIONS	ppm	1.22	0.65	2.77	1.54

1.3 No. 3 Dryer
1.3.1 PM, CO, VOC test:

Run. No.		1	2	3	avg.
Date		02-26-92	02-27-92	02-27-92	------
Time start		0924	1105	1303	------
Time end		1032	1229	1421	------
PM EMISSIONS	#/hr.	12.2	12.1	12.6	12.3
PM EMISSIONS	gr/dscf	0.046	0.046	0.047	0.046
CPM EMISSIONS	#/hr.	0.92	1.05	0.68	0.88
CPM EMISSIONS	gr/dscf	0.003	0.004	0.003	0.003
PMt EMISSIONS	#/hr.	13.1	13.2	13.3	13.2
PMt EMISSIONS	gr/dscf	0.049	0.050	0.050	0.050
CO EMISSIONS	#/hr.	2.04	5.31	4.05	3.80
CO EMISSIONS	ppmv	15	40	30	28
VOC EMISSIONS	#/hr. as C	41.2	47.6	47.3	45.4
VOC EMISSIONS	ppmv as C	707	836	817	786
VOLUMETRIC FLOWRATE	acfm	45615	44580	44700	44965
VOLUMETRIC FLOWRATE	dscfm	31186	30454	30944	30861
VELOCITY	ft./sec.	79.0	77.2	77.4	77.9
STACK TEMPERATURE	degrees F	185	183	183	184
MOISTURE	%	16.4	16.7	15.6	16.2
SAMPLE RATE	%isokinetic	95	97	96	96

1.3.2 PM_{10} sampling: (Performed and reported in detail by Armstrong Environmental)

Run. No.		1	2	3	avg.
Date		03-03-92	03-03-92	03-03-92	------
Time start		0910	1137	1410	------
Time end		1114	1345	1527	------
PM10 EMISSIONS	#/hr.	15.4	13.9	14.4	14.6
>PM10 EMISSIONS	#/hr.	3.19	2.05	1.75	2.33
PM10 EMISSIONS	% of total	82.84	87.15	89.16	86.38

1.3.3 HCHO sampling: (Performed and reported in detail by Industrial and Environmental Analysts)

Run. No.		1	2	3	avg.
Date		03-02-92	03-02-92	03-06-92	------
Time start		0909	1118	1011	------
Time end		1025	1235	1117	------
HCHO EMISSIONS	#/hr.	0.53	0.40	0.25	0.39
HCHO EMISSIONS	ppm	3.74	2.80	1.74	2.76

1.4 No. 4 Dryer
1.4.1 PM, CO, VOC test:

Run. No.		1	2	3	avg.
Date		02-27-92	02-27-92	02-28-92	------
Time start		1516	1702	1048	------
Time end		1618	1812	1048	------
PM EMISSIONS	#/hr.	12.9	13.5	13.0	13.1
PM EMISSIONS	gr/dscf	0.047	0.050	0.048	0.048
CPM EMISSIONS	#/hr.	0.85	1.53	0.95	1.11
CPM EMISSIONS	gr/dscf	0.003	0.006	0.004	0.004
PMt EMISSIONS	#/hr.	13.8	15.0	13.9	14.2
PMt EMISSIONS	gr/dscf	0.050	0.056	0.052	0.053
CO EMISSIONS	#/hr.	23.5	5.46	4.81	11.3
CO EMISSIONS	ppmv	170	40	35	82
VOC EMISSIONS	#/hr. as C	38.5	36.8	38.5	38.0
VOC EMISSIONS	ppmv as C	649	630	655	645
VOLUMETRIC FLOWRATE	acfm	45761	44688	45181	45210
VOLUMETRIC FLOWRATE	dscfm	31733	31267	31473	31491
VELOCITY	ft./sec.	79.3	77.4	78.3	78.3
STACK TEMPERATURE	degrees F	179	176	176	177
MOISTURE	%	16.4	16.7	15.6	16.2
SAMPLE RATE	%isokinetic	95	97	96	96

1.4.2 PM_{10} sampling: (Performed and reported in detail by Armstrong Environmental)

Run. No.		1	2	3	avg.
Date		03-02-92	03-02-92	03-02-92	------
Time start		1054	1425	1650	------
Time end		1311	1623	1853	------
PM10 EMISSIONS	#/hr.	16.4	18.2	18.0	17.5
>PM10 EMISSIONS	#/hr.	1.81	0.95	2.00	1.59
PM10 EMISSIONS	% of total	90.06	95.04	90.00	91.70

1.4.3 HCHO sampling: (Performed and reported in detail by Industrial and Environmental Analysts)

Run. No.		1	2	3	avg.
Date		03-05-92	03-05-92	03-06-92	------
Time start		1420	1700	0822	------
Time end		1522	1804	0927	------
HCHO EMISSIONS	#/hr.	0.37	0.56	0.58	0.50
HCHO EMISSIONS	ppm	2.55	3.95	3.89	3.46

1.5 No. 5 Dryer
1.5.1 PM, CO, VOC test:

Run. No.		1	2	3	avg.
Date		02-28-92	02-28-92	02-28-92	------
Time start		1149	1426	1611	------
Time end		1250	1528	1713	------
PM EMISSIONS	#/hr.	17.1	13.5	14.5	15.0
PM EMISSIONS	gr/dscf	0.064	0.050	0.053	0.056
CPM EMISSIONS	#/hr.	0.97	0.76	0.93	0.89
CPM EMISSIONS	gr/dscf	0.004	0.003	0.003	0.003
PMt EMISSIONS	#/hr.	18.1	14.3	15.4	15.9
PMt EMISSIONS	gr/dscf	0.068	0.053	0.057	0.059
CO EMISSIONS	#/hr.	4.76	4.10	3.44	4.10
CO EMISSIONS	ppmv	35	30	25	30
VOC EMISSIONS	#/hr. as C	43.7	35.3	39.1	39.4
VOC EMISSIONS	ppmv as C	750	603	663	672
VOLUMETRIC FLOWRATE	acfm	44917	45285	45646	45283
VOLUMETRIC FLOWRATE	dscfm	31145	31293	31562	31334
VELOCITY	ft./sec.	77.8	78.5	79.1	78.4
STACK TEMPERATURE	degrees F	174	175	175	175
MOISTURE	%	16.8	16.9	16.8	16.8
SAMPLE RATE	%isokinetic	98	98	97	97

1.5.2 PM_{10} sampling: (Performed and reported in detail by Armstrong Environmental)

Run. No.		1	2	3	avg.
Date		03-02-92	03-02-92	03-02-92	------
Time start		0945	1331	1638	------
Time end		1200	1535	1840	------
PM10 EMISSIONS	#/hr.	15.0	15.3	16.7	15.7
>PM10 EMISSIONS	#/hr.	3.11	1.74	2.75	2.53
PM10 EMISSIONS	% of total	82.83	89.79	85.86	86.16

1.5.3 HCHO sampling: (Performed and reported in detail by Industrial and Environmental Analysts)

Run. No.		1	2	3	avg.
Date		03-05-92	03-05-92	03-05-92	------
Time start		0917	1111	1245	------
Time end		1021	1216	1350	------
HCHO EMISSIONS	#/hr.	0.34	0.36	0.34	0.35
HCHO EMISSIONS	ppm	2.37	2.48	2.32	2.39

1.6 No. 1 Press Vent
1.6.1 PM, CO, VOC test:

Run. No. ..... Date ..... Time start ..... Time end		1 03-02-92 1514 1616	2 03-02-92 1631 1733	3 03-02-92 1753 1854	avg. ------ ------ ------
PM EMISSIONS	#/hr.	0.75	0.96	0.51	0.74
PM EMISSIONS	gr/dscf	0.002	0.003	0.001	0.002
CPM EMISSIONS	#/hr.	0.39	0.10	0.33	0.27
CPM EMISSIONS	gr/dscf	0.003	0.003	0.002	0.003
PMt EMISSIONS	#/hr.	1.14	1.06	0.84	1.01
PMt EMISSIONS	gr/dscf	0.003	0.003	0.002	0.003
CO EMISSIONS	#/hr.	1.76	1.85	1.84	1.82
CO EMISSIONS	ppmv	10	10	10	10
VOC EMISSIONS	#/hr. as C	7.76	9.22	12.8	9.92
VOC EMISSIONS	ppmv as C	103	116	162	127
VOLUMETRIC FLOWRATE	acfm	43387	45680	45434	44834
VOLUMETRIC FLOWRATE	dscfm	40290	42422	42206	41639
VELOCITY	ft./sec.	36.8	38.8	38.6	38.1
STACK TEMPERATURE	degrees F	99	100	100	100
MOISTURE	%	2.12	1.97	1.93	2.00
SAMPLE RATE	%isokinetic	100	96	93	96

1.6.2 HCHO sampling: (Performed and reported in detail by Industrial and Environmental Analysts)

Run. No. ..... Date ..... Time start ..... Time end		1 02-27-92 0833 0944	2 02-27-92 1040 1145	3 02-27-92 1236 1340	avg. ------ ------ ------
HCHO EMISSIONS	#/hr.	0.50	0.50	0.59	0.53
HCHO EMISSIONS	ppm	2.11	2.02	2.41	2.18

1.7 No. 2 Press Vent
1.7.1 PM, CO, VOC test:

Run. No.		1	2	3	avg.
Date		03-01-92	03-01-92	03-01-92	------
Time start		1444	1614	1735	------
Time end		1545	1715	1836	------
PM EMISSIONS	#/hr.	0.38	0.68	0.72	0.59
PM EMISSIONS	gr/dscf	0.001	0.002	0.002	0.002
CPM EMISSIONS	#/hr.	0.14	0.25	0.21	0.20
CPM EMISSIONS	gr/dscf	0.0004	0.0006	0.0006	0.0005
PMt EMISSIONS	#/hr.	0.52	0.92	0.94	0.79
PMt EMISSIONS	gr/dscf	0.001	0.002	0.003	0.002
CO EMISSIONS	#/hr.	1.88	1.96	1.88	1.91
CO EMISSIONS	ppmv	10	10	10	10
VOC EMISSIONS	#/hr. as C	11.0	17.2	14.9	14.4
VOC EMISSIONS	ppmv as C	137	205	185	176
VOLUMETRIC FLOWRATE	acfm	46103	48441	46335	46966
VOLUMETRIC FLOWRATE	dscfm	43027	44928	43173	43709
VELOCITY	ft./sec.	39.1	41.1	39.4	39.9
STACK TEMPERATURE	degrees F	99	101	99	100
MOISTURE	%	1.61	1.80	1.80	1.74
SAMPLE RATE	%isokinetic	94	93	94	94

1.7.2 HCHO sampling: (Performed and reported in detail by Industrial and Environmental Analysts)

Run. No.		1	2	3	avg.
Date		02-26-92	02-26-92	02-26-92	------
Time start		1126	1357	1615	------
Time end		1232	1501	1718	------
HCHO EMISSIONS	#/hr.	0.37	0.41	0.42	0.40
HCHO EMISSIONS	ppm	1.42	1.59	1.62	1.55

1.8 No. 3 Press Vent
1.8.1 PM, CO, VOC test:

Run. No.		1	2	3	avg.
Date		03-02-92	03-02-92	03-02-92	------
Time start		0938	1104	1231	------
Time end		1039	1205	1332	------
PM EMISSIONS	#/hr.	0.45	0.55	0.35	0.45
PM EMISSIONS	gr/dscf	0.001	0.001	0.001	0.001
CPM EMISSIONS	#/hr.	0.10	0.20	0.41	0.24
CPM EMISSIONS	gr/dscf	0.0003	0.0005	0.0011	0.0006
PMt EMISSIONS	#/hr.	0.55	0.74	0.76	0.68
PMt EMISSIONS	gr/dscf	0.001	0.002	0.002	0.002
CO EMISSIONS	#/hr.	1.89	1.86	1.84	1.86
CO EMISSIONS	ppmv	10	10	10	10
VOC EMISSIONS	#/hr. as C	10.6	10.1	8.07	9.58
VOC EMISSIONS	ppmv as C	131	127	102	120
VOLUMETRIC FLOWRATE	acfm	46302	45933	44983	45739
VOLUMETRIC FLOWRATE	dscfm	43270	42740	42140	42716
VELOCITY	ft./sec.	39.3	39.0	38.2	38.8
STACK TEMPERATURE	degrees F	100	101	99	100
MOISTURE	%	1.45	1.62	1.32	1.46
SAMPLE RATE	%isokinetic	97	95	95	95

1.8.2 HCHO sampling: (Performed and reported in detail by Industrial and Environmental Analysts)

Run. No.		1	2	3	avg.
Date		02-28-92	02-28-92	02-28-92	------
Time start		1255	1440	1622	------
Time end		1400	1546	1728	------
HCHO EMISSIONS	#/hr.	0.68	0.74	0.76	0.73
HCHO EMISSIONS	ppm	2.83	2.99	3.07	2.96

1.9 No. 4 Press Vent
1.9.1 PM, CO, VOC test:

Run. No.		1	2	3	avg.
Date		02-29-92	02-29-92	02-29-92	------
Time start		1220	1456	1643	------
Time end		1321	1609	1744	------
PM EMISSIONS	#/hr.	1.02	0.94	0.59	0.85
PM EMISSIONS	gr/dscf	0.003	0.003	0.002	0.002
CPM EMISSIONS	#/hr.	0.19	0.57	0.58	0.44
CPM EMISSIONS	gr/dscf	0.004	0.004	0.003	0.004
PMt EMISSIONS	#/hr.	1.21	1.51	1.17	1.30
PMt EMISSIONS	gr/dscf	0.004	0.004	0.003	0.004
CO EMISSIONS	#/hr.	1.75	1.78	1.78	1.77
CO EMISSIONS	ppmv	10	10	10	10
VOC EMISSIONS	#/hr. as C	9.91	7.71	10.1	9.23
VOC EMISSIONS	ppmv as C	132	101	132	122
VOLUMETRIC FLOWRATE	acfm	42921	43810	43937	43556
VOLUMETRIC FLOWRATE	dscfm	40134	40879	40743	40585
VELOCITY	ft./sec.	36.4	37.2	37.3	37.0
STACK TEMPERATURE	degrees F	90	92	93	92
MOISTURE	%	2.54	2.49	2.84	2.62
SAMPLE RATE	%isokinetic	93	93	94	93

1.9.2 HCHO sampling: (Performed and reported in detail by Industrial and Environmental Analysts)

Run. No.		1	2	3	avg.
Date		02-27-92	02-27-92	02-28-92	------
Time start		1437	1717	0910	------
Time end		1625	1822	1018	------
HCHO EMISSIONS	#/hr.	0.53	0.54	0.54	0.54
HCHO EMISSIONS	ppm	2.13	2.14	2.08	2.12

1.10 No. 5 Press Vent
1.10.1 PM, CO, VOC test:

Run. No.		1	2	3	avg.
Date		03-01-92	03-01-92	03-01-92	------
Time start		0953	1119	1321	------
Time end		1054	1220	1422	------
PM EMISSIONS	#/hr.	0.53	0.05	0.49	0.36
PM EMISSIONS	gr/dscf	0.001	0.0001	0.001	0.001
CPM EMISSIONS	#/hr.	0.14	0.35	0.54	0.34
CPM EMISSIONS	gr/dscf	0.0004	0.0009	0.0014	0.0009
PMt EMISSIONS	#/hr.	0.67	0.39	1.03	0.70
PMt EMISSIONS	gr/dscf	0.002	0.001	0.003	0.002
CO EMISSIONS	#/hr.	0.98	1.94	1.94	1.62
CO EMISSIONS	ppmv	5	10	10	8
VOC EMISSIONS	#/hr. as C	6.63	9.88	8.37	8.29
VOC EMISSIONS	ppmv as C	79	119	100	99
VOLUMETRIC FLOWRATE	acfm	47966	47253	47669	47629
VOLUMETRIC FLOWRATE	dscfm	44964	44427	44571	44654
VELOCITY	ft./sec.	40.7	40.1	40.5	40.4
STACK TEMPERATURE	degrees F	95	95	97	95
MOISTURE	%	1.93	1.60	1.69	1.74
SAMPLE RATE	%isokinetic	93	96	93	94

1.10.2 HCHO sampling: (Performed and reported in detail by Industrial and Environmental Analysts)

Run. No.		1	2	3	avg.
Date		02-29-92	02-29-92	02-29-92	------
Time start		1018	1201	1336	------
Time end		1122	1304	1440	------
HCHO EMISSIONS	#/hr.	0.40	0.39	0.36	0.39
HCHO EMISSIONS	ppm	1.62	1.59	1.44	1.55

2.0 Source Description: Kirby Forest Industries' oriented strand board (OSB) facility in Silsbee, Texas produces oriented strand board from southern pine timber.

Five (5) identical MEC Company rotary dryers are used to dry wood flakes used in the board construction. Particulate emissions from each of the rotary dryers are controlled by a multi-cyclone. Each identical system exhausts to the atmosphere by way of a 42.0 inch diameter stack. Two sample ports are provided at a location which is approximately 28 feet (8.0 diameters) below the stack exit and 50 feet (14 diameters) above the blower inlet to the stack.

Five (5) roof vents exhaust to the atmosphere from the forming line and press area. By design, the axial fans moving air through the roof vents provide a turbulent air flow inappropriate for measurement by standard methods. In order to provide a suitably laminar air flow, a short stack extension and straightening vanes were installed. The dimensions of the stack extension do not meet minimum requirements of standard sampling procedures. The extensions are 60 inch diameter vertical stacks approximately 44 inches high added to the existing fan shroud. Straightening vanes were installed at a point approximately 18 inches above the axial fan blades. Two sample ports were installed at 90° in the extensions at a point approximately 30 inches below the stack exit and approximately 14 inches above the straightening vanes.

Sketches of the stacks illustrating dimensions and selection of sampling points are provided in Appendix A.

Detailed descriptions of the processes and operating rates, and operating conditions during the tests are supplied by Kirby Forest Industries under separate cover.

3.0 Test Procedures: Test procedures used are generally those described in the Code of Federal Regulations, Title 40, Part 60, Appendix A. Specifically those procedures used were Method 1 to determine the number of sample points (with the aforementioned exception), Method 3 to determine carbon dioxide and oxygen content of the stack gas, and Method 5 (incorporates Methods 2 and 4) to determine flow rates, moisture content, and particulate emissions. The sampling train used is identical to that described in Method 5 except that no cyclone was used. VOC emissions were measured using Method 25A (continuous monitoring with a flame ionization detector). The Ratfish™ FID is equipped with multiple scales. The 0 to 1000 ppm scale was used for measurement of stack concentrations of VOC as propane. Calibrations were made using certified propane in nitrogen mixtures in nominal concentrations of 31, 82 and 830 ppm. Charcoal filtered air was used for zero. To obtain results as methane (CH_3) (or as carbon), measured concentrations were increased by a factor of three. Carbon monoxide concentration was determined using the continuous sampling technique described in Method 10 using a Beckman model 864 NDIR analyzer. The discrimination ratios for CO_2 and moisture are very low and accordingly, the silica gel and ascarite traps were omitted. The exhaust of the NDIR was captured in a Tedlar™ bag for the Method 3 determination. In addition, the contents of the Tedlar bags was redirected to the NDIR at the conclusion of each run in order to obtain a trace of the composited sample. Schematics of the sample trains are included in section 7.0 of this report.

Particulate matter of less than 10 microns (PM_{10}) was determined using the EPA proposed method 201A/CSR: 55 FR 14246 (4/17/90) using an Andersen PM_{10} cyclone. This testing was done by Armstrong Environmental and is reported under separate cover.

Formaldehyde emissions were measured using the BIF Method 0011. Formaldehyde testing was done by Industrial and Environmental Analysts and is reported under separate cover.

The particulate determination differed slightly from Method 5 in that the "back half" portion of the sample was captured (distilled water used in impingers) and analyzed for condensible particulate (CPM) using a methylene chloride extraction. Recovered samples were extracted four times with 15 milliliter portions of methylene chloride. The aqueous fraction was evaporated over low heat and the residue weight determined gravimetrically. The organic fraction was evaporated at room temperature and the residue weight determined gravimetrically.

Particulate filters were recovered by rinsing the front half of the filter holder into the probe wash and securing the filters in glass petri dishes. Filters were heated in an oven for 2 hours at 105° C, desiccated at least 24 hours and weighed to constant weight. Probe wash samples in acetone were evaporated to dryness over low heat in tarred beakers, desiccated for at least 24 hours and weighed to constant weight. Weighings are made at 6 hour or greater intervals (samples stored in desiccator). Final weights are considered valid and are recorded if there is no more than 0.5 milligrams difference from the previous weighing.

Equipment calibrations are described in Section 6.0. Calibration data is in Appendix C.

Calculations were made using a computer spreadsheet. Each new spreadsheet is generated from a master one which has constant values so that mathematical correctness can be confirmed with each use.

4.0 Data Reduction

REJECTED

Kirby Forest Industries - Silsbee OSB Facility
No. 1 Dryer Stack
Particulate/VOC/CO Emissions Test - February 24, 1992

Collected test data	RUN 1	RUN 2	RUN 3	
1. As : sq ft	9.621128	9.621128	9.621128	
2. Dn : in.	.196	.196	.196	
3. Cp : dimensionless	.84	.84	.84	
4. Theta : minutes	60	60	60	
5. Y : dimensionless	.98	.98	.98	
6. Pbar : in. Hg	29.61	29.61	29.61	
7. Pg : in. H2O	-.46	-.46	-.46	
8. Vm : cf (dry gas)	44.175	43.7	42.187	
9. sqr(DP),avg: in.H2O^.5	1.2043	1.2078	1.1889	
10. DH : in. H2O	1.6875	1.6667	1.6083	
11. ts : degrees F	190.92	187.17	185.50	187.86
12. tm : degrees F	98.50	105.63	102.42	
13. Vlc : ml	187	188.5	194	
14. CO2 : percent	.90	1.00	.97	
15. O2 : percent	19.53	19.30	19.43	
16. CO : ppm, dry (NDIR)	20	30	20	23.33333
17.a M,PM : mg (front half)	266.7	187.4	200.5	
17.b M,PM aqu: mg (aqu.fraction)	6.8	3	2.3	
17.c M,PM org: mg (org.fraction)	8.4	9.5	6.9	
18. C,VOC : ppmv as propane,wet	133	N/A	228	N/A

REJECTED

Kirby Forest Industries - Silsbee OSB Facility
No. 1 Dryer Stack
Particulate/VOC/CO Emissions Test - February 24, 1992

Calculations:	RUN 1	RUN 2	RUN 3	AVG.	
1. Pm : in.Hg (DH/13.6)+Pbar	29.73	29.73	29.73	N/A	
2. Ps : in. Hg (Pg/13.6)+Pbar	29.58	29.58	29.58	N/A	
3. An : sq ft ((Dn/24)^2)(3.1416)	2.095e-4	2.095e-4	2.095e-4	N/A	
4. Vmstd: dscf Vm Y(Pm/Pstd)(Tstd/Tm)	40.67301	39.72643	38.56433	N/A	
5. Vwstd: scf (.04707cf/ml)(Vlc)	8.80209	8.872695	9.13158	N/A	
6. Bws : dimensionless Vwstd/(Vwstd+Vmstd)	.1779095	.1825690	.1914542	.1839776	
7. Md : mol.wt. dry basis .44 CO2+.32 O2+.28(CO+N2)	28.92533	28.932	28.932	N/A	
8. Ms : mol.wt. wet basis Md(1-Bws)+18 Bws	26.98	26.94	26.84	N/A	
9. Vs : ft/sec Kp Cp (sqrDP)sqr(Ts/(Ps Ms))	78.11	78.17	76.99	77.76	
10. Q : cfm Vs As(60 sec/min)	45088	45127	44444	44886	
11. Qstd : dscfm Q(1-Bws)(Ps/Pstd)(Tstd/Ts)	29722	29750	29056	29509	← Q dscfm
12. I : percent [(100 Ts)(.002669 Vlc+(Vm Pm/Tm)]/ (60 Theta Vs Ps An)	104.74	102.21	101.59	102.85	
13. E,PM : pounds/hr ((M,PM/Vmstd)(Qstd)(60))/453590					
Front Half	25.78	18.56	19.98	21.44	- filter + probe
CPM, aqueous	.66	.30	.23	.39	- cond. inorganic
CPM, organic	.81	.94	.69	.81	- cond organic
Total CPM	1.47	1.24	.92	1.21	- total condensible
Total PM	27.25	19.80	20.90	22.65	- total PM
14. C,PM : grains/dscf (M,PM/Vmstd)(.0154 grains/mg)					
Front Half	.1009805	.0726458	.0800662	.0845642	
CPM, aqueous	.0025747	.0011630	.0009185	.0015520	
CPM, organic	.0031805	.0036827	.0027554	.0032062	
Total CPM	.0057552	.0048456	.0036739	.0047582	
Total PM	.1067356	.0774915	.0837401	.0893224	
15. E,CO : pounds/hr (C,CO*7.27e-8)(Qstd)(60)	2.59	3.89	2.54	3.01	
16. C'VOC: ppmv as C, dry basis ((C,VOC as C3H8)(3))/(1-Bws)	487	N/A	846	N/A	
17. E,VOC : pounds/hr as carbon (C,VOC)(3)(3.1161e-8)(Qstd)60	27.05	N/A	45.96	36.50	

Kirby Forest Industries - Silsbee OSB Facility
No. 1 Dryer Stack
Particulate/VOC/CO Emissions Test - February 26 & 27, 1992

Collected test data	RUN 1	RUN 2	RUN 3	
1. As : sq ft	9.621128	9.621128	9.621128	
2. Dn : in.	.196	.196	.196	
3. Cp : dimensionless	.84	.84	.84	
4. Theta : minutes	60	60	60	
5. Y : dimensionless	.98	.98	.98	
6. Pbar : in. Hg	29.91	29.92	29.92	
7. Pg : in. H2O	-.45	-.46	-.46	
8. Vm : cf (dry gas)	42.721	43.777	42.939	
9. sqr(DP),avg: in.H2O^.5	1.2229	1.2354	1.2079	
10. DH : in. H2O	1.7	1.7083	1.6625	
11. ts : degrees F	187.67	184.92	186.67	186.42
12. tm : degrees F	98.83	87.42	99.38	
13. Vlc : ml	160	168	158	
14. CO2 : percent	1.00	.97	.83	←
15. O2 : percent	19.80	19.63	19.87	
16. CO : ppm, dry (NDIR)	90	135	105	110
17.a M,PM : mg (front half)	153.9	138.7	152.7	
17.b M,PM aqu: mg (aqu.fraction)	1.8	.8	.3	
17.c M,PM org: mg (org.fraction)	7.1	6.1	8.6	
18. C,VOC : ppmv as propane,wet	206	176	225	202

Kirby Forest Industries - Silsbee OSB Facility
No. 1 Dryer Stack
Particulate/VOC/CO Emissions Test - February 26 & 27, 1992

Calculations:	RUN 1	RUN 2	RUN 3	AVG.
1. Pm : in.Hg (DH/13.6)+Pbar	30.04	30.05	30.04	N/A
2. Ps : in. Hg (Pg/13.6)+Pbar	29.88	29.89	29.89	N/A
3. An : sq ft ((Dn/24)^2)(3.1416)	2.095e-4	2.095e-4	2.095e-4	N/A
4. Vmstd: dscf Vm Y(Pm/Pstd)(Tstd/Tm)	39.70889	41.55323	39.88189	N/A
5. Vwstd: scf (.04707cf/ml)(Vlc)	7.5312	7.90776	7.43706	N/A
6. Bws : dimensionless Vwstd/(Vwstd+Vmstd)	.1594239	.1598787	.1571687	.1588238
7. Md : mol.wt. dry basis .44 CO2+.32 O2+.28(CO+N2)	28.952	28.9404	28.92813	N/A
8. Ms : mol.wt. wet basis Md(1-Bws)+18 Bws	27.21	27.19	27.21	N/A
9. Vs : ft/sec Kp Cp (sqrDP)sqr(Ts/(Ps Ms))	78.39	79.03	77.35	78.26
10. Q : cfm Vs As(60 sec/min)	45252	45623	44652	45176
11. Qstd : dscfm Q(1-Bws)(Ps/Pstd)(Tstd/Ts)	30965	31344	30693	31001 ←
12. I : percent [(100 Ts)(.002669 Vlc+(Vm Pm/Tm)]/ (60 Theta Vs Ps An)	98.15	101.47	99.45	99.69
13. E,PM : pounds/hr ((M,PM/Vmstd)(Qstd)(60))/453590				
Front Half	15.87	13.84	15.55	15.09 FILTERABLE PM
CPM, aqueous	.19	.08	.03	.10 COND. INORG.
CPM, organic	.73	.61	.88	.74 COND. ORGANIC
Total CPM	.92	.69	.91	.84
Total PM	16.79	14.53	16.45	15.92
14. C,PM : grains/dscf (M,PM/Vmstd)(.0154 grains/mg)				
Front Half	.0596859	.0514035	.0589636	.0566843
CPM, aqueous	.0006981	.0002965	.0001158	.0003701
CPM, organic	.0027535	.0022607	.0033208	.0027784
Total CPM	.0034516	.0025572	.0034366	.0031485
Total PM	.0631375	.0539607	.0624002	.0598328
15. E,CO : pounds/hr (C,CO*7.27e-8)(Qstd)(60)	12.16	18.46	14.06	14.89
16. C'VOC: ppmv as C, dry basis ((C,VOC as C3H8)(3))/(1-Bws)	735	628	801	722
17. E,VOC : pounds/hr as carbon (C,VOC)(3)(3.1161e-8)(Qstd)60	42.56	36.83	45.96	41.78

Kirby Forest Industries - Silsbee OSB Facility
No. 2 Dryer Stack
Particulate/VOC/CO Emissions Test - February 25, 1992

Collected test data	RUN 1	RUN 2	RUN 3	
1. As : sq ft	9.621128	9.621128	9.621128	
2. Dn : in.	.196	.196	.196	
3. Cp : dimensionless	.84	.84	.84	
4. Theta : minutes	60	60	60	
5. Y : dimensionless	.98	.98	.98	
6. Pbar : in. Hg	29.62	29.62	29.64	
7. Pg : in. H2O	-.52	-.52	-.52	
8. Vm : cf (dry gas)	44.36	43.652	44.619	
9. sqr(DP),avg: in.H2O^.5	1.2235	1.2288	1.2124	
10. DH : in. H2O	1.6917	1.7167	1.6708	
11. ts : degrees F	188.75	184.42	186.08	186.42
12. tm : degrees F	88.54	96.88	93.58	
13. Vlc : ml	177	175	173	
14. CO2 : percent	.83	.80	.70	
15. O2 : percent	19.87	19.77	20.03	
16. CO : ppm, dry (NDIR)	110	170	110	130
17.a M,PM : mg (front half)	192.8	120.4	119.5	
17.b M,PM aqu: mg (aqu.fraction)	2.2	.2	.6	
17.c M,PM org: mg (org.fraction)	8.3	12	11.8	
18. C,VOC : ppmv as propane,wet	215	180	173	189

Kirby Forest Industries - Silsbee OSB Facility
No. 2 Dryer Stack
Particulate/VOC/CO Emissions Test - February 25, 1992

Calculations:	RUN 1	RUN 2	RUN 3	AVG.
1. Pm : in.Hg (DH/13.6)+Pbar	29.74	29.75	29.76	N/A
2. Ps : in. Hg (Pg/13.6)+Pbar	29.58	29.58	29.60	N/A
3. An : sq ft ((Dn/24)^2)(3.1416)	2.095e-4	2.095e-4	2.095e-4	N/A
4. Vmstd: dscf Vm Y(Pm/Pstd)(Tstd/Tm)	41.59937	40.32486	41.48704	N/A
5. Vwstd: scf (.04707cf/ml)(Vlc)	8.33139	8.23725	8.14311	N/A
6. Bws : dimensionless Vwstd/(Vwstd+Vmstd)	.1668589	.1696230	.1640759	.1668526
7. Md : mol.wt. dry basis .44 CO2+.32 O2+.28(CO+N2)	28.92813	28.91893	28.91333	N/A
8. Ms : mol.wt. wet basis Md(1-Bws)+18 Bws	27.10	27.07	27.12	N/A
9. Vs : ft/sec Kp Cp (sqrDP)sqr(Ts/(Ps Ms))	79.03	79.16	78.10	78.77
10. Q : cfm Vs As(60 sec/min)	45623	45699	45085	45469
11. Qstd : dscfm Q(1-Bws)(Ps/Pstd)(Tstd/Ts)	30586	30740	30472	30599 ←
12. I : percent [(100 Ts)(.002669 Vlc+(Vm Pm/Tm)]/ (60 Theta Vs Ps An)	104.10	100.40	104.20	102.90
13. E,PM : pounds/hr ((M,PM/Vmstd)(Qstd)(60))/453590				
Front Half	18.75	12.14	11.61	14.17
CPM, aqueous	.21	.02	.06	.10
CPM, organic	.81	1.21	1.15	1.05
Total CPM	1.02	1.23	1.20	1.15
Total PM	19.77	13.37	12.82	15.32
14. C,PM : grains/dscf (M,PM/Vmstd)(.0154 grains/mg)				
Front Half	.0713742	.0459806	.0443584	.0539044
CPM, aqueous	.0008144	.0000764	.0002227	.0003712
CPM, organic	.0030726	.0045828	.0043802	.0040119
Total CPM	.0038871	.0046592	.0046029	.0043830
Total PM	.0752612	.0506397	.0489613	.0582874
15. E,CO : pounds/hr (C,CO*7.27e-8)(Qstd)(60)	14.68	22.80	14.62	17.37
16. C'VOC: ppmv as C, dry basis ((C,VOC as C3H8)(3))/(1-Bws)	774	650	621	682
17. E,VOC : pounds/hr as carbon (C,VOC)(3)(3.1161e-8)(Qstd)60	44.27	37.38	35.37	39.01

Kirby Forest Industries - Silsbee OSB Facility
No. 3 Dryer Stack
Particulate/VOC/CO Emissions Test - February 26, 1992

Collected test data	RUN 1	RUN 2	RUN 3	
1. As : sq ft	9.621128	9.621128	9.621128	
2. Dn : in.	.196	.196	.196	
3. Cp : dimensionless	.84	.84	.84	
4. Theta : minutes	60	60	60	
5. Y : dimensionless	.98	.98	.98	
6. Pbar : in. Hg	29.92	29.92	29.91	
7. Pg : in. H2O	-.48	-.48	-.48	
8. Vm : cf (dry gas)	40.007	41.535	42.085	
9. sqr(DP),avg: in.H2O^.5	1.2333	1.2067	1.2123	
10. DH : in. H2O	1.7292	1.6625	1.6125	
11. ts : degrees F	185.17	183.08	183.00	183.75
12. tm : degrees F	75.00	100.46	101.50	
13. Vlc : ml	161.5	164	152.5	
14. CO2 : percent	.73	.80	.73	
15. O2 : percent	19.67	19.73	19.64	
16. CO : ppm, dry (NDIR)	15	40	30	28
17.a M,PM : mg (front half)	115.1	115.8	119.8	
17.b M,PM aqu: mg (aqu.fraction)	2.8	.1	2.1	
17.c M,PM org: mg (org.fraction)	5.9	9.9	4.4	
18. C,VOC : ppmv as propane,wet	197	232	230	220

Kirby Forest Industries - Silsbee OSB Facility
No. 3 Dryer Stack
Particulate/VOC/CO Emissions Test - February 26, 1992

Calculations:	RUN 1	RUN 2	RUN 3	AVG.
1. Pm : in.Hg (DH/13.6)+Pbar	30.05	30.04	30.03	N/A
2. Ps : in. Hg (Pg/13.6)+Pbar	29.88	29.88	29.87	N/A
3. An : sq ft ((Dn/24)^2)(3.1416)	2.095e-4	2.095e-4	2.095e-4	N/A
4. Vmstd: dscf Vm Y(Pm/Pstd)(Tstd/Tm)	38.85831	38.50351	38.92338	N/A
5. Vwstd: scf (.04707cf/ml)(Vlc)	7.601805	7.71948	7.178175	N/A
6. Bws : dimensionless Vwstd/(Vwstd+Vmstd)	.1636200	.1670052	.1557035	.1621096
7. Md : mol.wt. dry basis .44 CO2+.32 O2+.28(CO+N2)	28.90413	28.91733	28.9028	N/A
8. Ms : mol.wt. wet basis Md(1-Bws)+18 Bws	27.12	27.09	27.21	N/A
9. Vs : ft/sec Kp Cp (sqrDP)sqr(Ts/(Ps Ms))	79.02	77.23	77.43	77.89
10. Q : cfm Vs As(60 sec/min)	45615	44580	44700	44965
11. Qstd : dscfm Q(1-Bws)(Ps/Pstd)(Tstd/Ts)	31186	30454	30944	30861
12. I : percent [(100 Ts)(.002669 Vlc+(Vm Pm/Tm)]/ (60 Theta Vs Ps An)	95.37	96.77	96.28	96.14
13. E,PM : pounds/hr ((M,PM/Vmstd)(Qstd)(60))/453590				
Front Half	12.22	12.12	12.60	12.31
CPM, aqueous	.30	.01	.22	.18
CPM, organic	.63	1.04	.46	.71
Total CPM	.92	1.05	.68	.88
Total PM	13.14	13.16	13.28	13.20
14. C,PM : grains/dscf (M,PM/Vmstd)(.0154 grains/mg)				
Front Half	.0456155	.0463158	.0473988	.0464433
CPM, aqueous	.0011097	.0000400	.0008309	.0006602
CPM, organic	.0023382	.0039596	.0017409	.0026796
Total CPM	.0034479	.0039996	.0025717	.0033398
Total PM	.0490634	.0503154	.0499705	.0497831
15. E,CO : pounds/hr (C,CO*7.27e-8)(Qstd)(60)	2.04	5.31	4.05	3.80
16. C'VOC: ppmv as C, dry basis ((C,VOC as C3H8)(3))/(1-Bws)	707	836	817	786
17. E,VOC : pounds/hr as carbon (C,VOC)(3)(3.1161e-8)(Qstd)60	41.20	47.57	47.28	45.35

Kirby Forest Industries - Silsbee OSB Facility
No. 4 Dryer Stack
Particulate/VOC/CO Emissions Test - February 27 & 28, 1992

Collected test data	RUN 1	RUN 2	RUN 3	
1. As : sq ft	9.621128	9.621128	9.621128	
2. Dn : in.	.196	.196	.196	
3. Cp : dimensionless	.84	.84	.84	
4. Theta : minutes	60	60	60	
5. Y : dimensionless	.98	.98	.98	
6. Pbar : in. Hg	29.92	29.94	29.96	
7. Pg : in. H2O	-.53	-.57	-.46	
8. Vm : cf (dry gas)	44.093	42.334	43.868	
9. sqr(DP),avg: in.H2O^.5	1.2446	1.2197	1.2329	
10. DH : in. H2O	1.7583	1.6917	1.725	
11. ts : degrees F	179.42	175.83	175.75	177.00
12. tm : degrees F	100.00	106.67	99.00	
13. Vlc : ml	164.5	153.5	167	
14. CO2 : percent	.93	1.03	1.00	
15. O2 : percent	19.87	19.37	19.80	
16. CO : ppm, dry (NDIR)	170	40	35	82
17.a M,PM : mg (front half)	125.7	126.3	127.3	
17.b M,PM aqu: mg (aqu.fraction)	.3	2.1	.9	
17.c M,PM org: mg (org.fraction)	8	12.3	8.4	
18. C,VOC : ppmv as propane,wet	182	177	183	181

Kirby Forest Industries - Silsbee OSB Facility
No. 4 Dryer Stack
Particulate/VOC/CO Emissions Test - February 27 & 28, 1992

Calculations:	RUN 1	RUN 2	RUN 3	AVG.
1. Pm : in.Hg (DH/13.6)+Pbar	30.05	30.06	30.09	N/A
2. Ps : in. Hg (Pg/13.6)+Pbar	29.88	29.90	29.93	N/A
3. An : sq ft ((Dn/24)^2)(3.1416)	2.095e-4	2.095e-4	2.095e-4	N/A
4. Vmstd: dscf Vm Y(Pm/Pstd)(Tstd/Tm)	40.91798	38.84274	40.83297	N/A
5. Vwstd: scf (.04707cf/ml)(Vlc)	7.743015	7.225245	7.86069	N/A
6. Bws : dimensionless Vwstd/(Vwstd+Vmstd)	.1591216	.1568387	.1614315	.1591306
7. Md : mol.wt. dry basis .44 CO2+.32 O2+.28(CO+N2)	28.94413	28.94013	28.952	N/A
8. Ms : mol.wt. wet basis Md(1-Bws)+18 Bws	27.20	27.22	27.18	N/A
9. Vs : ft/sec Kp Cp (sqrDP)sqr(Ts/(Ps Ms))	79.27	77.41	78.27	78.32
10. Q : cfm Vs As(60 sec/min)	45761	44688	45181	45210
11. Qstd : dscfm Q(1-Bws)(Ps/Pstd)(Tstd/Ts)	31733	31267	31473	31491
12. I : percent [(100 Ts)(.002669 Vlc+(Vm Pm/Tm)]/ (60 Theta Vs Ps An)	98.69	95.08	99.30	97.69
13. E,PM : pounds/hr ((M,PM/Vmstd)(Qstd)(60))/453590				
Front Half	12.89	13.45	12.98	13.11
CPM, aqueous	.03	.22	.09	.12
CPM, organic	.82	1.31	.86	1.00
Total CPM	.85	1.53	.95	1.11
Total PM	13.75	14.98	13.93	14.22
14. C,PM : grains/dscf (M,PM/Vmstd)(.0154 grains/mg)				
Front Half	.0473088	.0500742	.0480107	.0484646
CPM, aqueous	.0001129	.0008326	.0003394	.0004283
CPM, organic	.0030109	.0048766	.0031680	.0036852
Total CPM	.0031238	.0057092	.0035075	.0041135
Total PM	.0504326	.0557834	.0515182	.0525781
15. E,CO : pounds/hr (C,CO*7.27e-8)(Qstd)(60)	23.53	5.46	4.81	11.27
16. C'VOC: ppmv as C, dry basis ((C,VOC as C3H8)(3))/(1-Bws)	649	630	655	645
17. E,VOC : pounds/hr as carbon (C,VOC)(3)(3.1161e-8)(Qstd)60	38.52	36.82	38.52	37.95

Kirby Forest Industries - Silsbee OSB Facility
No. 5 Dryer Stack
Particulate/VOC/CO Emissions Test - February 28, 1992

Collected test data	RUN 1	RUN 2	RUN 3	
1. As : sq ft	9.621128	9.621128	9.621128	
2. Dn : in.	.196	.196	.196	
3. Cp : dimensionless	.84	.84	.84	
4. Theta : minutes	60	60	60	
5. Y : dimensionless	.98	.98	.98	
6. Pbar : in. Hg	29.96	29.96	29.96	
7. Pg : in. H2O	-.57	-.57	-.57	
8. Vm : cf (dry gas)	43.697	43.641	44.012	
9. sqr(DP),avg: in.H2O^.5	1.2258	1.2346	1.2439	
10. DH : in. H2O	1.7125	1.7292	1.75	
11. ts : degrees F	173.83	174.75	175.42	174.67
12. tm : degrees F	111.96	107.96	115.46	
13. Vlc : ml	170	173	170.5	
14. CO2 : percent	1.03	1.00	1.00	
15. O2 : percent	19.60	19.80	19.50	
16. CO : ppm, dry (NDIR)	35	30	25	30
17.a M,PM : mg (front half)	165.1	130.4	137.7	
17.b M,PM aqu: mg (aqu.fraction)	2.1	.9	.6	
17.c M,PM org: mg (org.fraction)	7.3	6.4	8.3	
18. C,VOC : ppmv as propane,wet	208	167	184	186

Kirby Forest Industries - Silsbee OSB Facility
No. 5 Dryer Stack
Particulate/VOC/CO Emissions Test - February 28, 1992

Calculations:

	RUN 1	RUN 2	RUN 3	AVG.
1. Pm : in.Hg (DH/13.6)+Pbar	30.09	30.09	30.09	N/A
2. Ps : in. Hg (Pg/13.6)+Pbar	29.92	29.92	29.92	N/A
3. An : sq ft ((Dn/24)^2)(3.1416)	2.095e-4	2.095e-4	2.095e-4	N/A
4. Vmstd: dscf Vm Y(Pm/Pstd)(Tstd/Tm)	39.75096	39.98125	39.79765	N/A
5. Vwstd: scf (.04707cf/ml)(Vlc)	8.0019	8.14311	8.025435	N/A
6. Bws : dimensionless Vwstd/(Vwstd+Vmstd)	.1675690	.1692097	.1678151	.1681979
7. Md : mol.wt. dry basis .44 CO2+.32 O2+.28(CO+N2)	28.94933	28.952	28.94	N/A
8. Ms : mol.wt. wet basis Md(1-Bws)+18 Bws	27.11	27.10	27.10	N/A
9. Vs : ft/sec Kp Cp (sqrDP)sqr(Ts/(Ps Ms))	77.81	78.45	79.07	78.44
10. Q : cfm Vs As(60 sec/min)	44917	45285	45646	45283
11. Qstd : dscfm Q(1-Bws)(Ps/Pstd)(Tstd/Ts)	31145	31293	31562	31334
12. I : percent [(100 Ts)(.002669 Vlc+(Vm Pm/Tm)]/ (60 Theta Vs Ps An)	97.69	97.79	96.51	97.33
13. E,PM : pounds/hr ((M,PM/Vmstd)(Qstd)(60))/453590				
Front Half	17.11	13.50	14.45	15.02
CPM, aqueous	.22	.09	.06	.12
CPM, organic	.76	.66	.87	.76
Total CPM	.97	.76	.93	.89
Total PM	18.09	14.26	15.38	15.91
14. C,PM : grains/dscf (M,PM/Vmstd)(.0154 grains/mg)				
Front Half	.0639617	.0502275	.0532840	.0558244
CPM, aqueous	.0008136	.0003467	.0002322	.0004641
CPM, organic	.0028281	.0024652	.0032117	.0028350
Total CPM	.0036417	.0028118	.0034439	.0032991
Total PM	.0676034	.0530394	.0567280	.0591236
15. E,CO : pounds/hr (C,CO*7.27e-8)(Qstd)(60)	4.76	4.10	3.44	4.10
16. C'VOC: ppmv as C, dry basis ((C,VOC as C3H8)(3))/(1-Bws)	750	603	663	672
17. E,VOC : pounds/hr as carbon (C,VOC)(3)(3.1161e-8)(Qstd)60	43.65	35.28	39.14	39.36

Kirby Forest Industries - Silsbee OSB Facility
No. 1 Press Vent
Particulate/VOC/CO Emissions Test - March 2, 1992

Collected test data	RUN 1	RUN 2	RUN 3	
1. As : sq ft	19.63495	19.63495	19.63495	
2. Dn : in.	.235	.235	.235	
3. Cp : dimensionless	.84	.84	.84	
4. Theta : minutes	60	60	60	
5. Y : dimensionless	.98	.98	.98	
6. Pbar : in. Hg	30.08	30.08	30.08	
7. Pg : in. H2O	-.12	-.12	-.12	
8. Vm : cf (dry gas)	40.097	41.522	39.989	
9. sqr(DP),avg: in.H2O^.5	.636	.6693	.6657	
10. DH : in. H2O	1.375	1.5117	1.525	
11. ts : degrees F	99.33	100.17	100.25	99.92
12. tm : degrees F	107.17	118.63	120.56	
13. Vlc : ml	17	16	15	
14. CO2 : percent	.00	.00	.00	
15. O2 : percent	20.90	20.90	20.90	
16. CO : ppm, dry (NDIR)	10	10	10	10
17.a M,PM : mg (front half)	5.2	6.4	3.3	
17.b M,PM aqu: mg (aqu.fraction)	1.7	.3	1.3	
17.c M,PM org: mg (org.fraction)	1	.4	.8	
18. C,VOC : ppmv as propane,wet	33.6	38	53	41.53333

Kirby Forest Industries - Silsbee OSB Facility
No. 1 Press Vent
Particulate/VOC/CO Emissions Test - March 2, 1992

Calculations:	RUN 1	RUN 2	RUN 3	AVG.
1. Pm : in.Hg (DH/13.6)+Pbar	30.18	30.19	30.19	N/A
2. Ps : in. Hg (Pg/13.6)+Pbar	30.07	30.07	30.07	N/A
3. An : sq ft ((Dn/24)^2)(3.1416)	3.012e-4	3.012e-4	3.012e-4	N/A
4. Vmstd: dscf Vm Y(Pm/Pstd)(Tstd/Tm)	36.90049	37.46756	35.96546	N/A
5. Vwstd: scf (.04707cf/ml)(Vlc)	.80019	.75312	.70605	N/A
6. Bws : dimensionless Vwstd/(Vwstd+Vmstd)	.0212248	.0197045	.0192534	.0200609
7. Md : mol.wt. dry basis .44 CO2+.32 O2+.28(CO+N2)	28.836	28.836	28.836	N/A
8. Ms : mol.wt. wet basis Md(1-Bws)+18 Bws	28.61	28.62	28.63	N/A
9. Vs : ft/sec Kp Cp (sqrDP)sqr(Ts/(Ps Ms))	36.83	38.77	38.57	38.06
10. Q : cfm Vs As(60 sec/min)	43387	45680	45434	44834
11. Qstd : dscfm Q(1-Bws)(Ps/Pstd)(Tstd/Ts)	40290	42422	42206	41639
12. I : percent [(100 Ts)(.002669 Vlc+(Vm Pm/Tm)]/ (60 Theta Vs Ps An)	99.51	95.96	92.58	96.02
13. E,PM : pounds/hr ((M,PM/Vmstd)(Qstd)(60))/453590				
Front Half	.75	.96	.51	.74
CPM, aqueous	.25	.04	.20	.16
CPM, organic	.14	.06	.12	.11
Total CPM	.39	.10	.33	.27
Total PM	1.14	1.06	.84	1.01
14. C,PM : grains/dscf (M,PM/Vmstd)(.0154 grains/mg)				
Front Half	.0021702	.0026305	.0014130	.0020712
CPM, aqueous	.0007095	.0001233	.0005566	.0004631
CPM, organic	.0004173	.0001644	.0003426	.0003081
Total CPM	.0011268	.0002877	.0008992	.0007712
Total PM	.0032970	.0029183	.0023122	.0028425
15. E,CO : pounds/hr (C,CO*7.27e-8)(Qstd)(60)	1.76	1.85	1.84	1.82
16. C'VOC: ppmv as C, dry basis ((C,VOC as C3H8)(3))/(1-Bws)	103	116	162	127
17. E,VOC : pounds/hr as carbon (C,VOC)(3)(3.1161e-8)(Qstd)60	7.76	9.22	12.79	9.92

Kirby Forest Industries - Silsbee OSB Facility
No. 2 Press Vent
Particulate/VOC/CO Emissions Test - March 1, 1992

Collected test data	RUN 1	RUN 2	RUN 3	
1. As : sq ft	19.63495	19.63495	19.63495	
2. Dn : in.	.235	.235	.235	
3. Cp : dimensionless	.84	.84	.84	
4. Theta : minutes	60	60	60	
5. Y : dimensionless	.98	.98	.98	
6. Pbar : in. Hg	30.05	30.05	30.05	
7. Pg : in. H2O	-.12	-.12	-.12	
8. Vm : cf (dry gas)	41.333	42.916	41.704	
9. sqr(DP),avg: in.H2O^.5	.6764	.7089	.6798	
10. DH : in. H2O	1.5413	1.66	1.5221	
11. ts : degrees F	98.88	101.32	98.96	99.72
12. tm : degrees F	117.60	120.60	124.38	
13. Vlc : ml	13	15	14.5	
14. CO2 : percent	.00	.00	.00	
15. O2 : percent	20.90	20.90	20.90	
16. CO : ppm, dry (NDIR)	10	10	10	10
17.a M,PM : mg (front half)	2.5	4.4	4.7	
17.b M,PM aqu: mg (aqu.fraction)	.9	1.1	1.1	
17.c M,PM org: mg (org.fraction)	0	.5	.3	
18. C,VOC : ppmv as propane,wet	45	67	61	58

Kirby Forest Industries - Silsbee OSB Facility
No. 2 Press Vent
Particulate/VOC/CO Emissions Test - March 1, 1992

Calculations:	RUN 1	RUN 2	RUN 3	AVG.
1. Pm : in.Hg (DH/13.6)+Pbar	30.16	30.17	30.16	N/A
2. Ps : in. Hg (Pg/13.6)+Pbar	30.04	30.04	30.04	N/A
3. An : sq ft ((Dn/24)^2)(3.1416)	3.012e-4	3.012e-4	3.012e-4	N/A
4. Vmstd: dscf Vm Y(Pm/Pstd)(Tstd/Tm)	37.32909	38.56964	37.22543	N/A
5. Vwstd: scf (.04707cf/ml)(Vlc)	.61191	.70605	.682515	N/A
6. Bws : dimensionless Vwstd/(Vwstd+Vmstd)	.0161279	.0179768	.0180045	.0173697
7. Md : mol.wt. dry basis .44 CO2+.32 O2+.28(CO+N2)	28.836	28.836	28.836	N/A
8. Ms : mol.wt. wet basis Md(1-Bws)+18 Bws	28.66	28.64	28.64	N/A
9. Vs : ft/sec Kp Cp (sqrDP)sqr(Ts/(Ps Ms))	39.13	41.12	39.35	39.87
10. Q : cfm Vs As(60 sec/min)	46103	48441	46355	46966
11. Qstd : dscfm Q(1-Bws)(Ps/Pstd)(Tstd/Ts)	43027	44928	43173	43709
12. I : percent [(100 Ts)(.002669 Vlc+(Vm Pm/Tm)]/ (60 Theta Vs Ps An)	94.26	93.27	93.68	93.74
13. E,PM : pounds/hr ((M,PM/Vmstd)(Qstd)(60))/453590				
Front Half	.38	.68	.72	.59
CPM, aqueous	.14	.17	.17	.16
CPM, organic	.00	.08	.05	.04
Total CPM	.14	.25	.21	.20
Total PM	.52	.92	.94	.79
14. C,PM : grains/dscf (M,PM/Vmstd)(.0154 grains/mg)				
Front Half	.0010314	.0017568	.0019444	.0015775
CPM, aqueous	.0003713	.0004392	.0004551	.0004219
CPM, organic	0	.0001996	.0001241	.0001079
Total CPM	.0003713	.0006388	.0005792	.0005298
Total PM	.0014027	.0023957	.0025235	.0021073
15. E,CO : pounds/hr (C,CO*7.27e-8)(Qstd)(60)	1.88	1.96	1.88	1.91
16. C'VOC: ppmv as C, dry basis ((C,VOC as C3H8)(3))/(1-Bws)	137	205	185	176
17. E,VOC : pounds/hr as carbon (C,VOC)(3)(3.1161e-8)(Qstd)60	11.04	17.19	14.92	14.38

Kirby Forest Industries - Silsbee OSB Facility
No. 3 Press Vent
Particulate/VOC/CO Emissions Test - March 2, 1992

Collected test data	RUN 1	RUN 2	RUN 3	
1. As : sq ft	19.63495	19.63495	19.63495	
2. Dn : in.	.235	.235	.235	
3. Cp : dimensionless	.84	.84	.84	
4. Theta : minutes	60	60	60	
5. Y : dimensionless	.98	.98	.98	
6. Pbar : in. Hg	30.08	30.08	30.08	
7. Pg : in. H2O	-.13	-.13	-.13	
8. Vm : cf (dry gas)	41.795	41.147	41.001	
9. sqr(DP),avg: in.H2O^.5	.6794	.6729	.6606	
10. DH : in. H2O	1.5554	1.5321	1.4746	
11. ts : degrees F	99.63	101.08	98.96	99.89
12. tm : degrees F	106.71	117.31	120.79	
13. Vlc : ml	12	13	10.5	
14. CO2 : percent	.00	.00	.00	
15. O2 : percent	20.90	20.90	20.90	
16. CO : ppm, dry (NDIR)	10	10	10	10
17.a M,PM : mg (front half)	3	3.6	2.3	
17.b M,PM aqu: mg (aqu.fraction)	.6	.8	1.3	
17.c M,PM org: mg (org.fraction)	.1	.5	1.4	
18. C,VOC : ppmv as propane,wet	42.9	41.5	33.7	39.36667

Kirby Forest Industries - Silsbee OSB Facility
No. 3 Press Vent
Particulate/VOC/CO Emissions Test - March 2, 1992

Calculations:	RUN 1	RUN 2	RUN 3	AVG.
1. Pm : in.Hg (DH/13.6)+Pbar	30.19	30.19	30.19	N/A
2. Ps : in. Hg (Pg/13.6)+Pbar	30.07	30.07	30.07	N/A
3. An : sq ft ((Dn/24)^2)(3.1416)	3.012e-4	3.012e-4	3.012e-4	N/A
4. Vmstd: dscf Vm Y(Pm/Pstd)(Tstd/Tm)	38.51127	37.21592	36.85651	N/A
5. Vwstd: scf (.04707cf/ml)(Vlc)	.56484	.61191	.494235	N/A
6. Bws : dimensionless Vwstd/(Vwstd+Vmstd)	.0144549	.0161762	.0132323	.0146211
7. Md : mol.wt. dry basis .44 CO2+.32 O2+.28(CO+N2)	28.836	28.836	28.836	N/A
8. Ms : mol.wt. wet basis Md(1-Bws)+18 Bws	28.68	28.66	28.69	N/A
9. Vs : ft/sec Kp Cp (sqrDP)sqr(Ts/(Ps Ms))	39.30	38.99	38.18	38.82
10. Q : cfm Vs As(60 sec/min)	46302	45933	44983	45739
11. Qstd : dscfm Q(1-Bws)(Ps/Pstd)(Tstd/Ts)	43270	42740	42140	42716
14. I : percent [(100 Ts)(.002669 Vlc+(Vm Pm/Tm)]/ (60 Theta Vs Ps An)	96.70	94.61	95.02	95.44
15. E,PM : pounds/hr ((M,PM/Vmstd)(Qstd)(60))/453590				
Front Half	.45	.55	.35	.45
CPM, aqueous	.09	.12	.20	.14
CPM, organic	.01	.08	.21	.10
Total CPM	.10	.20	.41	.24
Total PM	.55	.74	.76	.68
16. C,PM : grains/dscf (M,PM/Vmstd)(.0154 grains/mg)				
Front Half	.0011996	.0014897	.0009610	.0012168
CPM, aqueous	.0002399	.0003310	.0005432	.0003714
CPM, organic	.0000400	.0002069	.0005850	.0002773
Total CPM	.0002799	.0005379	.0011282	.0006487
Total PM	.0014796	.0020276	.0020892	.0018655
17. E,CO : pounds/hr (C,CO*7.27e-8)(Qstd)(60)	1.89	1.86	1.84	1.86
18. C'VOC: ppmv as C, dry basis ((C,VOC as C3H8)(3))/(1-Bws)	131	127	102	120
19. E,VOC : pounds/hr as carbon (C,VOC)(3)(3.1161e-8)(Qstd)60	10.56	10.11	8.07	9.58

Kirby Forest Industries - Silsbee OSB Facility
No. 4 Press Vent
Particulate/VOC/CO Emissions Test - February 29, 1992

Collected test data	RUN 1	RUN 2	RUN 3	
1. As : sq ft	19.63495	19.63495	19.63495	
2. Dn : in.	.235	.235	.235	
3. Cp : dimensionless	.84	.84	.84	
4. Theta : minutes	60	60	60	
5. Y : dimensionless	.98	.98	.98	
6. Pbar : in. Hg	29.93	29.93	29.93	
7. Pg : in. H2O	-.11	-.11	-.11	
8. Vm : cf (dry gas)	37.238	38.648	39.437	
9. sqr(DP),avg: in.H2O^.5	.6322	.6445	.6451	
10. DH : in. H2O	1.3088	1.3758	1.39	
11. ts : degrees F	90.33	91.83	93.25	91.80
12. tm : degrees F	104.40	112.17	118.71	
13. Vlc : ml	19	19	22	
14. CO2 : percent	.00	.00	.00	
15. O2 : percent	20.90	20.90	20.90	
16. CO : ppm, dry (NDIR)	10	10	10	10
17.a M,PM : mg (front half)	6.6	6.1	3.9	
17.b M,PM aqu: mg (aqu.fraction)	.8	2.6	2.4	
17.c M,PM org: mg (org.fraction)	.4	1.1	1.4	
18. C,VOC : ppmv as propane,wet	42.9	32.8	42.8	39.5

Kirby Forest Industries - Silsbee OSB Facility
No. 4 Press Vent
Particulate/VOC/CO Emissions Test - February 29, 1992

Calculations:	RUN 1	RUN 2	RUN 3	AVG.
1. Pm : in.Hg (DH/13.6)+Pbar	30.03	30.03	30.03	N/A
2. Ps : in. Hg (Pg/13.6)+Pbar	29.92	29.92	29.92	N/A
3. An : sq ft ((Dn/24)^2)(3.1416)	3.012e-4	3.012e-4	3.012e-4	N/A
4. Vmstd: dscf Vm Y(Pm/Pstd)(Tstd/Tm)	34.26089	35.08104	35.39391	N/A
5. Vwstd: scf (.04707cf/ml)(Vlc)	.89433	.89433	1.03554	N/A
6. Bws : dimensionless Vwstd/(Vwstd+Vmstd)	.0254395	.0248595	.0284259	.0262416
7. Md : mol.wt. dry basis .44 CO2+.32 O2+.28(CO+N2)	28.836	28.836	28.836	N/A
8. Ms : mol.wt. wet basis Md(1-Bws)+18 Bws	28.56	28.57	28.53	N/A
9. Vs : ft/sec Kp Cp (sqrDP)sqr(Ts/(Ps Ms))	36.43	37.19	37.30	36.97
10. Q : cfm Vs As(60 sec/min)	42921	43810	43937	43556
11. Qstd : dscfm Q(1-Bws)(Ps/Pstd)(Tstd/Ts)	40134	40879	40743	40585
12. I : percent [(100 Ts)(.002669 Vlc+(Vm Pm/Tm)]/ (60 Theta Vs Ps An)	92.75	93.24	94.38	93.46
13. E,PM : pounds/hr ((M,PM/Vmstd)(Qstd)(60))/453590				
Front Half	1.02	.94	.59	.85
CPM, aqueous	.12	.40	.37	.30
CPM, organic	.06	.17	.21	.15
Total CPM	.19	.57	.58	.44
Total PM	1.21	1.51	1.17	1.30
14. C,PM : grains/dscf (M,PM/Vmstd)(.0154 grains/mg)				
Front Half	.0029666	.0026778	.0016969	.0024471
CPM, aqueous	.0003596	.0011414	.0010442	.0008484
CPM, organic	.0001798	.0004829	.0006091	.0004239
Total CPM	.0005394	.0016242	.0016534	.0012723
Total PM	.0035060	.0043020	.0033503	.0037195
15. E,CO : pounds/hr (C,CO*7.27e-8)(Qstd)(60)	1.75	1.78	1.78	1.77
16. C'VOC: ppmv as C, dry basis ((C,VOC as C3H8)(3))/(1-Bws)	132	101	132	122
17. E,VOC : pounds/hr as carbon (C,VOC)(3)(3.1161e-8)(Qstd)60	9.91	7.71	10.07	9.23

Kirby Forest Industries - Silsbee OSB Facility
No. 5 Press Vent
Particulate/VOC/CO Emissions Test - March 1, 1992

Collected test data	RUN 1	RUN 2	RUN 3	
1. As : sq ft	19.63495	19.63495	19.63495	
2. Dn : in.	.235	.235	.235	
3. Cp : dimensionless	.84	.84	.84	
4. Theta : minutes	60	60	60	
5. Y : dimensionless	.98	.98	.98	
6. Pbar : in. Hg	30.04	30.04	30.04	
7. Pg : in. H2O	-.08	-.08	-.08	
8. Vm : cf (dry gas)	41.391	43.171	42.445	
9. sqr(DP),avg: in.H2O^.5	.706	.6958	.7002	
10. DH : in. H2O	1.6638	1.6079	1.6179	
11. ts : degrees F	94.50	94.71	97.25	95.49
12. tm : degrees F	103.96	115.48	118.69	
13. Vlc : ml	16	13.5	14	
14. CO2 : percent	.00	.00	.00	
15. O2 : percent	20.90	20.90	20.90	
16. CO : ppm, dry (NDIR)	5	10	10	8.333333
17.a M,PM : mg (front half)	3.4	.3	3.2	
17.b M,PM aqu: mg (aqu.fraction)	.5	2.1	1.7	
17.c M,PM org: mg (org.fraction)	.4	.2	1.8	
18. C,VOC : ppmv as propane,wet	25.8	39	32.9	33

Kirby Forest Industries - Silsbee OSB Facility
No. 5 Press Vent
Particulate/VOC/CO Emissions Test - March 2, 1992

Calculations:	RUN 1	RUN 2	RUN 3	AVG.
1. Pm : in.Hg (DH/13.6)+Pbar	30.16	30.16	30.16	N/A
2. Ps : in. Hg (Pg/13.6)+Pbar	30.03	30.03	30.03	N/A
3. An : sq ft ((Dn/24)^2)(3.1416)	3.012e-4	3.012e-4	3.012e-4	N/A
4. Vmstd: dscf Vm Y(Pm/Pstd)(Tstd/Tm)	38.28433	39.12606	38.25563	N/A
5. Vwstd: scf (.04707cf/ml)(Vlc)	.75312	.635445	.65898	N/A
6. Bws : dimensionless Vwstd/(Vwstd+Vmstd)	.0192922	.0159814	.0169340	.0174026
7. Md : mol.wt. dry basis .44 CO2+.32 O2+.28(CO+N2)	28.836	28.836	28.836	N/A
8. Ms : mol.wt. wet basis Md(1-Bws)+18 Bws	28.63	28.66	28.65	N/A
9. Vs : ft/sec Kp Cp (sqrDP)sqr(Ts/(Ps Ms))	40.72	40.11	40.46	40.43
10. Q : cfm Vs As(60 sec/min)	47966	47253	47669	47629
11. Qstd : dscfm Q(1-Bws)(Ps/Pstd)(Tstd/Ts)	44964	44427	44571	44654
12. I : percent [(100 Ts)(.002669 Vlc+(Vm Pm/Tm)]/ (60 Theta Vs Ps An)	92.51	95.68	93.25	93.81
13. E,PM : pounds/hr ((M,PM/Vmstd)(Qstd)(60))/453590				
Front Half	.53	.05	.49	.36
CPM, aqueous	.08	.32	.26	.22
CPM, organic	.06	.03	.28	.12
Total CPM	.14	.35	.54	.34
Total PM	.67	.39	1.03	.70
14. C,PM : grains/dscf (M,PM/Vmstd)(.0154 grains/mg)				
Front Half	.0013677	.0001181	.0012882	.0009246
CPM, aqueous	.0002011	.0008266	.0006843	.0005707
CPM, organic	.0001609	.0000787	.0007246	.0003214
Total CPM	.0003620	.0009053	.0014089	.0008921
Total PM	.0017297	.0010234	.0026971	.0018167
15. E,CO : pounds/hr (C,CO*7.27e-8)(Qstd)(60)	.98	1.94	1.94	1.62
16. C'VOC: ppmv as C, dry basis ((C,VOC as C3H8)(3))/(1-Bws)	79	119	100	99
17. E,VOC : pounds/hr as carbon (C,VOC)(3)(3.1161e-8)(Qstd)60	6.63	9.88	8.37	8.29

5.0 NOMENCLATURE

SYMBOL	UNITS	DESCRIPTION
An	ft^2	Nozzle area
As	ft^2	Stack area
Bws	dimensionless	Proportion of water vapor
CO2	percent	Carbon dioxide content by volume
CO	percent	Carbon monoxide content by volume
Cp	dimensionless	Pitot correction factor
C,PM	grains/dscf	Particulate concentration
C'PM	gr/dscf@12% CO2	Particulate emissions corrected to 12% excess air
C,[X]	ppm	Concentration of [X]
Dn	inches	Nozzle diameter
delta H	in. H2O	Pressure drop across meter orifice (also DH)
delta P	in. H2O	Stack velocity pressure head (also DP)
E,PM	#/hr	Particulate emission rate
E,[X]	#/hr	Emission rate of X
I	per cent	Per cent isokinetic sampling
Kp	consistent	Pitot tube constant = 85.49
M,PM	milligrams	Particulate sample weight
Md	#/# mole	Dry molecular wt. of stack gas
Ms	#/# mole	Wet molecular wt. of stack gas
N2	percent	Nitrogen content by volume
O2	percent	Oxygen content by volume
Pbar	in. Hg	Barometric pressure
Pg	in. H2O	Static pressure
Pm	in. Hg	Meter pressure = Pbar+(delta H/13.6)
Ps	in. Hg	Stack pressure = Pbar+(Pg/13.6)
Pstd	in. Hg	Standard pressure = 29.92
Q	ft^3/min	Volumetric flow rate at stack conditions
Qstd	dscf/min	Volumetric flow rate at dry, std. conditions
Theta	minutes	Sampling time per run
tm	^oF	Meter temperature (Tm denotes ^oR)
ts	^oF	Stack temperature (Ts denotes ^oR)
Tstd	^oR	Standard temperature = 528°
Vlc	ml	Volume of water collected
Vm	ft^3	Volume of dry gas sampled
Vmstd	dscf	Sample volume at standard conditions
Vwstd	scf	Sample volume of water vapor
Y	dimensionless	Meter correction factor
Xsair	percent	Excess air

6.0 CALIBRATIONS: Measurement devices used by Environmental Monitoring Laboratories and subject to changes in measurement precision are initially calibrated prior to use. Those instruments for which calibration factors are subject to change or for which calibration checks are required, are calibrated following each field use or as otherwise directed and noted. Calibration procedures for specific equipment are as follows.

Dry Gas Meter: Dry gas meters are periodically removed from the sampling consoles and cleaned and repaired (new gaskets etc. as required). Following the overhaul of a meter, the measuring precision is checked by the Bell Prover Method and adjusted when necessary to read to within 2% of 100% accuracy. This service is provided by Big Three Meter Company in Jackson, Mississippi. Overhaul service or any six month period is followed by a five point calibration described in APTD-0576 using either a wet test meter or calibrated dry gas meter (used exclusively for calibrations) as a standard reference. Following field use, a gas meter calibration is checked in one of two ways. [1] Three calibration checks at intermediate orifice settings are performed or [2] orifice meter coefficients are used.

If a meter coefficient obtained from pre-test and post-test checks differs by more than 5%, the coefficient (Y) giving the lower sample volume is used in the calculations.

Orifice: The orifice coefficient is initially determined and is rechecked following a major gas meter repair and calibration.

Nozzles: Nozzles are checked before each field use with a precision (.001 in.) dial caliper. Three measurements on different axes are made; an average of those three readings is used in calculations. If the tolerance among measurements exceeds 0.004 inches (highest to lowest reading) the nozzle is repaired and recalibrated or discarded.

Pitot Tubes: Pitot tubes meeting EPA geometry standards are assigned a coefficient of 0.84. Pitot tubes are visually inspected for damage before, during and after use. Those pitot tubes not meeting the geometry standards are assigned a coefficient from the manufacturer's calibration which it retains unless damaged. All pitot tubes used by Environmental Monitoring Laboratories are manufactured by NAPP, Inc.

Temperature Measuring Instruments: Most temperature measurements are made with a type K thermocouple and an Omega digital thermocouple thermometer which has an initial calibration traceable to NBS. Other measurements are made using bimetallic dial thermometers. The thermocouples and dial thermometers are checked following or during a test series against an ASTM mercury in glass thermometer.

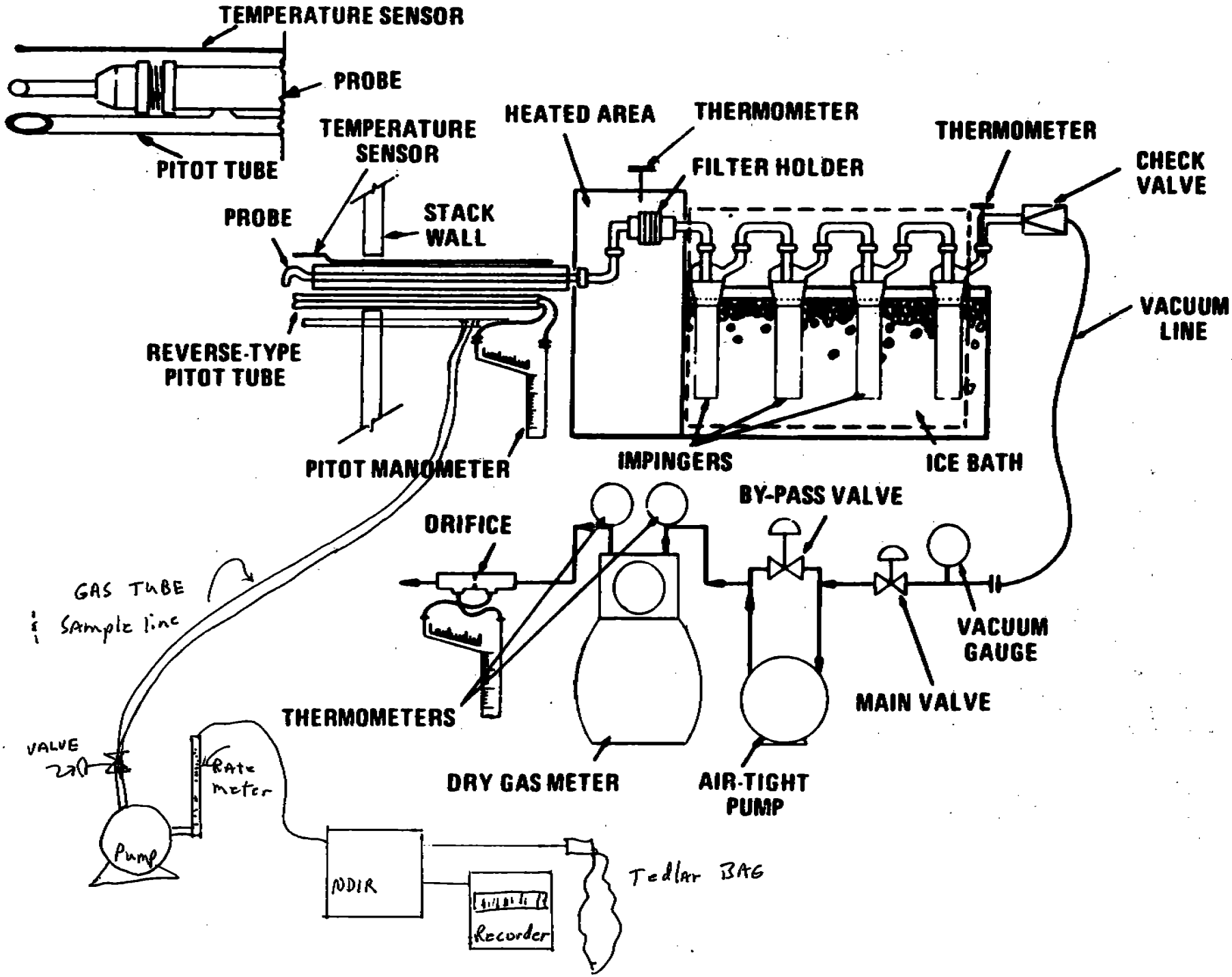
Barometer: Aneroid field barometers are checked against and adjusted to readings from a mercury barometer or readings obtained from local weather authorities.

Differential Pressure Gauges: Velocity head (delta P) and orifice pressure differential (delta H) measurements are made using water manometers of the appropriate range unless otherwise noted in the test data. Manometers do not require calibration.

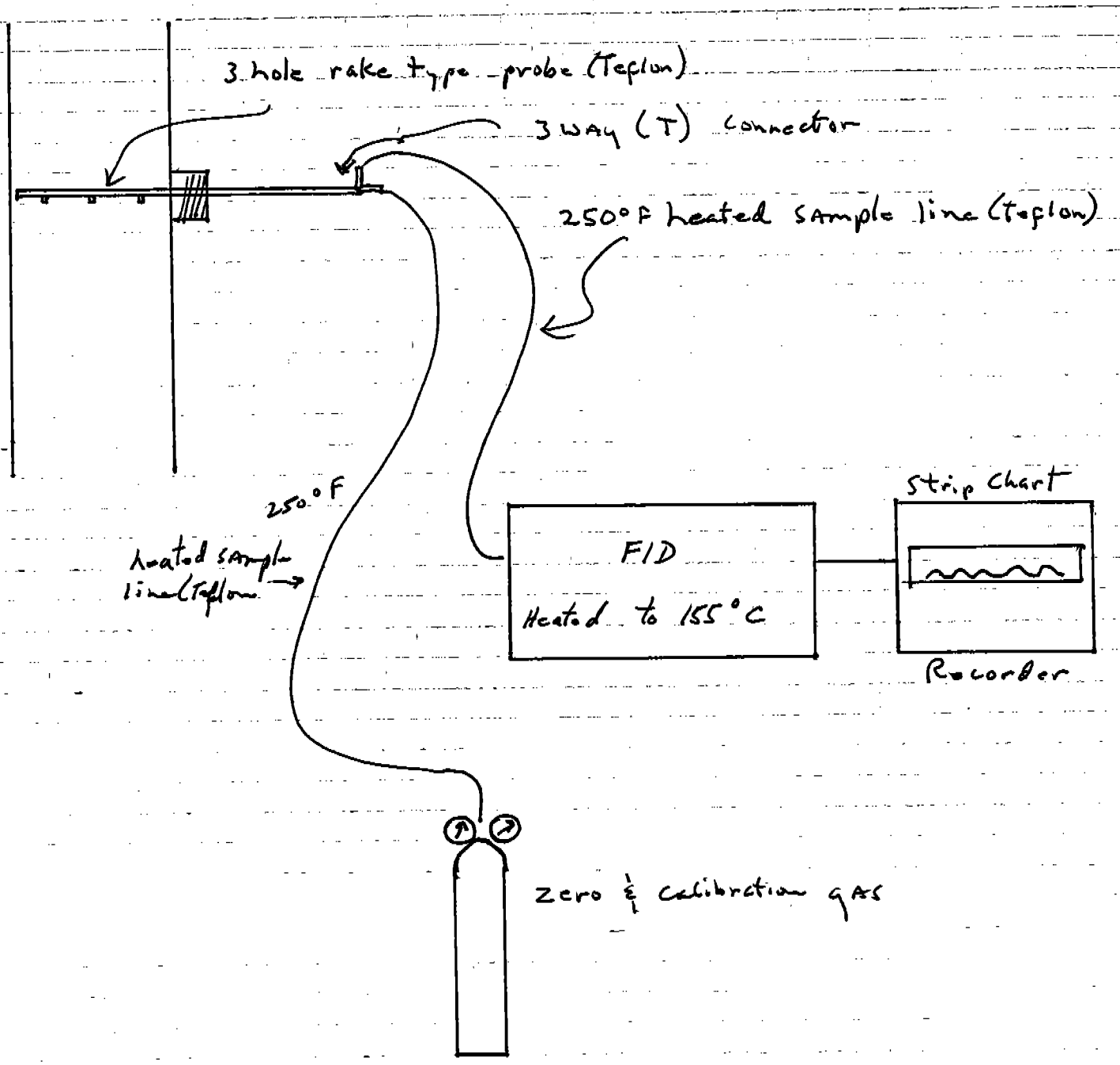
Flame Ionization Detector (FID): VOC measurements were made with a Ratfisch portable flame ionization detector set in a range of 0 to 1000 ppm propane. Following a sufficient warm up period the instrument was set to respond to and measure certified propane in nitrogen mixtures. Available concentrations were 31.1, 82.3, and 830 ppm certified propane. Prior to and following each sample run, the instrument's zero and span were checked and adjusted if necessary using supplies of air and calibration propane. Copies of the gas concentrations certifications are provided.

Non-dispersive Infrared Analyzer (NDIR): Carbon monoxide measurements are made with a Beckman 864 infrared instrument calibrated in ranges of 0 to 1000 ppm and 0 to 5000 ppm. Following a sufficient warm up period of at least 1 hour and prior to each sample run, the instrument's zero and calibration are checked and adjusted if necessary using a supply of 100% nitrogen and a collection of certified CO in nitrogen mixtures of nominally 50 ppm, 150 ppm, 300, and 700 ppm CO respectively. These calibrations and adjustments are repeated at the conclusion of each sampling period.

7.0 SAMPLE TRAIN CONFIGURATIONS



PM & CS Sample TRAIN



VOC Sample TRAIN

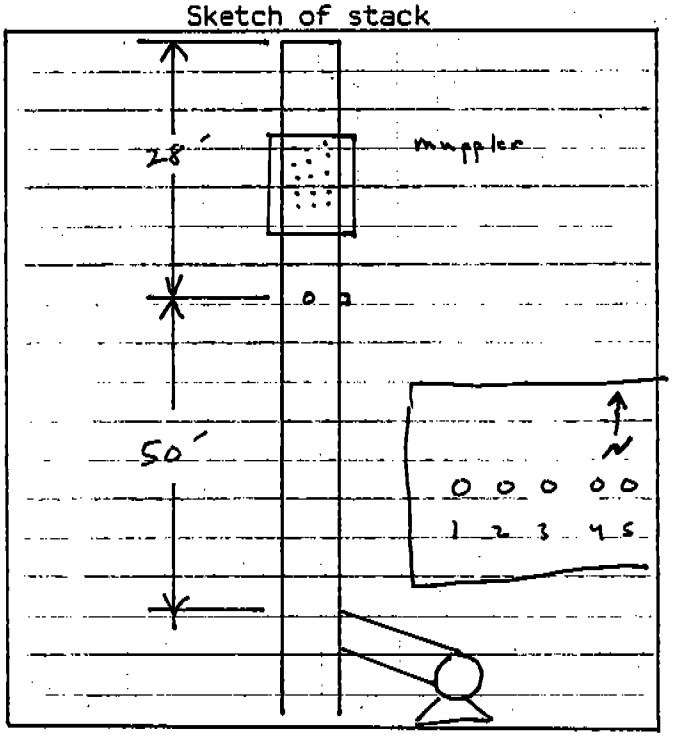
8.0 STACK CONFIGURATIONS:

STACK CONFIGURATION / SAMPLE AND VELOCITY POINTS

Plant Name La. Pacific (Kirby Forest Ind. Source OSB Dryers (1-5)

Data For: _____ Date _____

Sketch of stack



PERCENT OF DIAMETER

Point No	Points on a Diameter 2	4	6	8	10	12	14	16
1	14.6	6.7	4.4	3.2	2.6	2.1	1.8	1.6
2	85.4	25.0	14.6	10.5	8.2	6.7	5.7	4.9
3		75.0	29.6	19.4	14.6	11.8	9.9	8.5
4		93.3	70.4	32.3	22.6	17.7	14.6	12.5
5			85.4	67.7	34.2	25.0	20.1	16.9
6			95.6	80.6	65.8	35.6	26.9	22.0
7				89.5	77.4	64.4	36.6	28.3
8				96.8	85.4	75.0	63.4	37.5
9					91.8	82.3	73.1	62.5
10					97.4	88.2	79.9	71.7
11						93.3	85.4	78.0
12						97.9	90.1	83.1
13							94.3	87.5
14							98.2	91.5
15								95.1
16								98.4

Stack diameter 42.0

Distance from ports to disturbance:

distance to upstream disturbance 50'

distance to downstream disturbance 28'

upstream diameters 14

downstream diameters 8

Minimum No. points required 12

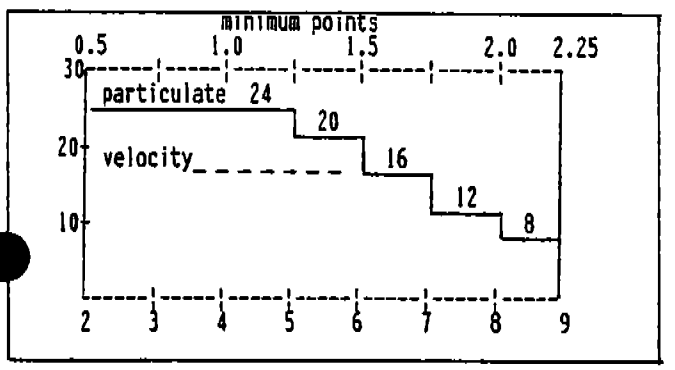
No. points selected 6x2

Nipple length 6" P.N 4"long

Point	inches from wall	velocity head
1	1.8	
2	6.1	
3	12.4	
4	29.6	
5	35.6	
6	40.2	
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		

Pg = Ts =

Pitot ID Cp =



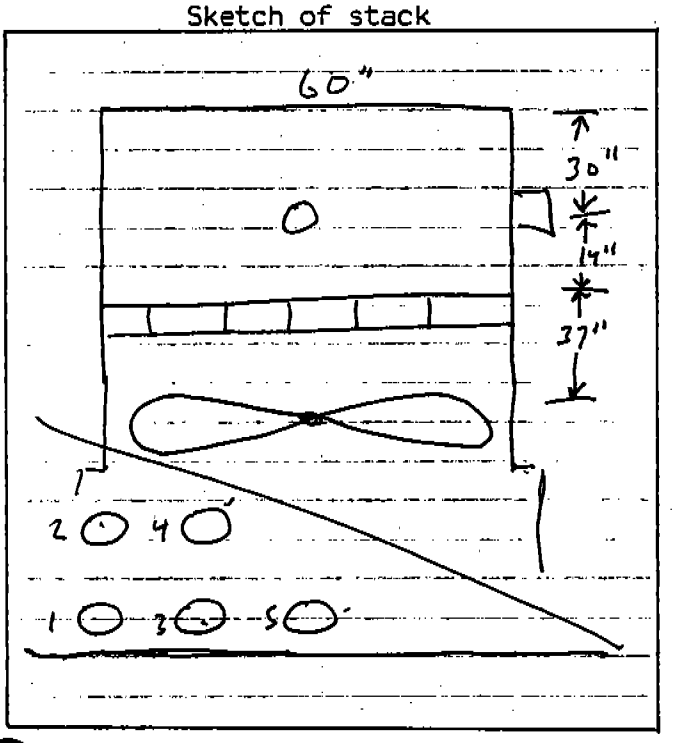
REMARKS _____

STACK CONFIGURATION / SAMPLE AND VELOCITY POINTS

Plant Name Kirby Forest Industries Source Press Vents 1 through 5

Data For: Date Stack Extension

Sketch of stack



PERCENT OF DIAMETER

Point No	Points on a Diameter 2	4	6	8	10	12	14	16
1	14.6	6.7	4.4	3.2	2.6	2.1	1.8	1.6
2	85.4	25.0	14.6	10.5	8.2	6.7	5.7	4.9
3		75.0	29.6	19.4	14.6	11.8	9.9	8.5
4		93.3	70.4	32.3	22.6	17.7	14.6	12.5
5			85.4	67.7	34.2	25.0	20.1	16.9
6			95.6	80.6	65.8	35.6	26.9	22.0
7				89.5	77.4	64.4	36.6	28.3
8				96.8	85.4	75.0	63.4	37.5
9					91.8	82.3	73.1	62.5
10					97.4	88.2	79.9	71.7
11						93.3	85.4	78.0
12						97.9	90.1	83.1
13							94.3	87.5
14							98.2	91.5
15								95.1
16								98.4

Stack diameter 60

Distance from ports to disturbance:

distance to upstream disturbance

distance to downstream disturbance

upstream diameters

downstream diameters

Minimum No. points required

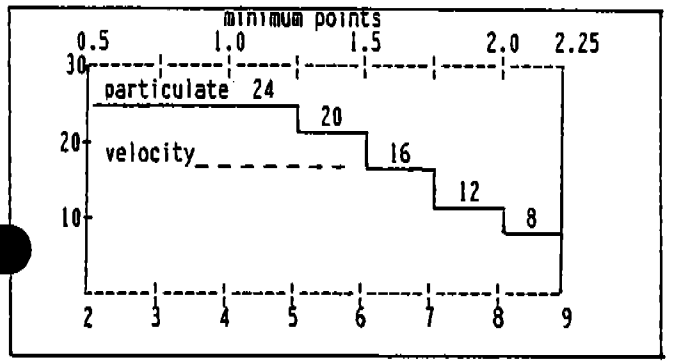
No. points selected 24 (12x2)

Nipple length 6" long 6" Flange

Point	inches from wall	velocity head
1	1.3	
2	4.0	
3	7.1	
4	10.6	
5	15.0	
6	21.4	
7	38.6	
8	45.0	
9	49.4	
10	52.9	
11	56.0	
12	58.7	
13		
14		
15		
16		

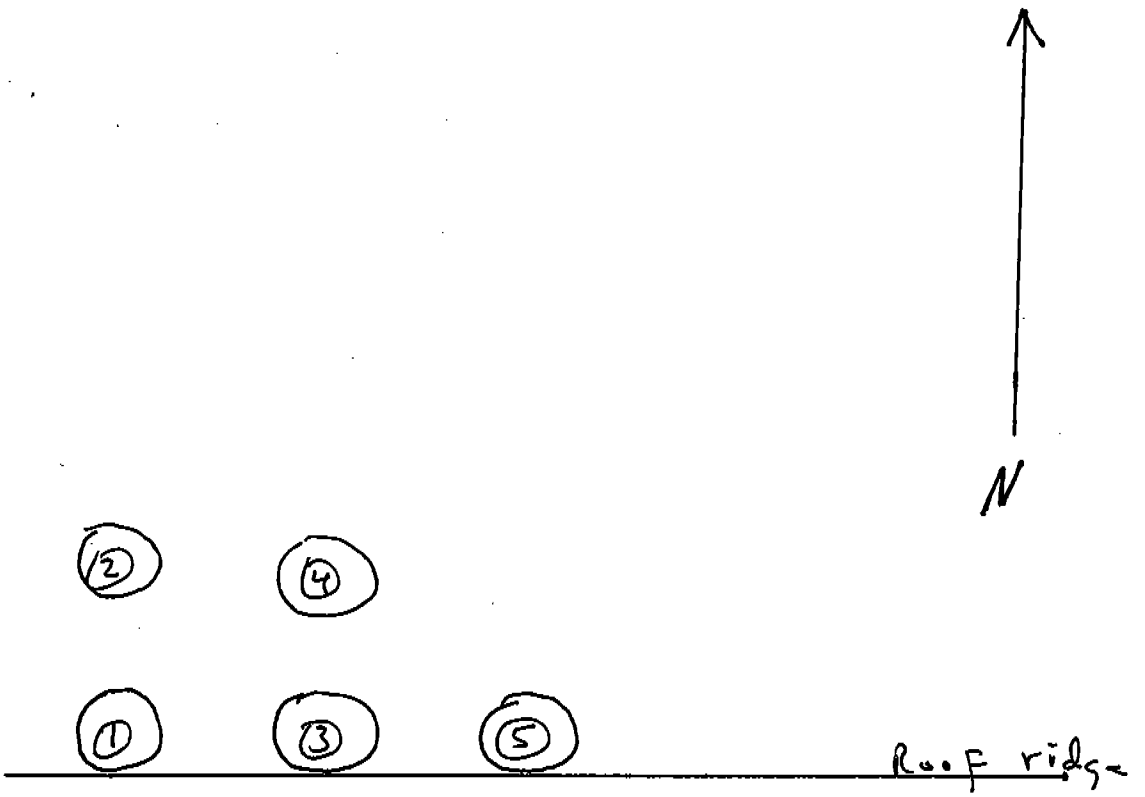
Pg = Ts =

Pitot ID Cp =



REMARKS

Press Vents



9.0 APPENDICES

A. Sampling and Analytical Data

B. Calibration Data

C. VOC/CO Recorder Trace

D. 02-24-92 Test for Dryer No. 1

9.0 APPENDICES

A. SAMPLING AND ANALYTICAL DATA

DRYER NO. 1

Plant: Kirby Forest Industries
Sampling Location: No. 1 OSB Dryer
Test For: PM/CPM/VOC/CO
Test Operators: Russell/Moore

RUN No. 1
Date 2-26-92
Time start 1545 end 1703

Meter Box	RAC591349	No. Sample Pts.	6 x 2	Gas Analysis	int. orsat		Remarks:
Sample Box	No. 1	Minutes/Pt.	5.0	CO_2	1.0	1.0	1.0	
Probe/Pitot	5' inc.			O_2	20.8	20.8	20.8	
Pitot Cp	.84	NOMOGRAPH		CO	NDIR = 90 ppm		
Nozzle Dia.	.196	ΔH@	1.85	Time			Nozzle calib.
Filter No.		Meter Temp.					①.196
		% H_2O		Condensate:			②.196
Amb. Temp. °F	61	C-Factor		tare 200	fin 346		③.196
Bar. Press. "Hg	29.91	Stack Temp.		Silica gel:			
Static Press. "H_2O	-.45	Ref. ΔP	1.65	tare 645	fin 659		

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO ppm
1	1	0	162.169	1.30	1.50	186	88	86	250	57	2	1.0
2	2	5	165.8	1.50	1.70	191	93	86	265	60	2	1.0
3	3	10	169.3	1.60	1.80	187	103	87	265	60	2	1.0
4	4	15	172.9	1.70	1.90	185	106	88	260	60	2	1.0
5	5	20	176.8	1.60	1.80	187	111	89	235	59	2	1.0
6	6	25	180.3	1.25	1.45	181	115	91	270	58	2	1.0
7												
8	1	30/0	183.522	1.30	1.50	182	110	93	235	64	2	1.0
9	2	5	186.9	1.50	1.70	190	109	93	250	55	2	1.0
10	* 3	10	189.8	1.60	1.80	188	113	92	265	54	2	1.0 → 17
11	4	15	194.7	1.75	1.95	192	110	95	230	55	2	1.0
12	5	20	198.4	1.60	1.80	191	113	96	225	60	2	1.0
13	6	25	202.0	1.30	1.50	192	117	98	240	64	2	1.0
14	end	60	205.168									
15												
16												
17												
18												
19			* filter plugged @ 10' 3 4" into 2nd traverse									
20												
21			mid test leak check	[190.081]		.030 →	.030 =	0.000 cfm @	19" Hg			
22				[190.359]								
23												
24			resumed @ 1644									
25												
26												
27			leak check	.048 →	.056 =	.008 cfm @	7" Hg					
28												
29												
30												
31												
32												
33												
34			42.721	1.2229	1.7000	187.67		98.83				
35												

Plant Kirby Forest Industries - Silsbee
Sampling Location No. 1 OSB Dryer
Test For PM / CPM /
Test Operators Russell / Moore / McKnight

RUN No. 2
Date 2-27-92
Time start 0904 end 1009

Meter Box	RAC591349	No. Sample Pts.	6x2	Gas Analysis	int	act	
Sample Box	No 3	Minutes/Pt.	5.0	CO_2	0.9	0.9	1.0
Probe/Pitot	5' inc.			O_2	20.6	20.6	20.6
Pitot Cp	.84	NOMOGRAPH		CO	NDIR = 140 ppm		
Nozzle Dia.	.196	ΔH@	1.9	Time			
Filter No.		Meter Temp.	100				
		% H_2O	16	Condensate:			
Amb. Temp. °F	48	C-Factor	.90	tare 200	fin 349		
Bar. Press. "Hg	29.92	Stack Temp.	185	Silica gel:			
Static Press. "H_2O	-.46	Ref. ΔP	1.6	tare 681	fin 700		

Remarks:

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac. in. Hg	CO lpm
1	1	0	205.495	1.30	1.50	175	70	67	225	53	2	1.0
2	2	5	209.5	1.50	1.70	179	75	67	235	45	2	1.0
3	3	10	212.7	1.60	1.85	180	83	68	235	50	2	1.0
4	4	15	216.3	1.80	2.00	188	92	70	250	50	2	1.0
5	5	20	220.3	1.70	1.90	185	98	73	265	51	2	1.0
6	6	25	224.3	1.20	1.40	180	104	75	265	53	2	1.0
7												
8	1	30½	227.822	1.40	1.60	192	101	79	255	53	2	1.0
9	2	5	231.8	1.50	1.70	189	99	82	245	50	2	1.0
10	3	10	235.3	1.50	1.70	191	107	84	245	50	2	1.0
11	4	15	239.0	1.70	1.90	187	111	86	235	50	2	1.0
12	5	20	242.4	1.60	1.80	188	113	88	235	50	2	1.0
13	6	25	246.3	1.25	1.45	185	116	90	235	50	2	1.0
14	end	60	249.272									
15												
16												
17												
18												
19												
20			leak check: .053 →		.059 = .006 cfm @ 12 "Hg							
21			pitot + ve 3.9									
22			pitot - ve 8.2									
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												
33												
34			43.777	1.2354	1.7083	184.92		87.42				
35												

Plant Kirby Forest Products
Sampling Location No. 1 OSB Dryer
Test For PM/CPM/VOC/CO
Test Operators Russell/Moore/McKnight

RUN No. 3
Date 2-27-92
Time start 1042 end 1212

Meter Box	RAC 591349	No. Sample Pts.	6x2	Gas Analysis	inlet		
Sample Box	No. 1	Minutes/Pt.	5.0	CO_2	0.8	0.9	0.8
Probe/Pitot	5' inc			O_2	20.7	20.7	20.7
Pitot Cp	.84	NOMOGRAPH		CO			
Nozzle Dia.	.196	ΔH@	1.9	Time			
Filter No.		Meter Temp.					
		% H_2O		Condensate:			
Amb. Temp. °F	60	C-Factor		tare 200	fin 341		
Bar. Press. "Hg	29.92	Stack Temp.		Silica gel:			
Static Press. "H_2O	-.46	Ref. ΔP	1.6	tare 596	fin 613		

Remarks:

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO ppm
1	1	0	249.604	1.30	1.50	189	91	88	235	60	2	1.0
2	2	5	254.0	1.50	1.70	194	96	88	240	57	2	1.0
3	3	10	256.9	1.65	1.85	186	104	88	235	55	2	1.0
4	4	15	260.2	1.65	1.85	187	110	90	235	62	2	1.0
5	5	20	264.3	1.45	1.65	182	115	91	230	62	2	1.0
6	6	25	268.3	1.30	1.50	182	118	93	240	62	2	1.0
7												
8	1	30/0	271.288	1.25	1.40	184	94	90	235	58	2	1.0
9	2	5	274.9	1.45	1.65	187	97	91	245	50	2	1.0
10	3	10	278.6	1.55	1.75	186	108	94	250	50	2	1.0
11	4	15	281.9	1.65	1.90	192	113	96	245	54	2	1.0
12	5	20	285.5	1.50	1.70	185	118	95	240	55	2	1.0
13	6	25	289.3	1.30	1.50	186	121	97	250	55	2	1.0
14	end	60	292.543									
15												
16												
17												
18			leak check: .086 → .093 = .007 cfm @ 6" Hg									
19			pitot +ve 4.4									
20			pitot -ve 3.0									
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												
33												
34			42.939	1.2079	1.6625	186.67		99.38				
35												

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD:

SAMPLES/PROJECT: Kirby - Silsbee OSB / Dryer No. 1

DATE TAKEN: 3-26-92 SAMPLING TEAM: Russell / Moore / McKnight

SAMPLES RECOVERED BY: DGR DATE RECOVERED: 3-26-92

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: 6 (3 filters) (3 probe wash)

01 R1 (2) Filter - grav.
01 R2 (2) Filt - grav
01 R3 (2) Filt - grav
01 R1 (2) Aceton - grav
01 R2 (2) Aceton - grav
01 R3 (2) Aceton - grav

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

Russell - recovery, transport, analysis David G. Russell

Filter treatment: Filters oven dried 2 hours at 105° C, desiccated at least 24 hours, weighed to constant weight

FILTERS:

RUN NO.	1		2	3	
FILTER NO.	419	420	422	421	
FILTER TARE, gms	.5664	.5680	.5654	.5660	
1st weighing	.6547	.6166	.6927	.7124	
2nd weighing	.6547	.6168	.6925	.7126	
3rd weighing					
FINAL WEIGHT, gms.	.6547	.6168	.6925	.7126	
NET GAIN, gms.	.0983	.0488	.1271	.1466	

Probe wash treatment: Transferred to a tared beaker, acetone evaporated over low heat, desiccated at least 24 hours, weighed to constant weight.

PROBE WASH:

RUN NO.	1	2	3	
CONTAINER ID	01 R1 (2)	01 R2 (2)	01 R3 (2)	
VOLUME INTACT?	✓	✓	✓	
VOLUME, ml	160	100	140	
TARE WT., gms.	(9) 114.8224	(22) 99.0858	(25) 97.0906	
1st weighing	114.8289	99.0973	97.0970	
2nd weighing	114.8293	99.0975	97.0968	
3rd weighing				
FINAL WEIGHT, gms.	114.8293	99.0975	97.0968	
NET GAIN, gms.	.0069	.0117	.0062	
LESS BLANK, gms.	-.0001	-.0001	-.0001	

PARTICULATE SAMPLE WEIGHT, mg.

RUN NO.	1	2	3	
filter + probe	153.9	138.7	152.7	

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD: FOR BACK HALF EXTRACTION ANALYSIS

SAMPLES/PROJECT: Kirby F.I. - Silsbee OSB Dryer No. 1 (2nd)

DATE TAKEN: 3-26-92 SAMPLING TEAM: Russell - Moore - McKnight

SAMPLES RECOVERED BY: DGR DATE RECOVERED: 3-26-92

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: 6

DIR1(2) BAK
DIR2(2) BAK
DIR2(2) BAK
} methylene chloride extraction / gravimetric

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

Recovered by DGR on 2-26-92
Transported by DGR on 3-3-92 } Daniel G Russell
analyzed by DGR on 3-21-92 & on 3-28-92

RUN NO.	1	2	3	
CONTAINER ID	DIR1(2)BAK	DIR2(2)BAK	DIR3(2)BAK	
VOLUME INTACT?	✓	✓	✓	
VOLUME, ml	400	400	400	

AQUEOUS FRACTION 3-28-92

TARE WT., gms.	104.7565	97.5712	104.1113	
1st weighing	104.7586	97.5718	104.1112	
2nd weighing	104.7583	97.5720	104.1116	
3rd weighing				
FINAL WEIGHT, gms.	1047583	97.5720	104.1116	
NET GAIN, gms.	.0018	.0008	.0003	
LESS BLANK, gms.	—	—	—	

ORGANIC FRACTION 3-21-92

TARE WT., gms.	103.1949	104.7516	98.3965	
1st weighing	103.2024	104.7582	98.4050	
2nd weighing	103.2020	104.7577	98.4051	
3rd weighing				
FINAL WEIGHT, gms.	103.2020	104.7577	98.4051	
NET GAIN, gms.	.0071	.0061	.0086	
LESS BLANK, gms.	—	—	—	

BACK HALF PARTICULATE SAMPLE WEIGHT, mg.

Aqueous fraction	1.8	0.8	0.3	
Organic fraction	7.1	6.1	8.6	

Plant Kirby	RUN NO. 1, 2, 3
Source No. 1 Dryer	Date 2-26 & 27-92
Test For VOC	Time start 1545/0904/1042
Test Operators Rumen	Time end 1703/1009/1213

		Time: 1535/0850/			Time: 1703/0915/1215					
FID ANALYZER CALIBRATION DATA	Cylinder Value, ppm	Initial analyzer response			Final analyzer response			Difference ppm		
Zero gas	Air 0	0	0	0	5	0	0	5	0	0
Low-level gas	31.1	32	33	[illegible]	31		31	1		[illegible]
Mid-level gas	83.2	83	85	85	88	83	85	5	2	0
High-level gas	830	830	830	830	820	810	835	10	20	5

	el. time min.	FID Reading ppm	FID Range ppm	Sample Pressure mBar	Fuel Pressure psi	Air Pressure psi	Oven Temp C	Line Temp	Chart Speed cm/hr
R1	1545	Strip chart	0-1000	4.0	6.75	12.0	155	258	20
R2	0904	Strip chart	0-1000	4.0	6.75	12.0	155	258	20
R3	1042	Strip chart	0-1000	4.0	6.75	12.0	155	260	20

DRYER NO. 2

Plant Kirby Forest Industries
Sampling Location No. 2 OSB Dryer
Test For PM/CPM/VOC/CO
Test Operators Russell/Moore/McKnight

RUN No. 1
Date 2-25-92
Time start 1342 end 1444

Meter Box	RAC 59/349	No. Sample Pts.	6x2	Gas Analysis	int.	out	
Sample Box	No. 1	Minutes/Pt.	5.0	CO_2	0.8	0.9	0.8
Probe/Pitot	5' inc			O_2	20.7	20.7	20.7
Pitot Cp	.84	NOMOGRAPH		CO	NDIR	110 ppm	
Nozzle Dia.	.196	ΔH@	1.85	Time			
Filter No.		Meter Temp.	100				
		% H_2O	17	Condensate:			
Amb. Temp. °F	63	C-Factor	.86	tare 200	fin 359		
Bar. Press. "Hg	29.62	Stack Temp.	200	Silica gel:			
Static Press. "H_2O	-.52	Ref. ΔP	1.65	tare 611	fin 629		

Remarks:
(1) .196
(2) .196
(3) .196

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	
1	1	0	901.372	1.25	1.40	187	69	68	175	61	2	1.0
2	2	5	904.9	1.70	1.90	187	73	68	200	50	2	1.0
3	3	10	908.6	1.90	2.10	186	80	71	230	50	2	1.0
4	4	15	913.3	1.65	1.85	191	96	71	245	51	2	1.0
5	5	20	917.2	1.50	1.70	190	102	74	255	50	2	1.0
6	6	25	921.0	1.25	1.40	190	106	77	260	56	2	1.0
7												
8	1	30/0	924.306	1.20	1.35	190	104	80	260	56	2	1.0
9	2	5	927.6	1.50	1.70	190	104	83	250	53	2	1.0
10	3	10	931.2	1.60	1.80	190	107	85	225	53	2	1.0
11	4	15	934.5	1.70	1.90	190	111	86	235	50	2	1.0
12	5	20	938.9	1.50	1.70	187	115	88	225	50	2	1.0
13	6	25	942.8	1.30	1.50	187	116	91	225	50	2	1.0
14	end	60	945.734									
15												
16												
17			leak check: .018 → .028 =			.010 cfm @ 10" Hg						
18			pitot +ve 7.6									
19			pitot -ve 4.5									
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												
33												
34			44.360	1.2235	1.6917	188.75		88.54				
35												

Plant: Kirby Forest
Sampling Location: No. 2 OSB Dryer
Test For: PM/CPM/VOC/CO
Test Operators: Russell / Moon / McKnight

RUN No. 2
Date 2-25-92
Time start 1608 end 1711

Meter Box	RAC 59,149	No. Sample Pts.	6 x 2	Gas Analysis	int. sect		Remarks:
Sample Box	No. 3	Minutes/Pt.	5.0	CO_2	0.8	0.8 0.8	
Probe/Pitot	5' inc			O_2	20.7	20.5 20.5	
Pitot Cp	.84	NOMOGRAPH		CO	NDIR	170 ppm	
Nozzle Dia.	.196	ΔH@	1.95	Time			
Filter No.		Meter Temp.					
		% H_2O		Condensate:			
Amb. Temp. °F	50	C-Factor		tare 200	fin 358		
Bar. Press. "Hg	29.62	Stack Temp.		Silica gel:			
Static Press. "H_2O	-.52	Ref. ΔP	1.65	tare 703	fin 720		

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO ppm
1	1	0	946.220	1.40	1.60	183	76	76	260	58	3	1.0
2	2	5	950.0	1.60	1.80	186	84	78	255	50	3	1.0
3	3	10	954.1	1.75	1.95	189	96	80	250	60	3	1.0
4	4	15	957.3	1.65	1.85	186	103	82	260	55	3	1.0
5	5	20	961.0	1.65	1.85	180	108	83	260	54	3	1.0
6	6	25	964.5	1.40	1.60	180	112	84	260	55	3	1.0
7												
8	1	30	968.419	1.10	1.30	187	111	88	260	50	3	1.0
9	2	5	972.1	1.50	1.70	189	112	90	270	55	3	1.0
10	3	10	975.2	1.75	1.95	184	114	91	235	55	3	1.0
11	4	15	979.3	1.70	1.90	185	119	94	225	58	3	1.0
12	5	20	983.4	1.45	1.65	184	124	98	230	61	3	1.0
13	6	25	986.8	1.25	1.45	185	123	95	235	60	3	1.0
14	end	60	989.872									
15												
16												
17												
18			leak check: .046 → .059 = .013 @ 8" Hg									
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												
33												
34			43.652	1.2288	1.7167	184.42		96.88				
35												

Plant Kirby Forest Industries
Sampling Location No. 2 Dryer
Test For PM/CPM/VOC/CO
Test Operators Russell/Moore/McKnight

RUN No. 3
Date 2-25-92
Time start 1825 end 1935

Meter Box	RAC591349	No. Sample Pts.	6x2	Gas Analysis	int.	out	
Sample Box	No. 3	Minutes/Pt.		CO_2	0.7	0.7	0.7
Probe/Pitot	5' inc			O_2	20.8	20.7	20.7
Pitot Cp	.84	NOMOGRAPH		CO			
Nozzle Dia.	.196	ΔH@	1.95	Time			
Filter No.		Meter Temp.					
		% H_2O		Condensate:			
Amb. Temp. °F	45	C-Factor		tare 200	fin 357		
Bar. Press. "Hg	29.64	Stack Temp.		Silica gel:			
Static Press. "H_2O	-.52	Ref. ΔP	1.65	tare 580	fin 596		

Remarks:
missed 9 minutes on Bag sample
Paused test @ 1903 to ch. filter vac. went to 15" Hg

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO lpm
1	1	0	990.933	1.30	1.50	183	82	81	210	45	2	1.0
2	2	5	994.8	1.60	1.80	187	87	82	230	45	2	1.0
3	3	10	998.4	1.60	1.80	185	96	83	190	45	2	1.0
4	4	15	002.2	1.70	1.90	185	103	84	195	45	2	1.0
5	5	20	005.3	1.45	1.65	189	108	85	195	45	2	1.0
6	6	25	008.7	1.10	1.30	186	111	86	195	45	2	1.0
7												
1	1	30/0	012.784	1.20	1.30	185	110	85	200	45	2	1.0
2	2	5	017.9	1.80	2.00	185	98	87	220	45	2	1.0
10	3	10	021.5	1.80	2.00	190	98	88	195	50	2	1.0
11	4	15	025.1	1.60	1.80	187	108	88	220	50	2	1.0
12	5	20	028.4	1.40	1.60	186	110	87	225	50	2	1.0
13	6	25	032.3	1.20	1.40	185	111	88	195	55	2	1.0
14	end	60	035.964									

mid test leak check for filter change (6'27" in to 2nd traverse)
[017.100] .033 → .035 = .002 @ 17" Hg [017.512]
following leak check - high vacuum had disappeared - plugging probably due to crimped umbilical cord. - Did not ch. filter
resumed test @ 1919

post test leak check: .044 → .047 = .003 @ 11" Hg
pitot + ✓ @ 3.9
pitot - ✓ @ 4.2

44.619 1.2124 1.6708 186.68 93.58

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD:

SAMPLES/PROJECT: Kirby - Silsbee OSB - Dryer No. 2

DATE TAKEN: 2-25-92 SAMPLING TEAM: Russell / Moore / McKnight

SAMPLES RECOVERED BY: DGR DATE RECOVERED: 2-25-92

SAMPLE ID/ANALYSES REQUIRED: NO. OF CONTAINERS: 6

D2R1 Filter — gravimetric D1R3 Acetone - grav.
D2R2 Filter "
D2R3 Filter "
D1R1 Acetone "
D1R2 Acetone "

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

Recovery - DGR 2-25
Transport - DGR 3-3
Analysis - DGR 3-5

Filter treatment: Filters oven dried 2 hours at 105° C, desiccated at least 24 hours, weighed to constant weight

FILTERS:

RUN NO.	1	2	3	[illegible]
FILTER NO.	412	411	414	
FILTER TARE, gms	.5672	.5680	.5666	
1st weighing	.7392	.6805	.6823	
2nd weighing	.7390	.6808	.6822	
3rd weighing				
FINAL WEIGHT, gms.	.7390	.6808	.6822	
NET GAIN, gms.	.1218	.1128	.1156	

Probe wash treatment: Transferred to a tared beaker, acetone evaporated over low heat, desiccated at least 24 hours, weighed to constant weight.

PROBE WASH:

RUN NO.	1	2	3	BLANK
CONTAINER ID	D2R1	D2R2	D2R3	[illegible]
VOLUME INTACT?	✓	✓	—	—
VOLUME, ml	200	180	180	200
TARE WT., gms.	(26) 98.6779	(29) 98.3968	(31) 95.7673	98.2505
1st weighing	98.6990	98.4040	95.7715	98.2508
2nd weighing	98.6990	98.4045	95.7713	98.2506
3rd weighing				
FINAL WEIGHT, gms.	98.6990	98.4045	95.7713	98.2506
NET GAIN, gms.	.0211	.0077	.0040	.0001
LESS BLANK, gms.	-.0001	-.0001	-.0001	—

PARTICULATE SAMPLE WEIGHT, mg.

RUN NO.	1	2	3	
filter + probe	192.8	120.4	119.5	

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD: FOR BACK HALF EXTRACTION ANALYSIS

SAMPLES/PROJECT: Kirby - Silsbee OSB Dryer No. 2 BACKHALF

DATE TAKEN: 2-25-92 SAMPLING TEAM: Russell - Moore - McKnight

SAMPLES RECOVERED BY: DGR DATE RECOVERED: 2-25-92

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: 3

D2 R1 BAK
D2 R2 BAK
D2 R3 BAK
} Methylene Chloride Extraction/gravimetric

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

Recovery - DGR 2-25-92
Transport DGR ~~[illegible]~~ 3-3-92
Analysis DGR 3-28-92
} [signature]

RUN NO.	1	2	3	BLANK
CONTAINER ID	D2R1BAK	D2R2BAK	D2R3BAK	
VOLUME INTACT?	✓	✓	✓	—
VOLUME, ml	400	400	400	400

AQUEOUS FRACTION

TARE WT., gms.	98.8505	98.3976	111.8064	114.3930
1st weighing	98.8525	98.3982	111.8072	114.3931
2nd weighing	98.8527	98.3978	111.8070	114.3928
3rd weighing				
FINAL WEIGHT, gms.	98.8527	98.3978	111.8070	114.3928
NET GAIN, gms.	.0022	.0002	.0006	0
LESS BLANK, gms.	— 0 —	— 0 —	— 0 —	

ORGANIC FRACTION

TARE WT., gms.	107.2571	112.5838	111.3444	109.7653
1st weighing	107.2654	112.5962	111.3566	107.7653
2nd weighing	107.2654	112.5958	111.3562	107.7652
3rd weighing				
FINAL WEIGHT, gms.	107.2654	112.5958	111.3562	109.7653
NET GAIN, gms.	.0083	.0120	.0118	0
LESS BLANK, gms.	— 0 —	— 0 —	— 0 —	— 0 —

BACK HALF PARTICULATE SAMPLE WEIGHT, mg.

Aqueous fraction	2.2	0.2	0.6	
Organic fraction	8.3	12.0	11.8	

DRYER NO. 3

Plant Kirby Front Industries	RUN NO. 1, 2, 3
Source No. 1 Dryer	Date 2-25-92
Test For VOC	Time start 1342
Test Operators Russen	Time end 1935

		Time: 1320		Time: 1455					
FID ANALYZER CALIBRATION DATA	Cylinder Value, ppm	Initial analyzer response		Final analyzer response			Difference ppm		
Zero gas	Air	0		0	0	0	0	0	0
Low-level gas	31.1	31		31	33	31	0	0	0
Mid-level gas	83.2	85		85	82	83	0	3	0
High-level gas	830	830		830	830	830	0	0	0

	el. time min.	FID Reading ppm	FID Range ppm	Sample Pressure mBar	Fuel Pressure psi	Air Pressure psi	Oven Temp C	Line Temp °F	Chart Speed cm/hr
R1	1342 0	strip	0-1000	4.0	6.75	12.0	155	251	20
		chart							
R2	1608 0	strip	0-1000	4.0	6.75	12.0	153	259	20
		chart							
R3	1825 0	strip	0-1000	4.0	6.75	12.0	153	259	20
		chart							

Plant Kirby Forest Industries - Silsbee OSB
Sampling Location No. 3 OSB Dryer
Test For PM/CPM/VOC/CO
Test Operators Russell / Moore / McKnight

RUN No. 1
Date 2-26-92
Time start 0924 end 1032

Meter Box	RAC59/349	No. Sample Pts.	6 x 2	Gas Analysis	int.	post	
Sample Box	No. 3	Minutes/Pt.	5	CO_2	0.8	0.7	0.7
Probe/Pitot	5' inc.			O_2	20.4	20.4	20.4
Pitot Cp	.84	NOMOGRAPH		CO			
Nozzle Dia.	.196	ΔH@	1.9	Time			
Filter No.		Meter Temp.					
		% H_2O		Condensate:			
Amb. Temp. °F	49	C-Factor		tare 200	fin 346		
Bar. Press. "Hg	29.92	Stack Temp.		Silica gel:			
Static Press. "H_2O	-.48	Ref. ΔP	1.65	tare 612	fin 627.5		

Remarks:
① .197
② .196 } Dn = .196
③ .196

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO lpm
1	1	0	036.482	1.30	1.50	186	55	53	260	49	2	1.0
2	2	5	039.9	1.70	1.90	189	60	54	265	47	2	1.0
3	3	10	043.3	1.80	2.00	184	69	58	240	45	2	1.0
4	4	15	047.4	1.70	1.90	184	81	59	255	46	2	1.0
5	5	20	050.7	1.65	1.85	185	90	63	250	45	2	1.0
6	6	25	054.5	1.40	1.60	187	93	63	260	48	2	1.0
7								6				
8	1	30/0	057.932	1.45	1.65	183	85	68	245	47	2	1.0
9	2	5	061.4	1.55	1.75	186	87	70	220	45	2	1.0
10	3	10	064.4	1.65	1.85	182	92	72	200	45	2	1.0
11	4	15	068.6	1.65	1.85	186	98	75	225	45	2	1.0
12	5	20	071.8	1.50	1.70	184	100	77	250	55	2	1.0
13	6	25	073.7	1.00	1.20	186	100	78	250	55	2	1.0
14	end	60	076.489									
15												
16												
17												
18			leak check: .053 → .059 = .001 cfm @ 10 "Hg									
19			pitot + /c 4.6									
20			pitot - /c 3.7									
21												
22												
23												
24												
25												
26												
27												
28												
29												
31												
32												
33												
34			40.007	1.2333	1.7292	185.17		75.00				
35												

Plant Kirby Forest Products
Sampling Location No. 305B Dryer
Test For PM/CPM/VOC/CO
Test Operators Russell / Moore / McKnight

RUN No. 2
Date 2-26-92
Time start 1105 end 1229

Meter Box	RACS91349	No. Sample Pts.	6 x 2	Gas Analysis	int.	act	
Sample Box	No. 1	Minutes/Pt.	5.0	CO_2	.8	.8	.8
Probe/Pitot	5' inc			O_2	20.5	20.5	20.6
Pitot Cp	.84	NOMOGRAPH		CO	NDIR = 40 ppm		
Nozzle Dia.	.196	ΔH@	1.85	Time			
Filter No.		Meter Temp.					
		% H_2O		Condensate:			
Amb. Temp. °F	52	C-Factor		tare 200	fin 349		
Bar. Press. "Hg	29.92	Stack Temp.		Silica gel:			
Static Press. "H_2O	-.48	Ref. ΔP	1.65	tare 648	fin 663		

Remarks:
* at 5'28" into run hi-vacuum (18") caused filter ch. removed @ 1204

Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO lpm
1	0	076.709	1.45	1.65	181	89	85	245	50	2	1.0
2	5	080.6	1.65	1.85	186	92	83	250	52	2	1.0
3	10	084.6	1.70	1.90	187	100	85	255	52	2	1.0
4	15	087.8	1.60	1.80	188	111	88	255	52	2	1.0
5	20	091.6	1.40	1.60	183	118	91	255	52	2	1.0
6	25	095.2	1.35	1.55	182	121	95	255	54	2	1.0
											→ 18
1	30/0	098.418	1.35	1.55	183	117	98	255	54	2	1.0
* 2	5	100.4	1.50	1.70	184	120	98	250	50	2	1.0
3	10	104.3	1.40	1.60	183	102	94	245	48	2	1.0
4	15	107.9	1.70	1.90	179	107	94	240	48	2	1.0
5	20	111.9	1.45	1.65	182	113	94	260	55	2	1.0
6	25	115.2	1.00	1.20	179	120	96	260	55	2	1.0
end	60	118.579									

mid test leak check: [100.466] .063 → .067 = .004 cfm @ 20" Hg
[100.801]

end leak check: .080 → .093 = .013 cfm @ 7" Hg
pitot +ve 4.5
pitot -ve 3.6

41.535 1.2067 1.6625 183.08 100.46
~~41.870~~ ~~1.2067~~

Plant Kirby Forest Industries
Sampling Location No. 3 OSB Dryer
Test For PM/CPM/VOC/CO
Test Operators Russell/Moore/McKnight

RUN No. 3
Date 2-26-92
Time start 1303 end 1421

Meter Box	RAC591349	No. Sample Pts.	6x2
Sample Box	No. 3	Minutes/Pt.	5
Probe/Pitot	5' inc.		
Pitot Cp	.84	NOMOGRAPH	
Nozzle Dia.	.196	ΔH@	1.8
Filter No.		Meter Temp.	
		% H_2O	
Amb. Temp. °F	60	C-Factor	
Bar. Press. "Hg	29.91	Stack Temp.	
Static Press. "H_2O	-.48	Ref. ΔP	1.65

Gas Analysis int. react

CO_2	0.7	0.8	0.7
O_2	20.4	20.4	20.3
CO			
Time			

Condensate:
tare 200 fin 338
Silica gel:
tare 704.5 fin 718.5

Remarks:
charged filter holder @ 22'/17" into 2nd traverse when vacuum went from 3 to 18
resumed @

Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	
1	0	118.915	1.10	1.30	175	95	91	195	60	2	1.0
2	5	122.3	1.60	1.80	180	94	89	230	50	2	1.0
3	10	126.2	1.60	1.80	189	106	90	265	50	2	1.0
4	15	129.7	1.70	1.90	184	108	91	260	50	2	1.0
5	20	133.1	1.60	1.80	191	108	91	270	51	2	1.0
6	25	136.8	1.50	1.70	184	115	92	235	55	3	1.0
1	30/0	140.8	1.25	1.45	179	112	94	225	56	3	1.0
2	5	143.9	1.60	1.80	178	112	95	210	50	3	1.0
3	10	147.4	1.75	1.95	180	111	97	245	52	3	1.0
4	15	151.0	1.55	1.75	183	120	98	260	55	3	1.0
5	20	154.7	1.50	1.70	183	121	98	270	59	3	1.0
6	25	158.6	1.00	1.20	190	109	99	235	60	3	1.0
end	60	161.493									

midtest leak check: [155.863] .031 → .033 = .002 cfm @ 20" Hg]
[156.352]

leak check: .097 → .103 = .006 cfm @ 7" Hg
pitot +ve 3.6
pitot -ve 6.9

42.085 1.2123 1.6125 183.00 101.50

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD:

SAMPLES/PROJECT: Kirby - Silsbee DSB - Drum No. 3

DATE TAKEN: 2-26-92 SAMPLING TEAM: Russell - Moore - McKnight

SAMPLES RECOVERED BY: DGR DATE RECOVERED: 2-26-92

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: 6 (3 filters, 3 probe wash)

D3R1 Filter D3R3 Acetone
D3R2 Filter
D3R3 Filter
D3R1 Acetone
D3R2 Acetone

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

Recovery by DGR on 2-26-92
Transport by DGR on 3-3-92
Analysis by DGR on 3-3-92

Filter treatment: Filters oven dried 2 hours at 105° C, desiccated at least 24 hours, weighed to constant weight

FILTERS:

RUN NO.	1	2		3		
FILTER NO.	399	415	416	417	418	
FILTER TARE, gms	.5607	.5675	.5679	.5663	.5663	
1st weighing	.6712	.6188	.6300	.6665	.5808	
2nd weighing	.6712	.6187	.6299	.6667	.5807	
3rd weighing						
FINAL WEIGHT, gms.	.6712	.6187	.6299	.6667	.5807	
NET GAIN, gms.	.1105	.0512	.0620	.1005	.0144	

Probe wash treatment: Transferred to a tared beaker, acetone evaporated over low heat, desiccated at least 24 hours, weighed to constant weight.

PROBE WASH:

RUN NO.	1	2	3	
CONTAINER ID	D3R1	D3R2	D3R3	
VOLUME INTACT?	✓	✓	✓	
VOLUME, ml	175	180	200	
TARE WT., gms.	(32) 97.5706	(45) 107.2585	(44) 104.1099	
1st weighing	97.5756	107.2620	104.1152	
2nd weighing	97.5753	107.2609	104.1149	
3rd weighing		107.2612		
FINAL WEIGHT, gms.	97.5753	107.2612	104.1149	
NET GAIN, gms.	.0047	.0027	.0050	
LESS BLANK, gms.	-.0001	-.0001	-.0001	

PARTICULATE SAMPLE WEIGHT, mg.

RUN NO.	1	2	3	
filter + probe	115.1	115.8	119.8	

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD: FOR BACK HALF EXTRACTION ANALYSIS

SAMPLES/PROJECT: Kirby - Silsbee DSB Dryer No. 3 Back Half

DATE TAKEN: 2-26-92 SAMPLING TEAM: Russell Moore - McKinzie

SAMPLES RECOVERED BY: DGR DATE RECOVERED: 2-26-92

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: 3

D3R1 BAK
D3R2 BAK
D3R3 BAK
} Methylene Chloride Extraction / gravimetric

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

Recovery by DGR on 2-26-92
Transport by DGR on 2-03-92
Analysis by DGR on 3-21-92 + 3-28-92
} [signature]

RUN NO.	1	2	3	
CONTAINER ID	D3R1 BAK	D3R2 BAK	D3R3 BAK	
VOLUME INTACT?	✓	✓	✓	
VOLUME, ml	400	400	400	

AQUEOUS FRACTION (3-21-92)

TARE WT., gms.	107.2579	113.9910	113.2267	
1st weighing	107.2606	113.9914	113.2293	
2nd weighing	107.2607	113.9911	113.2288	
3rd weighing				
FINAL WEIGHT, gms.	107.2607	113.9911	113.2288	
NET GAIN, gms.	.0028	.0001	.0021	
LESS BLANK, gms.	— 0 —	— 0 —	— 0 —	

3-21-92

ORGANIC FRACTION (3-28-92)

TARE WT., gms.	113.9854	113.2244	109.8900	
1st weighing	113.9916	113.2343	109.8945	
2nd weighing	113.9913	113.2243	109.8944	
3rd weighing				
FINAL WEIGHT, gms.	113.9913	113.2343	109.8944	
NET GAIN, gms.	.0059	.0099	.0044	
LESS BLANK, gms.	— 0 —	— 0 —	— 0 —	

3-28-92

BACK HALF PARTICULATE SAMPLE WEIGHT, mg.

Aqueous fraction	2.8	0.1	2.1	
Organic fraction	5.9	9.9	4.4	

Plant Kirby	RUN NO. 1, 2, 3
Source No. 3 Dryer	Date 2-26-92
Test For VOC	Time start 0924/1105 /1303
Test Operators Russell	Time end 1031/1229 /1421

		Time: ~~[illegible]~~ 0910	Time: 1040/1235/1430					
FID ANALYZER CALIBRATION DATA	Cylinder Value, ppm	Initial analyzer response	Final analyzer response			Difference ppm		
Zero gas	Air 0	0	0	0	0	0	0	0
Low-level gas	31.1	31			33			2
Mid-level gas	83.2	83	85	83	88	2	0	5
High-level gas	830	830	835	830	820	5	0	10

	el. time min.	FID Reading ppm	FID Range ppm	Sample Pressure mBar	Fuel Pressure psi	Air Pressure psi	Oven Temp C	Line Temp	Chart Speed cm/hr
R1	0924	Strip chart	0-1000	4.0	6.75	12.0	155	258	20
R2	1105	Strip chart	0-1000	4.0	6.75	12.0	154	260	20
R3	1303	Strip chart	0-1000	4.0	6.75	12.0	154	260	20

DRYER NO. 4

Plant: Kirby Forest Industries
Sampling Location: No. 4 OSB Dryer
Test For: PM/CPM/VOC/CO
Test Operators: Russell/Moore/McKnight

RUN No. 1
Date 2-27-92
Time start 1516 end 1628

Meter Box	RAC591349	No. Sample Pts.	8x2	Gas Analysis	int	post	
Sample Box	No. 3	Minutes/Pt.	5.0	CO_2	0.9	0.9	1.0
Probe/Pitot	5' inc.			O_2	20.8	20.8	20.8
Pitot Cp	.84	NOMOGRAPH		CO			
Nozzle Dia.	.196	ΔH@	1.9	Time			
Filter No.		Meter Temp.					
		% H_2O		Condensate:			
Amb. Temp. °F	69	C-Factor		tare 200	fin 350		
Bar. Press. "Hg	29.92	Stack Temp.		Silica gel:			
Static Press. "H_2O	-.46	Ref. ΔP	1.6	tare 707	fin 721.5		

Remarks:

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO ppm
1	1	0	292.701	1.40	1.60	182	84	81	270	64	2	1.0
2	2	5	296.4	1.65	1.85	181	88	82	250	60	3	1.0
3	3	10	300.3	1.80	2.00	184	99	84	255	60	3	1.0
4	4	15	304.1	1.75	1.55	181	107	86	240	61	3	1.0
5	5	20	307.8	1.40	1.60	176	113	87	235	61	3	1.0
6	6	25	311.6	1.20	1.40	170	114	90	240	60	3	1.0
7												
8	1	30/0	314.515	1.15	1.30	178	114	93	250	60	3	1.0
9	2	5	318.6	1.45	1.65	179	116	94	255	61	3	1.0
10	3	10	321.8	1.50	1.70	180	119	94	250	60	3	1.0
11	4	15	325.3	1.95	2.20	178	120	95	225	59	3	1.0
12	5	20	329.2	1.75	1.95	184	123	96	255	55	3	1.0
13	6	25	333.0	1.70	1.90	180	124	97	255	54	3	1.0
14	end	60	336.794									
15												
16												
17												
18			leak check: .033 →		0.39 = .0064	@ 14" Hg						
19			pitot + -46									
20			pitot - -1.9									
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31			4									
32												
33												
34			44.093	1.2446	1.7583	179.42		100.00				
35												

Plant Kirby Forest Industries
Sampling Location No. 4 OSB Dryer
Test For PM / CPM / VOC / CO
Test Operators Russell / Moore / McKnight

RUN No. 2
Date 2-27-92
Time start 1702 end 1812

Meter Box	RAC59/349	No. Sample Pts.	6x2	Gas Analysis	int. orsat		
Sample Box	No. 1	Minutes/Pt.	5.0	CO_2	1.1	1.0	1.0
Probe/Pitot	5' inc.			O_2	20.4	20.4	20.4
Pitot Cp	.84	NOMOGRAPH		CO			
Nozzle Dia.	.196	ΔH@	1.9	Time			
Filter No.		Meter Temp.					
		% H_2O		Condensate:			
Amb. Temp. °F	74	C-Factor		tare 200	fin 339		
Bar. Press. "Hg	29.94	Stack Temp.		Silica gel:			
Static Press. "H_2O	-.57	Ref. ΔP	1.65	tare 635.5	fin 649.		

Remarks:

resumed @ 1759

Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO cpm
1	0	337.182	1.30	1.50	178	96	92	240	66	2	1.0
2	5	340.6	1.70	1.90	179	99	93	225	60	2	1.0
3	10	344.5	1.70	1.90	180	109	96	225	65	2	1.0
4	15	348.1	1.65	1.85	179	115	98	230	64	2	1.0
5	20	352.0	1.20	1.40	171	119	97	220	62	2	1.0
6	25	355.8	1.10	1.25	170	123	100	225	62	2	1.0
1	30/0	358.794	1.30	1.50	175	122	101	230	62	2	1.0
2	5	363.1	1.40	1.60	179	122	102	225	60	2	1.0
3	10	365.7	1.70	1.90	181	123	102	250	62	3	1.0
4	15	368.7	1.70	1.90	176	120	102	255	63	3	1.0 18
1759 5	20	372.6	1.70	1.90	171	116	100	245	50	3	1.0
6	25	376.5	1.50	1.70	171	114	99	200	55	3	1.0
end	60	379.771									

hi vacuum @ 16' 05" into 2nd traverse - changed filter holders

mid test leak check: [369.081] .035 → .036 = .001 cfm @ 20" Hg
[369.336]

leak check: .023 → .029 = .006 cfm @ 6" Hg
pitot + ve 3.9
pitot - ve 3.9

		42.334	1.2197	1.6917	175.83		106.67				

Plant Kirby Forest Industries
Sampling Location No. 4 DSB Dryer
Test For PM/CPM/CO/VOC
Test Operators Rhodes/Moore/McKnight

RUN No. 3
Date 2-28-92
Time start 0947 end 1048

Meter Box	RAC591349	No. Sample Pts.	6x2	Gas Analysis	integrated		
Sample Box	No. 3	Minutes/Pt.	5.0	CO_2	6.0	1.0	1.0
Probe/Pitot	5' inc			O_2	20.8	20.8	20.8
Pitot Cp	.84	NOMOGRAPH		CO			
Nozzle Dia.	.196	ΔH@	1.95	Time			
Filter No.		Meter Temp.	100				
		% H_2O	16	Condensate:			
Amb. Temp. °F	60	C-Factor	.89	tare 200	fin 351		
Bar. Press. "Hg	29.96	Stack Temp.	180	Silica gel:			
Static Press. "H_2O	-.53	Ref. ΔP	1.6	tare 629.5	fin 645.5		

Remarks:

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO lpm
1	1	0	380.046	1.30	1.50	173	73	72	195	68	2	1.0
2	2	5	387.3	1.65	1.85	172	80	74	225	60	2	1.0
3	3	10	347.0	1.65	1.85	175	92	75	260	65	2	1.0
4	4	15	391.1	1.70	1.90	180	103	80	260	65	2	1.0
5	5	20	394.7	1.60	1.80	176	110	84	260	65	2	1.0
6	6	25	398.3	1.30	1.50	170	116	86	240	65	2	1.0
7												
8	1	30/0	402.084	1.15	1.30	178	119	93	265	69	2	1.0
9	2	5	405.7	1.45	1.65	176	121	96	270	60	2	1.0
10	3	10	409.2	1.70	1.90	179	122	96	255	60	2	1.0
11	4	15	413.3	1.90	2.10	180	123	98	240	60	2	1.0
12	5	20	416.8	1.75	1.95	177	128	102	265	60	2	1.0
13	6	25	420.7	1.20	1.40	173	129	104	245	60	2	1.0
14	end	60	423.914									
15												
16												
17												
18			leak check: .053	→ .063	= .010 cfm @ 7" Hg							
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												
33												
34			43.868	1.2329	1.725	175.75		99.00				
35												

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD:

SAMPLES/PROJECT: Kirby - Silsbee DSB - Dryer No. 4

DATE TAKEN: 3-27-92 + 3-28-92 SAMPLING TEAM: Russell - Moore - McKnight

SAMPLES RECOVERED BY: DGR DATE RECOVERED: 3-27-92 + 3-28-92

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: 6

D4R1 Filter D4R3 Acetone
D4R2 Filter
D4R3 Filter
D4R1 Acetone
D4R2 Acetone

gravimetric

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

Recovery by DGR on 3-27 + 28-92
Transport by DGR on 3-3-92
Analysis by DGR on 3-3-92

David G Russell

Filter treatment: Filters oven dried 2 hours at 105° C, desiccated at least 24 hours, weighed to constant weight

FILTERS:

RUN NO.	1	2	3	
FILTER NO.	424	423 425	426	
FILTER TARE, gms	.5681	.5662 .5662	.5673	
1st weighing	.6870	.5989 .6585	.6917	
2nd weighing	.6873	.5987 .6583	.6913	
3rd weighing				
FINAL WEIGHT, gms.	.6873	.5987 .6583	.6913	
NET GAIN, gms.	.1192	.0325 .0921	.1240	

Probe wash treatment: Transferred to a tared beaker, acetone evaporated over low heat, desiccated at least 24 hours, weighed to constant weight.

PROBE WASH:

RUN NO.	1	2	3	
CONTAINER ID	D4R1	D4R2	D4R3	
VOLUME INTACT?	✓	✓	✓	
VOLUME, ml	210	175	180	
TARE WT., gms.	(61) 113.9914	(62) 113.2255	(64) 111.8066	
1st weighing	113.9976	113.2272	111.8103	
2nd weighing	113.9980	113.2273	111.8100	
3rd weighing				
FINAL WEIGHT, gms.	113.9980	113.2273	111.8100	
NET GAIN, gms.	.0066	.0018	.0034	
LESS BLANK, gms.	-.0001	-.0001	-.0001	

PARTICULATE SAMPLE WEIGHT, mg.

RUN NO.	1	2	3	
filter + probe	125.7	126.3	127.3	

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD: FOR BACK HALF EXTRACTION ANALYSIS

SAMPLES/PROJECT: Kirby - Silsbee DSB No. 4 Dryer

DATE TAKEN: 2-27-92 & 2-28-92 SAMPLING TEAM: Russell - Moore - McKnight

SAMPLES RECOVERED BY: DGR DATE RECOVERED: 2-27-92 & 2-28-92

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: 3

D4R1BAK
D4R2BAK } Methylene Chloride extraction / gravimetric
D4R3BAK

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

recovery by DGR on 2-27 + 2-28-92
transport by DGR on 3-3-92 } [illegible]
analysis by DGR on 3-21-92 + 3-28-92

RUN NO.	1	2	3	
CONTAINER ID	D4R1BAK	D4R2BAK	D4R3BAK	
VOLUME INTACT?	✓	✓	✓	
VOLUME, ml	400	400	400	

AQUEOUS FRACTION 3-21-92

TARE WT., gms.	99.0897	112.5402	111.3468	
1st weighing	99.0902	112.5422	111.3473	
2nd weighing	99.0900	112.5423	111.3477	
3rd weighing				
FINAL WEIGHT, gms.	99.0900	112.5423	111.3477	
NET GAIN, gms.	.0003	.0026	.0009	
LESS BLANK, gms.	—	—	—	

ORGANIC FRACTION 3-28-92

TARE WT., gms.	97.5708	105.8211	111.8041	
1st weighing	97.5790	105.8334	111.8126	
2nd weighing	97.5788	105.8334	111.8125	
3rd weighing				
FINAL WEIGHT, gms.	97.5788	105.8334	111.8125	
NET GAIN, gms.	.0080	.0123	.0084	
LESS BLANK, gms.	—	—	—	

BACK HALF PARTICULATE SAMPLE WEIGHT, mg.

Aqueous fraction	0.3	2.1	0.9	
Organic fraction	8.0	12.3	8.4	

Plant Kirby	RUN NO. 1, 2, 3
Source No. 14 Dryer	Date 2-27-92/2-28-92
Test For VOC	Time start 1516/1702/0947
Test Operators Russi	Time end 1618/1812/1048

		Time: 1450/1640/0935			Time: 1640/1825/1035					
FID ANALYZER CALIBRATION DATA	Cylinder Value, ppm	Initial analyzer response			Final analyzer response			Difference ppm		
Zero gas	0	0	0	0	0	0	0	0	0	0
Low-level gas	31.1	31	31	32	30	30	35	1	1	5
Mid-level gas	82.2	83	83	83	83	82	85	0	1	2
High-level gas	830	825	830	825	820	825	800	5	5	25

	el. time min.	FID Reading ppm	FID Range ppm	Sample Pressure mBar	Fuel Pressure psi	Air Pressure psi	Oven Temp C	Line Temp	Chart Speed cm/hr
R1	1516	Strip chart	0-1000	4.0	6.75	12.0	154	255°	20
R2	1702	Strip chart	0-1000	4.0	6.75	12.0	153	260	20
R3	0947	Strip chart	0-1000	4.0	6.75	12.0	153	260	20

DRYER NO. 5

Plant Kirby Forest Industries
Sampling Location No. 5 OSB Dryer
Test For PM/CPM/CO/VOC
Test Operators

RUN No. 1
Date 2-28-92
Time start 1149 end 1250

Meter Box	RAC 591349	No. Sample Pts.	6x2	Gas Analysis	int. duct		Remarks:
Sample Box	No. 1	Minutes/Pt.	5.0	CO_2	1.1	1.0 1.0	
Probe/Pitot	5' inc.			O_2	20.7	20.6 20.6	
Pitot Cp	.84	NOMOGRAPH		CO	NDIR = 35 ppm		
Nozzle Dia.	.196	ΔH@	1.85	Time			
Filter No.		Meter Temp.					
		% H_2O		Condensate:			
Amb. Temp. °F	70	C-Factor		tare 200	fin 355		
Bar. Press. "Hg	29.96	Stack Temp.		Silica gel:			
Static Press. "H_2O	-.57	Ref. ΔP	1.6	tare 631	fin 646		

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO ppm
1	1	0	424.159	1.15	1.35	174	96	93	240	68	2	1.0
2	2	5	427.6	1.60	1.80	174	100	94	225	55	2	1.0
3	3	10	431.2	1.65	1.85	172	109	96	195	60	2	1.0
4	4	15	435.8	1.75	1.95	172	117	97	230	60	2	1.0
5	5	20	438.6	1.40	1.60	174	123	100	225	60	2	1.0
6	6	25	442.4	1.15	1.35	169	127	103	235	61	2	1.0
7												
8	1	30/0	445.427	1.30	1.50	174	128	106	255	65	2	1.0
9	2	5	449.1	1.70	1.90	175	129	107	265	65	2	1.0
10	3	10	452.8	1.80	2.00	176	130	107	260	65	2	1.0
11	4	15	456.6	1.50	2.10	173	131	107	265	65	2	1.0
12	5	20	461.0	1.40	1.60	174	134	109	260	64	2	1.0
13	6	25	464.8	1.35	1.55	171	134	110	270	65	2	1.0
14	end	60	467.856				~~12~~	~~112~~				
15												
16												
17												
18			leak check: .006	→	.064 =	.006 cfm		8" Hg				
19			pitot +ve 6.1									
20			pitot -ve 5.9									
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												
33												
34			43.697	1.2258	1.7125	173.83		111.96				
35												

Plant Kirby Forest Industries
Sampling Location No. 505B Dryer
Test For PM/CPM/CO/VOC
Test Operators Russell / Moore / McKnight

RUN No. 2
Date 2-28-92
Time start 1426 end 1528

Meter Box	RAC591349	No. Sample Pts.	6x2	Gas Analysis	int. ost
Sample Box	No. 1	Minutes/Pt.	5.0	CO_2	1.0 1.0 1.0
Probe/Pitot	5' inc			O_2	20.8 20.8 20.8
Pitot Cp	.84	NOMOGRAPH		CO	
Nozzle Dia.	.196	ΔH@	1.9	Time	
Filter No.		Meter Temp.			
		% H_2O		Condensate:	
Amb. Temp. °F	72	C-Factor		tare 200	fin 358
Bar. Press. "Hg	29.96	Stack Temp.		Silica gel:	
Static Press. "H_2O	-.57	Ref. ΔP	1.65	tare 651	fin 666

Remarks:

Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	lpm CO
1	0	468.217	1.40	1.60	178	95	92	240	60	2	1.0
2	5	471.9	1.55	1.75	175	99	92	260	58	2	1.0
3	10	475.5	1.60	1.80	173	109	95	260	58	2	1.0
4	15	479.3	1.55	1.75	180	113	95	270	62	2	1.0
5	20	482.5	1.60	1.80	175	114	95	265	62	2	1.0
6	25	486.7	1.25	1.45	177	122	97	260	65	2	1.0
1	30/0	489.744	1.40	1.60	172	122	100	270	66	2	1.0
2	5	493.3	1.75	1.95	175	121	100	260	64	2	1.0
3	10	496.8	1.80	2.00	174	124	102	270	69	3	1.0
4	15	501.0	1.70	1.90	169	127	103	255	65	3	1.0
5	20	504.7	1.50	1.70	175	129	105	250	64	3	1.0
6	25	509.1	1.25	1.45	174	133	107	225	66	3	1.0
end	60	511.858									

leak check: .043 → .053 = .010 cfm @ 10" Hg
pitot +ve
pitot -ve 6.6

43.641 1.2346 1.7292 174.75 107.96

Plant Kirby Forest Industries - Silsbee OSB
Sampling Location No. 5 OSB Dryer
Test For PM / CPM / VOC / CO
Test Operators Russell / Moore / McKnight

RUN No. 3
Date 2-28-92
Time start 1611 end 1713

Meter Box	RAC 91349	No. Sample Pts.	6x2	Gas Analysis	int.	exit	
Sample Box	No. 3	Minutes/Pt.	5.0	CO_2	1.0	1.0	1.0
Probe/Pitot	5' inc.			O_2	20.5	20.5	20.5
Pitot Cp	.84	NOMOGRAPH		CO			
Nozzle Dia.	.196	ΔH@	1.85	Time			
Filter No.		Meter Temp.					
		% H_2O		Condensate:	355		
Amb. Temp. °F	70	C-Factor		tare 200	fin ~~255~~		
Bar. Press. "Hg	29.96	Stack Temp.		Silica gel:			
Static Press. "H_2O	-.57	Ref. ΔP	1.65	tare 673.5	fin 689		

Remarks:

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO ppm
1	1	0	512.732	1.25	1.45	176	102	98	250	67	2	1.0
2	2	5	516.5	1.55	1.75	177	105	98	255	55	2	1.0
3	3	10	520.0	1.55	1.75	176	113	101	230	58	2	1.0
4	4	15	523.3	1.60	1.80	176	120	102	230	60	2	1.0
5	5	20	527.2	1.50	1.70	177	126	104	230	60	2	1.0
6	6	25	530.6	1.45	1.65	173	130	106	225	65	2	1.0
7												
8	1	30/0	539.184	1.50	1.70	174	132	109	235	66	2	1.0
9	2	5	538.3	1.75	1.95	176	133	111	270	60	2	1.0
10	3	10	541.8	1.75	1.95	175	134	111	250	60	2	1.0
11	4	15	545.3	1.60	1.80	174	134	111	270	62	2	1.0
12	5	20	549.6	1.60	1.80	173	135	111	245	65	2	1.0
13	6	25	553.5	1.50	1.70	178	135	110	255	65	2	1.0
14	end	60	556.744									
15												
16												
17												
18												
19			leak check:	.096 →	.108 =	.012 cfm	@ 10	" Hg				
20			pitot + vac	63								
21			pitot - vac	8.8								
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												
33								115.46				
34			44.012	1.2439	1.7500	175.42						
35												

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD:

SAMPLES/PROJECT: Kirby - Silsbee DSB - Dryer No. 5

DATE TAKEN: 2-28-92 SAMPLING TEAM: Russell/Moore/McKight

SAMPLES RECOVERED BY: DGR DATE RECOVERED: 2-28-92

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: 6

DSR1 Filt DSR3 Acton
DSR2 Filt
DSR3 Filt
DSR1 Acton
DSR2 Acton

6 gravimetric

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

Recovery on 2-28-92 by DGR
Transport on 3-3-92 by DGR
Analysis on 3-3-92 by DGR

David G. Russell

Filter treatment: Filters oven dried 2 hours at 105° C, desiccated at least 24 hours, weighed to constant weight

FILTERS:

RUN NO.	1	2	3	
FILTER NO.	427	428	429	
FILTER TARE, gms	.5652	.5658	.5678	
1st weighing	.7266	.6929	.7007	
2nd weighing	.7266	.6930	.7007	
3rd weighing				
FINAL WEIGHT, gms.	.7266	.6930	.7007	
NET GAIN, gms.	.1614	.1272	.1329	

Probe wash treatment: Transferred to a tared beaker, acetone evaporated over low heat, desiccated at least 24 hours, weighed to constant weight.

PROBE WASH:

RUN NO.	1	2	3	
CONTAINER ID	DSR1	DSR2	DSR2	
VOLUME INTACT?	✓	✓	✓	
VOLUME, ml	150	210	200	
TARE WT., gms.	(65) 114.7874	(66) 109.8923	(67) 111.4705	
1st weighing	114.7909	109.8956	111.4751	
2nd weighing	114.7912	109.8956	111.4754	
3rd weighing				
FINAL WEIGHT, gms.	114.7912	109.8956	111.4754	
NET GAIN, gms.	.0038	.0023	.0049	
LESS BLANK, gms.	-.0001	-.0001	-.0001	

PARTICULATE SAMPLE WEIGHT, mg.

RUN NO.	1	2	3	
filter + probe	165.1	130.4	137.7	

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD: FOR BACK HALF EXTRACTION ANALYSIS

SAMPLES/PROJECT: Kirby - Silsbee OSB Dryer No. 5

DATE TAKEN: 2-28-92 SAMPLING TEAM: Russell - Moore - McKight

SAMPLES RECOVERED BY: DGR DATE RECOVERED: 2-28-92

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: 3

DSR1 BAK
DSR2 BAK
DSR3 BAK } Methylene chloride extraction

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

recovery by DGR on 2-28-92
transport by DGR on 3-3-92 } [signature]
analysis by DGR on 3-24-92 & 3-28-92

RUN NO.	1	2	3	
CONTAINER ID	DSR1 BAK	DSR2 BAK	DSR3 BAK	
VOLUME INTACT?	✓	✓	✓	
VOLUME, ml	400	400	400	

AQUEOUS FRACTION 3-28-92

TARE WT., gms.	114.8281	98.6806	112.5868	
1st weighing	114.8304	98.6819	112.5877	
2nd weighing	114.8302	98.6815	112.5874	
3rd weighing				
FINAL WEIGHT, gms.	114.8302	98.6815	112.5874	
NET GAIN, gms.	.0021	.0009	.0006	
LESS BLANK, gms.	—	—	—	

ORGANIC FRACTION 3-24-92

TARE WT., gms.	97.0908	104.1100	112.5386	
1st weighing	97.0980	104.1169	112.5471	
2nd weighing	97.0981	104.1164	112.5469	
3rd weighing				
FINAL WEIGHT, gms.	97.0981	104.1164	112.5469	
NET GAIN, gms.	.0073	.0064	.0083	
LESS BLANK, gms.	—	—	—	

BACK HALF PARTICULATE SAMPLE WEIGHT, mg.

Aqueous fraction	2.1	0.9	0.6	
Organic fraction	7.3	6.4	8.3	

Plant Kirby	RUN NO. 1, 2, 3
Source No. 5 Oven	Date 2-28-92
Test For VOC	Time start 1149/1426/1611
Test Operators Russell	Time end 1250/1528/1713

		Time: 1149			Time: 1300					
FID ANALYZER CALIBRATION DATA	Cylinder Value, ppm	Initial analyzer response			Final analyzer response			Difference ppm		
Zero gas	0	0	0	0	0	0	0	0	0	0
Low-level gas	31.1	33	31	31	31	30	30	2	1	1
Mid-level gas	83.2	85	83	83	87	83	89	2	0	6
High-level gas	830	830	830	830	840	840	830	10	10	0

	el. time min.	FID Reading ppm	FID Range ppm	Sample Pressure mBar	Fuel Pressure psi	Air Pressure psi	Oven Temp C	Line Temp	Chart Speed cm/hr
R1	1149	Strip Chart	0-1000	4.0	6.75	12.0	155	259	20
R2	1426	Strip Chart	0-1000	4.0	6.75	12.0	155	259	20
R3	1611	Strip Chart	0-1000	4.0	6.75	12.0	155	259	20

PRESS VENT NO. 1

Plant Kirby Forest Industries
Sampling Location Press Vent No. 1
Test For PM/CPM/CO/VOC
Test Operators Russell / Moore / McKnight

RUN No. 2
Date 3-2-92
Time start 1514 end 1616

Meter Box	RAC 591349	No. Sample Pts.	12x2	Gas Analysis	int / orsat
Sample Box	No. 3	Minutes/Pt.	2.5	CO_2	0.0
Probe/Pitot	5' inc.			O_2	Air
Pitot Cp	.84	NOMOGRAPH		CO	10 ppm NDIR
Nozzle Dia.	.235	ΔH@	1.9	Time	
Filter No.		Meter Temp.			
		% H_2O		Condensate:	
Amb. Temp. °F	74	C-Factor		tare 208	fin 203
Bar. Press. "Hg	30.08	Stack Temp.		Silica gel:	
Static Press. "H_2O	-.12	Ref. ΔP	.59	tare 688	fin 702

Remarks:
AVG VOC = 33.6

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg
1	1	000	053.869	0.62	1.95	98	96	96	150	70	2
2	2	230	056.0	0.64	2.00	97	101	96	145	55	2
3	3	500	057.7	0.45	1.35	110	102	96	135	55	2
4	4	730	060.6	0.37	1.15	100	107	96	140	55	2
5	5	1000	062.0	0.15	0.46	108	109	95	150	55	2
6	6	1230	063.5	0.04	0.13	98	111	96	175	60	2
7	7	1500	064.0	0.36	1.10	95	108	95	185	62	2
8	8	1730	065.2	0.60	1.90	103	108	96	220	58	2
9	9	2000	067.4	0.41	1.25	93	108	94	225	58	2
10	10	2230	068.9	0.50	1.60	96	110	92	225	56	2
11	11	2500	070.8	0.45	1.40	94	113	93	230	58	2
12	12	2730	072.6	0.35	1.15	95	117	92	225	58	2
13											
14	1	30/00	074.014	0.61	1.90	96	121	95	250	60	2
15	2	230	075.9	0.58	1.85	100	122	97	260	60	2
16	3	500	077.4	0.46	1.45	103	123	100	230	61	2
17	4	730	079.6	0.42	1.30	100	124	102	190	58	2
18	5	1000	081.8	0.17	0.54	95	124	102	160	60	2
19	6	1230	082.5	0.05	0.16	94	123	103	160	60	2
20	7	1500	083.4	0.62	1.95	99	124	105	150	60	2
21	8	1730	085.1	0.87	2.70	106	122	106	135	60	2
22	9	2000	086.9	0.90	2.80	101	125	104	130	62	2
23	10	2230	089.5	0.33	1.10	104	128	104	120	58	3
24	11	2500	091.3	0.28	0.86	99	127	105	125	58	3
25	12	2730	092.7	0.30	0.95	100	126	105	100	58	3
26	end	60	093.966								
27											
28											
29			leak check: .063 → .080 = .017 cfm @ 7" Hg								
30			pitot t va 4.4								
31			pitot - va 3.6								
32											
33											
34			40.097	.6360	1.3750	99.33	102.17				
35											

Plant Kirby Forest Industries
Sampling Location No. 1 Press Vent
Test For PM/CPM/CO/VOC
Test Operators Runnels / Moore / McKnight

RUN No. 2
Date 3-2-92
Time start 1631 end 1733

Meter Box	RAC591349	No. Sample Pts.	12x2	Gas Analysis	int. out
Sample Box	No. 1	Minutes/Pt.	2.5	CO_2	
Probe/Pitot	5' inc.			O_2	
Pitot Cp	.84	NOMOGRAPH		CO	
Nozzle Dia.	.235	ΔH@	1.85	Time	
Filter No.		Meter Temp.			
		% H_2O		Condensate:	
Amb. Temp. °F	73	C-Factor		tare 200	fin 204
Bar. Press. "Hg	30.08	Stack Temp.		Silica gel:	
Static Press. "H_2O	-.12	Ref. ΔP	.59	tare 640	fin 652

Remarks:
AVG VOC = 38

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg
1	1	0000	094.402	0.67	2.10	107	109	102	120	65	4
2	2	2330	097.0	0.76	2.40	101	110	102	125	63	5
3	3	5000	099.1	0.55	1.70	100	112	102	135	65	5
4	4	7330	100.7	0.52	1.60	95	110	98	135	65	4
5	5	10000	102.7	0.30	0.92	98	116	100	110	60	4
6	6	12330	104.6	0.04	0.12	100	122	103	100	60	4
7	7	15000	105.1	0.40	1.25	95	119	104	90	60	4
8	8	17330	106.6	0.67	2.05	99	123	104	105	55	2
9	9	20000	108.6	0.58	1.80	99	125	106	135	55	2
10	10	22330	110.3	0.60	1.90	106	130	108	155	55	3
11	11	25000	112.4	0.50	1.55	101	132	109	160	55	3
12	12	27330	114.4	0.34	1.05	105	133	110	180	55	3
13											
14	1	30000	115.669	0.74	2.30	113	130	110	195	60	4
15	2	2330	118.1	0.74	2.30	103	134	111	190	55	4
16	3	5000	120.1	0.39	1.20	97	137	113	195	58	2
17	4	7330	121.7	0.44	1.40	94	137	113	215	58	2
18	5	10000	123.7	0.27	0.85	96	136	113	210	55	2
19	6	12330	124.9	0.05	0.16	95	136	114	215	60	2
20	7	15000	125.6	0.45	1.40	100	135	114	220	62	2
21	8	17330	127.3	0.98	3.10	106	134	114	220	60	2
22	9	20000	129.4	0.84	2.60	100	138	117	215	60	2
23	10	22330	131.8	0.32	1.00	101	140	116	220	60	2
24	11	25000	133.4	0.23	0.73	100	140	117	225	60	2
25	12	27330	134.7	0.26	0.80	93	138	118	230	62	2
26	end	60	135.924								
27											
28											
29			leak check:								
31			pitot ✓								
32			pitot ✓								
33											
34			41.522	.6693	1.5117	100.17	118.63				
35											

Plant Kirby Forest Industries - Silsbee OSB
Sampling Location No. 1 Press Vent
Test For PM/CPM/CO/VOC
Test Operators Russell / Moore / McKnight

RUN No. 3
Date 3-2-92
Time start 1753 end 1854

Meter Box	RAC591349	No. Sample Pts.	12x2	Gas Analysis	int orsat
Sample Box	No. 3	Minutes/Pt.	2.5	CO_2	
Probe/Pitot	5' inc.	NOMOGRAPH		O_2	
Pitot Cp	.84	ΔH@	1.85	CO	NDIR = 10ppm
Nozzle Dia.	.235	Meter Temp.		Time	
Filter No.		% H_2O		Condensate:	
Amb. Temp. °F	68	C-Factor		tare 200	fin 203
Bar. Press. "Hg	30.06	Stack Temp.		Silica gel:	
Static Press. "H_2O	-.12	Ref. ΔP	.59	tare 612	fin 624

Remarks:

AVG VOC = 53.0

Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg
1	000	136.415	0.85	2.65	99	117	112	210	60	2
2	230	138.8	0.85	2.65	109	120	113	225	50	3
3	500	140.9	0.56	1.75	101	122	111	235	50	2
4	730	142.9	0.48	1.50	96	123	111	240	55	2
5	1000	144.4	0.26	0.80	99	127	110	240	55	2
6	1230	145.9	0.04	0.13	103	124	109	250	58	2
7	1500	146.5	0.37	1.15	107	125	109	245	60	2
8	1730	147.9	0.64	2.00	104	126	110	250	55	2
9	2000	149.6	0.54	1.70	96	128	110	250	55	2
10	2230	152.0	0.33	1.05	100	129	109	250	56	2
11	2500	153.4	0.61	1.90	94	131	110	255	55	2
12	2730	154.8	0.50	1.55	93	132	109	260	54	2
1	30/00	156.572	0.90	2.80	96	132	110	255	54	2
2	230	158.8	0.82	2.60	103	136	111	260	55	2
3	500	161.4	0.36	1.10 ~~2.55~~	108	135	111	265	56	3
4	730	162.9	0.34	1.05	99	137	111	250	58	3
5	1000	164.3	0.16	0.50	101	136	111	230	55	3
6	1230	165.4	0.05	0.16	95	133	112	220	55	2
7	1500	166.1	0.54	1.75	97	136	111	230	58	2
8	1730	168.0	0.98	3.10	96	132	112	245	55	2
9	2000	170.2	0.76	2.30	100	136	112	255	55	2
10	2230	172.3	0.27	0.85	105	137	112	250	58	2
11	2500	173.7	0.25	0.78	106	135	113	250	58	2
12	2730	175.1	0.25	0.78	99	136	113	240	58	2
end	60	176.404								

leak check: .093 → .099 = .006 cfm @ 10" Hg
pitot + ✓ @ 4.6
pitot - ✓ @ 5.6

39.989 .1657 1.5250 100.25 120.56

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD:

SAMPLES/PROJECT: Kirby - Silsbee OSB P.Vent No. 1

DATE TAKEN: 3-2-92

SAMPLING TEAM: Russell - Moore - McKnight

SAMPLES RECOVERED BY: RSM

DATE RECOVERED: 3-2-92

SAMPLE ID/ANALYSES REQUIRED:

No. OF CONTAINERS: 6

PV1R1 Filter
PV1R2 Filter
PV1R3 Filter
PV1R1 Acetone
PV1R2 Acetone
PV1R3 Acetone } gravimetric

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

Recovered by RSM on 3-2-92 to DGR
Transport by DGR
Analysis by DGR on 3-5-92 } [signature]

Filter treatment: Filters oven dried 2 hours at 105° C, desiccated at least 24 hours, weighed to constant weight

FILTERS:

RUN NO.	1	2	3	
FILTER NO.	443	444	445	
FILTER TARE, gms	.5679	.5676	.5671	
1st weighing	.5713	.5700	.5691	
2nd weighing	.5713	.5703	.5690	
3rd weighing				
FINAL WEIGHT, gms.	.5713	.5703	.5690	
NET GAIN, gms.	.0034	.0027	.0019	

Probe wash treatment: Transferred to a tared beaker, acetone evaporated over low heat, desiccated at least 24 hours, weighed to constant weight.

PROBE WASH:

RUN NO.	1	2	3	
CONTAINER ID	PV1R1	PV1R2	PV1R3	
VOLUME INTACT?	✓	✓	✓	
VOLUME, ml	150	125	120	
TARE WT., gms.	(68) 112.5385	(69) 112.5844	(70) 113.8317	
1st weighing	112.5404	112.5883	113.8336	
2nd weighing	112.5404	112.5882	113.8332	
3rd weighing				
FINAL WEIGHT, gms.	112.5404	112.5882	113.8332	
NET GAIN, gms.	.0019	.0038	.0015	
LESS BLANK, gms.	-.0001	-.0001	-.0001	

PARTICULATE SAMPLE WEIGHT, mg.

RUN NO.	1	2	3	
filter + probe	5.2	6.4	3.3	

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD: FOR BACK HALF EXTRACTION ANALYSIS

SAMPLES/PROJECT: Kirby - Silsbee DSB Press Vent No. 1

DATE TAKEN: 3-2-92 SAMPLING TEAM: Russell/Moore/McKnight

SAMPLES RECOVERED BY: RSM DATE RECOVERED: 3-2-92

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: 3

PV1R1BAK
PV1R2BAK
PV1R3BAK
} ~~gas~~ methylene chloride extraction / gravimetric

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

recovery by RSM on 3-2-92 to DGR
transport by DGR on 3-3-92
analysis by DGR on 3-21-92 & 3-28-92
} [signature]

RUN NO.	1	2	3	
CONTAINER ID	PV1R 1BAK	PV1R2BAK	PV1R3BAK	
VOLUME INTACT?	✓	✓	✓	
VOLUME, ml	300	300	300	

AQUEOUS FRACTION 3-28-92

TARE WT., gms.	103.1953	104.7572	108.4662	
1st weighing	103.1971	104.7580	108.4687	
2nd weighing	103.1970	104.7575	108.4677	
3rd weighing			108.4675	
FINAL WEIGHT, gms.	103.1970	104.7575	108.4675	
NET GAIN, gms.	.0017	.0003	.0013	
LESS BLANK, gms.	—	—	—	

ORGANIC FRACTION 3-21-92

TARE WT., gms.	114.8233	98.8499	111.4691	
1st weighing	114.8244	98.8503	111.4700	
2nd weighing	114.8243	98.8503	111.4699	
3rd weighing				
FINAL WEIGHT, gms.	114.8243	98.8503	111.4699	
NET GAIN, gms.	.0010	.0004	.0008	
LESS BLANK, gms.	—	—	—	

BACK HALF PARTICULATE SAMPLE WEIGHT, mg.

Aqueous fraction	1.7	0.3	1.3	
Organic fraction	1.0	0.4	0.8	

Plant Kirby	RUN NO. 1, 2, 3
Source No. 1 Press Vent	Date 3-2-92
Test For VOC	Time start 1514/1631/1753
Test Operators Russell	Time end 1616/1733/1854

		Time: 1505/1620/1745			Time: 1620/1740/1900					
FID ANALYZER CALIBRATION DATA	Cylinder Value, ppm	Initial analyzer response			Final analyzer response			Difference ppm		
Zero gas	0	0	0	0	0	4	0	0	4	0
Low-level gas	31.1	31	31	31	31	31	31	0	0	0
Mid-level gas	83.2	83	82	83	80	83	82	0	1	1
High-level gas	830	830	830	835	840	835	830	10	5	5

	el. time min.	FID Reading ppm	FID Range ppm	Sample Pressure mBar	Fuel Pressure psi	Air Pressure psi	Oven Temp C	Line Temp	Chart Speed cm/hr
R1	1514	Strip Chart	0-1000	4.0	6.75	12.0	153	258	20
R2	1631	Strip Chart	0-1000	4.0	6.75	12.0	153	258	20
R3	1854	Strip Chart	0-1000	4.0	6.75	12.0	153	260	20

PRESS VENT NO. 2

Plant: Kirby Forest Industries - Silsbee OSB
Sampling Location: No. 2 Press Vent
Test For: PM/CPM/CO/VOC
Test Operators: Russ / Moore / McKnight

RUN No. 1
Date 3-1-92
Time start 1444 end 1545

Meter Box	RAC591349	No. Sample Pts.	12 x 2	Gas Analysis	int. start
Sample Box	No. 3	Minutes/Pt.	2.5	CO_2	0.0 0.0 0.0
Probe/Pitot	5' inc.	NOMOGRAPH		O_2	Air
Pitot Cp	.84	ΔH@	1.85	CO	
Nozzle Dia.	.235	Meter Temp.		Time	
Filter No.		% H_2O		Condensate:	
Amb. Temp. °F		C-Factor		tare 200	fin 200
Bar. Press. "Hg	30.05	Stack Temp.		Silica gel:	
Static Press. "H_2O	-.12	Ref. ΔP	.6	tare 656	fin 669

Remarks: VOC = 4.5 ppm

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO ppm
1	1	000	800.416	0.78	2.45	103	116	109	240	62	3	1.0
2	2	230	802.6	0.72	2.20	93	118	109	250	60	3	
3	3	500	804.3	0.70	2.20	96	119	109	245	56	2	1.0
4	4	730	807.0	0.31	0.95	94	122	110	255	60	2	
5	5	1000	808.6	0.22	0.66	99	125	113	260	60	2	1.0
6	6	1230	810.0	0.06	0.18	92	126	113	260	60	2	
7	7	1500	810.7	0.36	1.10	98	121	110	270	60	2	1.0
8	8	1730	812.1	0.70	2.20	106	119	108	255	61	2	
9	9	2000	814.3	0.76	2.40	101	122	109	240	61	3	1.0
10	10	2230	816.6	0.51	1.60	97	127	109	260	63	3	
11	11	2500	818.2	0.45	1.40	94	122	109	265	60	3	1.0
12	12	2730	819.9	0.40	1.20	93	124	110	270	60	3	
13												
14	1	30/00	821.415	0.83	2.65	95	128	112	250	60	4	1.0
15	2	230	823.5	0.66	2.05	99	126	112	255	60	4	
16	3	500	825.7	0.43	1.35	98	128	113	270	60	4	1.0
17	4	730	827.5	0.36	1.10	103	132	115	255	62	3	
18	5	1000	829.0	0.13	0.40	96	129	113	225	60	3	1.0
19	6	1230	830.4	0.05	0.15	99	124	110	225	60	3	
20	7	1500	830.9	0.54	1.55	98	121	110	235	64	3	1.0
21	8	1730	832.1	0.86	2.65	109	125	116	255	60	3	
22	9	2000	834.6	0.87	2.70	106	128	112	220	60	3	1.0
23	10	2230	836.9	0.42	1.30	99	133	111	260	60	3	
24	11	2500	838.5	0.45	1.35	102	132	109	235	60	3	1.0
25	12	2730	840.3	0.35	1.20	100	132	110	230	60	3	
26	End	60	841.749									
27												
28												
29			leak check: .057		→ .060	= .003 cfm		7" Hg				
30			pitot + @ 3.9									
31			pitot - @ 6.0									
32												
33			41.333	.6764	1.5413	98.88		117.60				
34												
35												

Plant Kirby Forest Industries
Sampling Location No. 2 Press Vent
Test For PM/CPM/CO/VOC
Test Operators Russell / Moore

RUN No. 2
Date 2-1-92
Time start 1614 end 1715

Meter Box	RAC591349	No. Sample Pts.	12x2	Gas Analysis	int. onset
Sample Box	No. 1	Minutes/Pt.	2.5	CO_2	0.0 0.0 0.0
Probe/Pitot	5' inc.			O_2	Air
Pitot Cp	.84	NOMOGRAPH		CO	NDIR = 10ppm
Nozzle Dia.	.235	ΔH@	1.85	Time	
Filter No.		Meter Temp.			
		% H_2O		Condensate:	
Amb. Temp. °F	78	C-Factor		tare 200 fin 203	
Bar. Press. "Hg	30.05	Stack Temp.		Silica gel:	
Static Press. "H_2O	-.12	Ref. ΔP	.6	tare 644 fin 656	

Remarks:

VOC = 67.0 ppm

Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO ppm
1	000	842.125	0.70	2.20	105	105	105	140	66	2	1.0
2	230	844.1	0.84	2.60	106	110	107	155	50	2	
3	500	846.4	0.57	1.75	98	113	107	140	50	2	1.0
4	730	848.2	0.55	1.70	93	118	107	165	53	2	
5	1000	850.1	0.30	0.91	101	122	110	190	55	2	1.0
6	1230	851.5	0.12	0.37	96	118	108	190	58	2	
7	1500	852.6	0.31	0.92	93	117	104	200	58	2	1.0
8	1730	853.9	0.71	2.20	99	120	109	190	60	2	
9	2000	856.5	0.66	2.05	95	128	110	165	58	2	1.0
10	2230	858.0	0.85	2.60	107	131	110	155	58	2	
11	2500	860.2	0.72	2.20	113	135	112	190	58	2	1.0
12	2730	863.0	0.53	1.65	100	135	113	190	58	2	
1	30/00	864.139	0.93	2.85	114	135	113	180	60	3	1.0
2	230	866.7	0.75	2.30	114	137	114	185	60	3	
3	500	868.4	0.40	1.20	98	138	114	180	58	2	1.0
4	730	870.5	0.44	1.35	96	138	115	170	60	3	
5	1000	872.2	0.15	0.46	100	138	115	180	60	2	1.0
6	1230	873.2	0.06	0.18	101	134	116	190	62	2	
7	1500	874.0	0.57	1.80	99	132	119	175	64	2	1.0
8	1730	875.9	0.95	2.95	100	132	118	225	66	2	
9	2000	878.1	0.73	2.25	92	137	118	225	68	2	1.0
10	2230	880.5	0.39	1.20	NTC *	139	118	230	62	2	
11	2500	882.2	0.36	1.10	NTC *	139	118	235	62	2	1.0
12	2730	883.9	0.35	1.05	109	139	119	240	62	2	
End	60	885.041									

leak check: .047 → .057 = .010 cfm @ 12 "Hg
pitot + ve 8.2
pitot - ve 5.1

42.916 .7089 1.6600 101.32 120.60

Plant Kirby Forest Industries - Silsbee OSB
Sampling Location No. 2 Press Vent
Test For PM/CPM/CO/VOC
Test Operators Russell / Moore / McKnight

RUN No. 3
Date 3-1-92
Time start 1735 end 1836

Meter Box	RAC 591349	No. Sample Pts.	12x2	Gas Analysis	int. orsat
Sample Box	No. 3	Minutes/Pt.		CO_2	0.0 0.0 0.0
Probe/Pitot	5' inc			O_2	Air
Pitot Cp	.84	NOMOGRAPH		CO	NDIR 10 ppm
Nozzle Dia.	.255	ΔH@	1.9	Time	
Filter No.		Meter Temp.			
		% H_2O		Condensate:	
Amb. Temp. °F	68	C-Factor		tare 200	fin 201
Bar. Press. "Hg	30.05	Stack Temp.		Silica gel:	
Static Press. "H_2O	-.12	Ref. ΔP	.60	tare 655	fin 668.5

Remarks:

VOC = 60.5

Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO lpm
1	000	885.716	0.77	2.35	104	117	114	230	68	3	1.0
2	230	888.2	0.64	1.95	94	120	114	250	60	3	
3	500	890.5	0.57	1.75	91	124	114	255	52	3	1.0
4	730	891.6	0.44	1.35	102	119	115	265	52	3	
5	1000	893.9	0.22	0.67	111	121	114	270	52	3	1.0
6	1230	895.0	0.07	0.22	97	127	114	255	52	3	
7	1500	896.4	0.35	1.05	96	125	114	225	52	3	1.0
8	1730	897.7	0.64	2.00	99	126	114	220	52	3	
9	2000	899.5	0.66	2.05	106	128	115	240	52	3	1.0
10	2230	901.4	0.67	2.10	97	128	116	255	53	3	
11	2500	903.3	0.52	1.60	95	134	117	270	54	3	1.0
12	2730	905.4	0.53	1.60	91	135	117	255	52	3	
1	30/00	906.928	0.87	2.70	96	135	116	255	55	4	1.0
2	230	909.5	0.64	1.95	105	136	119	230	55	4	
3	500	911.4	0.49	1.50	100	138	120	245	55	3	1.0
4	730	913.1	0.40	1.25	94	138	118	260	55	3	
5	1000	914.9	0.15	0.46	95	138	121	275	55	2	1.0
6	1230	915.9	0.06	0.18	96	135	123	260	56	2	
7	1500	916.8	0.51	1.55	99	134	125	235	55	2	1.0
8	1730	918.0	0.71	2.20	104	134	120	215	55	2	
9	2000	920.1	0.85	2.60	100	136	121	220	55	2	1.0
10	2230	922.2	0.43	1.30	91	139	121	230	52	2	
11	2500	924.1	0.37	1.15	111	140	120	245	52	2	1.0
12	2730	925.0	0.33	1.00	101	141	120	200	52	2	
end	60	927.420					125				

leak check: .062 → .066 = .004 cfm @ 10" Hg
pitot + ve 3.3
pitot - ve 7.1

41.204 .6798 1.5221 98.96 124.38

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD:

SAMPLES/PROJECT: Kirby - Silsbee OSB Pressvent No. 2

DATE TAKEN: 3-1-92 SAMPLING TEAM: Russell/Moore/McKnight

SAMPLES RECOVERED BY: RSM DATE RECOVERED: 3-1-92

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: 6

PV2R1 Filter PV2R3 Acetone
PV2R2 Filter
PV2R3 Filter
PV2R1 Acetone
PV2R2 Acetone

} gravimetric

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

recovery by RSM on 3-1-92 to DGR
transport by DGR on 3-3-92 &
analysis by DGR on 3-5-92

} [signature]

Filter treatment: Filters oven dried 2 hours at 105° C, desiccated at least 24 hours, weighed to constant weight

FILTERS:

RUN NO.	1	2	3	
FILTER NO.	437	438	439	
FILTER TARE, gms	.5656	.5671	.5667	
1st weighing	.5676	.5688	.5688	
2nd weighing	.5676	.5688	.5687	
3rd weighing				
FINAL WEIGHT, gms.	.5676	.5688	.5687	
NET GAIN, gms.	.0020	.0017	.0020	

Probe wash treatment: Transferred to a tared beaker, acetone evaporated over low heat, desiccated at least 24 hours, weighed to constant weight.

PROBE WASH:

RUN NO.	1	2	3	
CONTAINER ID	PV2R1	PV2R2	PV2R3	
VOLUME INTACT?	✓	✓	✓	
VOLUME, ml	300	300	300	
TARE WT., gms.	(71) 115.8220	(72) 111.3451	(76) 105.8232	
1st weighing	115.8226	111.3477	105.8261	
2nd weighing	115.8226	111.3479	105.8260	
3rd weighing				
FINAL WEIGHT, gms.	115.8226	111.3479	105.8260	
NET GAIN, gms.	-.0006	.0028	.0028	
LESS BLANK, gms.	-.0001	-.0001	-.0001	

PARTICULATE SAMPLE WEIGHT, mg.

RUN NO.	1	2	3	
filter + probe	2.5	4.4	4.7	

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD: FOR BACK HALF EXTRACTION ANALYSIS

SAMPLES/PROJECT: Kirby – Silsbee OSB Press Vent No. 2

DATE TAKEN: 3-1-92 SAMPLING TEAM: Russell / Moore / McKnight

SAMPLES RECOVERED BY: RSM DATE RECOVERED: 3-1-92

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: 3

PV2R1 BAK
PV2R2 BAK
PV2R3 BAK
} methylene chloride extraction – gravimetric

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

Recovery by RSM on 3-1-92 to DGR
transport by DGR on 3-3-92
analysis by DGR on 3-31-92
} [illegible]

RUN NO.	1	2	3	
CONTAINER ID	PV2R1	PV2R2	PV2R3	
VOLUME INTACT?	✓	—	—	
VOLUME, ml	250	250	250	

AQUEOUS FRACTION 3-31-92

TARE WT., gms.	98.6777	97.5706	107.2582	
1st weighing	98.6784	97.5718	107.2593	
2nd weighing	98.6786	97.5717	107.2593	
3rd weighing				
FINAL WEIGHT, gms.	98.6786	97.5717	107.2593	
NET GAIN, gms.	.0009	.0011	.0011	
LESS BLANK, gms.				

ORGANIC FRACTION 3-31-92

TARE WT., gms.	99.0878	98.3978	115.8217	
1st weighing	99.0879	98.3984	115.8223	
2nd weighing	99.0876	98.3983	1115.8220	
3rd weighing				
FINAL WEIGHT, gms.	99.0876	98.3983	115.8220	
NET GAIN, gms.	< 0	.0005	.0003	
LESS BLANK, gms.	—			

BACK HALF PARTICULATE SAMPLE WEIGHT, mg.

Aqueous fraction	9.0	1.1	1.1	
Organic fraction	0	0.5	0.3	

Plant Kirby	RUN NO. 1, 2, 3
Source No. 2 Press Vent	Date 3-1-92
Test For VOC	Time start 1444/1614/1735
Test Operators Russell	Time end 1545/1715/1836

		Time: 1430/1550/1725			Time: 1550/1723/1840					
FID ANALYZER CALIBRATION DATA	Cylinder Value, ppm	Initial analyzer response			Final analyzer response			Difference ppm		
Zero gas	0	0	0	0	0	0	0	0	0	0
Low-level gas	31.1	31	32	30	32	30	34	1	2	4
Mid-level gas	83.2	83	83	83	83	86	83	0	3	0
High-level gas	830	830	830	830	830	850	820	0	20	10

	el. time min.	FID Reading ppm	FID Range ppm	Sample Pressure mBar	Fuel Pressure psi	Air Pressure psi	Oven Temp C	Line Temp	Chart Speed cm/hr
R1	1444	Strip Chart	0-1000	4.0	6.75	12.0	155	260	20
R2	1614	Strip Chart	0-1000	4.0	6.75	12.0	155	257	20
R3	1735	Strip Chart	0-1000	4.0	6.75	12.0	155	258	20

PRESS VENT NO. 3

Plant Kirby Forest Industries - Silsbee DSB
Sampling Location No. 3 Press Vent
Test For PM/CPM/CO/VOC
Test Operators Russell/Moore/McKnight

RUN No. 1
Date 3-2-92
Time start 0938 end 1039

Meter Box	RAC591349	No. Sample Pts.	12x2	Gas Analysis	int.	direct	Remarks:
Sample Box	No. 1	Minutes/Pt.	2.5	CO_2	0.0	0.0	0.0	
Probe/Pitot	5' inc			O_2	Air			
Pitot Cp	.84	NOMOGRAPH		CO	NDIR = 10 ppm			
Nozzle Dia.	.235	ΔH@	1.85	Time				
Filter No.		Meter Temp.					
		% H_2O		Condensate:			
Amb. Temp. °F	70	C-Factor		tare 200	fin 205		VOC = 42.9
Bar. Press. "Hg	30.08	Stack Temp.		Silica gel:			
Static Press. "H_2O	-.13	Ref. ΔP	.59	tare 656	fin 663		

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg
1	1	000	927.682	0.88	2.75	98	84	84	245	60	3
2	2	230	929.9	0.72	2.25	93	86	82	245	58	3
3	3	500	931.9	0.40	1.25	96	91	82	245	62	2
4	4	730	933.8	0.32	0.96	96	96	84	240	60	2
5	5	1000	935.5	0.18	0.57	105	100	86	240	58	2
6	6	1230	936.5	0.06	0.18	98	102	87	245	58	2
7	7	1500	937.3	0.54	1.70	102	104	86	245	56	2
8	8	1730	938.9	0.74	2.40	106	110	88	245	56	2
9	9	2000	941.8	0.70	2.20	104	114	91	245	56	2
10	10	2230	943.3	0.67	2.15	104	117	92	245	58	2
11	11	2500	945.1	0.53	1.70	100	121	94	250	58	2
12	12	2730	947.1	0.47	1.45	95	124	96	250	58	2
13											
14	1	30/00	948.951	0.70	2.20	104	123	98	250	58	2
15	2	230	951.3	0.64	2.00	102	126	100	225	55	2
16	3	500	953.5	0.57	1.80	102	128	100	225	55	2
17	4	730	955.2	0.42	1.30	96	129	103	240	55	2
18	5	1000	956.9	0.17	0.54	98	131	104	245	55	2
19	6	1230	958.5	0.06	0.18	111	130	105	225	52	2
20	7	1500	959.7	0.46	1.40	96	129	106	240	52	2
21	8	1730	961.1	0.62	1.95	101	129	107	245	60	2
22	9	2000	962.9	0.78	2.45	95	131	108	240	60	2
23	10	2230	964.9	0.44	1.40	94	131	108	250	62	2
24	11	2500	966.0	0.45	1.40	96	136	110	245	60	2
25	12	2730	968.0	0.37	1.15	99	136	113	240	60	2
26	end	60	969.477								
27											
28											
29											
30			leak check: .059 → .063 =			.004 cfm @	6" Hg				
31			pitot + side 6.6								
32			pitot - side 5.0								
33											
34			41.795	.6794	1.5554	99.63		104.71			
35											

Plant: Kirby Forest Industries
Sampling Location: No. 3 Press Vent
Test For: PM / CPM / CO / VOC
Test Operators: Russell / Moore / McKnight

RUN No. 2
Date 3-2-92
Time start 1104 end 1205

Meter Box	RAC 59/349	No. Sample Pts.	12 x 2	Gas Analysis	integrated
Sample Box	No. 3	Minutes/Pt.	2.5	CO_2	0.0 0.0 0.0
Probe/Pitot	5' inc.	NOMOGRAPH		O_2	Air
Pitot Cp	.84	ΔH@	1.8	CO	NDIR = 10 ppm
Nozzle Dia.	.235	Meter Temp.		Time	
Filter No.		% H_2O		Condensate:	
Amb. Temp. °F	74	C-Factor		tare 200	fin 205
Bar. Press. "Hg	30.08	Stack Temp.		Silica gel:	
Static Press. "H_2O	-.13	Ref. ΔP	.59	tare 678	fin 686

Remarks:
VOC = 41.5

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg
1	1	000	970.542	0.76	2.40	111	113	105	250	70	4
2	2	230	972.8	0.76	2.40	101	116	105	255	66	4
3	3	500	975.2	0.46	1.45	96	120	105	255	60	4
4	4	730	976.9	0.46	1.45	100	123	106	255	66	4
5	5	1000	978.9	0.20	0.63	109	124	105	260	65	2
6	6	1230	980.0	0.05	0.16	108	124	105	265	62	2
7	7	1500	981.0	0.54	1.70	98	123	106	270	60	2
8	8	1730	982.6	0.65	2.00	96	125	105	245	58	3
9	9	2000	984.2	0.79	2.50	95	127	105	225	58	4
10	10	2230	986.8	0.70	2.20	99	131	106	230	58	4
11	11	2500	988.7	0.61	1.95	103	132	106	230	58	3
12	12	2730	990.6	0.45	1.45	102	134	106	235	58	2
13											
14	1	30/00	992.268	0.65	2.00	93	133	108	260	62	3
15	2	230	994.7	0.63	1.95	98	133	106	265	58	3
16	3	500	996.4	0.40	1.25	97	133	106	260	58	2
17	4	730	997.9	0.39	1.25	106	133	106	245	62	2
18	5	1000	999.5	0.18	0.56	103	132	107	225	62	2
19	6	1230	000.7	0.04	0.12	96	131	107	230	60	2
20	7	1500	001.4	0.42	1.30	111	128	107	195	62	2
21	8	1730	003.0	0.71	2.20	102	129	107	165	62	2
22	9	2000	005.0	0.72	2.30	104	131	108	160	60	2
23	10	2230	007.0	0.36	1.15	107	134	108	160	60	2
24	11	2500	008.6	0.39	1.20	99	134	109	180	60	2
25	12	2730	010.1	0.38	1.20	100	134	110	200	60	2
26	end	60	011.689								
27											
28											
29			leak check: .049 → .061 = .012 cfm @ 6" Hg								
30			pitot pre 5.0								
31			pitot post 7.6								
32											
33											
34			41.147	.6729	1.5321	101.08	117.31				
35											

Plant Kirby Forest Industries
Sampling Location No. 3 Press Vent
Test For PM/CPM/CO/VOC
Test Operators Russell / Moore / McKnight

RUN No. 3
Date 3-2-92
Time start 1231 end 1332

Meter Box	RAC591349	No. Sample Pts.	12x2	Gas Analysis	int. orsat
Sample Box	No.	Minutes/Pt.	2.5	CO_2	0.0
Probe/Pitot	5' inc.			O_2	20.9 Air
Pitot Cp	.84	NOMOGRAPH		CO	NDIR = 10 ppm
Nozzle Dia.	.235	ΔH@	1.85	Time	
Filter No.		Meter Temp.	100		
		% H_2O	<10	Condensate:	
Amb. Temp. °F	74	C-Factor	1.0	tare 200	fin 202
Bar. Press. "Hg	30.08	Stack Temp.	100	Silica gel:	
Static Press. "H_2O	-.13	Ref. ΔP	.59	tare 663	fin 671.5

Remarks:

AVG VOC = 53.7

Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg
1	000	012.228	0.60	1.90	98	114	107	200	66	2
2	230	014.3	0.57	1.75	101	116	110	210	62	2
3	500	016.5	0.32	1.00	101	123	110	190	62	2
4	730	017.6	0.35	1.15	96	125	112	185	62	2
5	1000	019.3	0.23	0.73	95	123	113	220	64	2
6	1230	020.7	0.03	0.10	104	125	114	200	60	2
7	1500	021.2	0.49	1.55	100	123	111	175	62	2
8	1730	022.8	0.74	2.30	95	128	112	145	60	2
9	2000	024.9	0.67	2.10	96	128	109	160	58	2
10	2230	027.0	0.76	2.40	99	131	109	185	58	2
11	2500	029.2	0.58	1.80	104	133	108	200	58	2
12	2730	031.2	0.42	1.30	100	134	110	210	57	2
1	30/00	032.718	0.69	2.20	93	133	112	220	58	2
2	230	035.4	0.70	2.20	101	134	110	210	58	2
3	500	037.0	0.40	1.25	106	136	111	220	58	2
4	730	038.7	0.39	1.25	100	135	110	220	60	2
5	1000	040.2	0.18	0.56	96	140	112	230	60	2
6	1230	041.5	0.05	0.15	96	133	111	230	65	2
7	1500	042.3	0.43	1.30	98	132	112	235	65	2
8	1730	043.9	0.75	2.30	103	135	114	225	62	2
9	2000	045.8	0.73	2.30	100	133	112	215	58	2
10	2230	047.9	0.40	1.25	101	136	113	220	58	2
11	2500	050.0	0.41	1.30	92	140	114	220	60	2
12	2730	051.7	0.40	1.25	100	138	114	220	62	2
end	60	053.229								

leak check: .020 → .027 = .007 cfm @ 9 "Hg
pitot + ve 7.0
pitot - ve 7.0

41.001 .6606 1.4746 98.96 120.79

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD:

SAMPLES/PROJECT: Kirby - Silkbee DCB Pr. Vat 3

DATE TAKEN: 3-2-92 SAMPLING TEAM: Russell - Moore - McKnight

SAMPLES RECOVERED BY: DGR DATE RECOVERED: 3-2-92

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: 6

PV3 R1 Filter
PV3 R2 Filter
PV3 R3 Filter
PV3 R1 Acetone
PV3 R2 Acetone
PV3 R3 Acetone } gravimetric

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

Recovery by RSM to DGR on 3-2-92
Transport by DGR on 3-3-92
Analysis by DGR on 3-5-92
} David G. Russell

Filter treatment: Filters oven dried 2 hours at 105° C, desiccated at least 24 hours, weighed to constant weight

FILTERS:

RUN NO.	1	2	3	
FILTER NO.	440	441	442	
FILTER TARE, gms	.5669	.5680	.5676	
1st weighing	.5669	.5683	.5677	
2nd weighing	.5667	.5684	.5676	
3rd weighing				
FINAL WEIGHT, gms.	.5668	.5684	.5676	
NET GAIN, gms.	0	.0004	0	

Probe wash treatment: Transferred to a tared beaker, acetone evaporated over low heat, desiccated at least 24 hours, weighed to constant weight.

PROBE WASH:

RUN NO.	1	2	3	
CONTAINER ID	PV3R1	PV3R2	PV3R3	
VOLUME INTACT?	—	—	—	
VOLUME, ml	120	120	150	
TARE WT., gms.	(1) 103.1987	(3) 104.6300	(9) 114.8241	
1st weighing	103.2019	104.6333	114.8269	
2nd weighing	103.2018	104.6333	114.8265	
3rd weighing				
FINAL WEIGHT, gms.	103.2018	104.6333	114.8265	
NET GAIN, gms.	.0031	.0033	.0024	
LESS BLANK, gms.	-.0001	-.0001	-.0001	

PARTICULATE SAMPLE WEIGHT, mg.

RUN NO.	1	2	3	
filter + probe	3.0	3.6	2.3	

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD: FOR BACK HALF EXTRACTION ANALYSIS

SAMPLES/PROJECT: Kirby - Silsbee OSB Press Vent No. 3

DATE TAKEN: 3-2-92 SAMPLING TEAM: Russell - Moore - Midkiff

SAMPLES RECOVERED BY: RSM DATE RECOVERED: 3-2-92

SAMPLE ID/ANALYSES REQUIRED: NO. OF CONTAINERS: 3

PV3R1 BAK
PV3R2 BAK } methylene chloride extraction / gravimetric
PV3R3 BAK

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

Received by RSM on 3-2-92 to DGR
Transported by DGR on 3-3-92 } David G. Rowe
Analysis by DGR on 3-31-92

RUN NO.	1	2	3	
CONTAINER ID	PV3R1	PV3R2	PV3R3	
VOLUME INTACT?	✓	✓	✓	
VOLUME, ml	300	250	250	

AQUEOUS FRACTION 4-2-92

TARE WT., gms.	113.2245	112.5383	112.5842	
1st weighing	113.2252	112.5395	112.5858	
2nd weighing	113.2251	112.5391	112.5855	
3rd weighing				
FINAL WEIGHT, gms.	113.2251	112.5391	112.5855	
NET GAIN, gms.	.0006	.0008	.0013	
LESS BLANK, gms.	—	—	—	

ORGANIC FRACTION 3-31-92

TARE WT., gms.	111.5467	111.8045	111.3441	
1st weighing	111.5471	111.8047	111.3453	
2nd weighing	111.5468	111.8050	111.3455	
3rd weighing				
FINAL WEIGHT, gms.	111.5468	111.8050	111.3455	
NET GAIN, gms.	.0001	.0005	.0014	
LESS BLANK, gms.	—	—	—	

BACK HALF PARTICULATE SAMPLE WEIGHT, mg.

Aqueous fraction	0.6	0.8	1.3	
Organic fraction	0.1	0.5	1.4	

Plant Kirby	RUN NO. 1, 2, 3
Source Vent No. 3	Date 9-2-92
Test For VOC	Time start 0938/1104/1231
Test Operators Russ	Time end 1029/1205/1332

		Time: 0940/1055/1210			Time: 1055/1210/1340					
FID ANALYZER CALIBRATION DATA	Cylinder Value, ppm	Initial analyzer response			Final analyzer response			Difference ppm		
Zero gas	0	0	0	0	0	0	0	0	0	0
Low-level gas	31.1	31	31	31	33	32	32	7	1	1
Mid-level gas	83.2	83	83	83	83	88	85	0	5	2
High-level gas	830	830	830	830	835	850	830	5	20	0

	el. time min.	FID Reading ppm	FID Range ppm	Sample Pressure mBar	Fuel Pressure psi	Air Pressure psi	Oven Temp C	Line Temp °F	Chart Speed cm/hr
R1	0938	Strip Chart	0-1000	4.0	6.75	12.0	155	260	20
R2	1104	Strip Chart	0-1000	4.0	6.75	12.0	153	258	20
R3	1231	Strip Chart	0-1000	4.0	6.75	12.0	151	259	20

PRESS VENT NO. 4

Plant Kirby Forest
Sampling Location Press Vent No. 4
Test For PM/CPM/CO/VOC
Test Operators Russell/Moore/McKnight

RUN No. 1
Date 2-29-92
Time start 1220 end 1321

Meter Box	RAC591349	No. Sample Pts.	12 x 2	Gas Analysis	int. orsat
Sample Box	No. 3	Minutes/Pt.	2.5	CO_2	0 0 0
Probe/Pitot	5' inc.			O_2 Air	20.9 20.9 20.9
Pitot Cp	.84	NOMOGRAPH		CO ppm	10 10 10 ppm
Nozzle Dia.	.235	ΔH@	1.85	Time	
Filter No.		Meter Temp.	100		
		% H_2O	<10	Condensate:	
Amb. Temp. °F	78	C-Factor	1.0	tare 200	fin 202
Bar. Press. "Hg	29.93	Stack Temp.	100	Silica gel:	
Static Press. "H_2O	-.11	Ref. ΔP	.595	tare 642	fin 659

Remarks: Dn Calibration
① .236
② .235 } .235
③ .234

VOC = 42.9

Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg
1	000	557.063	0.86	2.65	90	85	83	230	63	2
2	230	558.7	0.50	1.50	89	87	83	250	60	2
3	500	560.6	0.40	1.20	~~90~~ 90	94	83	265	65	3
4	730	562.3	0.38	1.15	90	97	83	250	63	2
5	1000	563.9	0.11	0.32	90	100	85	250	63	2
6	1230	564.7	0.10	0.30	90	102	85	240	63	2
7	1500	565.5	0.54	1.65	88	106	86	230	63	3
8	1730	567.1	0.77	2.35	90	108	88	250	64	3
9	2000	569.3	0.53	1.65	90	113	89	220	60	3
10	2230	571.0	0.53	1.65	90	118	91	230	60	3
11	2500	572.6	0.48	1.45	90	120	92	240	61	3
12	2730	574.6	0.43	1.35	91	122	94	240	62	3
1	30/00	576.050	0.70	2.15	91	122	96	250	62	3
2	230	577.9	0.51	1.45	92	125	97	240	60	3
3	500	579.8	0.34	1.00	91	126	98	250	60	3
4	730	581.3	0.29	0.88	90	127	100	230	60	3
5	1000	582.6	0.08	0.24	93	126	93	210	60	2
6	1230	583.9	0.07	0.22	93	127	95	240	60	2
7	1500	584.6	0.19	0.60	90	127	94	230	60	2
8	1730	585.7	0.54	1.65	91	125	97	230	60	3
9	2000	587.3	0.57	1.75	90	128	99	230	60	3
10	2230	589.3	0.61	1.85	90	130	103	250	63	3
11	2500	591.0	0.50	1.50	90	132	107	240	66	3
12	2730	593.0	0.35	1.00	89	135	108	255	64	2
End	60	594.301								

leak check: .060 → .066 = .006 cfm 7" Hg
pitot +ve 3.3
pitot -ve 3.9

37.238 .6322 1.3088 90.33 104.40

Plant Kirby Forest
Sampling Location
Test For PM/CPM/CO/VOC
Test Operators Russell/Moore/McKnight

RUN No. 2
Date 2-29-92
Time start 1456 end 1609

Meter Box	RAC591349	No. Sample Pts.	12x2	Gas Analysis	integrated
Sample Box	No. 7	Minutes/Pt.	2.5	CO_2	0.0 0.0 0.0
Probe/Pitot	5' inc.	NOMOGRAPH		O_2	Air
Pitot Cp	.84	ΔH@	1.9	CO	
Nozzle Dia.	.235	Meter Temp.		Time	
Filter No.		% H_2O		Condensate:	
Amb. Temp. °F	82	C-Factor		tare 200 fin 203	
Bar. Press. "Hg	29.93	Stack Temp.		Silica gel:	
Static Press. "H_2O	-.11	Ref. ΔP		tare 633 fin 649	

Remarks:
* delay for press drop @ 1535
up @ 1543
changed VOC probe to 3 hole nozzle type
VOC = 22.8

Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO ppm
1	000	594.548	0.87	2.65	88	100	98	170	70	2	1.0
2	230	597.1	0.66	2.05	88	102	98	180	60	2	
3	500	599.0	0.35	1.15	89	107	96	180	60	2	1.0
4	730	600.4	0.32	0.96	89	110	100	210	70	2	
5	1000	602.0	0.11	0.34	90	112	101	220	65	2	1.0
6	1230	602.9	0.06	0.18	89	113	100	225	65	2	
7	1500	603.8	0.56	1.70	89	114	101	240	55	2	1.0
8	1730	605.1	0.85	2.60	89	115	102	245	60	2	
9	2000	607.3	0.64	1.90	89	121	104	250	60	2	1.0
10	2230	609.9	0.40	1.20	89	125	103	250	60	2	
11	2500	611.1	0.45	1.35	88	128	106	250	60	2	1.0
12	2730	612.9	0.36	1.10	92	128	105	250	60	2	
13											
14	1	20/00	614.164	0.60	1.80	93	127	108	240	63	2	1.0
15	2	230	616.0	0.74	2.30	94	128	107	250	60	2	
16	3	500	618.0	0.47	1.45	92	121	109	230	60	2	1.0
17	4	730	621.6	0.18	0.55	96	121	109	230	60	2	
18	5	1000	622.5	0.06	0.18	95	120	109	200	60	2	1.0
19	6	1230	623.9	0.25	0.75	94	119	109	190	65	2	
20	7	1500	624.8	0.59	1.75	96	120	109	150	62	2	1.0
21	8	1730	626.6	0.53	1.65	96	122	109	165	60	2	
22	9	2000	627.7	0.25	0.76	95	125	110	155	59	2	1.0
23	10	2230	628.6	0.52	1.60	97	123	110	150	59	2	
24	11	2500	629.9	0.58	1.75	94	128	112	150	59	2	1.0
25	12	2730	631.8	0.42	1.30	93	128	112	190	60	2	
26	End	60	633.196								
27											
28											
29			leak check: .093 →		.097 =	.004					
			pitot + ve								
31			pitot − ve								
32											
33								112.17			
34			38.648	.6445	1.3758	91.83					
35											

Plant: Kirby Forest Industries
Sampling Location: No. 4 Press Vent
Test For: PM/CPM/CO/VOC
Test Operators: Rhessel/moore/McKnight

RUN No. 3
Date 2-29-93
Time start 1643 end 1744

Meter Box	RAC591349	No. Sample Pts.	12x2	Gas Analysis	int-vent
Sample Box	No.	Minutes/Pt.	2.5	CO_2	0.0 0.0 0.0
Probe/Pitot	5" inc	NOMOGRAPH		O_2	20.8 Air —
Pitot Cp	.84	ΔH@	1.85	CO	
Nozzle Dia.	.235	Meter Temp.		Time	
Filter No.		% H_2O		Condensate:	
Amb. Temp. °F	84	C-Factor		tare 200 fin 200	
Bar. Press. "Hg	29.93	Stack Temp.		Silica gel:	
Static Press. "H_2O	-.11	Ref. ΔP	.6	tare 659.0 fin 681.0	

Remarks: VOC = 42.8

Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO ppm
1	000	633.542	0.86	2.65	93	106	106	265	73	5	1.0
2	230	635.7	0.53	1.65	89	108	104	260	61	3	
3	500	637.8	0.35	1.10	92	110	104	250	60	2	1.0
4	730	639.4	0.28	0.86	94	117	104	230	65	2	
5	1000	641.0	0.15	0.46	95	118	105	230	65	2	1.0
6	1230	642.1	0.08	0.24	90	117	105	250	60	2	
7	1500	642.8	0.59	1.80	90	120	106	235	62	2	1.0
8	1730	644.9	0.88	2.70	89	122	107	245	60	4	
9	2000	646.6	0.60	1.80	94	127	107	265	60	3	1.0
10	2230	648.7	0.46	1.40	95	130	109	250	60	3	
11	2500	650.5	0.44	1.35	94	132	109	230	60	2	1.0
12	2730	652.5	0.31	0.95	94	132	110	235	62	2	
13											
14	1 30/00	653.566	0.73	2.20	95	132	111	240	62	3	1.0
15	230	655.5	0.67	2.10	96	132	111	250	60	3	
16	500	657.8	0.30	0.90	95	135	112	270	62	4	1.0
17	730	659.9	0.25	0.75	94	135	113	260	60	4	
18	1000	661.2	0.09	0.28	94	135	113	245	62	4	1.0
19	1230	662.3	0.07	0.22	95	133	115	215	62	2	
20	1500	662.7	0.36	1.10	90	131	114	235	62	2	1.0
21	1730	664.1	0.77	2.40	92	132	116	240	60	2	
22	2000	666.1	0.59	1.80	92	134	118	200	62	2	1.0
23	2230	667.9	0.57	1.75	95	136	116	225	62	2	
24	2500	669.7	0.50	1.55	94	137	116	245	62	2	1.0
25	2730	671.4	0.44	1.35	96	137	119	270	66	2	
26	end 60	672.979									
27											
28			leak check: .044 ⇒ .050 = .006 cfm @ 8" Hg								
29			pitot + ve 6.6								
30			pitot - ve 7.0								
31											
32											
33											
34		39.437	.6451	1.3900	93.25		118.71				
35											

SAMPLES/PROJECT: Kirby - Silsbee OSB Pro Vent No. 4

DATE TAKEN: 2-29-92 SAMPLING TEAM: Russell - Moore - McKnight

SAMPLES RECOVERED BY: RSM DATE RECOVERED: 2-29-92

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: 6

PV4R1 Filter
PV4R2 Filter PV4R2 Acetone
PV4R3 Filter PV4R3 Acetone } gravimetric
PV4R1 Acetone

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

Recovered 2-29-92 by RSM to DGR
Transported 3-3-92 by DGR
Analyzed 3-5-92 by DGR } [signature]

Filter treatment: Filters oven dried 2 hours at 105° C, desiccated at least 24 hours, weighed to constant weight

FILTERS:

RUN NO.	1	2	3	
FILTER NO.	432	431	433	
FILTER TARE, gms	.5665	.5653	.5679	
1st weighing	.5672	.5677	.5685	
2nd weighing	.5671	.5672	.5685	
3rd weighing				
FINAL WEIGHT, gms.	.5671	.5677	.5685	
NET GAIN, gms.	.0006	.0024	.0006	

Probe wash treatment: Transferred to a tared beaker, acetone evaporated over low heat, desiccated at least 24 hours, weighed to constant weight.

PROBE WASH:

RUN NO.	1	2	3	
CONTAINER ID	PV4R1	PV4R2	PV4R3	
VOLUME INTACT?	✓	—	—	
VOLUME, ml	150	180	210	
TARE WT., gms.	(22) 99.0862	(26) 98.6772	(27) 98.8502	
1st weighing	99.0921	98.6813	98.8537	
2nd weighing	99.0923	98.6810	98.8536	
3rd weighing				
FINAL WEIGHT, gms.	99.0923	98.6810	98.8536	
NET GAIN, gms.	.0061	.0038	.0034	
LESS BLANK, gms.	-.0001	-.0001	-.0001	

PARTICULATE SAMPLE WEIGHT, mg.

RUN NO.	1	2	3	
filter + probe	6.6	6.1	3.9	

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD.

Back Half Agnew

SAMPLES/PROJECT: PV 4

DATE TAKEN: _____ SAMPLING TEAM: _____

SAMPLES RECOVERED BY: _____ DATE RECOVERED: _____

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: _____

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

Filter treatment: Filters oven dried 2 hours at 105° C, desiccated at least 24 hours, weighed to constant weight

FILTERS:

RUN NO.				
FILTER NO.				
FILTER TARE, gms				
1st weighing				
2nd weighing				
3rd weighing				
FINAL WEIGHT, gms.				
NET GAIN, gms.				

Probe wash treatment: Transferred to a tared beaker, acetone evaporated over low heat, desiccated at least 24 hours, weighed to constant weight.

PROBE WASH:

RUN NO.				
CONTAINER ID				
VOLUME INTACT?				
VOLUME, ml				
TARE WT., gms.	(25) 97.0874	(27) 98.8474	(29) 98.3921	
1st weighing				
2nd weighing				
3rd weighing				
FINAL WEIGHT, gms.	97.0882	98.8500	98.3945	
NET GAIN, gms.	.0008	.0026	.0024	
LESS BLANK, gms.				

PARTICULATE SAMPLE WEIGHT, mg.

RUN NO.				
filter + probe	.8	2.6	2.4	

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD: FOR BACK HALF EXTRACTION ANALYSIS

SAMPLES/PROJECT: Kirby - Slater OSB Press Vent No. 4

DATE TAKEN: 2-29-92 SAMPLING TEAM: Russell - Moore - McKnight

SAMPLES RECOVERED BY: RSM DATE RECOVERED: 2-29-92

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: 3

PV4 R1 BAK
PV4R2 BAK } methylene chloride extraction / gravimetric
PV4R3 BAK

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

Recovered by RSM on 2-29-92
transported by DGR on 3-3-92 } David G. Russell
analysis by DGR on 3-31-92

RUN NO.	1	2	3	
CONTAINER ID	PV4R1BAK	PV4R2BAK	PV4R3BAK	
VOLUME INTACT?	✓	✓	✓	
VOLUME, ml	300	300	300	

AQUEOUS FRACTION 4-2-92

TARE WT., gms.	97.0874	98.8474	98.3921	
1st weighing	97.0889	98.8502	98.3957	
2nd weighing	97.0880	98.8500	98.3945	
3rd weighing	97.0882		98.3945	
FINAL WEIGHT, gms.	97.0882	98.8500	98.3945	
NET GAIN, gms.	.0008	.0026	.0024	
LESS BLANK, gms.	.0008	.0026	.0024	

ORGANIC FRACTION 3-31-92

TARE WT., gms.	114.7883	109.8912	113.8307	
1st weighing	114.7883	109.8919	113.8326	
2nd weighing	114.7887	109.8923	113.8321	
3rd weighing				
FINAL WEIGHT, gms.	114.7887	109.8923	113.8321	
NET GAIN, gms.	.0004	.0011	.0014	
LESS BLANK, gms.	—	—	—	

BACK HALF PARTICULATE SAMPLE WEIGHT, mg.

Aqueous fraction	0.8	2.6	2.4	
Organic fraction	0.4	1.1	1.4	

Plant Kirby	RUN NO. 1, 2, 3.
Source No 4 Press Vent	Date 2-25-92
Test For VOC	Time start 1220/1456/1643
Test Operators Russ	Time end 1321/1609/1744

		Time: 1210/1325			Time: 1325/1625					
FID ANALYZER CALIBRATION DATA	Cylinder Value, ppm	Initial analyzer response			Final analyzer response			Difference ppm		
Zero gas	0	0	0	0	0	0	0	0	0	0
Low-level gas	31.1	31	31	30	31	30	35	0	1	5
Mid-level gas	83.2	83	83	82	86	82	85	3	1	3
High-level gas	830	830	830	830	840	830	825	10	0	5

	el. time min.	FID Reading ppm	FID Range ppm	Sample Pressure mBar	Fuel Pressure psi	Air Pressure psi	Oven Temp C	Line Temp	Chart Speed cm/hr
R1	1220	Strip Chart	0-1000	4.0	6.75	12.0	151	258	20
R2	1456	Strip Chart	0-1000	4.0	6.75	12.0	153	258	20
R3	1643	Strip Chart	0-1000	4.0	6.75	12.0	151	259	20

PRESS VENT NO. 5

Plant Kirby Forest Industries
Sampling Location No. 5
Test For PM/CPM/CO/VOC
Test Operators Russell/Moore/McKnight

RUN No. 1
Date 3-1-92
Time start 0953 end 1054

Meter Box	RAC 591349	No. Sample Pts.	12 x 2	Gas Analysis	int. avg
Sample Box	No. 1	Minutes/Pt.	2.5	CO_2	0.0 0.0 0.0
Probe/Pitot	S'inc.	NOMOGRAPH		O_2	Air
Pitot Cp	.84	ΔH@	1.85	CO	NDIR = 5ppm
Nozzle Dia.	.235	Meter Temp.		Time	
Filter No.		% H_2O		Condensate:	
Amb. Temp. °F	78	C-Factor		tare 200	fin 198
Bar. Press. "Hg	30.04	Stack Temp.		Silica gel:	
Static Press. "H_2O	-.08	Ref. ΔP		tare 641	fin 659

Remarks:
VOC = 25.8

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO ppm
1	1	000	673.248	0.67	2.10	93	84	82	100	66	2	1.0
2	2	230	675.4	0.72	2.25	97	86	82	135	64	2	
3	3	500	677.3	0.47	1.45	97	90	82	145	65	2	1.0
4	4	730	679.0	0.43	1.30	91	90	83	170	64	2	
5	5	1000	680.6	0.20	0.60	97	98	84	200	65	2	1.0
6	6	1230	681.8	0.07	0.22	93	101	86	220	68	2	
7	7	1500	682.7	0.47	1.45	90	100	86	225	67	2	1.0
8	8	1730	684.0	0.84	2.50	93	102	88	205	59	2	
9	9	2000	685.8	0.63	2.10	98	106	85	210	55	2	1.0
10	10	2230	688.1	0.63	2.10	95	110	88	215	55	2	
11	11	2500	689.8	0.56	1.75	92	115	91	220	55	2	1.0
12	12	2730	691.6	0.40	1.20	96	117	91	225	55	2	
13												
14	1	30/00	693.086	0.97	3.00	100	114	95	230	55	2	1.0
15	2	230	695.5	0.78	2.35	102	122	96	230	60	2	
16	3	500	697.7	0.54	1.65	94	126	99	235	59	2	1.0
17	4	730	699.5	0.35	1.05	93	127	99	235	55	2	
18	5	1000	701.0	0.21	0.63	90	127	101	240	58	2	1.0
19	6	1230	702.2	0.06	0.18	95	126	102	245	60	2	
20	7	1500	703.2	0.61	1.85	91	132	105	250	60	2	1.0
21	8	1730	704.9	0.96	3.00	94	127	105	245	59	2	
22	9	2000	707.6	0.97	3.00	99	131	105	245	59	2	1.0
23	10	2230	709.6	0.54	1.65	95	134	105	250	59	2	
24	11	2500	711.5	0.48	1.50	93	135	107	245	60	2	1.0
25	12	2730	713.2	0.34	1.05	90	135	108	245	60	2	
26	End	60	714.639									
27												
28												
29			leak check: .036 → .049 = .013 cfm @ 8" Hg									
30			pitot + ve 3.3									
31			pitot - ve 3.9									
32												
33												
34			41.391	.7060	1.6638	94.50		103.96				
35												

Plant Kirby Forest Industries
Sampling Location No. 5 Press Vent
Test For PM/CPM/VOC/CO
Test Operators Russell/Moore/McKnight

RUN No. 2
Date 3-1-92
Time start 1119 end 1220

Meter Box	RAC 591349	No. Sample Pts.	12x2	Gas Analysis	int. orsat
Sample Box	No. 3	Minutes/Pt.	2.5	CO_2	0 0 0
Probe/Pitot	5' inc.			O_2	20.8 Air Air
Pitot Cp	.84	NOMOGRAPH		CO	NDIR = 10ppm
Nozzle Dia.	.235	ΔH@	1.8	Time	
Filter No.		Meter Temp.			
		% H_2O		Condensate:	
Amb. Temp. °F	80	C-Factor		tare 200 fin 201	
Bar. Press. "Hg	30.04	Stack Temp.		Silica gel:	
Static Press. "H_2O	-.08	Ref. ΔP	.6	tare 627.0 fin 636.5	

Remarks:

39.0

Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO ppm
1	000	715.046	0.83	2.60	93	112	106	270	70	4	1.0
2	230	717.3	0.74	2.30	96	111	105	250	61	4	
3	500	719.7	0.32	0.96	92	117	106	225	60	2	1.0
4	730	721.1	0.31	0.94	101	117	107	230	60	2	
5	1000	722.8	0.17	0.50	100	114	105	260	63	2	1.0
6	1230	723.8	0.06	0.18	93	118	104	265	60	2	
7	1500	724.5	0.58	1.75	95	116	104	275	60	2	1.0
8	1730	726.1	0.56	1.70	93	117	104	260	60	3	
9	2000	728.2	0.80	2.40	100	119	104	235	53	3	1.0
10	2230	730.1	0.70	2.10	95	121	104	205	52	4	
11	2500	732.2	0.48	1.50	94	121	104	225	52	4	1.0
12	2730	734.2	0.49	1.50	91	126	105	235	55	2	
1	30/00	735.527	0.83	2.60	94	126	108	250	55	4	1.0
2	230	737.9	0.74	2.30	91	128	108	250	57	4	
3	500	740.0	0.43	1.35	97	132	109	270	55	4	1.0
4	730	742.0	0.32	0.96	90	132	111	245	59	4	
5	1000	743.3	0.14	0.43	95	134	112	230	55	2	1.0
6	1230	744.5	0.07	0.22	93	151	109	225	58	2	
7	1500	745.5	0.56	1.70	99	128	109	215	60	2	1.0
8	1730	747.3	0.82	2.50	95	126	111	230	60	2	
9	2000	749.3	0.98	3.00	99	130	110	250	60	2	1.0
10	2230	752.1	0.57	1.70	97	133	110	265	60	2	
11	2500	753.8	0.55	1.70	90	133	111	270	60	2	1.0
12	2730	755.7	0.55	1.70	90	134	111	260	60	2	
End	60	757.217									

leak check @ .099 → .108 = .009 cfm @ 8" Hg
pitot +ve 5.3
pitot -ve 6.9

43.71 .6958 1.6079 94.71 115.48

Plant: Kirby Forest Industries
Sampling Location: No. 5 Press Vent
Test For: PM/CPM/CO/VOC
Test Operators: Russell/Moore/McKnight

RUN No. 3
Date 3-1-92
Time start 1321 end 1422

Meter Box	RAC 591349	No. Sample Pts.	12 x 2	Gas Analysis	int. bact
Sample Box	No. 1	Minutes/Pt.	2.5	CO_2	0.0 0.0 0.0
Probe/Pitot	5' inc.	NOMOGRAPH		O_2	20.8 — —
Pitot Cp	.84	ΔH@	1.85	CO	10 ppm
Nozzle Dia.	.235	Meter Temp.		Time	
Filter No.		% H_2O		Condensate:	
Amb. Temp. °F	80	C-Factor		tare 200	fin 200
Bar. Press. "Hg	30.04	Stack Temp.		Silica gel:	
Static Press. "H_2O	-.08	Ref. ΔP	.6	tare 643.5	fin 657.5

Remarks:
VOC = 32.9

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO ppm
1	1	000	757.532	0.72	2.20	100	100	98	110	67	2	1.0
2	2	230	759.9	0.73	2.25	97	101	99	120	69	2	
3	3	500	761.8	0.41	1.25	95	102	101	125	65	2	1.0
4	4	730	763.0	0.50	1.55	103	111	101	160	65	2	
5	5	1000	765.7	0.26	0.80	100	113	101	180	65	2	1.0
6	6	1230	766.6	0.06	0.18	96	117	104	195	65	2	
7	7	1500	767.3	0.46	1.40	95	120	104	220	65	2	1.0
8	8	1730	769.0	0.67	2.10	97	121	106	215	64	2	
9	9	2000	771.1	0.77	2.40	92	125	105	230	59	2	1.0
10	10	2230	773.3	0.75	2.30	99	129	107	240	58	2	
11	11	2500	775.2	0.66	2.05	95	132	109	245	58	2	1.0
12	12	2730	777.3	0.37	1.15	94	136	109	250	58	2	
13									~~250~~	~~62~~	~~2~~	
14	1	30/00	779.183	0.79	2.40	99	136	111	250	62	2	1.0
15	2	230	781.4	0.68	2.10	99	136	111	225	55	2	
16	3	500	783.5	0.36	1.10	92	139	114	240	55	2	1.0
17	4	730	785.1	0.39	1.15	95	138	114	240	55	2	
18	5	1000	786.6	0.20	0.60	103	136	116	230	55	2	1.0
19	6	1230	787.8	0.05	0.15	100	135	114	230	58	2	
20	7	1500	788.7	0.50	1.50	95	139	116	235	60	2	1.0
21	8	1730	790.1	0.97	3.00	96	136	120	230	60	2	
22	9	2000	792.5	0.78	2.40	106	138	117	225	62	2	1.0
23	10	2230	795.0	0.55	1.70	98	139	118	240	59	2	
24	11	2500	796.5	0.52	1.60	94	141	117	250	60	2	1.0
25	12	2730	798.3	0.48	1.50	94	142	118	245	60	2	
26	End	60	799.977									
27												
28												
29												
31												
32												
33												
34			42.445	.7062	1.6179	97.25		118.69				
35												

Leak check: .092 → .105 = .013 cfm @ 10" Hg
pitot +ve 6.9
pitot -ve 7.8

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD:

SAMPLES/PROJECT: Kirby-Silsbee OSB Permit No. 5

DATE TAKEN: 3-1-92 SAMPLING TEAM: Russell/Munn/McKnight

SAMPLES RECOVERED BY: RSM DATE RECOVERED: 3-1-92

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: 6

PVS R1 Filt
PVS R2 Filt
PVS R3 Filt
PVS R1 Acetone
PVS R2 Acetone
PVS R3 Acetone } gravimetric

CUSTODY EXCHANGES: *(declare purpose, date and time, personnel)*

Recovered by RSMun 3-1-92 to DGR
transported by DGR on 3-3-92
analysis by DGR on 3-5-92 } David G. Russell

Filter treatment: Filters oven dried 2 hours at 105° C, desiccated at least 24 hours, weighed to constant weight

FILTERS:

RUN NO.	1	2	3	
FILTER NO.	434	435	436	
FILTER TARE, gms	.5659	.5667	.5658	
1st weighing	.5666	.5664	.5655	
2nd weighing	.5666	.5663	.5655	
3rd weighing				
FINAL WEIGHT, gms.	.5666	.5663	.5656	
NET GAIN, gms.	.0007	-.0004	-.0002	

Probe wash treatment: Transferred to a tared beaker, acetone evaporated over low heat, desiccated at least 24 hours, weighed to constant weight.

PROBE WASH:

RUN NO.	1	2	3	
CONTAINER ID	PVS R1	PVS R2	PVS R3	
VOLUME INTACT?	✓	✓	✓	
VOLUME, ml	100	150	150	
TARE WT., gms.	(29) 98.3960	(31) 95.7680	(32) 97.5695	
1st weighing	98.3989	95.7684	97.5735	
2nd weighing	98.3988	95.7688	97.5730	
3rd weighing				
FINAL WEIGHT, gms.	98.3988	95.7688	97.5730	
NET GAIN, gms.	.0028	.0008	.0035	
LESS BLANK, gms.	-.0001	-.0001	-.0001	

PARTICULATE SAMPLE WEIGHT, mg.

RUN NO.	1	2	3	
filter + probe	3.4	0.3	3.2	

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD: FOR BACK HALF EXTRACTION ANALYSIS

SAMPLES/PROJECT: Kirby - Silsbee DSB Press Vat No. 5

DATE TAKEN: 3-1-92 SAMPLING TEAM: Russell/Moore/McKnight

SAMPLES RECOVERED BY: RSM DATE RECOVERED: 3-1-92

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: 3

~~PVSR~~ PVSR1 BAK
PVSR2 BAK
PVSR3 BAK
} meth-fore chloride / gravimetric

CUSTODY EXCHANGES: (declare purpose, date and time, personnel)

Recovery by RSM on 3-1-92 to DGR
transported by DGR on 3-3-92
analysis by DGR on 3-31 + 4-2-92
} Daniel G. Rum

RUN NO.	1	2	3	
CONTAINER ID	PVSR1BAK	PVSR2BAK	PVSR3BAK	
VOLUME INTACT?	—	—	—	
VOLUME, ml	250	250	250	

AQUEOUS FRACTION 4-2-92

TARE WT., gms.	111.8028	114.7843	109.8903	
1st weighing	111.8026	114.7864	109.8921	
2nd weighing	111.8033	114.7864	109.8920	
3rd weighing				
FINAL WEIGHT, gms.	111.8033	114.7864	109.8920	
NET GAIN, gms.	.0005	.0021	.0017	
LESS BLANK, gms.	—	—	—	

ORGANIC FRACTION 3-31-92

TARE WT., gms.	97.0921	105.8234	104.6318	
1st weighing	95.0029	105.8241	104.6335	
2nd weighing	95.0925	105.8236	104.6336	
3rd weighing				
FINAL WEIGHT, gms.	95.0925	105.8236	104.6336	
NET GAIN, gms.	.0004	.0002	.0018	
LESS BLANK, gms.	—	—	—	

BACK HALF PARTICULATE SAMPLE WEIGHT, mg.

Aqueous fraction	0.5	2.1	1.7	
Organic fraction	0.4	0.2	1.8	

Plant Kirby	RUN NO. 1, 2, 3
Source No. 1 S Press Vent	Date 3-1-92
Test For VOC	Time start 0953/1119/1321
Test Operators Russer	Time end 1054/1220/1423

		Time: 0810/1100/1230			Time: 1100/1230/1425					
FID ANALYZER CALIBRATION DATA	Cylinder Value, ppm	Initial analyzer response			Final analyzer response			Difference ppm		
Zero gas	0	0	0	0	0	0	0	0	0	0
Low-level gas	~~83~~ 31.1	31	31	30	31	30	31	0	1	1
Mid-level gas	83.2	83	82	82	82	83	85	1	1	2
High-level gas	830	830	835	830	835	840	830	5	5	0

	el. time min.	FID Reading ppm	FID Range ppm	Sample Pressure mBar	Fuel Pressure psi	Air Pressure psi	Oven Temp C	Line Temp	Chart Speed cm/hr
R1	0953	strip chart	0-1000	4.0	6.75	12.0	155	260	20
R2	1119	strip chart	0-1000	4.0	6.75	12.0	155	260	20
R3	1321	strip chart	0-1000	4.0	6.75	12.0	155	258	20

APPENDIX B: CALIBRATION DATA

DRY GAS METER CALIBRATION

Meter ID Rac 591349 Date 2/22/92

Calibration Method DGM/DGM By DGR

Calibration Meter ID 651729 Pbar 29.56

Vac	DH	Time	Calibrating Meter			Field Meter						Y	Q	K	DH@
			Vi	Vf	Temp	Vi	Vf	Temp in		Temp out					
			cf	cf	F	cf	cf	initial	final	initial	final				
1	4.00	9.17	437.136	447.068	68	718.602	728.779	72	95	71	74	.9729	1.2048	0.744	1.67
1	3.00	10.6	447.068	456.814	66	728.779	738.918	95	109	74	81	.9853	1.0177	0.72	1.77
1	2.00	12.8	456.814	466.268	65	738.918	748.929	108	113	82	88	.9864	0.8309	0.712	1.81
1	1.50	15.6	466.268	476.154	66	748.929	759.548	113	118	87	95	.9813	0.733	0.72	1.78
1	1.00	17.3	476.154	485.584	68	759.548	769.651	117	118	95	100	.9887	0.6315	0.753	1.63
	Average											.9829			1.73

Y = [Vcal)(Pbar)(Tdgm)]/[(Vdgm)(Pm)(Tcal)]
K = Q(sqrt((Pm Mm)/((Tm out)(DH))
Q = ((Vmi-Vmf)/min.)(Tm,out/Tm,avg)(Y)
DH@ = 0.921/K^2

WHERE:

Y = Meter correction factor
Vcal = Volume of gas through calibrating meter, cubic feet
Vdgm = Volume of gas through field dry gas meter, cubic feet
Pbar = Barometric pressure, in. Hg
Pm = Meter pressure, (Pbar + DH/13.6)
Tdgm = Average dry gas meter temp., degrees F
Tcal = Temperature of gas at calibrating meter

Meter ID Rac 591349 Date 3/5/92

Calibration Method DGM/DGM By DGR

Calibration Meter ID 651729 Pbar 29.68

Vac	DH	Time	Calibrating Meter			Field Meter						Y	Q	K	DH@
			Vi	Vf	Temp	Vi	Vf	Temp in		Temp out					
			cf	cf	F	cf	cf	initial	final	initial	final				
8	1.90	15	485.493	496.374	71	176.574	187.856	71	97	71	76	.9662	0.8222	0.735	1.70
8	1.90	15.5	496.374	507.618	69	187.856	199.657	95	112	76	85	.9817	0.8128	0.721	1.77
8	1.90	15.3	507.618	518.662	69	199.657	211.416	109	116	86	92	.983	0.8261	0.726	1.75
	Average											.9769			1.74

Y = [Vcal)(Pbar)(Tdgm)]/[(Vdgm)(Pm)(Tcal)]

K = Q(sqrt((Pm Mm)/((Tm out)(DH))

Q = ((Vmi-Vmf)/min.)(Tm,out/Tm,avg)(Y)

DH@ = 0.921/K^2

WHERE:

Y = Meter correction factor
Vcal = Volume of gas through calibrating meter, cubic feet
Vdgm = Volume of gas through field dry gas meter, cubic feet
Pbar = Barometric pressure, in. Hg
Pm = Meter pressure, (Pbar + DH/13.6)
Tdgm = Average dry gas meter temp., degrees F
Tcal = Temperature of gas at calibrating meter

THERMOMETER/THERMOCOUPLE CALIBRATION

Date: 2-27-92 By: [illegible]

Reference Thermometer ASTM Hg /glass 20°-760°F

Last Service

Field Thermometer	Temp. Source	Reference Temperature	Field Therm. Temperature	% error, absolute
5' T'couple Omega 650	No. 4 Omega Stds	177 ~~180~~ °F	180°F	<1
Meter In Omega 650	VAN Amb.	79	80	<1
Meter Out Omega 650	VAN Amb.	79	80	<1
Impinger out Bimetal-dial	VAN Amb.	79	79	—
Sample Box Bimetal-dial	Box No. 3	266	265	<1

PITOT TUBE GEOMETRY CALIBRATION

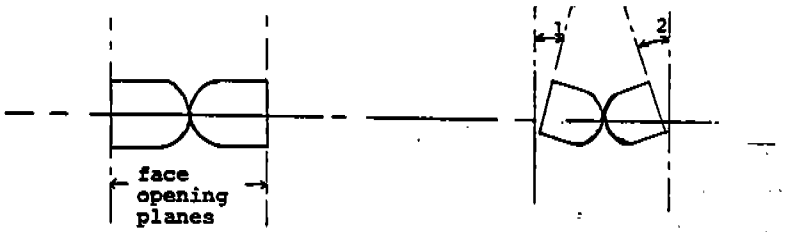
Pitot tube/probe identification: 5' inc. Date Checked: 2-24-92 By: OGR

I. Pitot tubes having the following geometric characteristics are assigned a pitot tube coefficient of 0.84.

1. Face openings perpendicular to transverse axis: ($\alpha 1$ and $\alpha 2 < 10^0$)

$\alpha 1$ = 0

$\alpha 2$ = 0

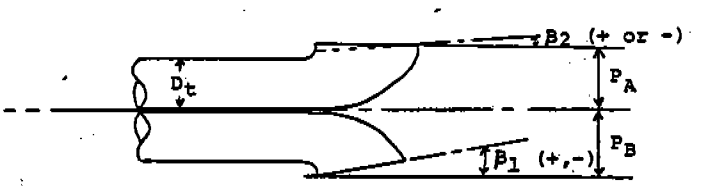


2. Face openings parallel to longitudinal axis: (β_1 and $\beta_2 < 5^0$; $P = 1.05\ D_t$ to $1.50\ D_t$; $P_A = P_B$)

D_t = .375" β_1 = 0

P_A = .46" β_2 = 0

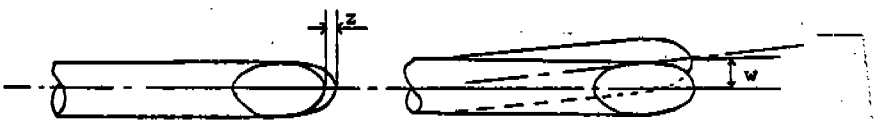
P_B = .46"



3. Both legs equal length and centerline coincident ($z < .125$ inch; $w < .031$ inch)

z = 0

w = 0



PITOT/PROBE CLEARANCE CHECK:

Nozzle ID: .196 Nozzle dia: .196 Date: 2-24-92

II. Pitot/probe/nozzle assemblies have the same Cp as the isolated Pitot tube when the following conditions exist.

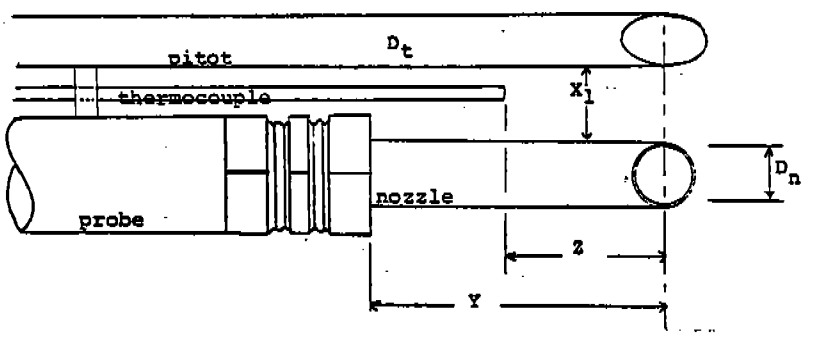
1. $D_t > .188$ & $< .375$ inch D_t = .375"

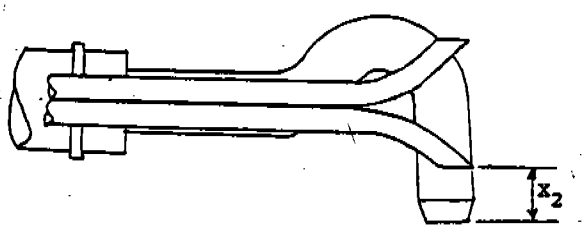
2. $X_1 \geq .75$ inch X_1 = .95"

3. $X_2 \geq 0$ inch X_2 = .30"

4. $Y \geq 3.0$ inch Y = 6.25"

5. $z \geq 2.0$ inch z = 2.25"





PITOT TUBE GEOMETRY CALIBRATION

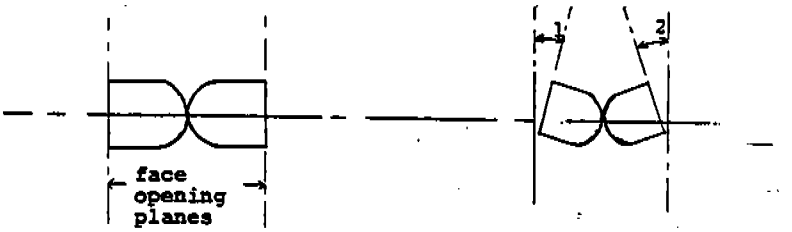
Pitot tube/probe identification: 5' inc Date Checked: 2-24-92 By: DGR

. Pitot tubes having the following geometric characteristics are assigned a pitot tube coefficient of 0.84.

1. Face openings perpendicular to transverse axis: ($\alpha 1$ and $\alpha 2 < 10^0$)

$\alpha 1$ = 0

$\alpha 2$ = 0

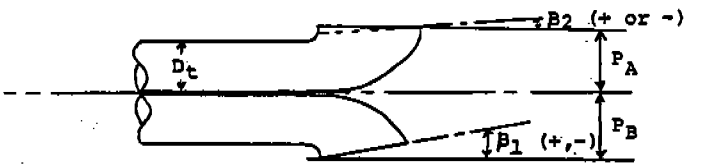


2. Face openings parallel to longitudinal axis: (β_1 and $\beta_2 < 5^0$; $P = 1.05\ D_t$ to $1.50\ D_t$; $P_A = P_B$)

D_t = .375 β_1 = 0

P_A = .46 β_2 = 0

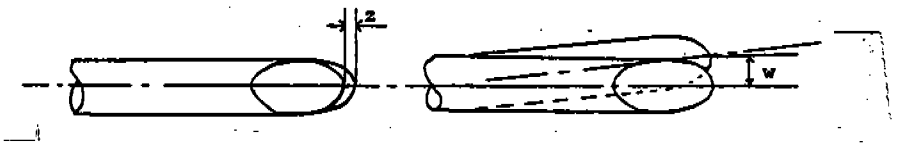
P_B = .46



3. Both legs equal length and centerline coincident ($z < .125$ inch; $w < .031$ inch)

z = 0

w = 0



PITOT/PROBE CLEARANCE CHECK:

Nozzle ID: .235 Nozzle dia: .235" Date: 2-25-92

II. Pitot/probe/nozzle assemblies have the same Cp as the isolated Pitot tube when the following conditions exist.

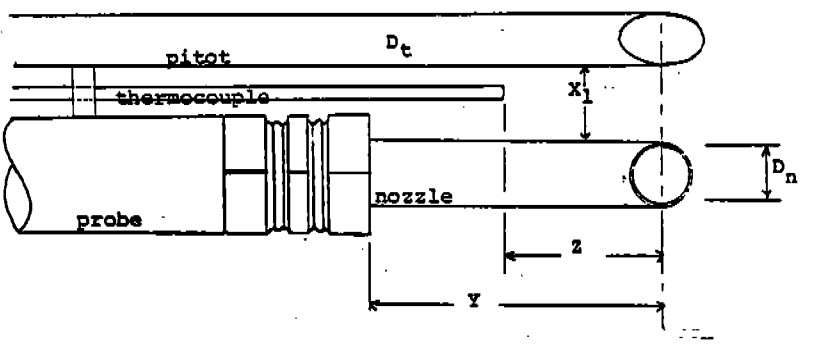
1. $D_t > .188$ & $< .375$ inch D_t = .375"

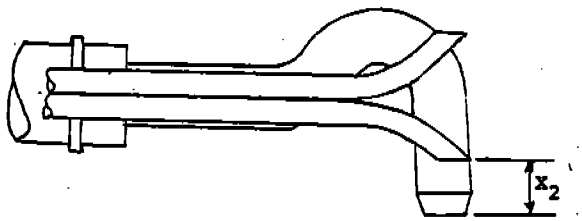
2. $X_1 \geq .75$ inch X_1 = .88"

3. $X_2 \geq 0$ inch X_2 = .50"

4. $Y \geq 3.0$ inch Y = 6.25"

5. $z \geq 2.0$ inch z = 2.25"





AIRCO Industrial Gases
Division of the BOC Group, Inc.
1075 Cinclare Drive
Port Allen, LA 70767

Telephone: 504-388-0900
FAX: 504-388-0959

Date Reported: 12/18/91

Customer Order No.: 2004

Shipper No.: 463452

Test No.: 1291-051

ANALYTICAL REPORT

To: ANDRIES
317 WEST RANKIN
JACKSON, MS 39207

Material Submitted: PROPANE IN NITROGEN

Information Requested: PROPANE CONCENTRATION

Method of Analysis: GAS CHROMATOGRAPHY

Result of Investigation: Cyl.No.: N-421999

Component	Specification	Concentration
PROPANE	30 PPM	31.1 PPM
NITROGEN	BAL.	BAL.

Principal Analyst: C. Simonin

AIRCO Industrial Gases
Division of the BOC Group, Inc.
1075 Cinclare Drive
Port Allen, LA 70767

Telephone: 504-388-0900
FAX: 504-388-0959

Date Reported: 12/18/91

Customer Order No.: 2004

Shipper No.: 463452

Test No.: 1291-052

ANALYTICAL REPORT

To: ANDRIES
317 WEST RANKIN
JACKSON, MS 39207

Material Submitted: PROPANE IN NITROGEN

Information Requested: PROPANE CONCENTRATION

Method of Analysis: GAS CHROMATOGRAPHY

Result of Investigation: Cyl.No.: N-101038

Component	Specification	Concentration
PROPANE	80 PPM	83.2 PPM
NITROGEN	BAL.	BAL.

Principal Analyst: C Simonsi

AIRCO Industrial Gases
Division of the BOC Group, Inc.
1075 Cinclare Drive
Port Allen, LA 70767

Telephone: 504-388-0900
FAX: 504-388-0959

Date Reported: 12/18/91

Customer Order No.: 2004

Shipper No.: 463452

Test No.: 1291-053

ANALYTICAL REPORT

To: ANDRIES
317 WEST RANKIN
JACKSON, MS 39207

Material Submitted: PROPANE IN NITROGEN

Information Requested: PROPANE CONCENTRATION

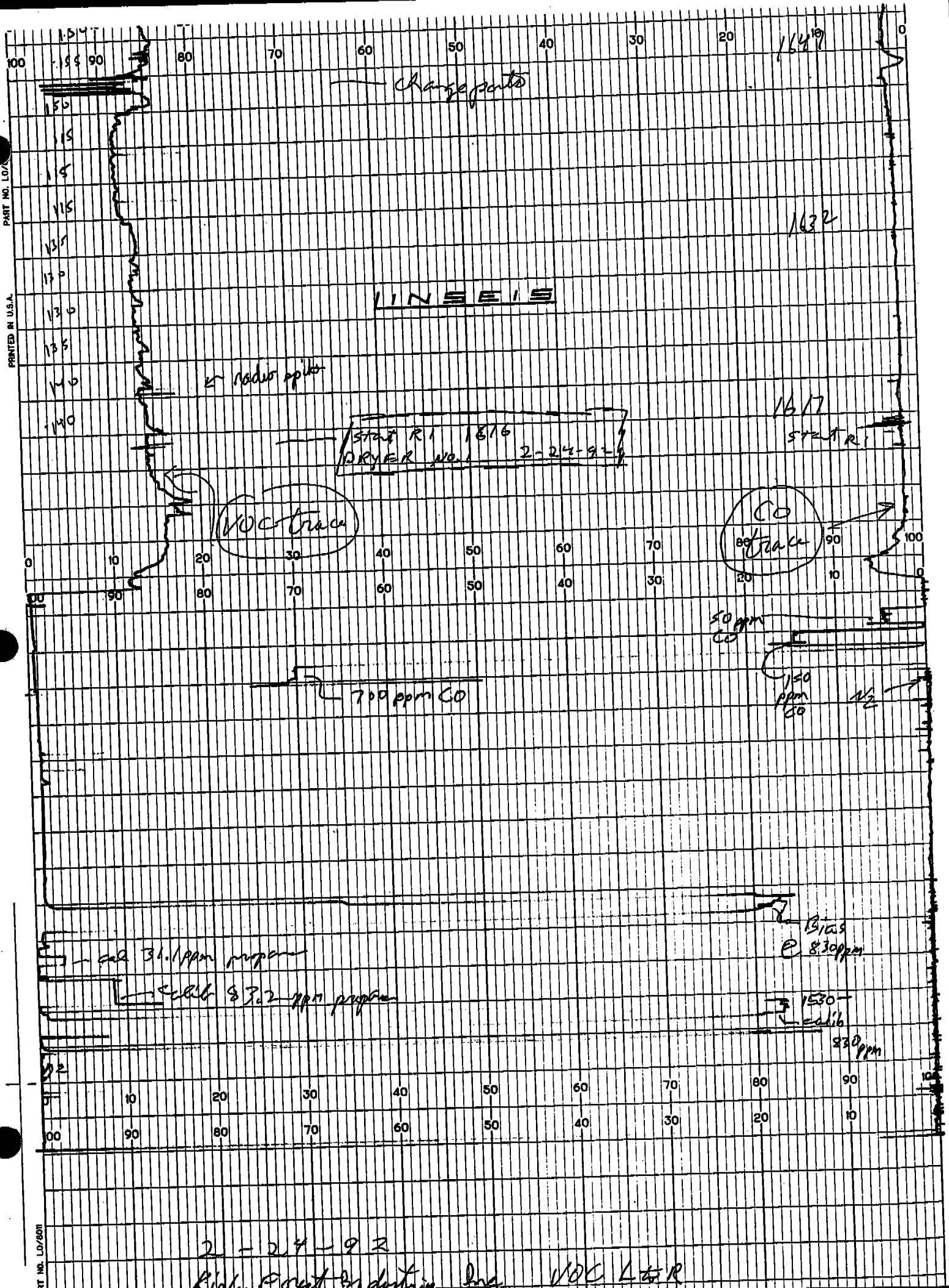
Method of Analysis: GAS CHROMATOGRAPHY

Result of Investigation: Cyl.No.: N-413828

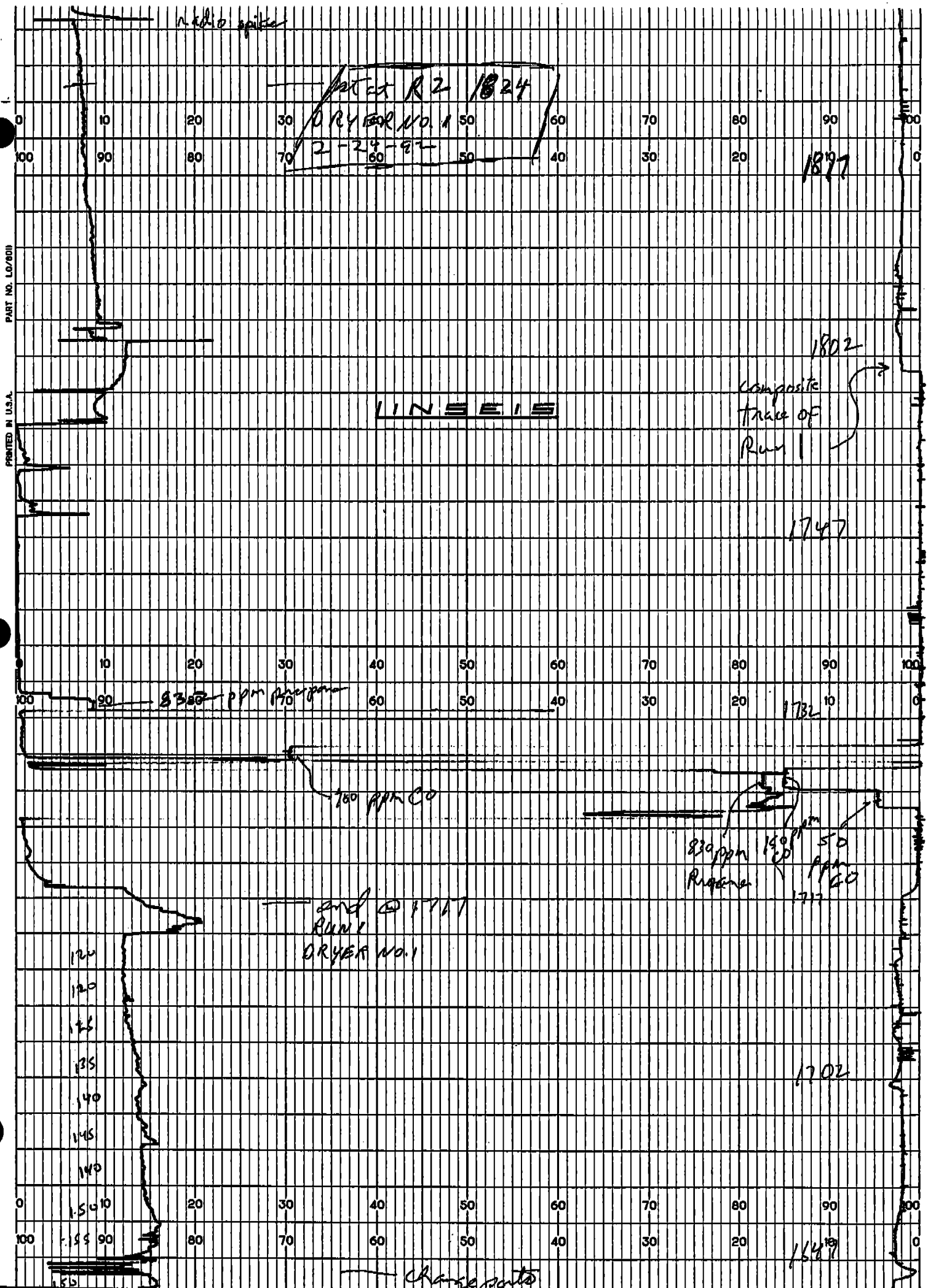
Component	Specification	Concentration
PROPANE	800 PPM	830 PPM
NITROGEN	BAL.	BAL.

Principal Analyst: C. Simonini

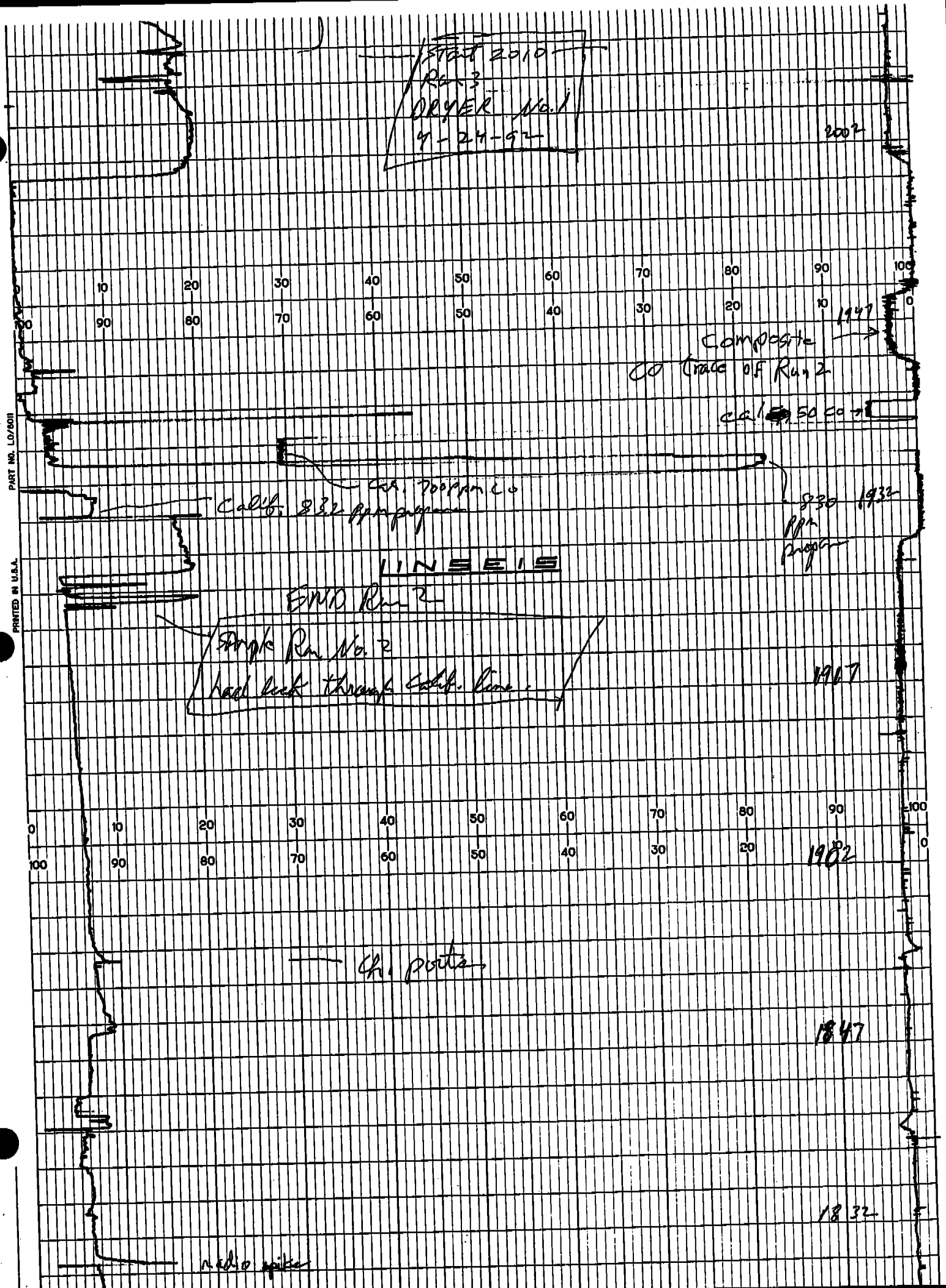
C. VOC AND CO TRACES



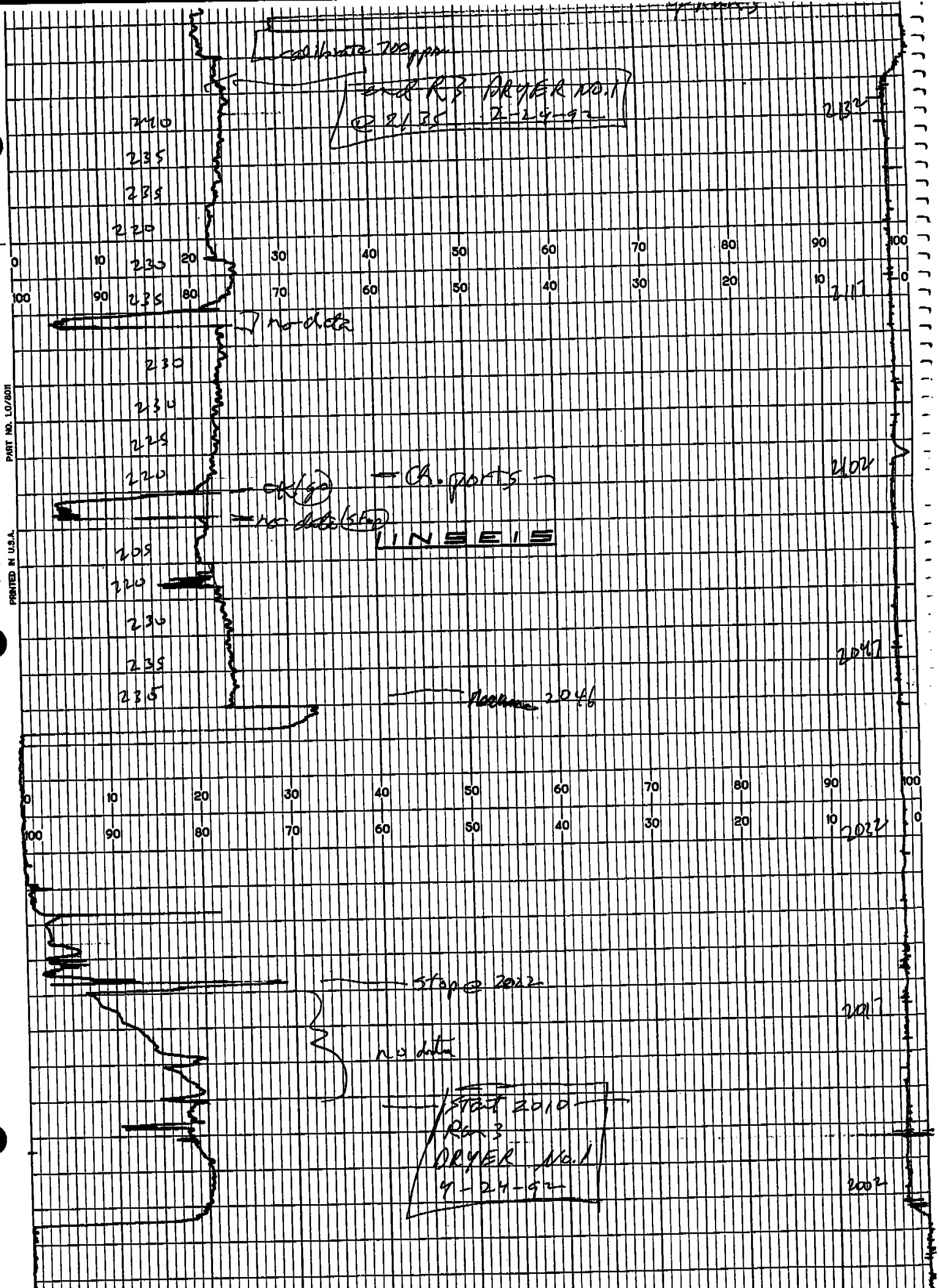
LINSEIS
change ports
1649
1632
1617
radio spike
start R1 1616
DRYER NO. 1 2-24-92
start R1
VOC trace
CO trace
50 ppm CO
150 ppm CO
700 ppm CO
Bias @ 830 ppm
cal 31.1 ppm propane
calib 83.2 ppm propane
1530
calib
830 ppm
2-24-92
VOC L to R
PART NO. LO/8011
PRINTED IN U.S.A.



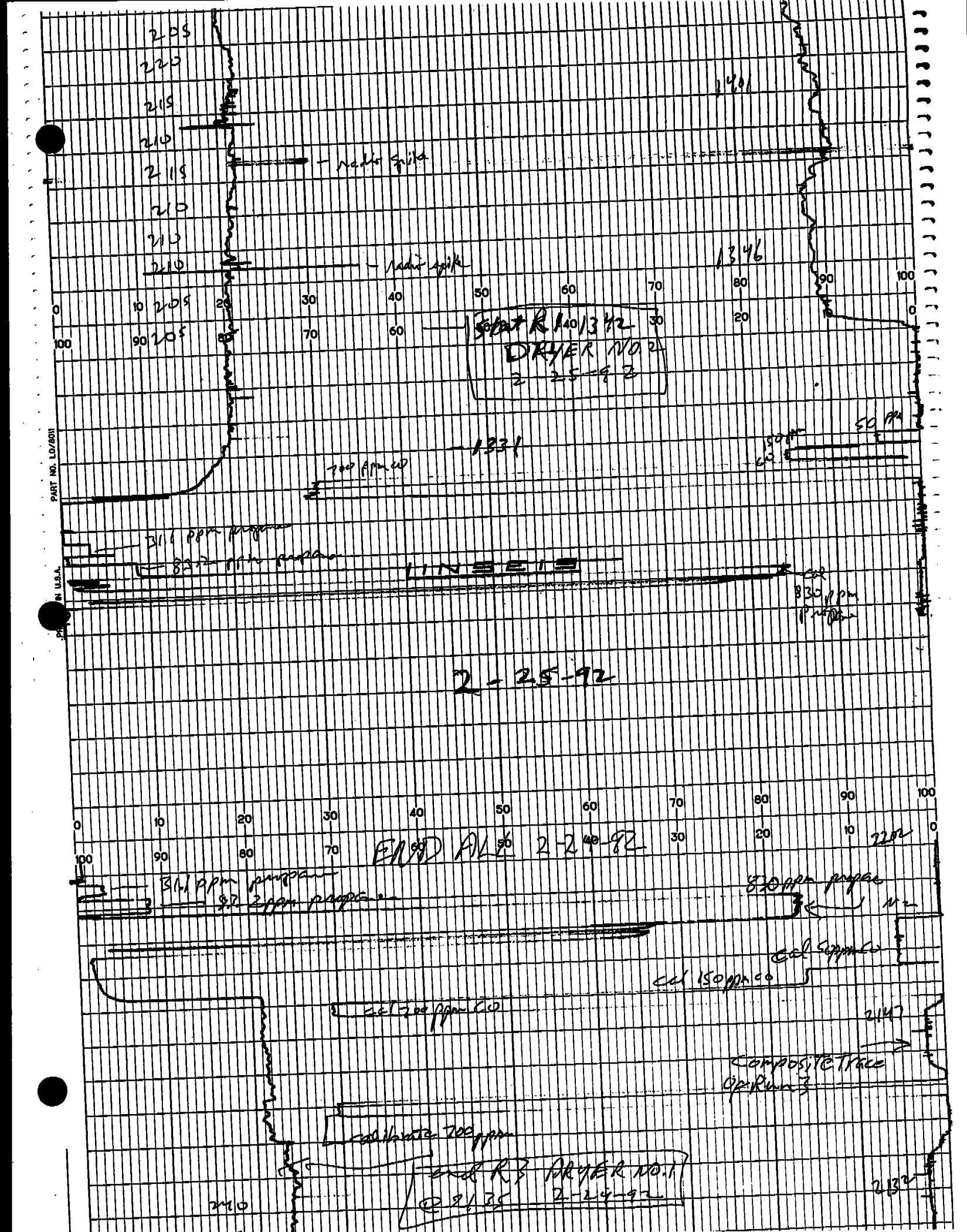
radio spike
Start R2 1824
DRYER NO. 1
2-24-92
1817
1802
Composite Trace of Run 1
LINSEIS
1747
830 ppm propane
1732
180 ppm CO
830 ppm Propane
150 ppm CO
50 ppm CO
1717
end @ 1717
RUN 1
DRYER NO. 1
1702
1649
Change parts
PART NO. LO/8011
PRINTED IN U.S.A.



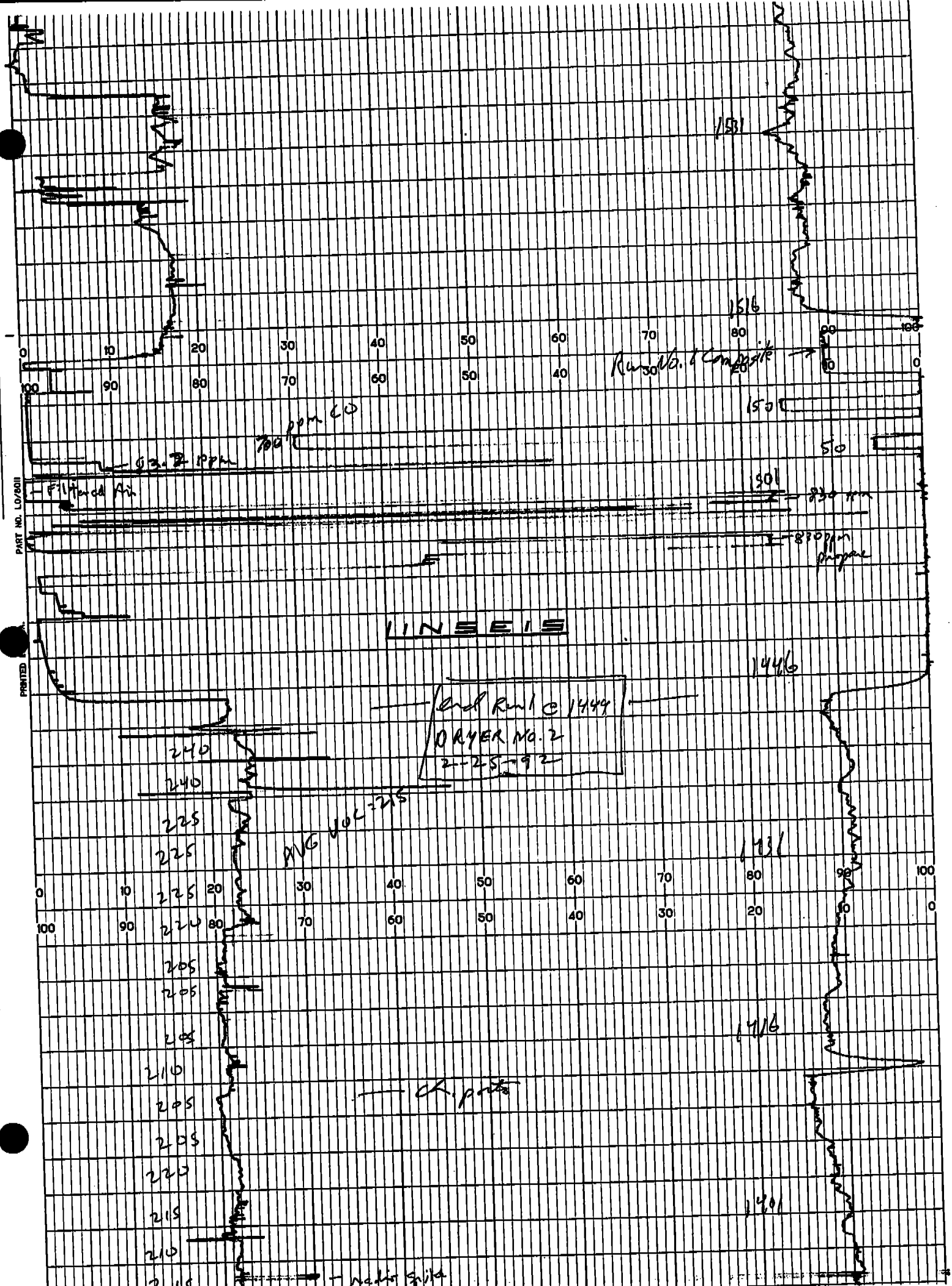
PART NO. L0/6011
PRINTED IN U.S.A.



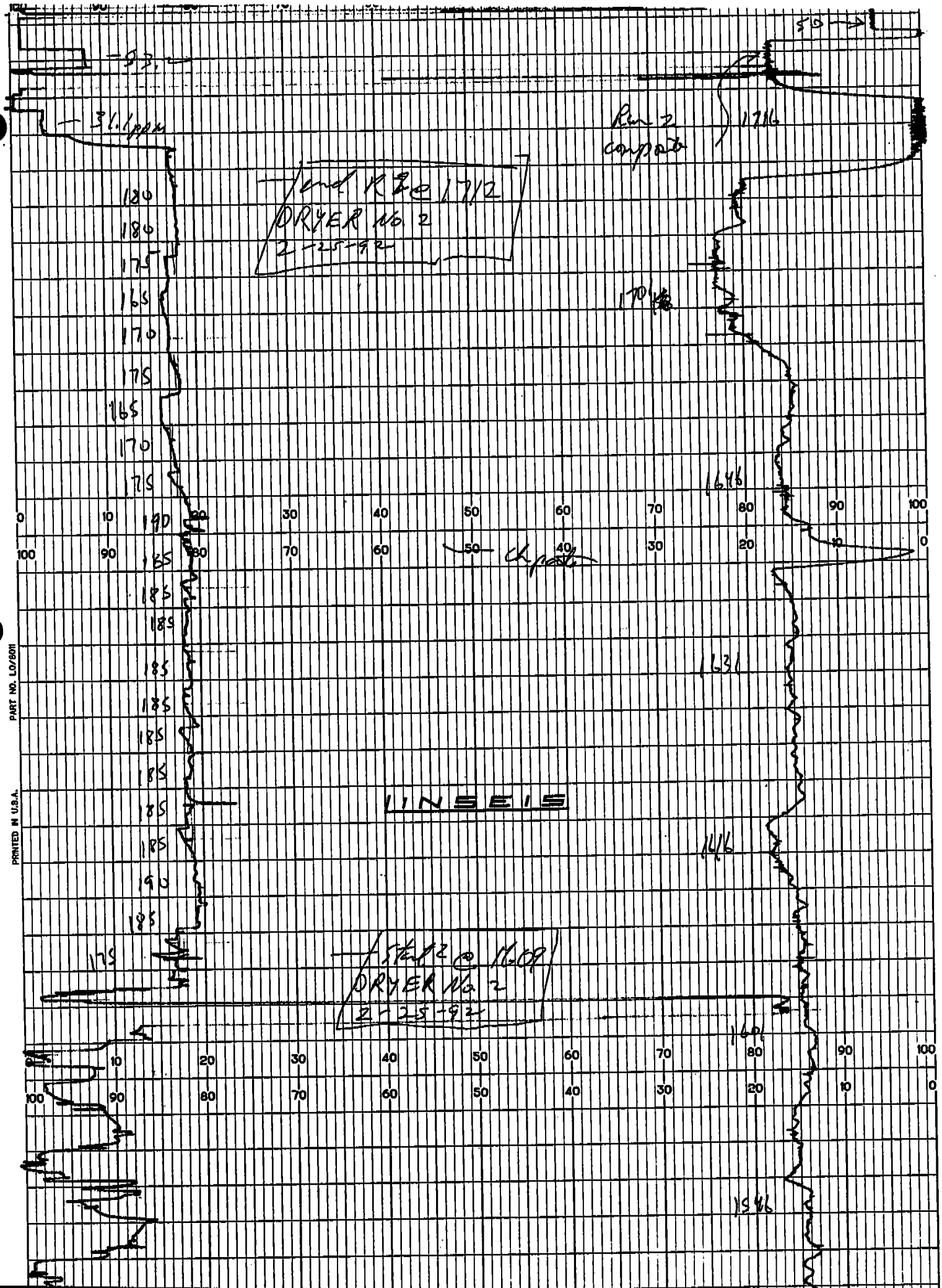
calibrate 700 ppm
end R3 DRYER NO.1
@ 2135 2-24-92
240
235
235
220
230
235
no data
230
230
225
220
ok (go)
Ch. ports
no data (stop)
LINSEIS
205
220
230
235
235
Resume 2046
stop @ 2022
no data
Start 2010
Run 3
DRYER No.1
4-24-92
2132
2117
2102
2047
2032
2017
2002
PART NO. LO/8011
PRINTED IN U.S.A.



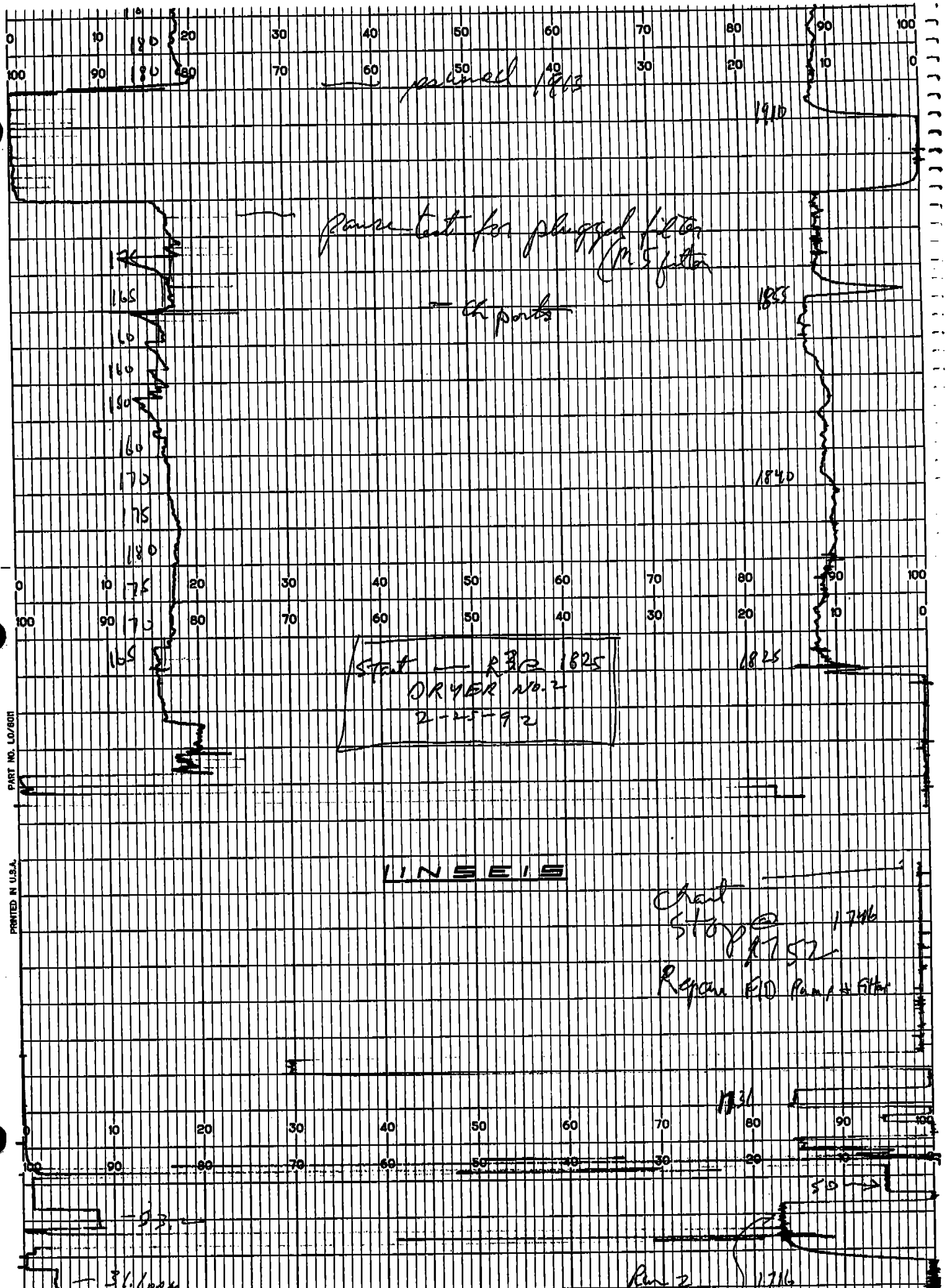
205
220
215
210
215
210
210
210
205
205
1401
1346
radio spike
radio spike
Start R1 1342
DRYER NO. 2
2-25-92
1331
700 ppm CO
50 ppm
150 ppm CO
311 ppm propane
832 ppm propane
LINSEIS
cal 830 ppm propane
2-25-92
END ALL 2-24-92
2202
311 ppm propane
832 ppm propane
830 ppm propane
cal 50 ppm CO
cal 150 ppm CO
cal 700 ppm CO
2147
Composite Trace Of Run 3
calibrate 700 ppm
end R3 DRYER NO. 1
@ 2135 2-24-92
2132
240
PART NO. LO/8011
IN U.S.A.



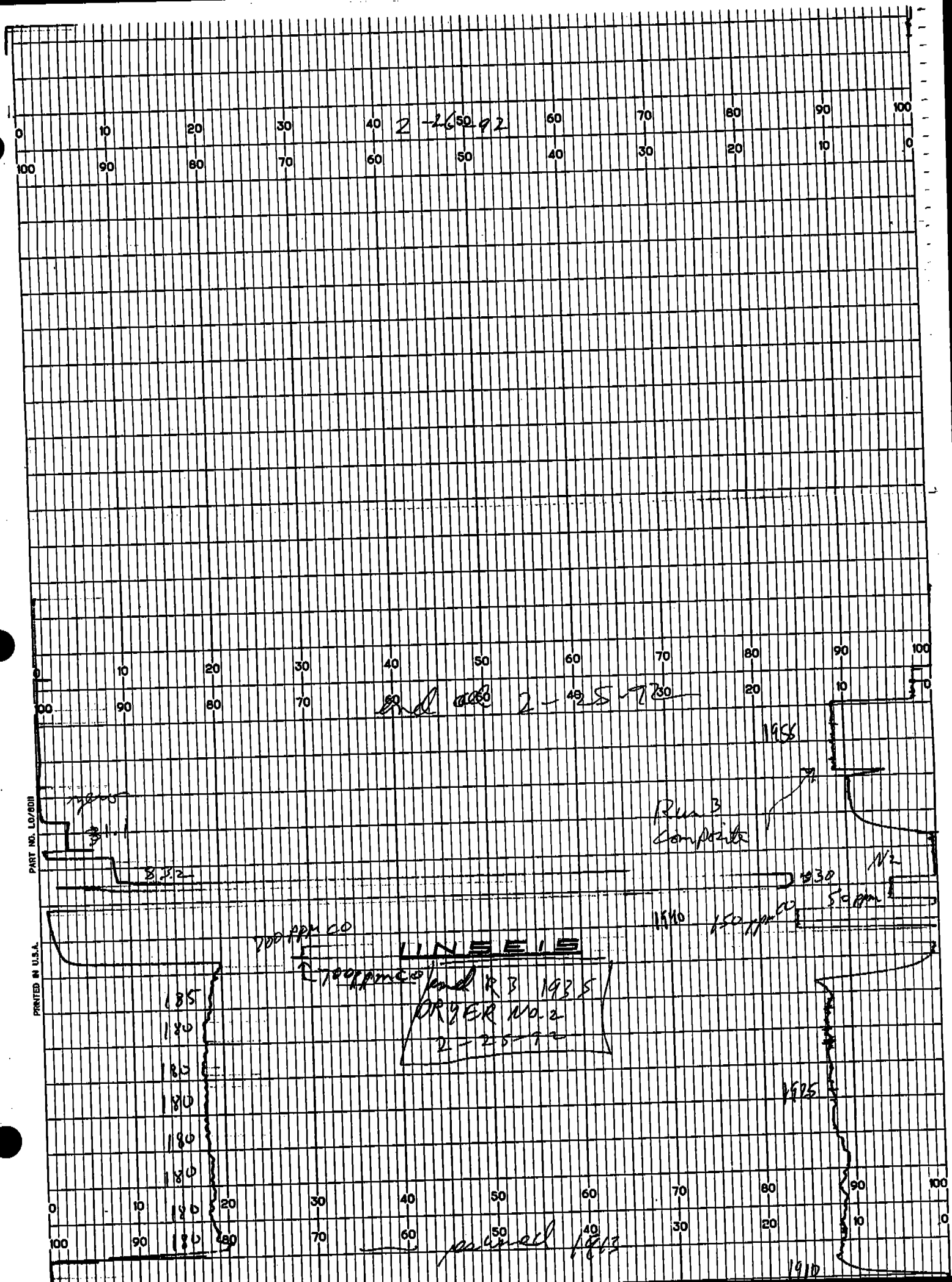
1531
1516
Run No. 1 Composite
1501
700 ppm CO
93.2 ppm
Filtered Air
830 ppm
830 ppm propane
LINSEIS
1446
End Run 1 @ 1444
DRYER No. 2
2-25-92
240
240
225
225
225
220
205
205
205
210
205
205
220
215
210
AVG VOC = 215
1431
1416
1401
Ch. parts
Radio spike
PART NO. LO/8011
PRINTED

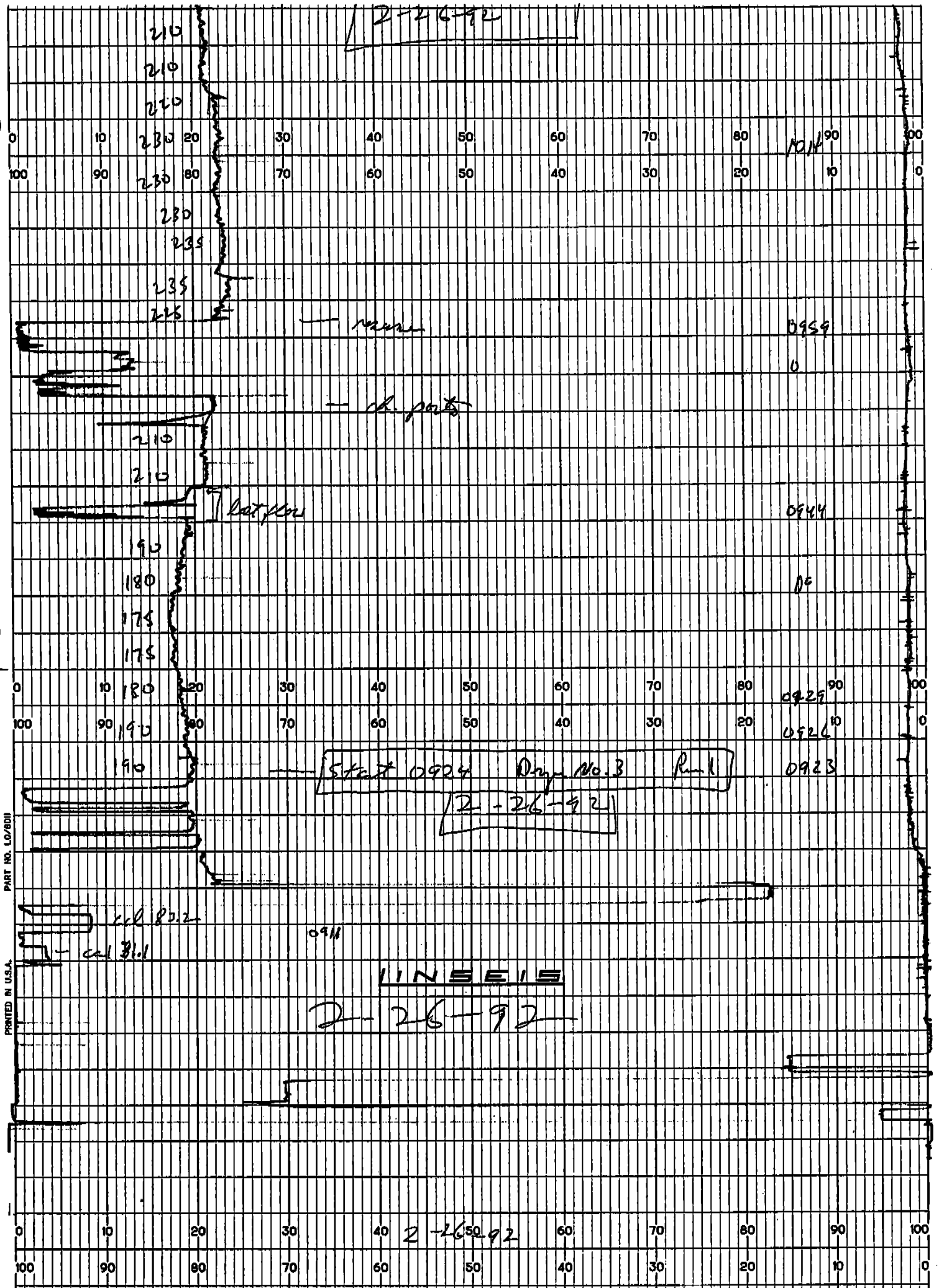


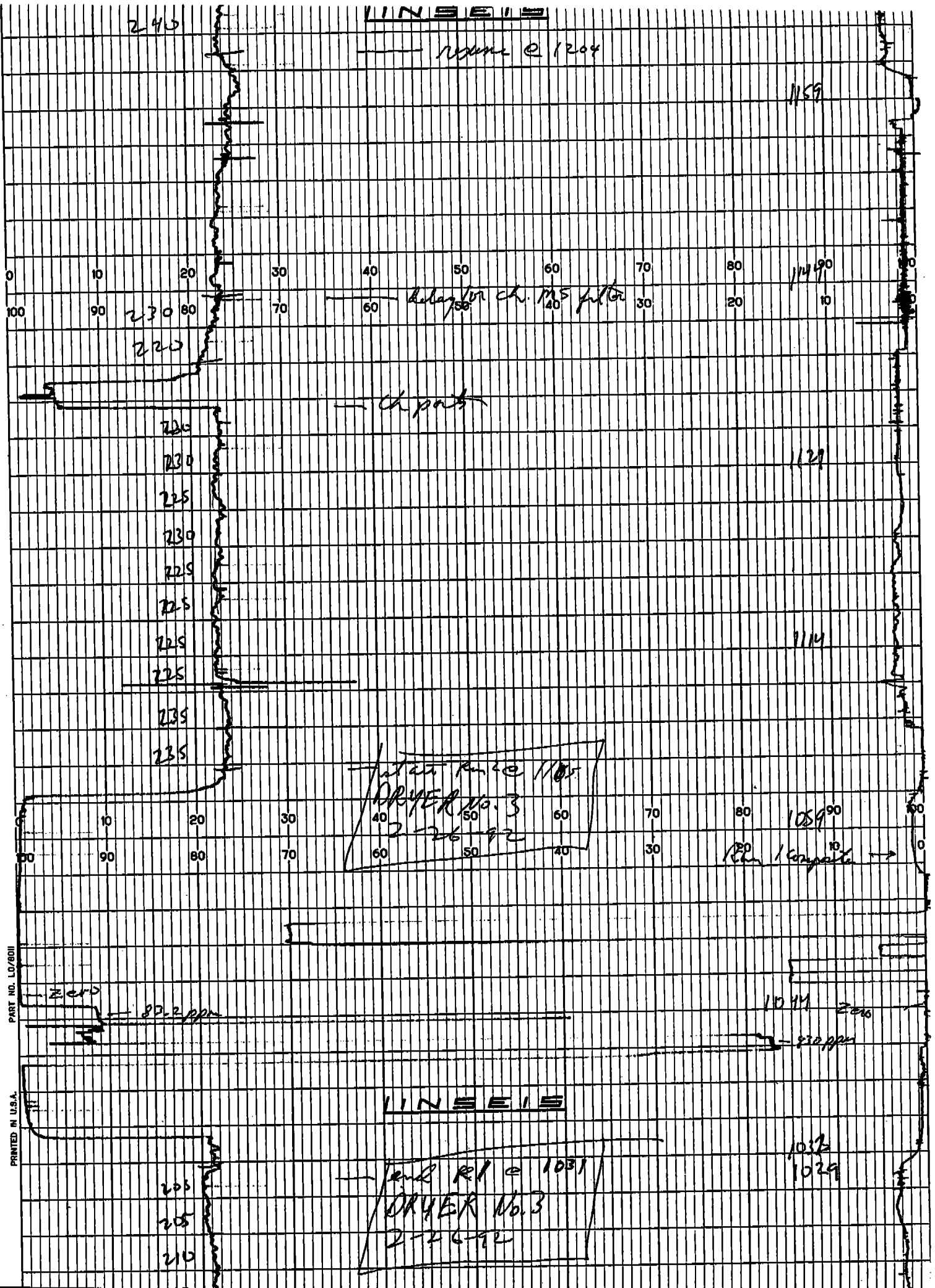
93.
31.1 ppm
Run 2 composite
1716
end R2 @ 1712
DRYER No. 2
2-25-92
180
180
175
165
170
175
165
170
175
190
185
185
185
185
185
185
185
185
185
190
185
175
1646
1631
1616
1601
1546
LINSEIS
start 2 @ 1609
DRYER No. 2
2-25-92
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
PART NO. LO/6011
PRINTED IN U.S.A.



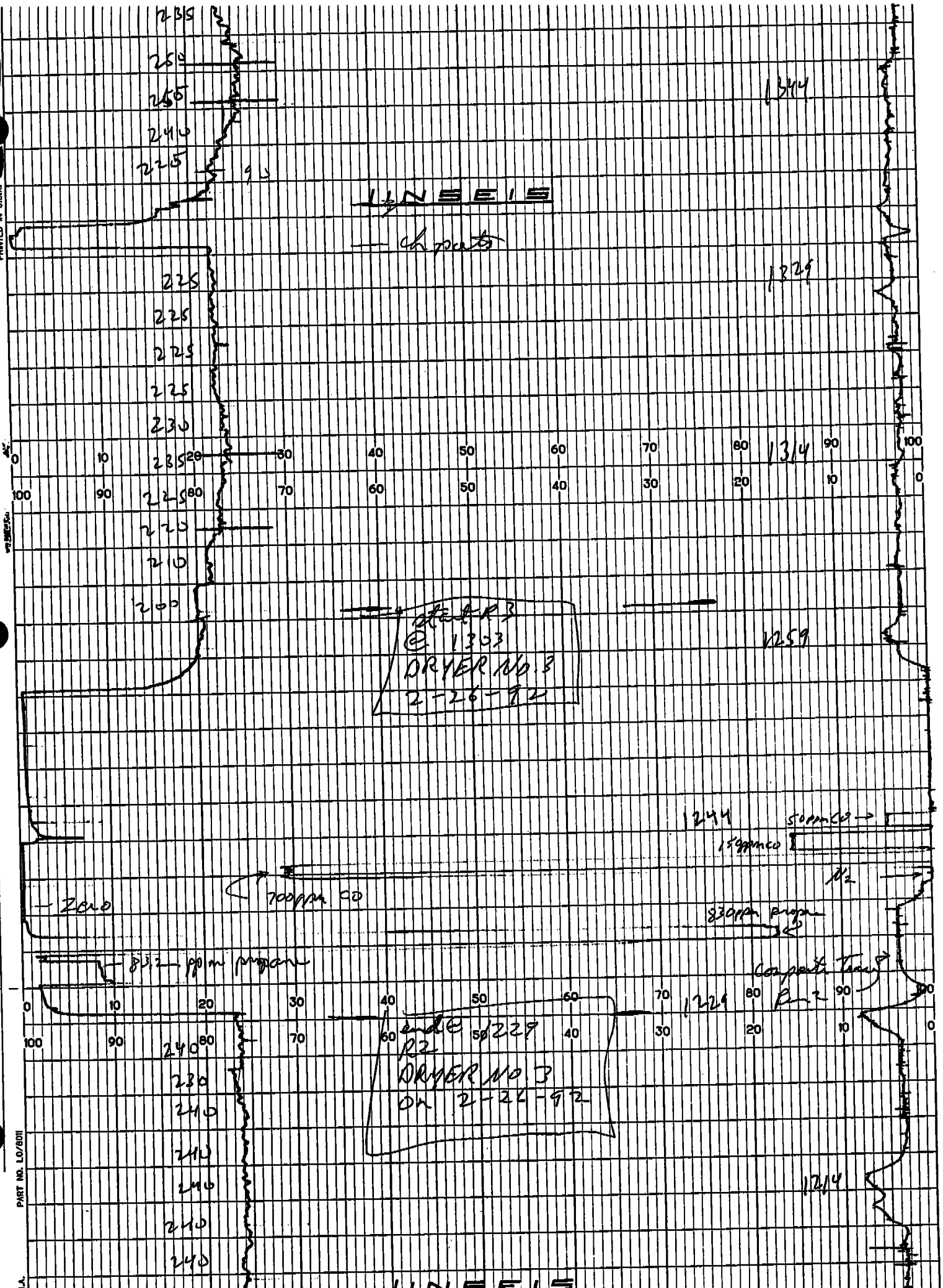
1910
pause test for plugged filter
(M5 filter
1855
1840
1825
Start — R3 @ 1825
DRYER No. 2
2-25-92
LINSEIS
Chart
Stop @ 1746
R752
Repair FID Pump + Filter
1731
50
Run 2
1716
PART NO. LO/6011
PRINTED IN U.S.A.


2-26-92
end 2-25-92
1955
Run 3
Composite
31.1
83.2
N2
50 ppm
1940
150 ppm CO
700 ppm CO
UNSEIS
700 ppm CO
end R3 1935
DRYER No. 2
2-25-92
185
180
180
180
180
180
180
180
1925
1910
PART NO. LO/8011
PRINTED IN U.S.A.

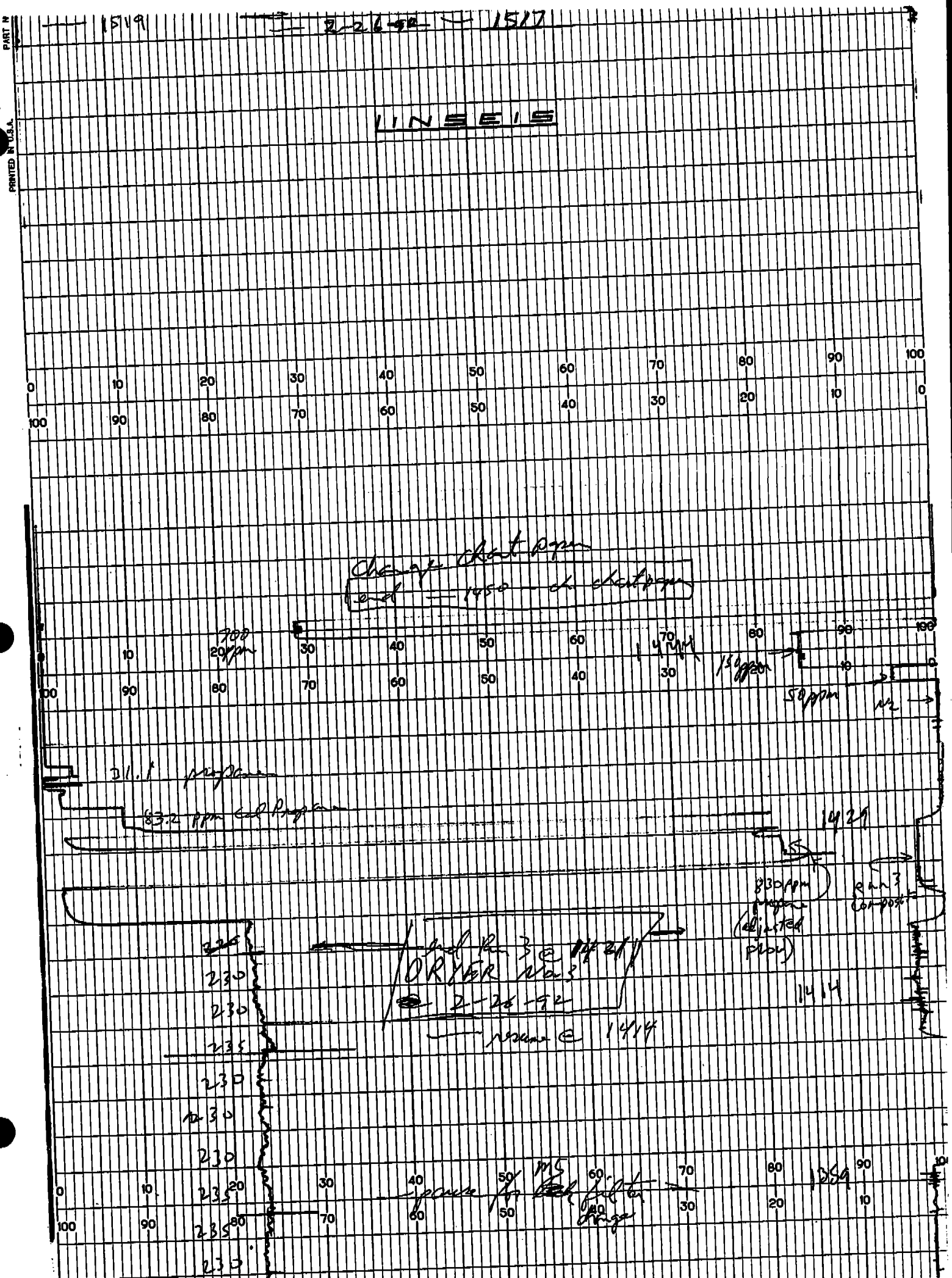

2-26-92
210
210
220
230
230
230
235
235
225
0959
0
210
210
0944
190
180
175
175
180
0929
190
0926
190
Start 0924 Dry No. 3 Run 1
0923
2-26-92
cal 80.2
0911
cal 31.1
LINSEIS
2-26-92
2-26-92
PART NO. LO/8011
PRINTED IN U.S.A.

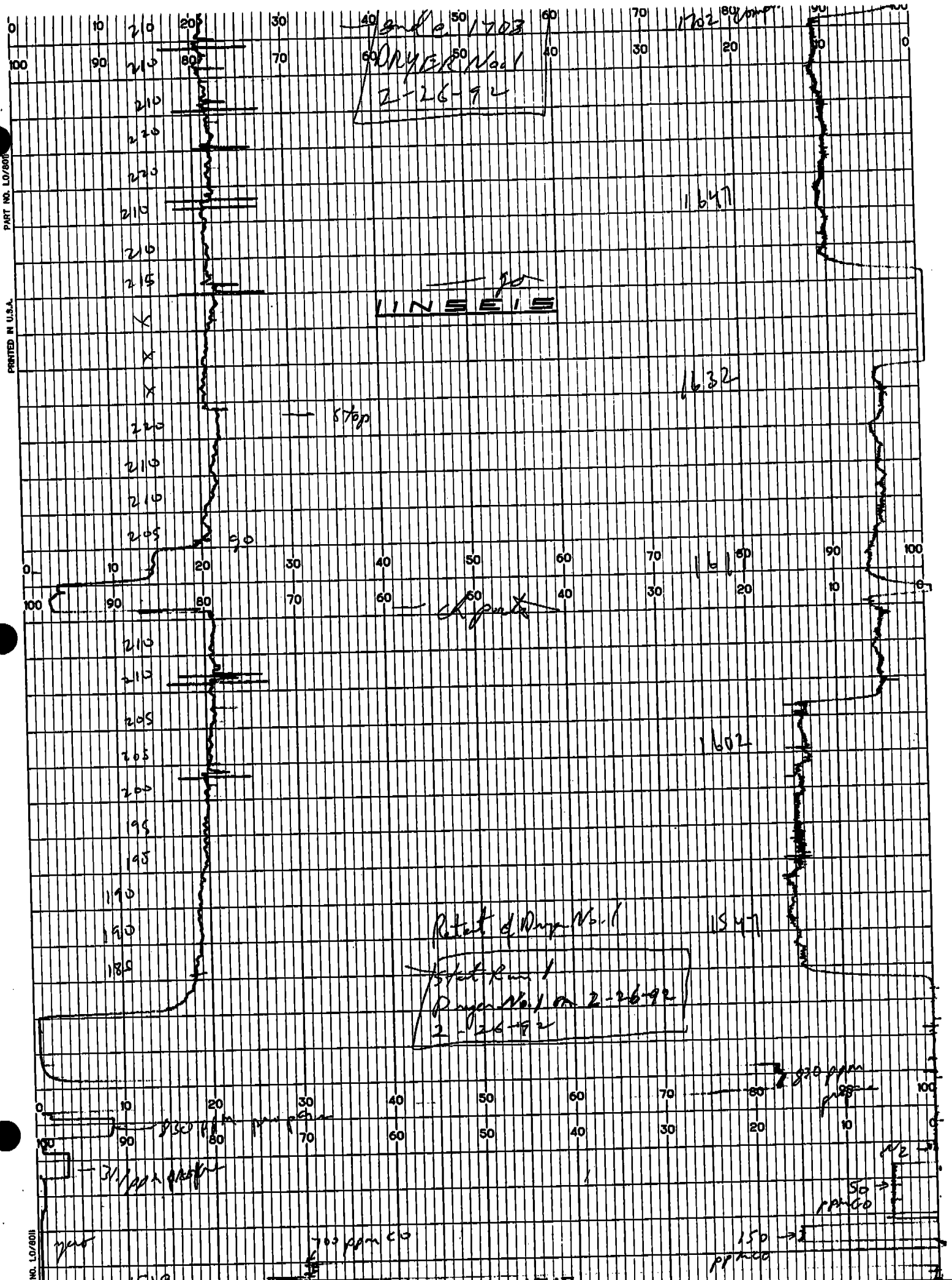


LINSEIS
240
resume @ 1204
1159
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
1149
delay for ch. MS filter
230
220
ch. port
230
230
225
230
225
225
225
225
235
235
1129
1114
start Run 2 @ 1105
DRYER No. 3
2-26-92
1059
Run 1 composite
Zero
83.2 ppm
1044
Zero
830 ppm
LINSEIS
end R1 @ 1031
DRYER No. 3
2-26-92
1032
1029
205
205
210
PRINTED IN U.S.A.
PART NO. LO/8011

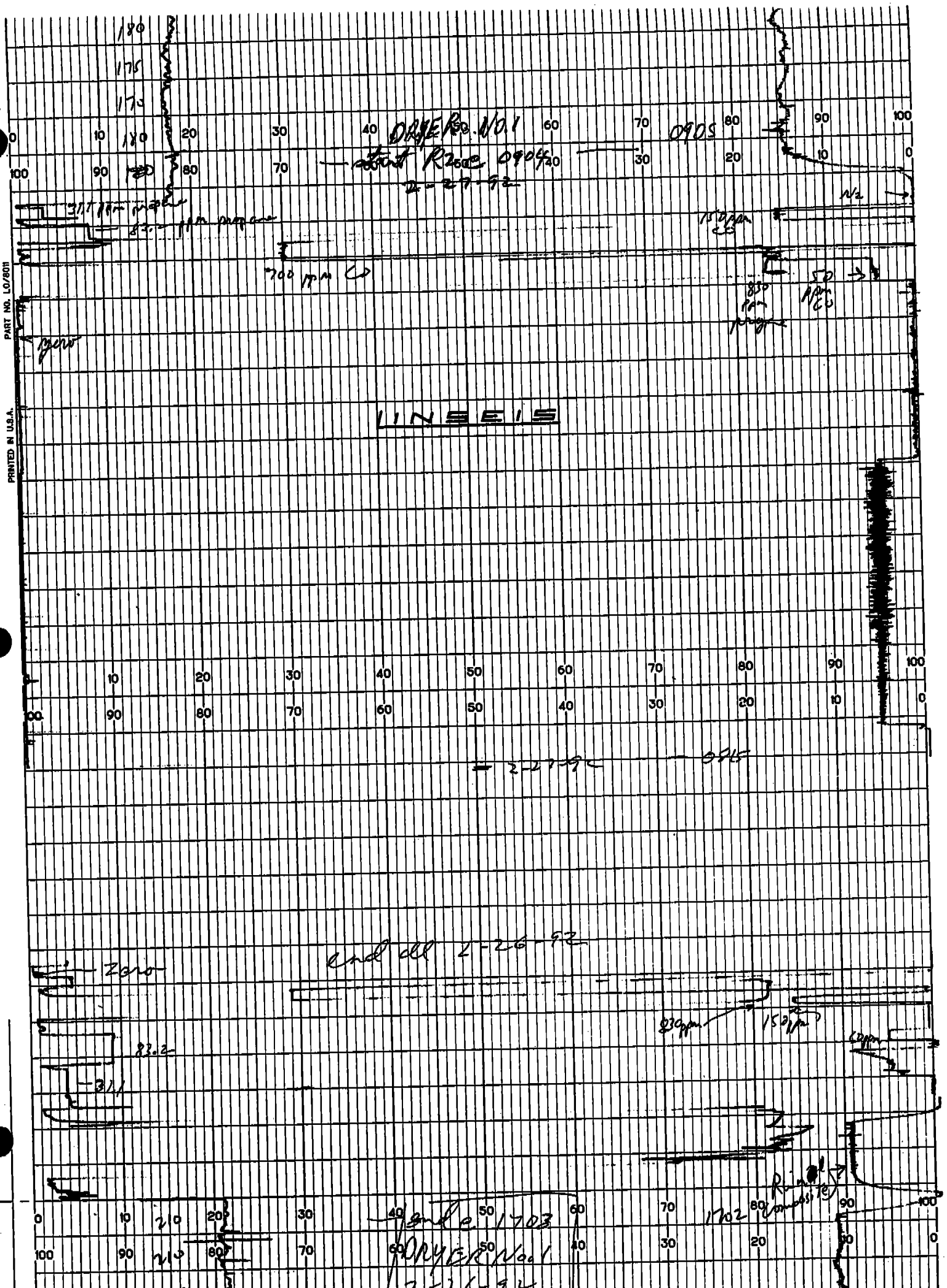


235
250
255
240
225
90
UNSEIS
ch parts
1344
225
225
225
225
230
235
225
220
210
200
1329
1314
start R3
@ 1303
DRYER No. 3
2-26-92
1259
1244
50ppm CO
150ppm CO
N2
700ppm CO
Zero
830ppm propane
83.2 ppm propane
Compute Temp
Run 2
1229
end @ 1229
R2
DRYER No. 3
on 2-26-92
240
230
240
240
240
240
240
1214
UNSEIS

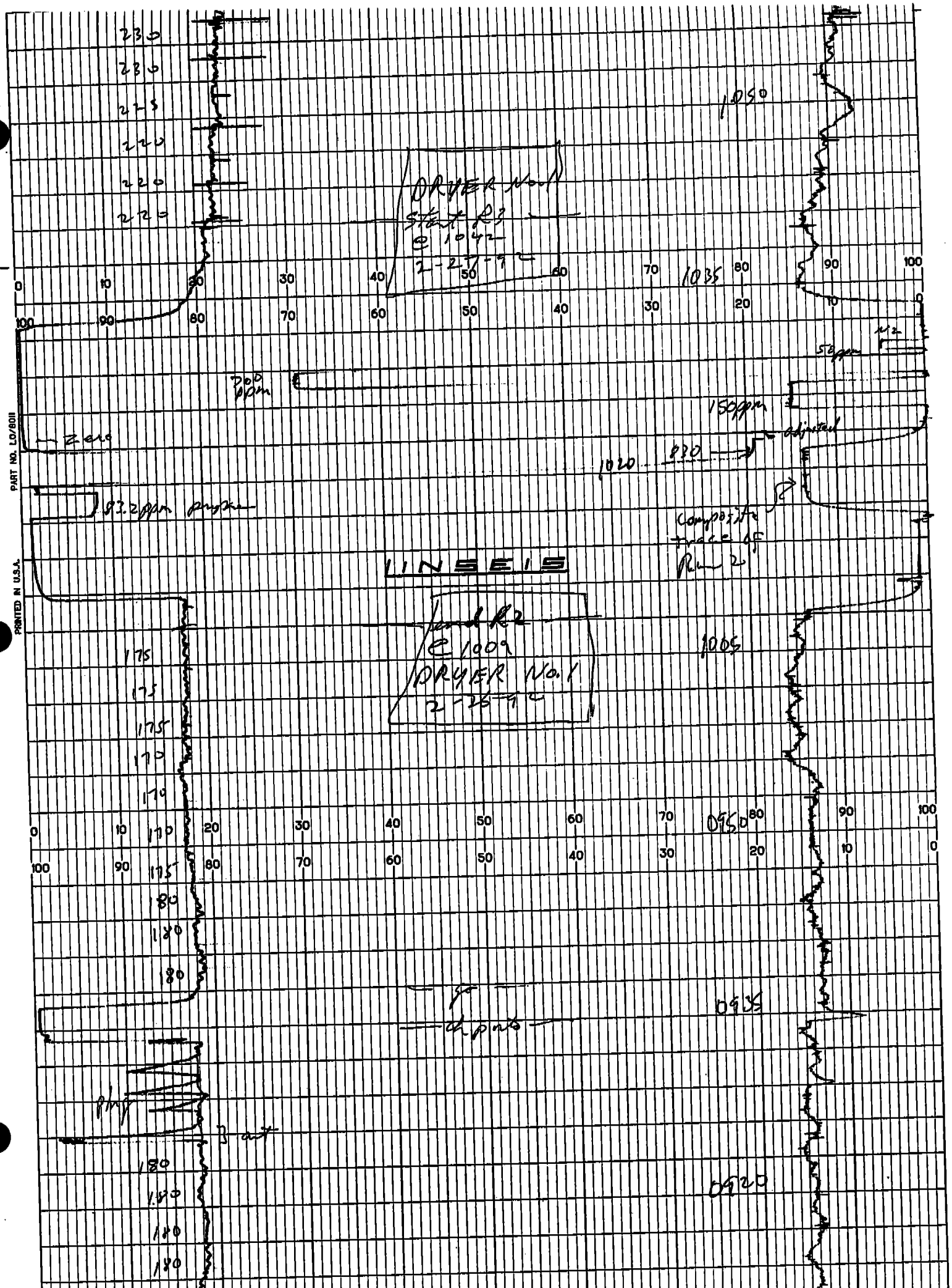

1519
2-26-92
1517
LINSEIS
Change chart paper
end 1450 ch chart paper
700 ppm
1444
150 ppm
50 ppm
N2
31.1 propane
83.2 ppm cal Propane
1429
830 ppm propane (adjusted flow)
Run 3 composite
end Run 3 @ 1421
DRYER No 3
2-26-92
resume @ 1414
1414
230
230
235
230
230
230
235
235
230
pause for MS filter change
1359



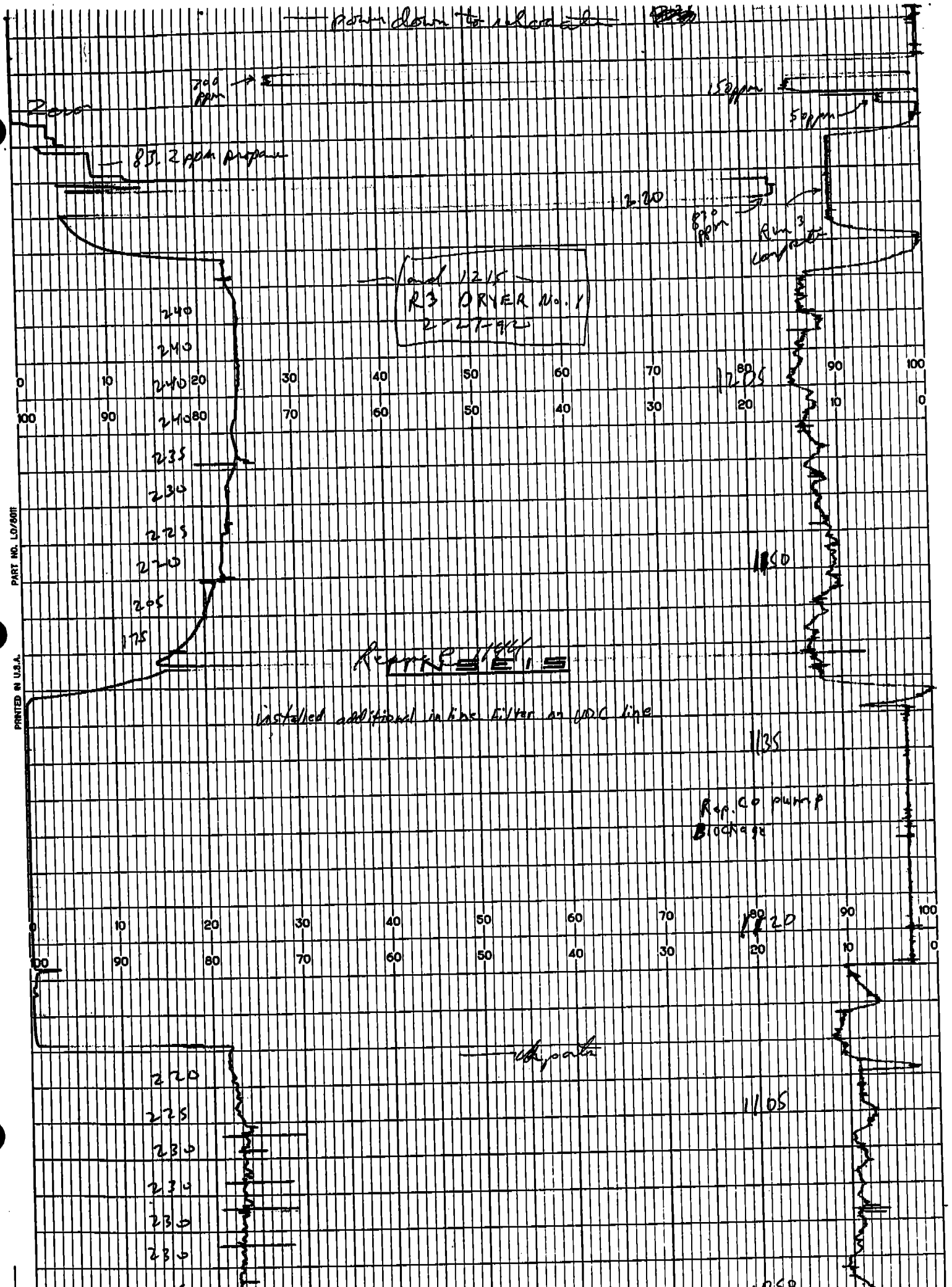
End of 1703
DRYER No. 1
2-26-92
1702 comp
1647
go
LINSEIS
1632
stop
1617
ch parts
1602
1547
Retest of Dryer No. 1
Start Run 1
Dryer No. 1 on 2-26-92
2-26-92
830 ppm propane
830 ppm propane
31 ppm propane
N2
50 ppm CO
150 ppm CO
700 ppm CO
zero
PART NO. LO/8011
PRINTED IN U.S.A.



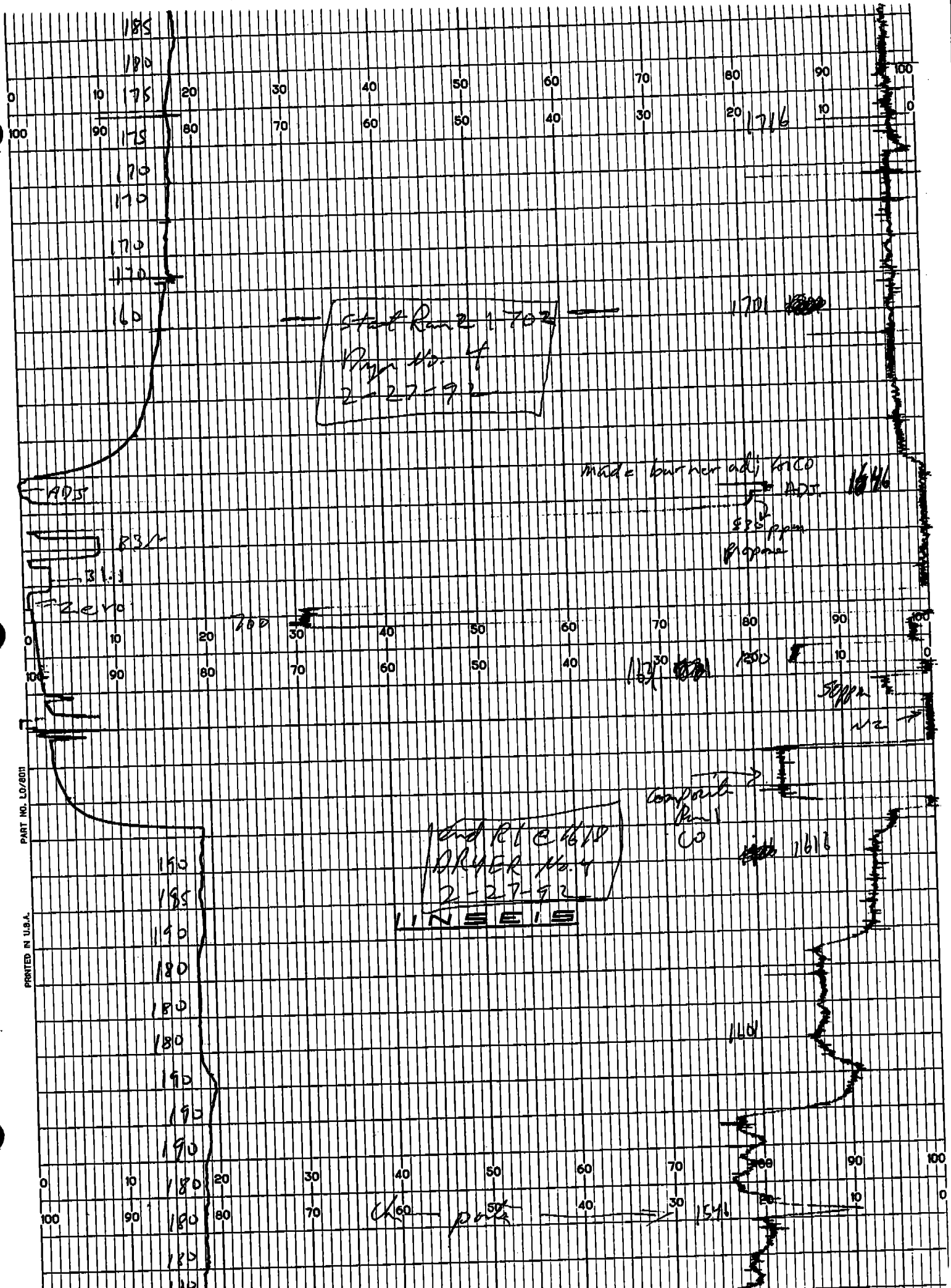
DRYER No. 1
0905
start R2 @ 0904
2-27-92
N2
150 ppm CO
700 ppm CO
830 ppm propane
50 ppm CO
zero
LINSEIS
2-27-92
0915
end all 2-26-92
Zero
830 ppm
150 ppm
83.2
31.1
Rinal composite
1702
end @ 1703
DRYER No. 1
210
PART NO. LO/8011
PRINTED IN U.S.A.



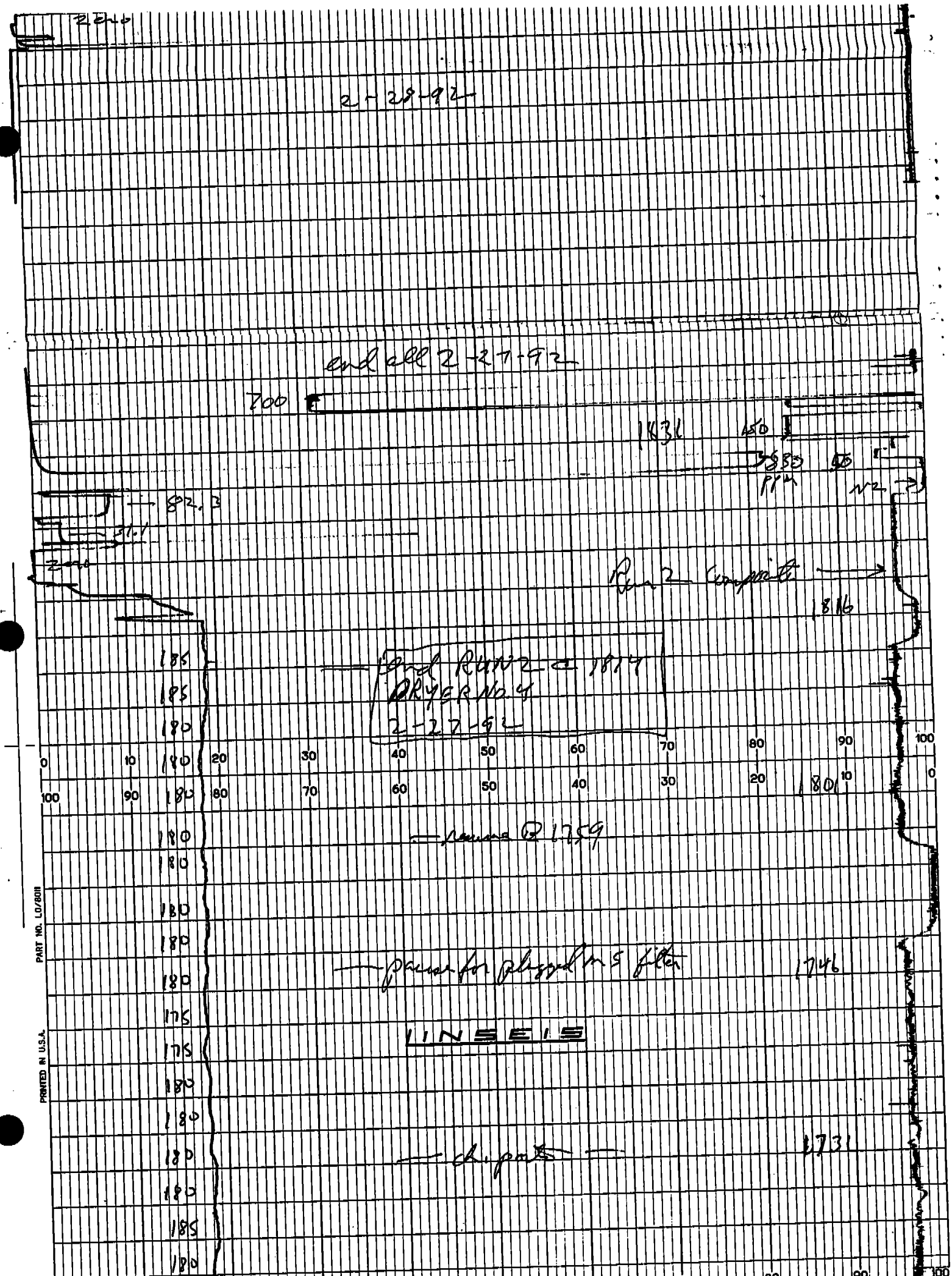
230
230
225
220
220
220
DRYER No. 1
Start R3
@ 1042
2-27-92
1050
1035
700 ppm
50ppm
150ppm
adjusted
Zero
1020
830
83.2ppm propane
Composite trace of Run 2
LINSEIS
end R2
@ 1009
DRYER No. 1
2-26-92
1005
175
175
175
170
170
170
175
180
180
180
0950
0935
ch pnts
plug
cut
180
180
180
180
0920
PART NO. LO/8011
PRINTED IN U.S.A.

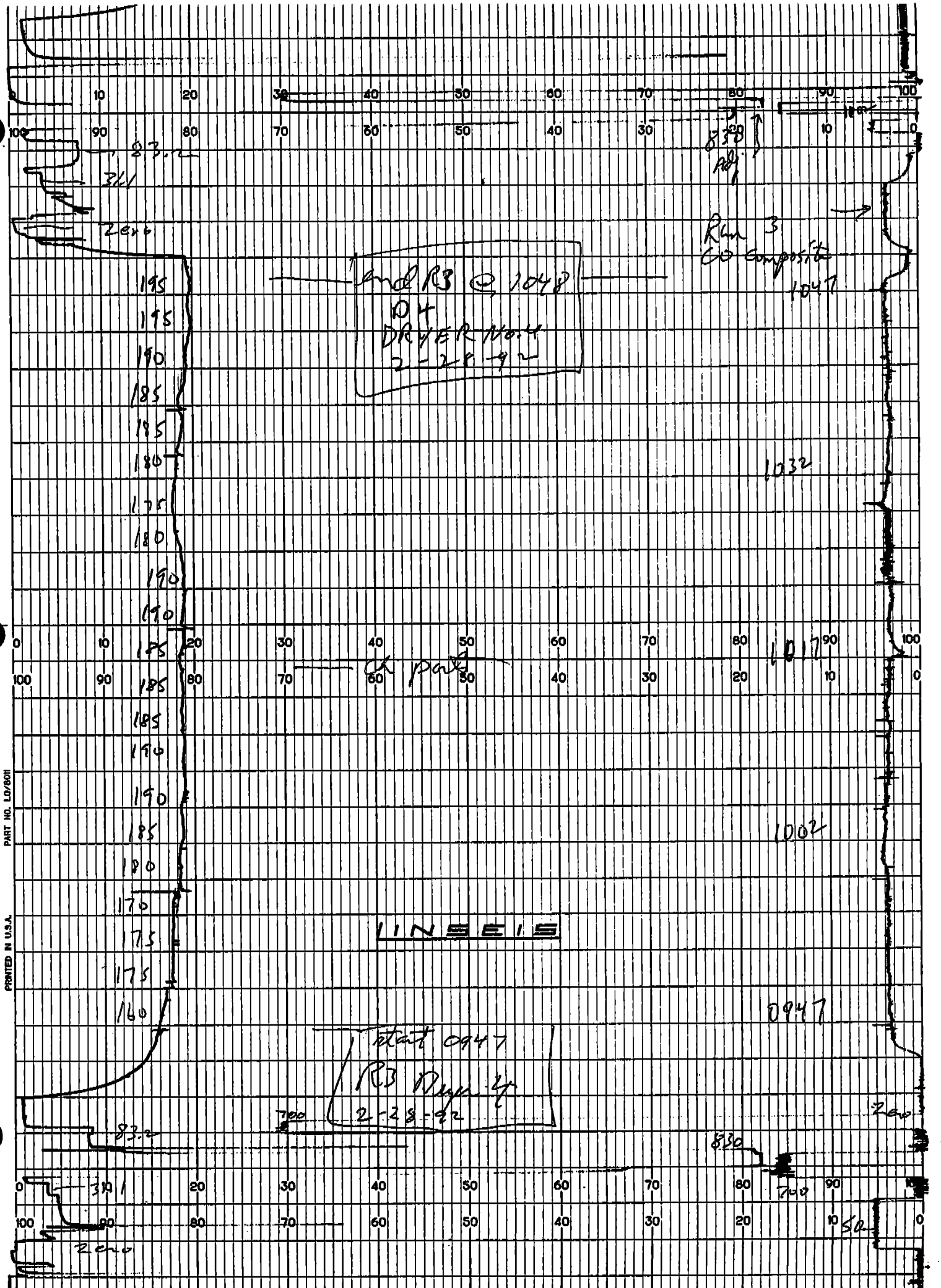


power down to relocate
700 ppm
150 ppm
50 ppm
83.2 ppm propane
1220
830 ppm
Run 3 complete
and 1215
R3 DRYER No. 1
2-27-92
240
240
240
240
235
230
225
220
205
175
1205
1150
installed additional in line filter on VOC line
1135
Rep. CO pump
Blockage
1120
220
225
230
230
230
230
1105
PART NO. LO/8011
PRINTED IN U.S.A.

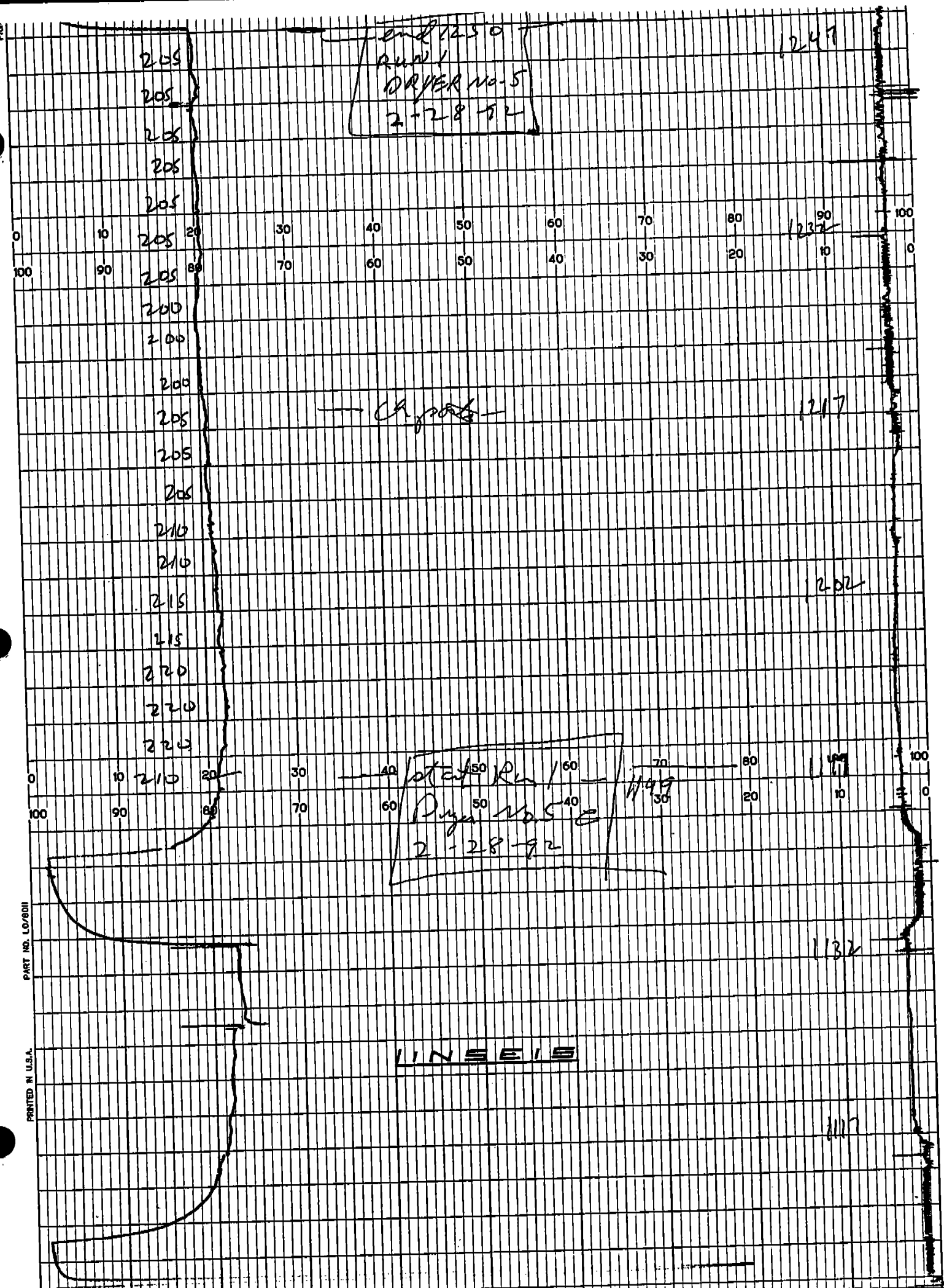


Start Run 2 1702
Dryer No. 4
2-27-92
made burner adj for CO
ADJ.
830 ppm
propane
ADJ
83.1
31.1
zero
700
1716
1701
1646
1631
1500
50ppm
N2
Composite
Run 1
CO
1616
End R1 @ 1618
DRYER No. 4
2-27-92
LINSEIS
1601
1546
PART NO. LO/8011
PRINTED IN U.S.A.

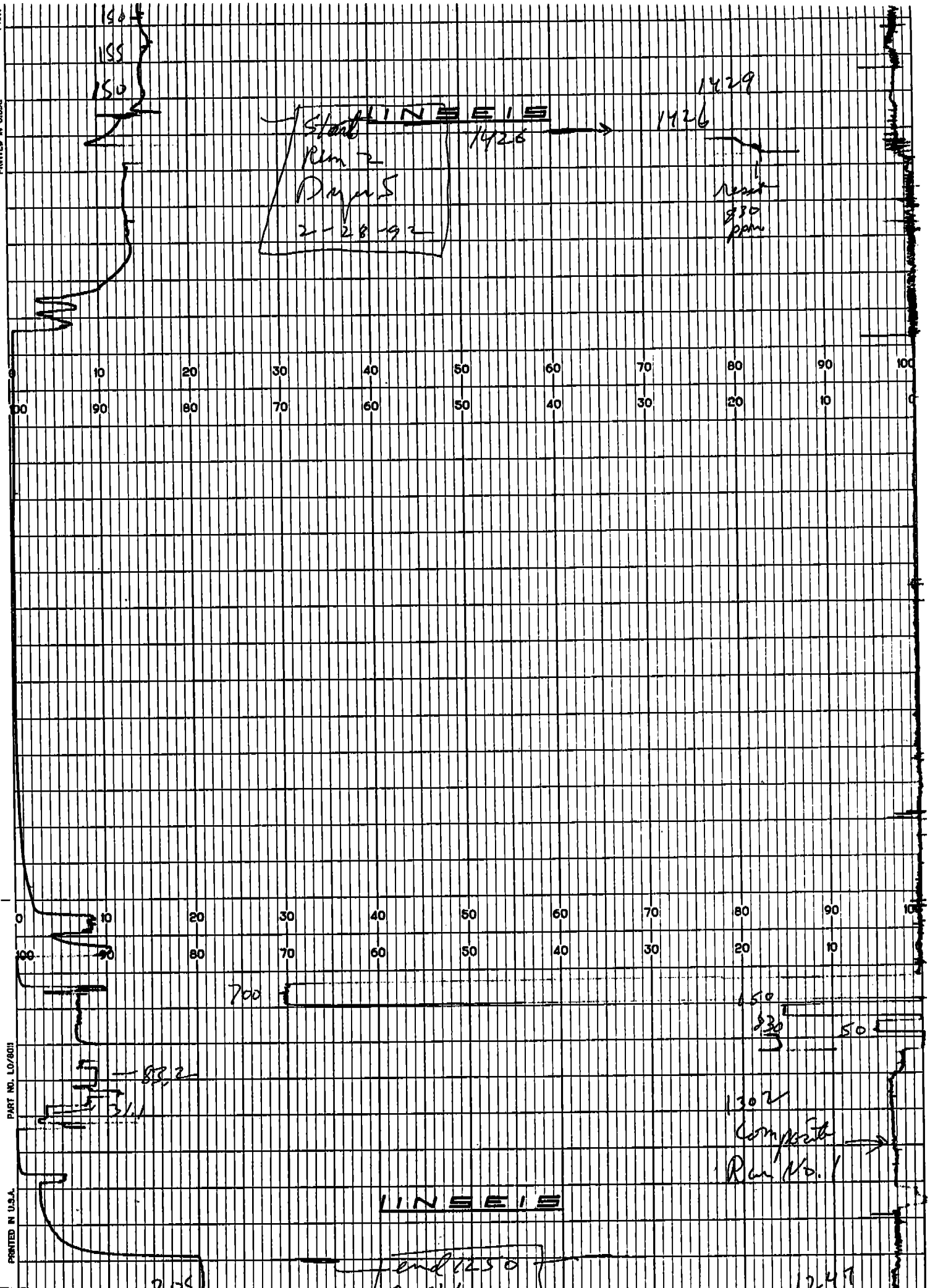

2-28-92
end all 2-27-92
700
1831
150
830
ppm
N2
82.3
31.1
Run 2 composite
1816
End RUN 2 @ 1814
DRYER No. 4
2-27-92
185
185
180
180
180
180
180
180
180
180
175
175
180
180
180
180
185
180
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
1801
— resume @ 1759
— pause for plugged m5 filter
1746
LINSEIS
— chi-parts —
1731
PART NO. LO/8011
PRINTED IN U.S.A.

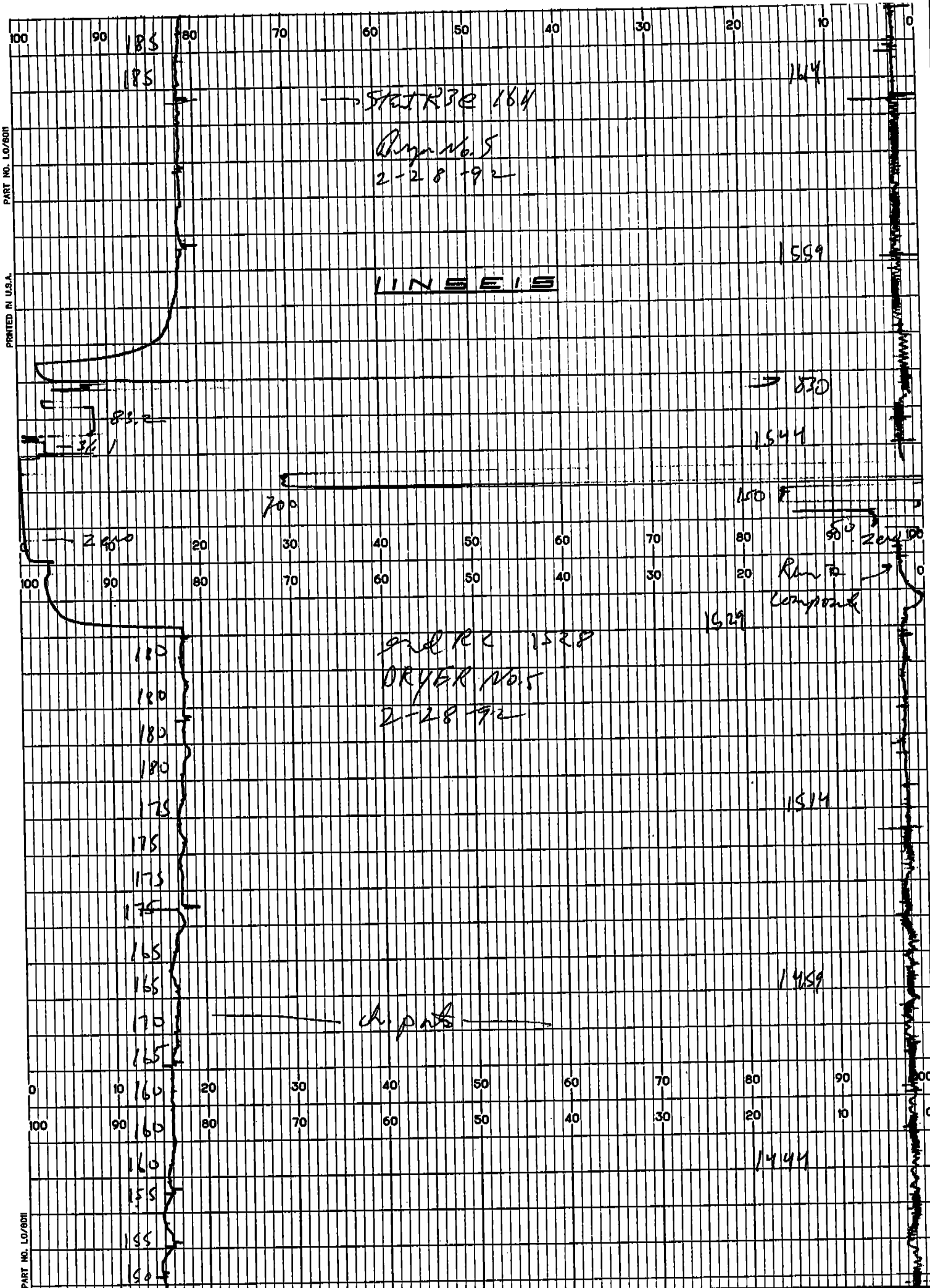


83.2
31.1
Zero
195
195
190
185
185
180
175
180
190
190
185
185
185
190
190
185
180
170
175
175
160
and R3 @ 1048
D4
DRYER No.4
2-28-92
830
Adj
Run 3
CO Composite
1047
1032
1017
1002
0947
LINSEIS
start 0947
R3 Dryer 4
2-28-92
700
83.2
830
700
31.1
Zero
50
PART NO. LO/8011
PRINTED IN U.S.A.

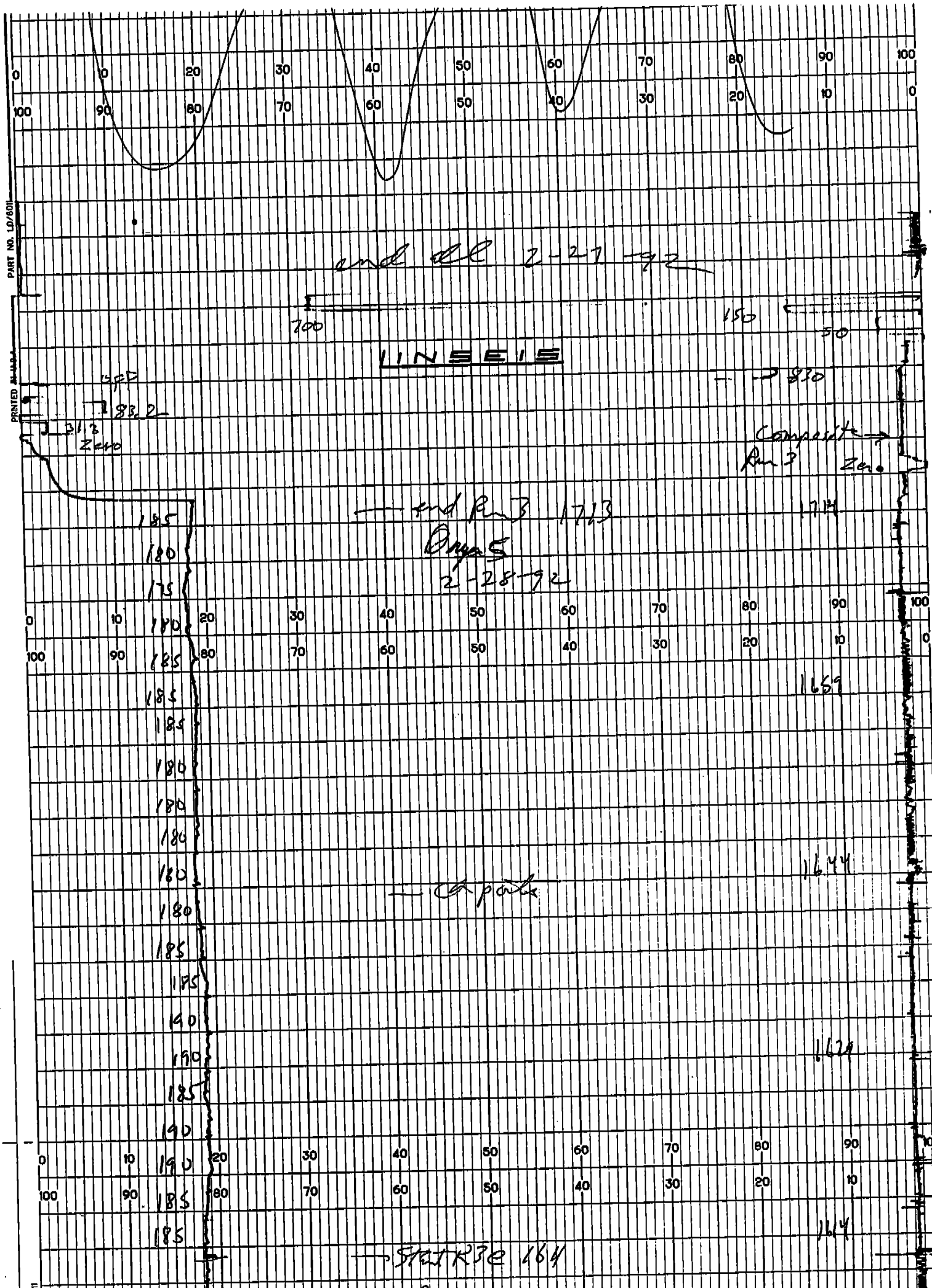


end 1250
Run 1
DRYER No-5
2-28-92
1247
205
205
205
205
205
205
205
200
200
200
205
205
205
210
210
215
215
220
220
220
210
1232
1217
1202
start Run 1
Dryer No.5 E
2-28-92
1149
1132
1117
LINSEIS
PART NO. LO/8011
PRINTED IN U.S.A.

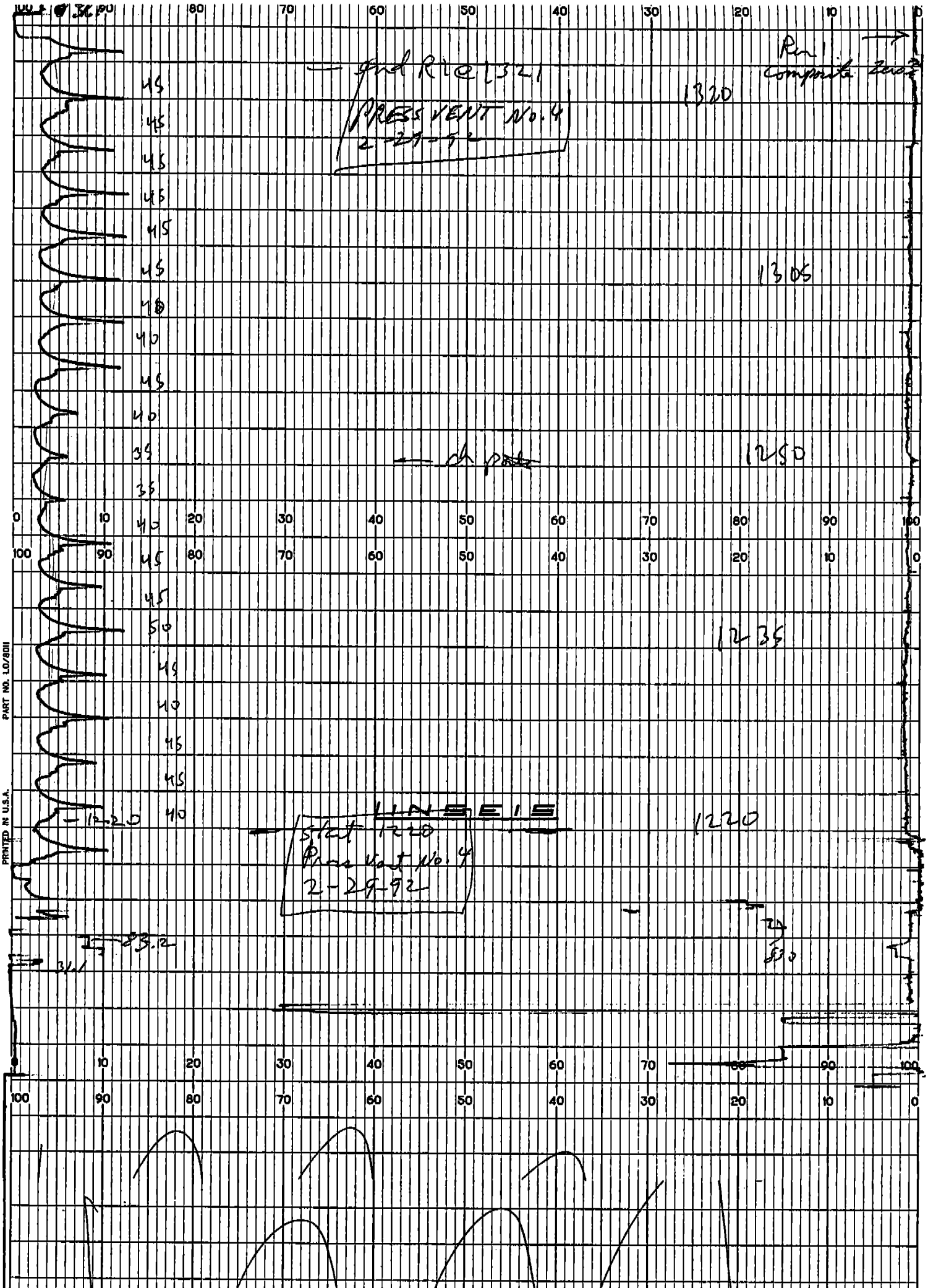

PART
PRINTED IN U.S.A.
160
155
150
LINSEIS
Start
Run 2
Day 5
2-28-92
1426
1429
1426
reset
830
ppm
0
10
20
30
40
50
60
70
80
90
100
700
650
830
500
88.2
31.1
1302
Composite
Run No. 1
PART NO. LO/8011
PRINTED IN U.S.A.
LINSEIS
end 1250
1247



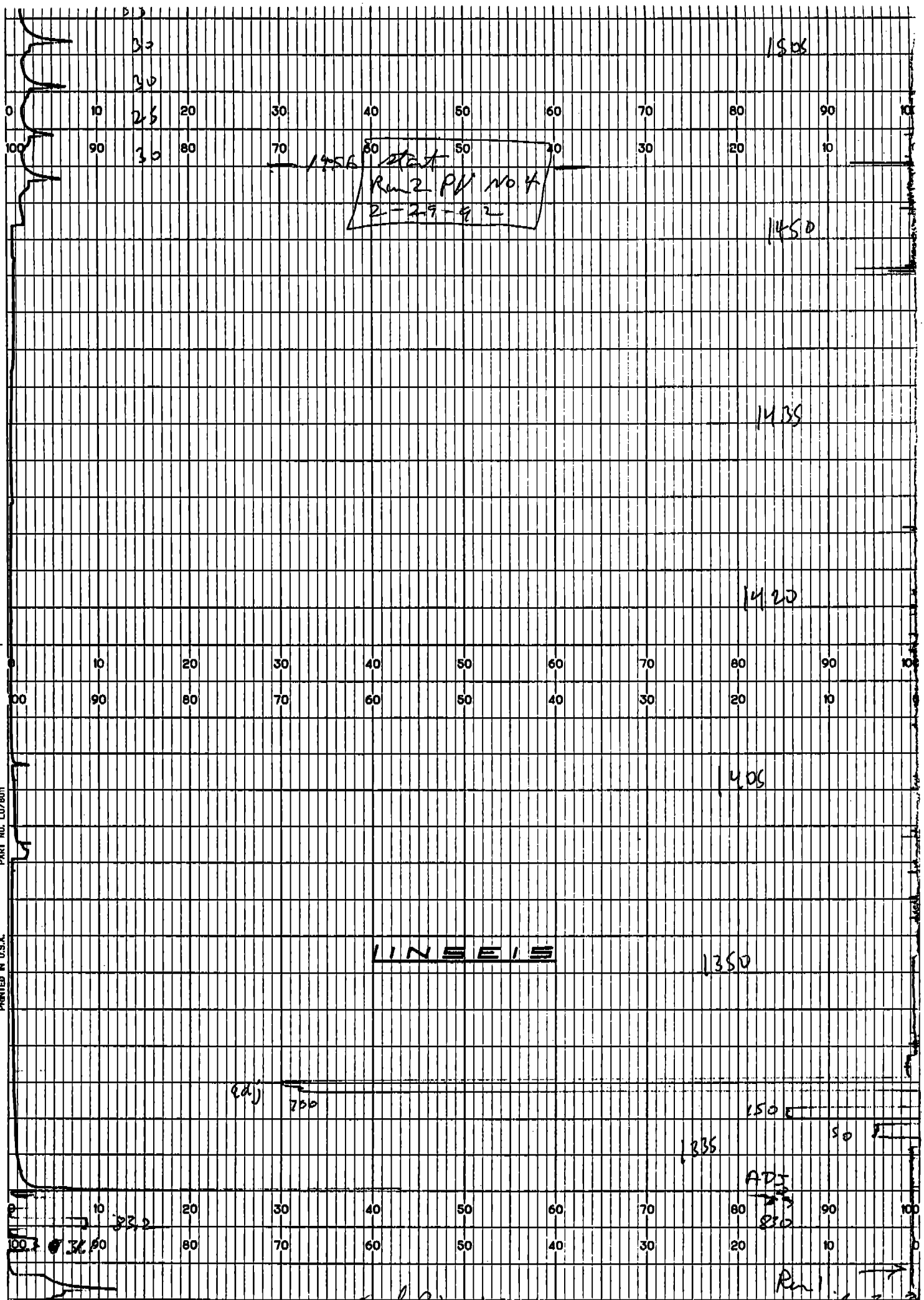
PART NO. LO/8011
PRINTED IN U.S.A.
185
185
164
Start R3e 164
Dryer No. 5
2-28-92
1559
LINSEIS
830
83.2
36.1
1544
700
150
50
zero
zero
Run to Compound
1529
end RC 1528
DRYER No. 5
2-28-92
180
180
180
180
175
175
175
175
1514
165
165
1459
170
ch. pnts
165
160
160
160
1444
155
155
150



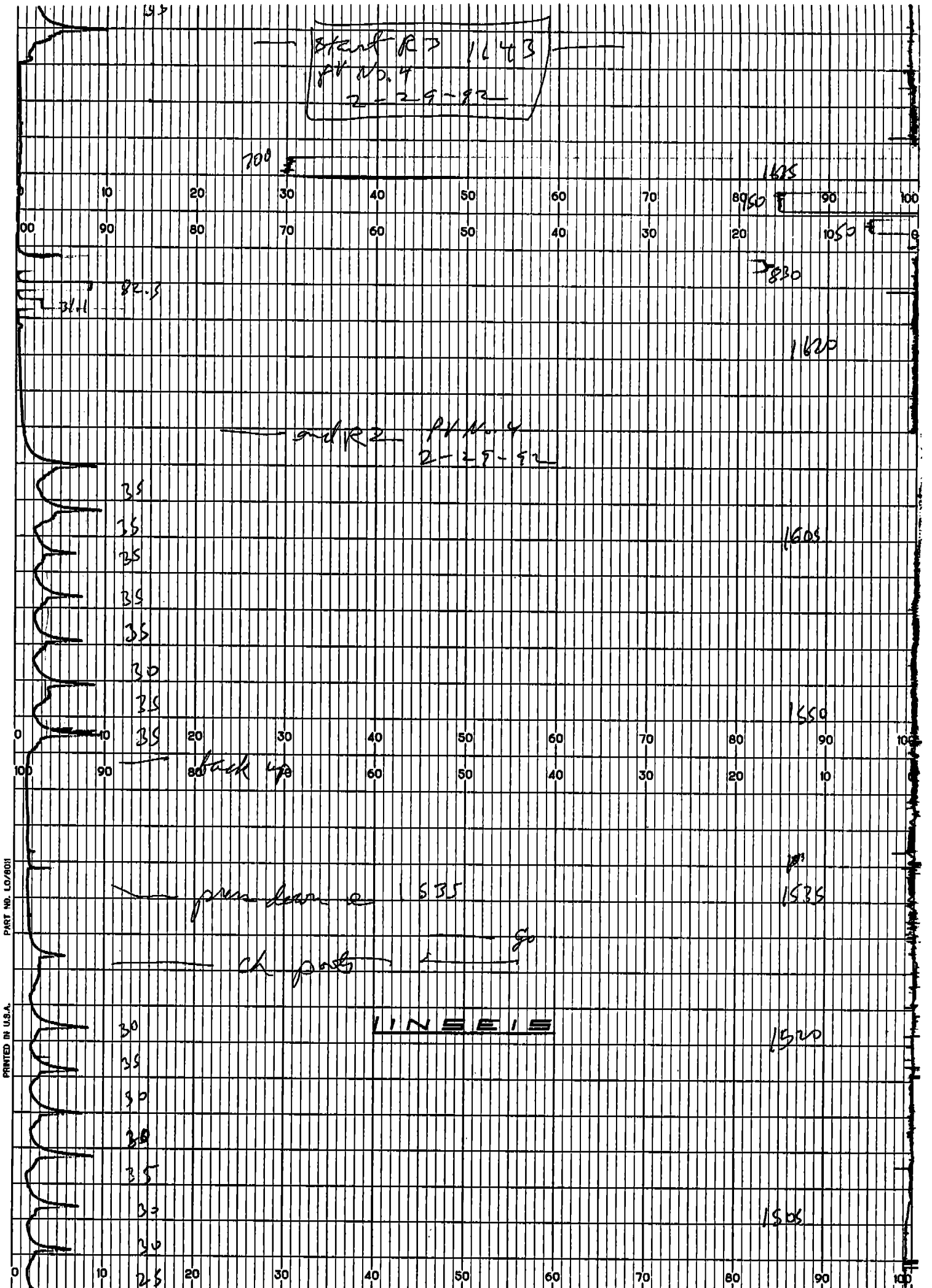
end dl 2-27-92
700
150
50
LINSEIS
830
83.2
31.3
Zero
Composite
Run 3
Zero
end Run 3 1713
1714
2-28-92
1659
1644
1624
1614
Start R3e 164



Run 1 Composite Zero
— End R1 @ 1321
PRESS VENT No. 4
2-29-92
1320
45
45
45
45
45
45
1305
40
40
45
40
35
— ch pole
1250
35
40
45
45
50
1235
45
40
45
45
40
— 1220
LINSEIS
Start 1220
Press Vent No. 4
2-29-92
1220
83.2
31.1
83.0
PART NO. LO/8011
PRINTED IN U.S.A.

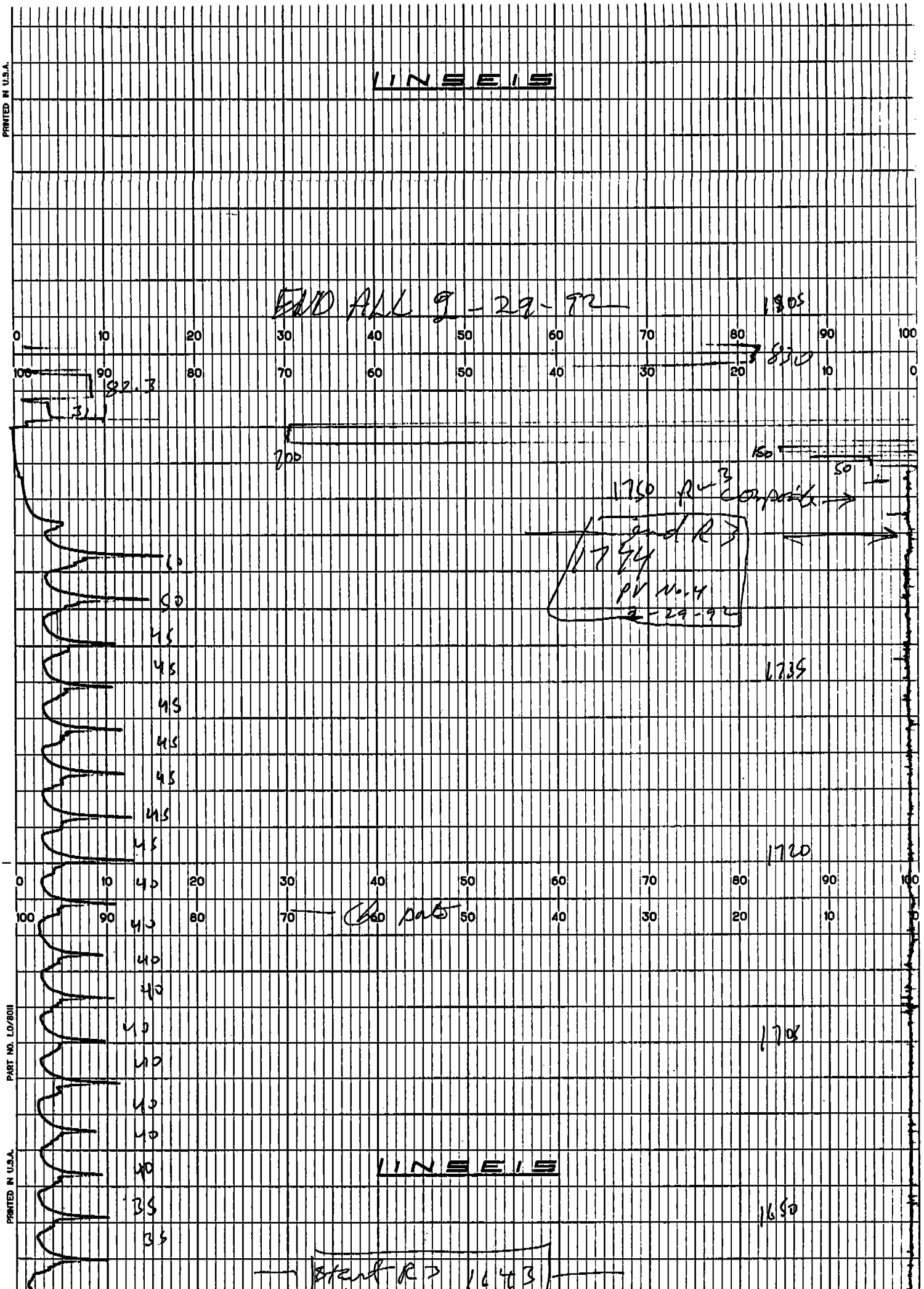


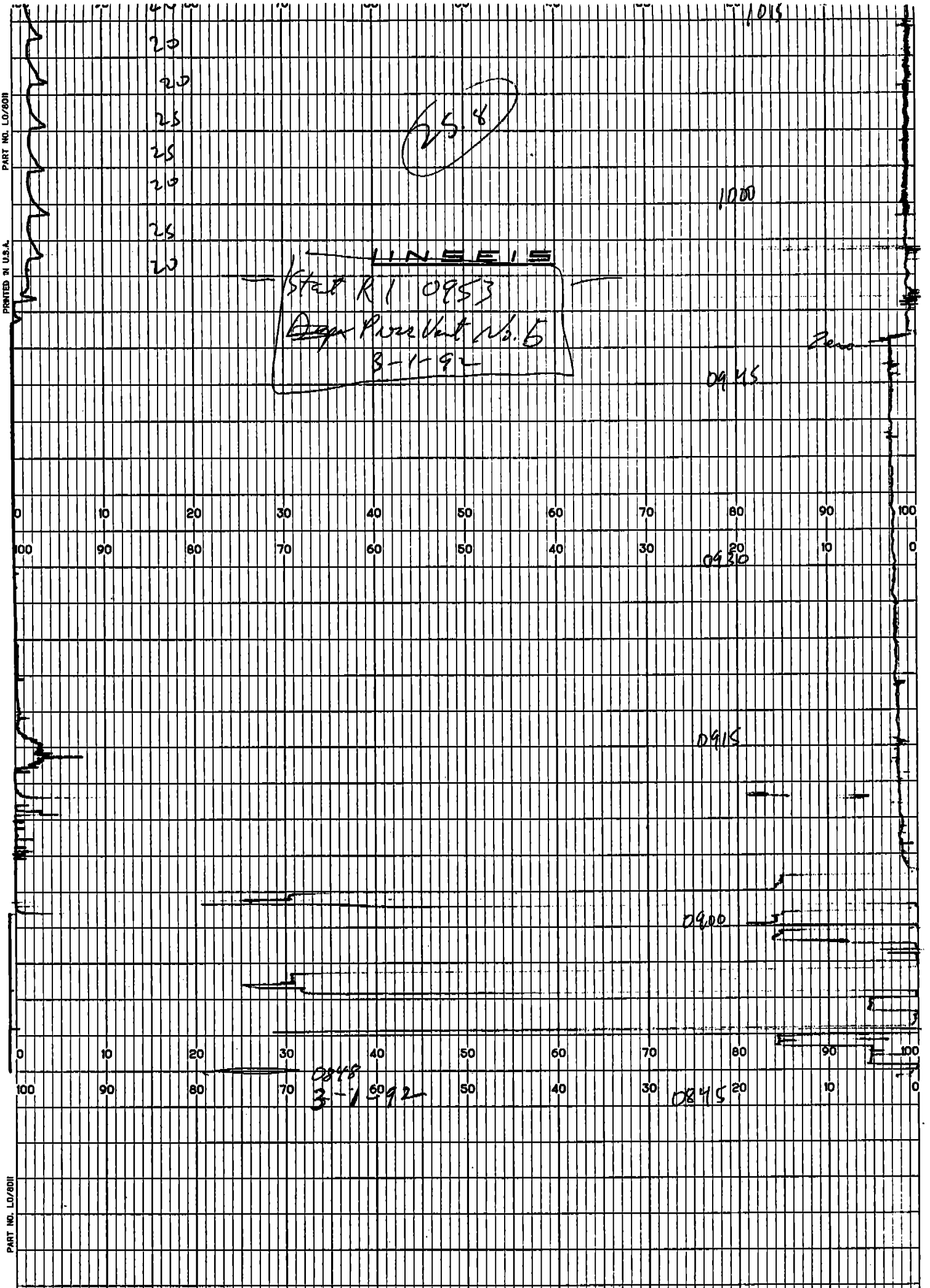
PRINTED IN U.S.A. PART NO. LO/8011



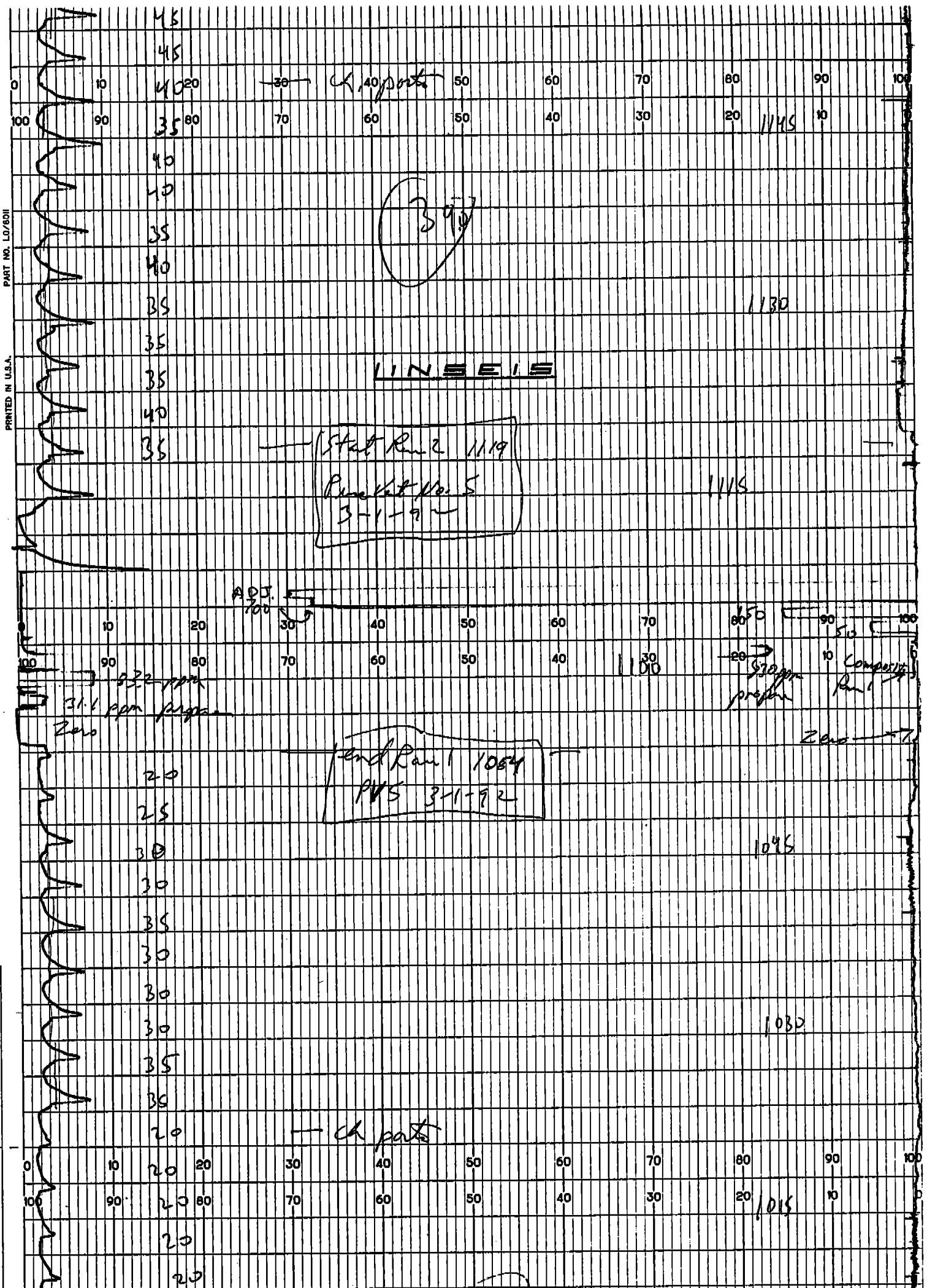
PART NO. LO/8031

PRINTED IN U.S.A.

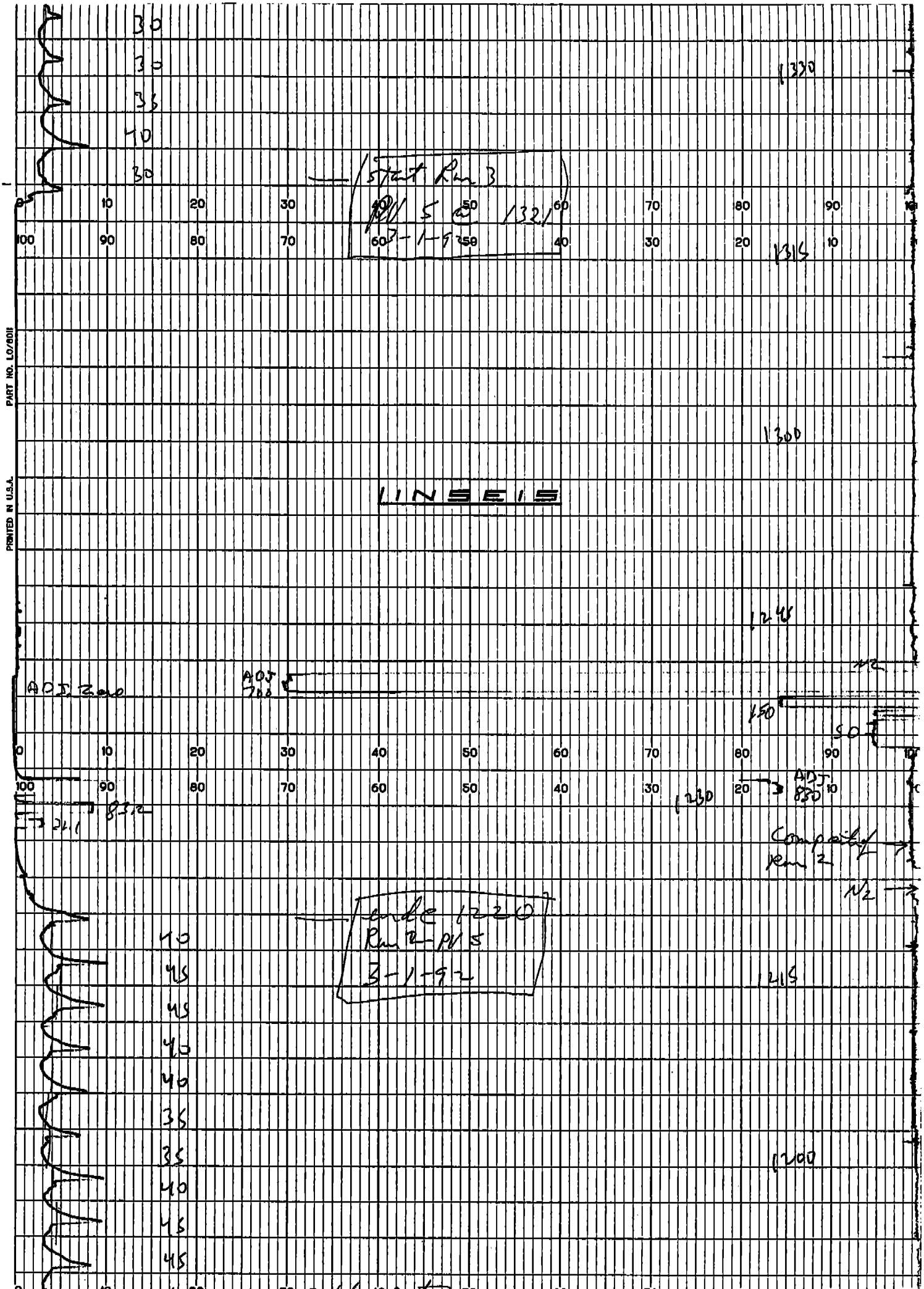

LINSEIS
END ALL 9-29-92
1805
830
82.3
31
700
150
50
1750 R-3 composite
end R3
1744
PV No. 4
9-29-92
60
50
45
45
45
45
45
45
45
1735
1720
40
40
40
40
40
40
40
40
40
40
1705
LINSEIS
35
35
1650
Start R3 1643

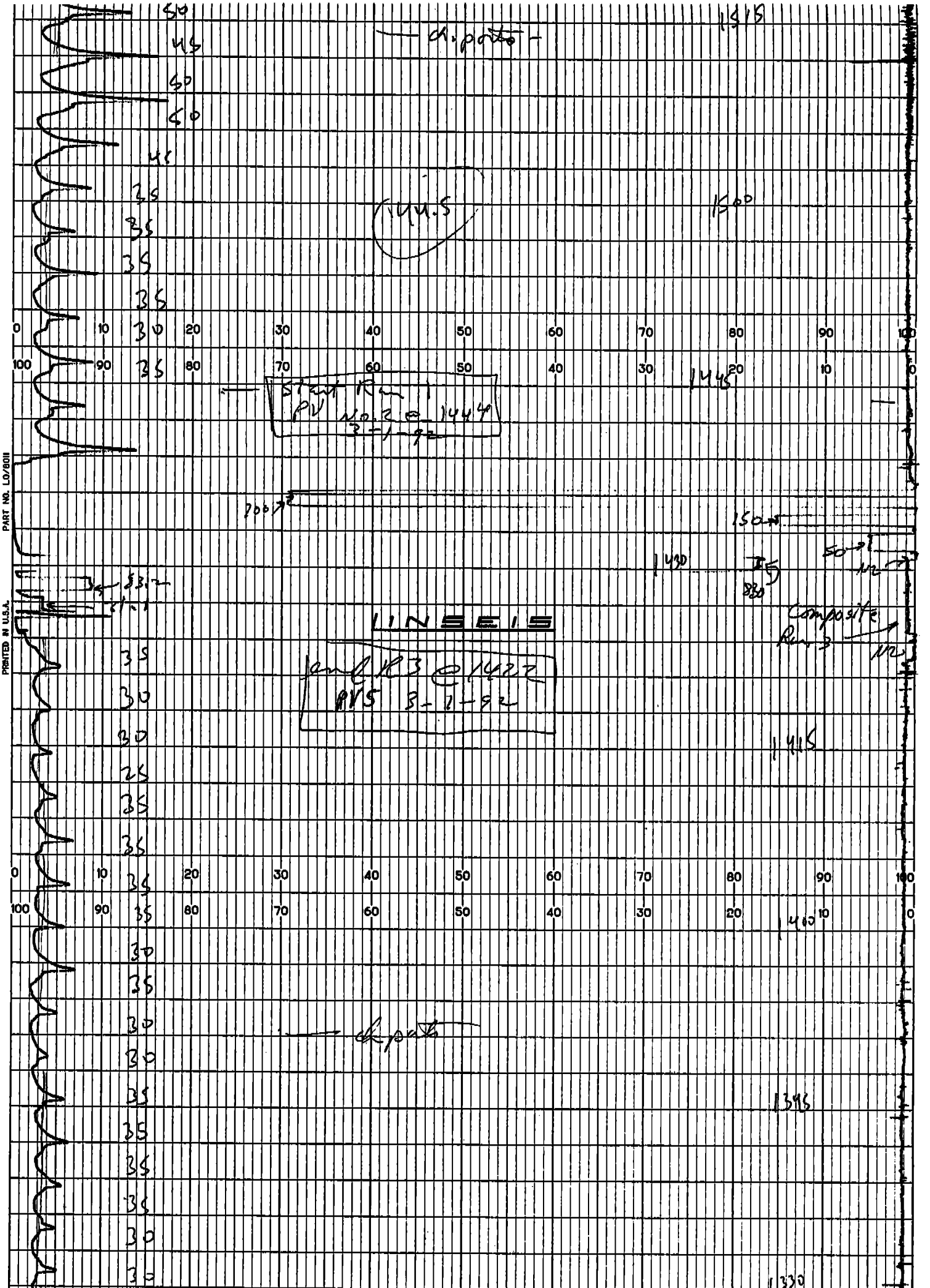


1015
20
20
25
25
20
25
20
25.8
1000
LINSEIS
Start R1 0953
Press Vent No. 6
3-1-92
Zero
0945
0930
0915
0900
0848
3-1-92
0845
PART NO. LO/8011
PRINTED IN U.S.A.

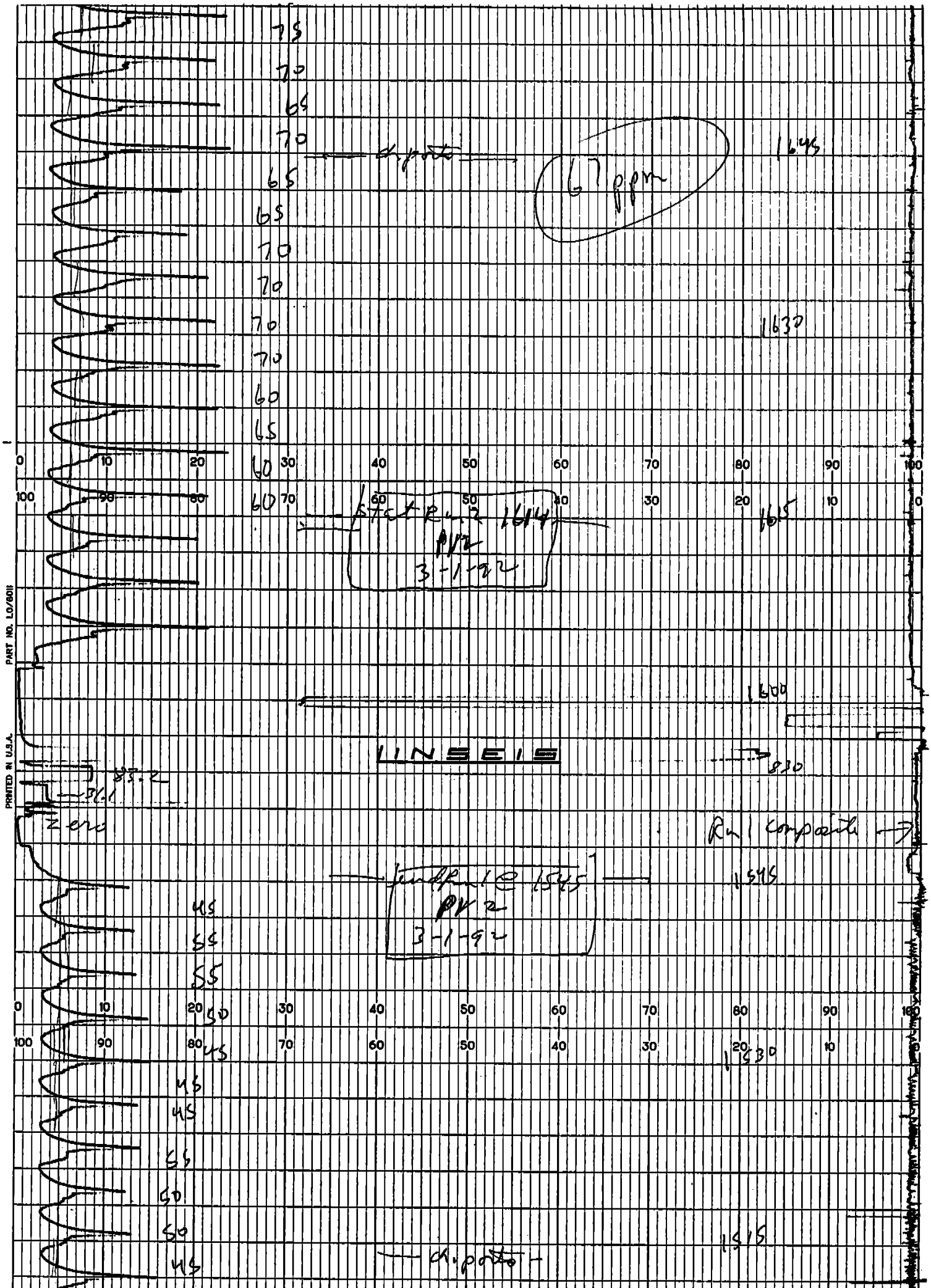


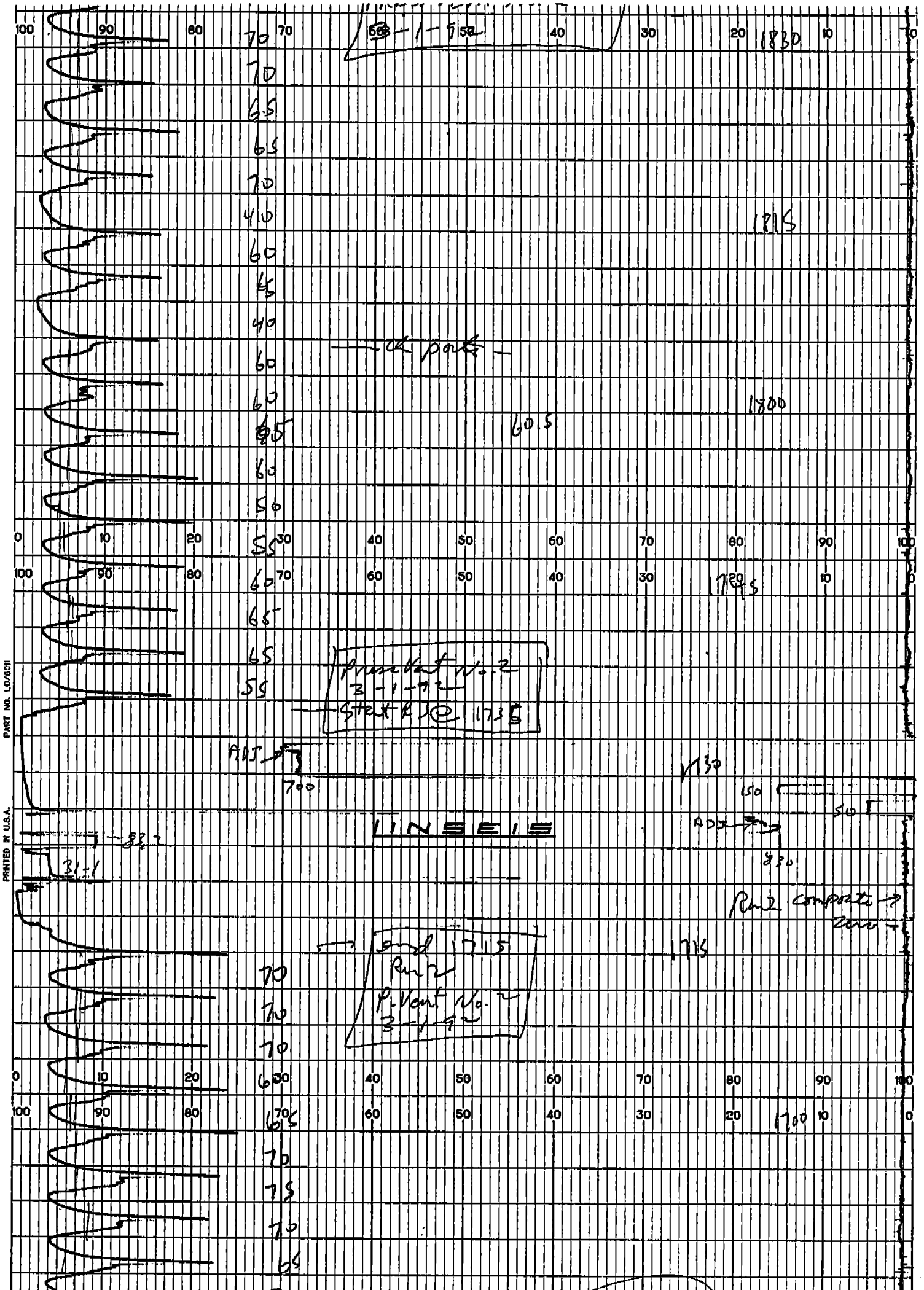
45
45
40
Ch. ports
35
1145
40
40
390
35
40
35
1130
35
LINSEIS
35
40
35
Start Run 2 1119
Pure Vent No. 5
3-1-92
1115
ADJ.
700
150
50
1100
930 ppm
propane
Composite
Run 1
33.2 ppm
31.1 ppm propane
Zero
Zero
End Run 1 1054
PVS 3-1-92
20
25
30
1045
30
35
30
30
30
1030
35
35
20
Ch ports
20
20
1015
20
20
PART NO. LO/8011
PRINTED IN U.S.A.


30
30
35
40
30
1330
Start Run 3
PV 5 @ 1321
3-1-92
1315
1300
LINSEIS
1245
ADJ. Zero
ADJ 700
N2
150
50
ADJ 830
1230
83.2
21.1
Composite of Run 2
N2
ende 1220
Run 2 PV 5
3-1-92
40
45
45
40
40
35
35
40
45
45
1215
1200
PART NO. LO/8011
PRINTED IN U.S.A.

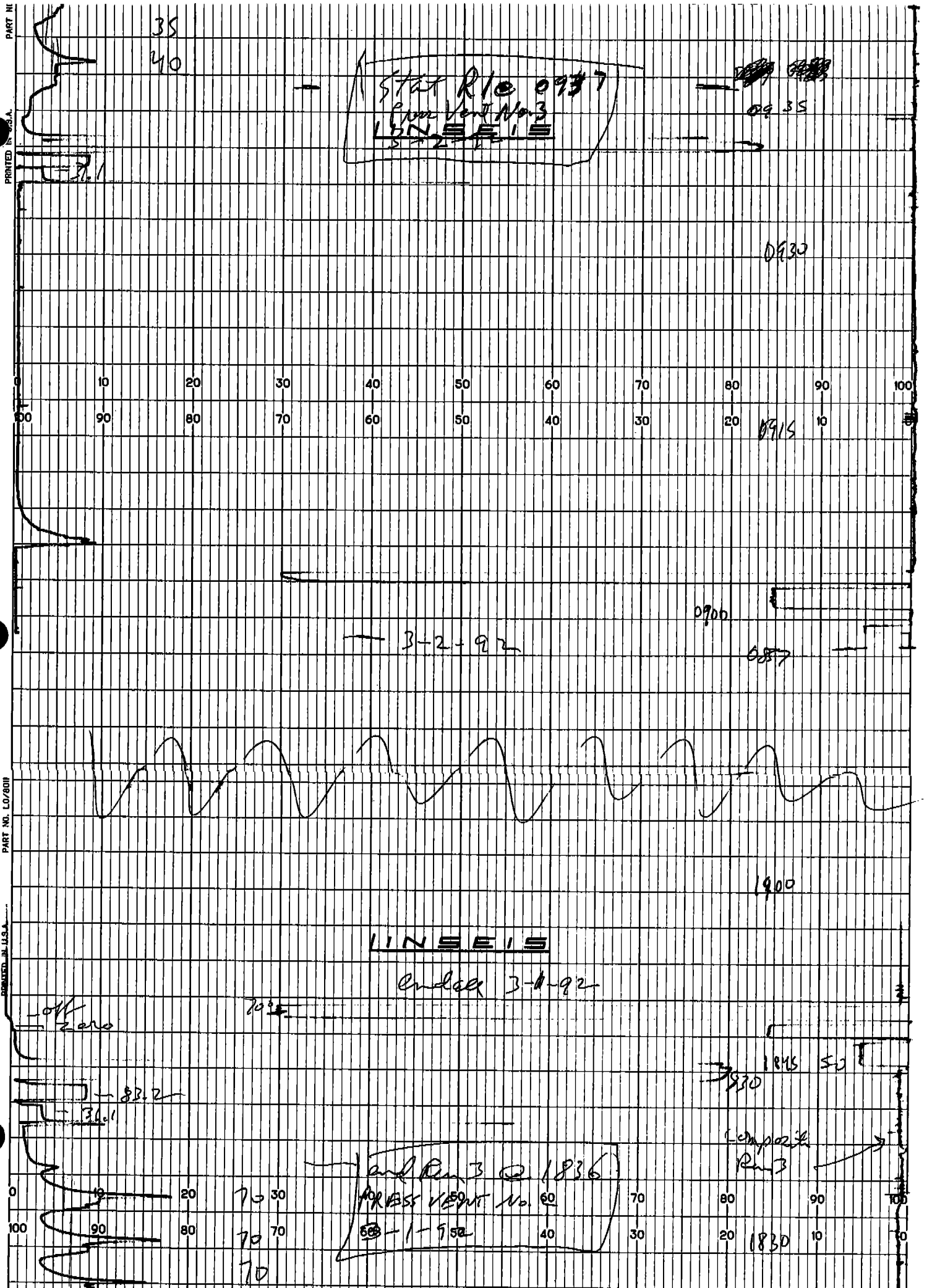


50
45
50
50
45
35
35
35
35
30
35
— ch. parts —
1515
144.5
1500
Start Run 1
PV No. 2 @ 1444
3-1-92
1445
700
150
1430
50
N2
830
Composite
Run 3
N2
LINSEIS
and R3 @ 1422
PV5 3-1-92
35
30
30
25
35
35
35
35
30
35
30
30
35
35
35
35
30
30
— ch. parts
1415
1400
1395
1330
PART NO. LO/8011
PRINTED IN U.S.A.

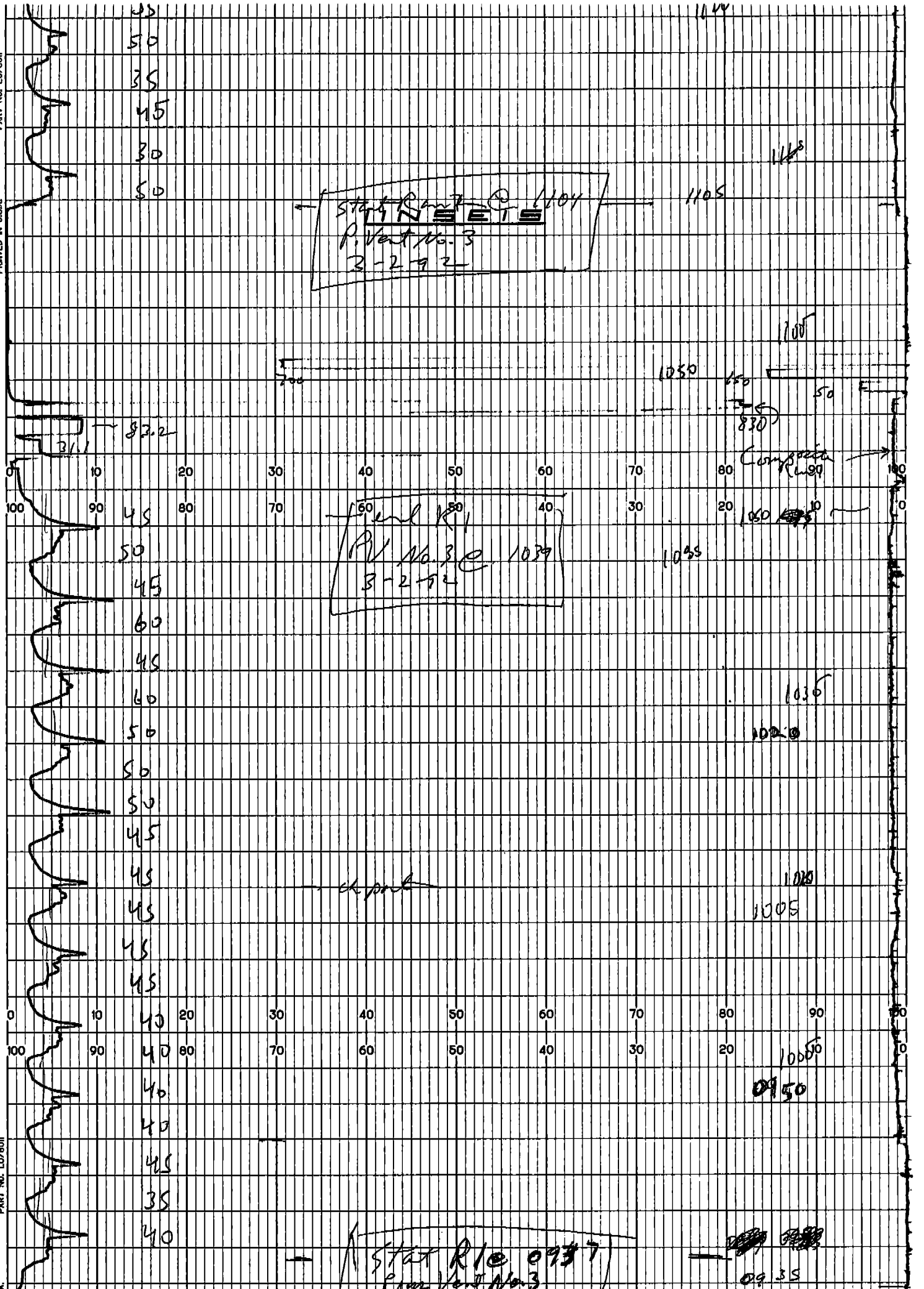

75
70
65
70
chiporto
1645
67 ppm
65
65
70
70
70
1630
70
60
65
60
60
Stat Run 2 1614
PV2
3-1-92
1615
1600
LINSEIS
830
83.2
36.1
zero
Run 1 composite
end Run 1 @ 1545
PV 2
3-1-92
1545
45
55
55
50
45
1530
45
45
55
50
50
45
chiporto
1515
PART NO. LO/601
PRINTED IN U.S.A.



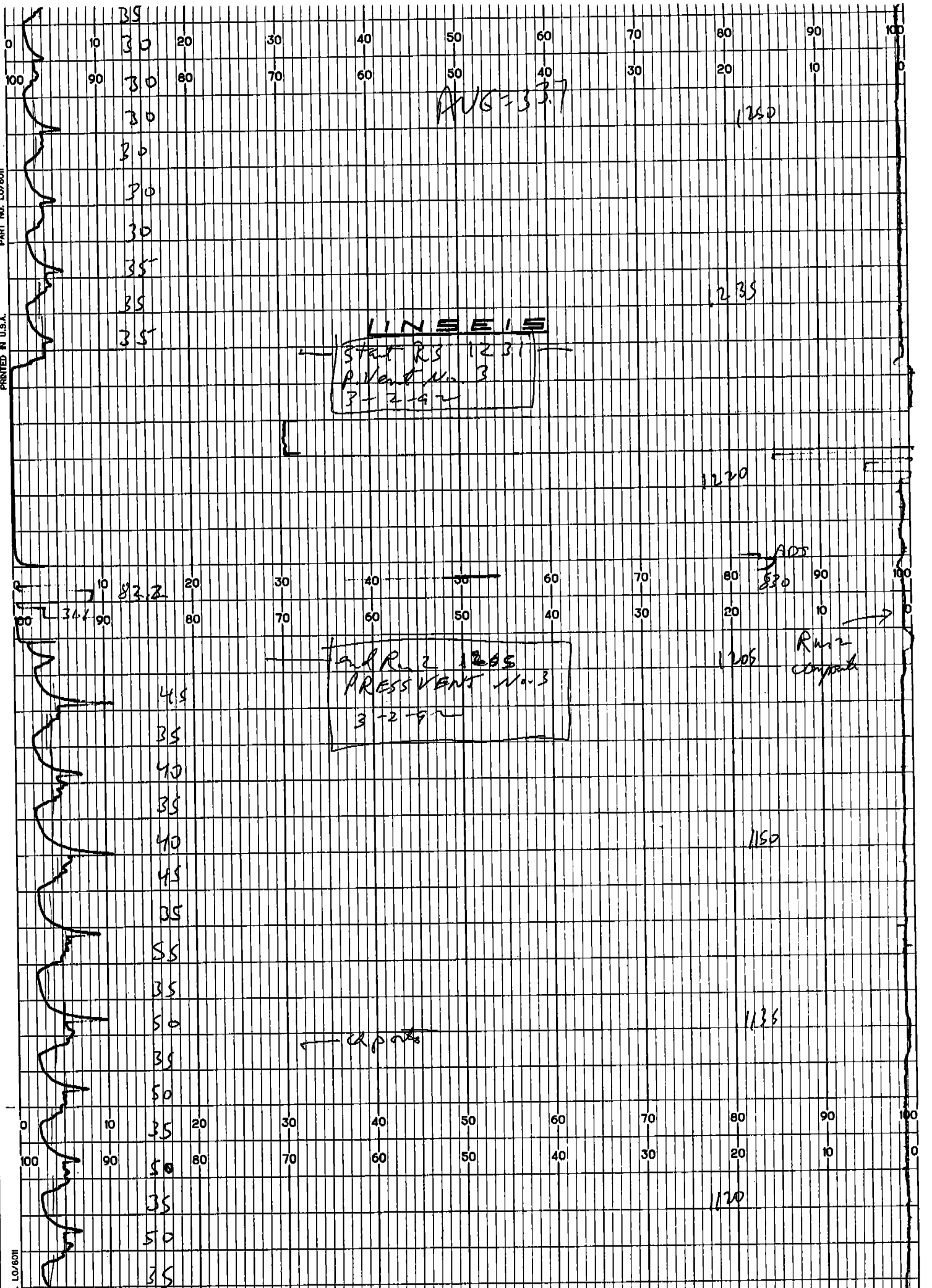
3-1-92
1830
70
70
65
65
70
40
1815
60
65
40
— ck parts —
60
60
1800
65
60.5
60
50
55
60
1745
65
65
55
Press Vent No. 2
3-1-92
Start R3 @ 1735
ADJ
700
1730
150
50
ADJ
830
LINSEIS
83.2
31-1
Run 2 composite →
zero →
end 1715
Run 2
P. Vent No. 2
3-1-92
1715
70
70
70
65
65
1700
70
75
70
65
PART NO. LO/6011
PRINTED IN U.S.A.



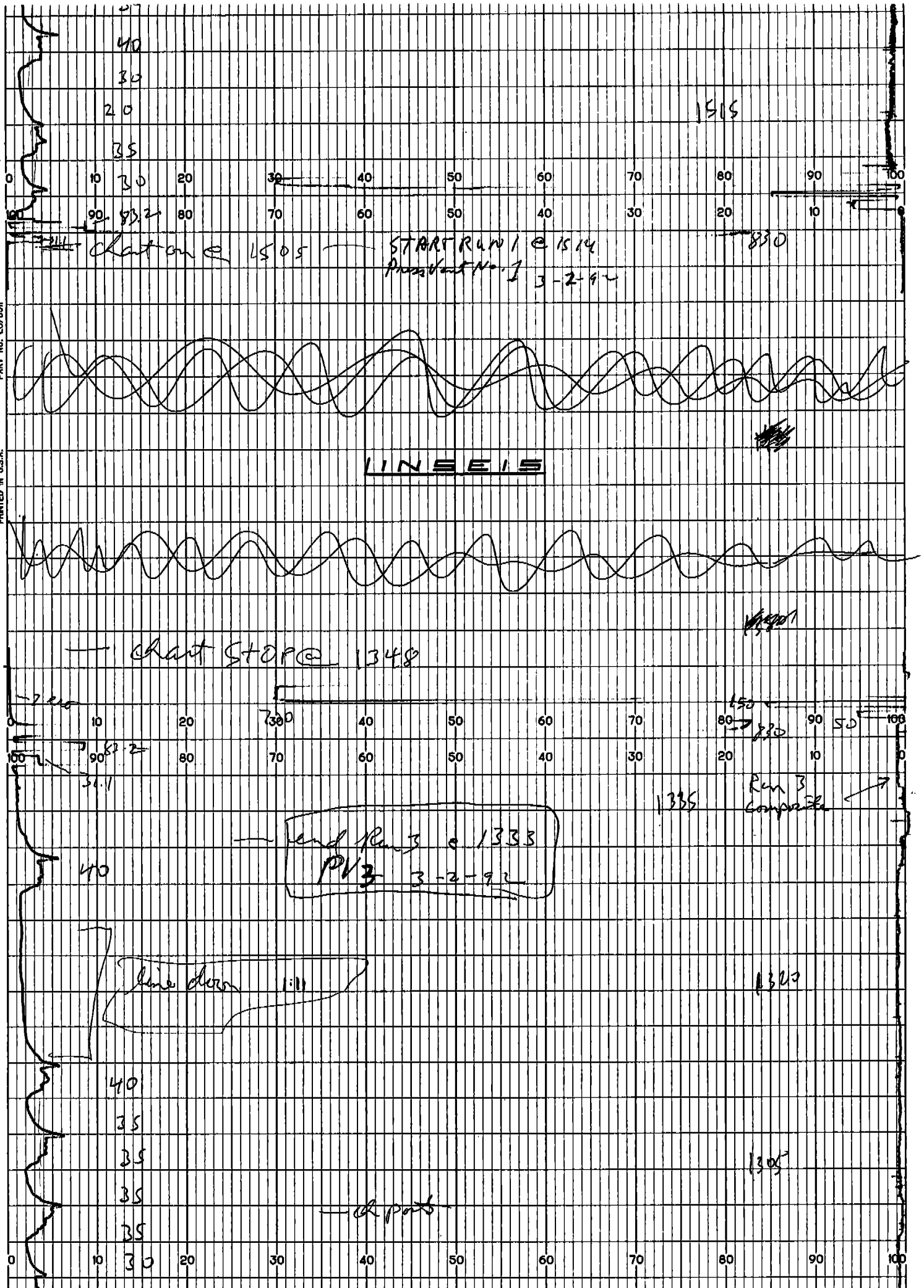
35
40
Stat R1 @ 0937
Cross Vent No. 3
LINSEIS
3-2-92
0935
31.1
0930
0915
0900
3-2-92
0857
1900
LINSEIS
end all 3-1-92
off zero
70
1845
50
830
83.2
36.1
Composite Run 3
end Run 3 @ 1836
PRESS VENT No. 2
3-1-92
70
70
70
1830

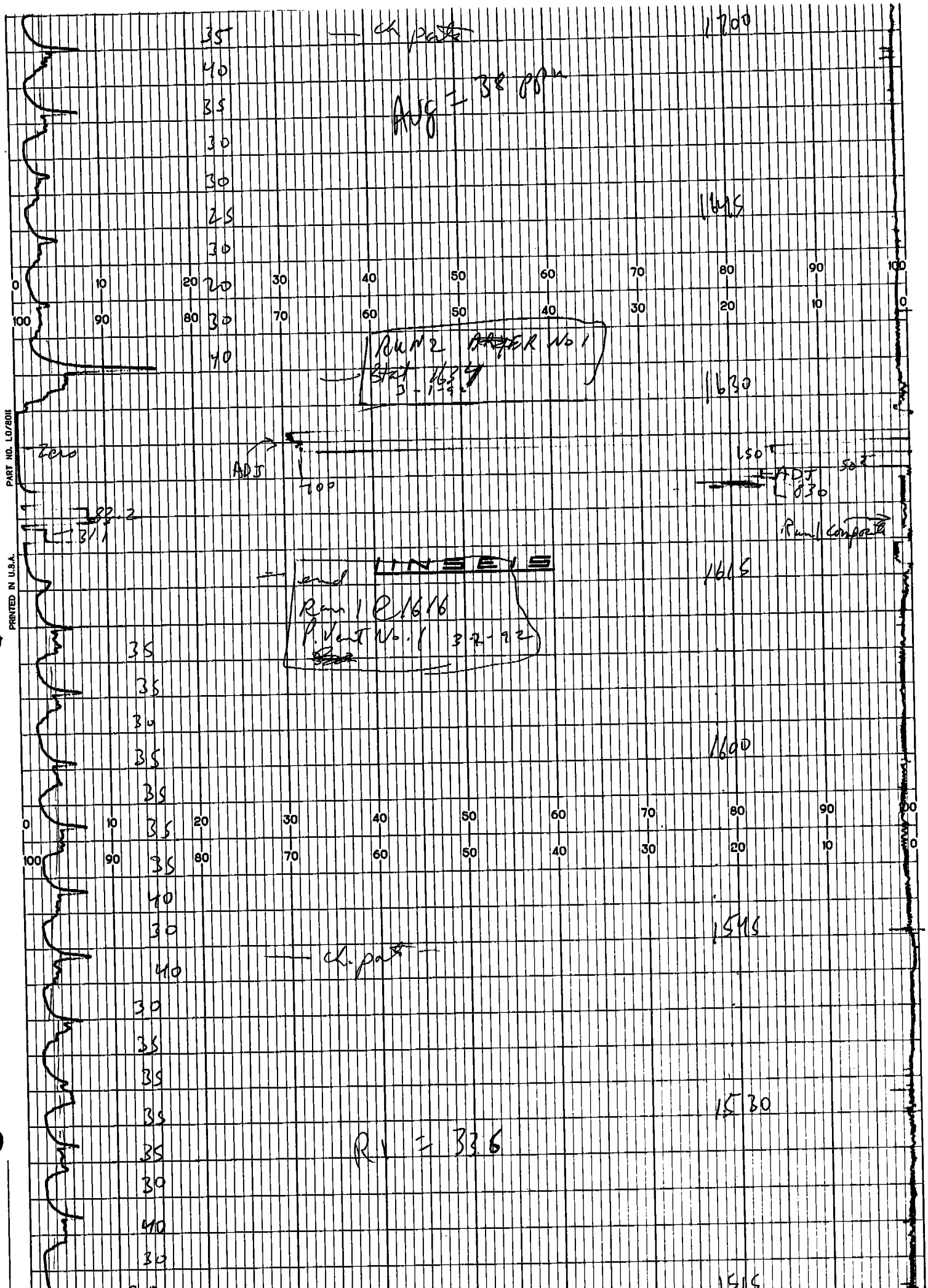


PART NO. LO/8011
PRINTED IN U.S.A.
INSETS
P. Vent No. 3
3-2-92
Stat R1 @ 1104
1105
1100
1050
650
50
830
83.2
31.1
Composite Run
Stat R1
PV No. 3 @ 1039
3-2-92
1035
1036
1020
1005
1000
0950
Stat R1 @ 0937
Pour Vent No. 3
0935

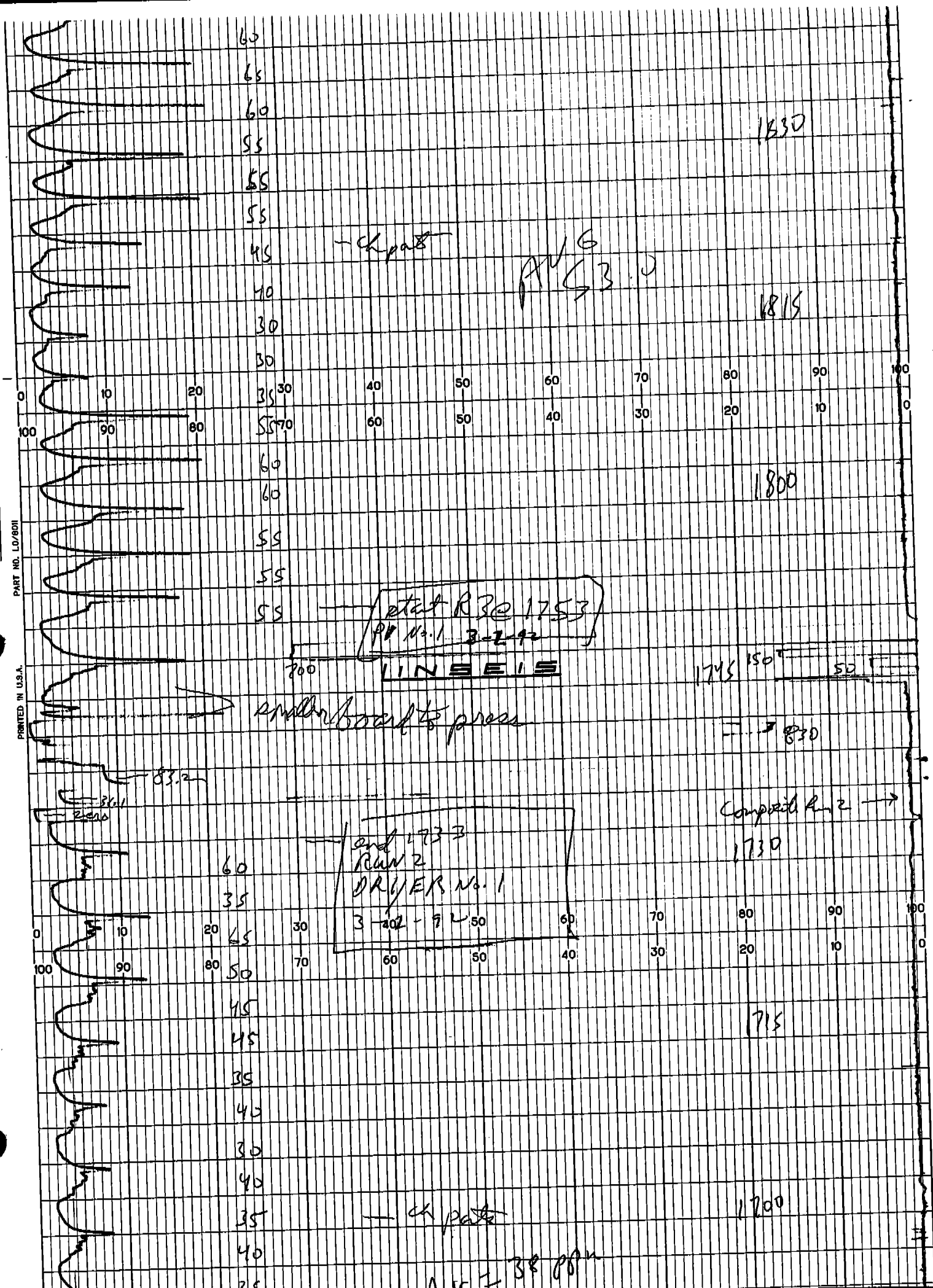


AVG = 33.7
1250
1235
LINSEIS
Start R3 1231
P. Vent No. 3
3-2-92
1220
ADJ
830
82.2
34.6
Run 2 1205
PRESS VENT No. 3
3-2-92
1205
Run 2 composite
1150
1135
capacity
1120
PART NO. LO/8011
PRINTED IN U.S.A.
LO/8011

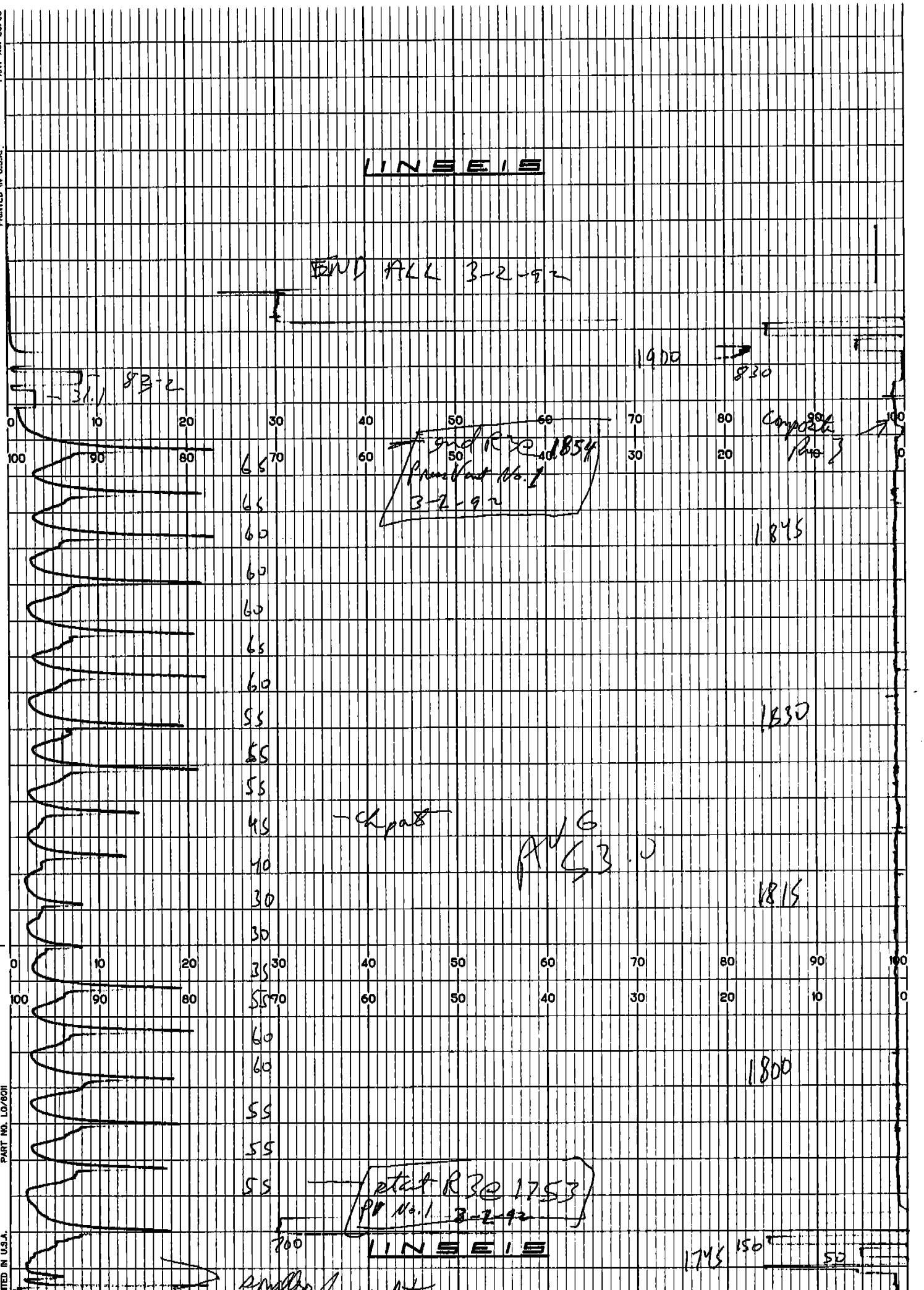

40
30
20
35
30
1515
83.2
chart on @ 1505
START RUN 1 @ 1514
Press Vent No. 1 3-2-92
830
LINSEIS
chart STOP @ 1348
150
830
50
83.2
31.1
1335
Run 3 composite
end Run 3 @ 1333
PV3 3-2-92
40
line down 1:11
1320
40
35
35
35
35
30
1305
ch ports
PART NO. LO/8011
PRINTED IN U.S.A.



ch. pots
1700
Avg = 38 ppm
1645
RUN 2 ~~ARTER~~ No 1
Stat 1634
3-1-92
1630
Zero
ADJ
700
150
ADJ
830
50
Run 1 compost
83.2
31.1
LINSEIS
end
1615
Run 1 @ 1616
P. Vent No. 1 3-2-92
1600
1545
ch. pots
1530
R1 = 33.6
1515
PART NO. LO/8011
PRINTED IN U.S.A.



60
65
60
55
55
55
45
40
30
30
35
55
60
60
55
55
55
1830
— ch pat
AVG 53.0
1815
1800
start R3 @ 1753
PV No. 1 3-2-92
LINSEIS
700
1745
150
50
smaller board to press
830
83.2
36.1
zero
Composite Run 2
end 1733
Run 2
DRYER No. 1
3-2-92
1730
60
35
65
50
45
45
35
40
30
40
35
40
1715
— ch pat
1700
38 ppm
PART NO. LO/8011
PRINTED IN U.S.A.



LINSEIS
END ALL 3-2-92
1900
830
83-2
31.1
Composite Run 3
End R3 @ 1854
Press Vent No. 1
3-2-92
65
65
60
60
60
65
60
55
55
55
45
40
30
30
35
55
60
60
55
55
55
1845
1830
1815
1800
Chpart
AVG
53.0
start R3 @ 1753
PV No. 1 3-2-92
700
LINSEIS
1745
150
50
PART NO. LO/8011
PRINTED IN U.S.A.

APPENDIX D: 02-24-92 TEST DATA FOR DRYER NO. 1

Plant Kirby Forest Industries - Silsbee OSB Plant
Sampling Location No. 1 OSB Dryer
Test For PM / CPM / VOC / CO
Test Operators Russell / Moore / McKnight

RUN No. 1
Date 2-24-92
Time start 1616 end 1717

Meter Box	RAC591349	No. Sample Pts.	6x2	Gas Analysis	int. orsat
Sample Box	No. 1	Minutes/Pt.	5.0	CO_2	0.9 0.9 0.9
Probe/Pitot	5' inc			O_2	20.5 20.4 20.4
Pitot Cp	.84	NOMOGRAPH		CO	NDIR: 20 ppm
Nozzle Dia.	.196	ΔH@	1.85	Time	
Filter No.		Meter Temp.	100		
		% H_2O	15	Condensate:	
Amb. Temp. °F	63	C-Factor	.90	tare 2.00	fin 372
Bar. Press. "Hg	29.61	Stack Temp.	200	Silica gel:	
Static Press. "H_2O	-.46	Ref. ΔP	1.6	tare 721.0	fin 736.0

Remarks:
D .196
D .196 } D_n = .196
D .196

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO ppm
1	1	0	770.039	1.30	1.50	191	86	77	255	60	3	1.0
2	2	5	773.6	1.45	1.65	190	84	77	250	60	3	1.0
3	3	10	776.9	1.50	1.75	190	92	79	245	62	3	1.0
4	4	15	780.5	1.65	1.90	194	102	81	240	62	3	1.0
5	5	20	784.2	1.55	1.80	195	108	84	250	62	4	1.0
6	6	25	788.4	1.25	1.45	189	114	87	250	62	4	1.0
7												
8	1	30	791.747	1.30	1.50	189	114	90	240	62	3	1.0
9	2	5	795.6	1.40	1.65	190	117	93	205	60	3	1.0
10	3	10	799.0	1.50	1.75	194	120	95	210	50	3	1.0
11	4	15	803.1	1.70	2.00	193	123	97	215	50	3	1.0
12	5	20	806.2	1.60	1.85	190	125	99	220	58	3	1.0
13	6	25	810.5	1.25	1.45	186	126	100	220	56	3	1.0
14	End	60	814.214									
15												
16												
17												
18												
19			leak check	.000 →	.007 =	.007 cfm	8" Hg					
20			pitot + ve	3.6 "H_2O								
21			pitot - ve	3.5 "H_2O								
22												
23												
24												
25												
26												
27												
28												
29												
31												
32												
33												
34			44.175	1.2043	1.6875	190.92		98.50				
35												

Plant: Kirby Forest Industries
Sampling Location: No. 1 OSB Dryer
Test For: PM/CPM/CO/VOC
Test Operators: Russell / Moore / McKnight

RUN No. 2
Date 2-24-92
Time start 1824 end 1929

Meter Box	RAC 91349	No. Sample Pts.	6x2	Gas Analysis	int. orsat		Remarks:
Sample Box	No. 3	Minutes/Pt.	5.0	CO_2	1.0	1.0	1.0
Probe/Pitot	5' inc.			O_2	20.3	20.3	20.3
Pitot Cp	.84	NOMOGRAPH		CO	NDIR	= 30ppm	
Nozzle Dia.	.196	ΔH@	1.85	Time			
Filter No.		Meter Temp.	100				1st dump 840 # 1900
		% H_2O	18	Condensate:			2nd
Amb. Temp. °F	64	C-Factor	.86	tare 200	fin 375		
Bar. Press. "Hg	29.60	Stack Temp.	190	Silica gel:			VOC sample not good
Static Press. "H_2O	-.46	Ref. ΔP	1.65	tare 633	fin 646.5		- leaked thru Calib. hose

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO lpm
1	1	0	814.617	1.25	1.40	190	91	90	270	61	2	1.0
2	2	5	819.4	1.40	1.65	185	95	91	260	60	2	1.0
3	3	10	821.6	1.50	1.75	185	103	91	250	52	3	1.0
4	4	15	825.0	1.60	1.80	187	109	92	250	55	3	1.0
5	5	20	828.6	1.45	1.65	186	115	95	275	60	3	1.0
6	6	25	832.6	1.30	1.50	184	119	98	245	62	3	1.0
7												
8	1	30/0	836.113	1.35	1.60	187	118	100	250	62	3	1.0
9	2	5	839.9	1.60	1.80	188	120	100	225	62	3	1.0
10	3	10	844.0	1.50	1.70	189	121	101	235	55	3	1.0
11	4	15	847.5	1.70	1.90	188	125	102	250	55	3	1.0
12	5	20	851.8	1.65	1.85	192	126	103	250	55	3	1.0
13	6	25	855.1	1.25	1.40	185	127	103	240	58	3	1.0
14	end	60	858.317									
15												
16												
17												
18			leak check: .097 → .099 =			.002 cfm @		6" Hg				
19			pitot + ve 4.9									
20			pitot - ve 6.9									
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												
33								105.63				
34			43.700	1.2078	1.6667	187.17						
35												

Plant Kirby Forest Industries - Silsbee, Texas OSB Plant
Sampling Location No. 1 OSB Dryer
Test For PM/CPM/CO/VOC
Test Operators Russell / Moore / McKnight

RUN No. 3
Date 2-27-92
Time start 2010 end 2135

Meter Box	RAC 91345	No. Sample Pts.	6x2	Gas Analysis	integrated		Remarks:
Sample Box	No. 1	Minutes/Pt.	5.0	CO_2	1.0	1.0	0.9
Probe/Pitot	5' inc			O_2	20.4	20.4	20.4
Pitot Cp	.84	NOMOGRAPH		CO	NDIR: 20 ppm		
Nozzle Dia.	.196	ΔH@	1.85	Time			
Filter No.		Meter Temp.	100				
		% H_2O	18	Condensate:			paused @ 11:35 "into 1st half - crimped VOC sample line
Amb. Temp. °F	60	C-Factor	.86	tare 200	fin 378		
Bar. Press. "Hg	29.61	Stack Temp.	190	Silica gel:			
Static Press. "H_2O	-.46	Ref. ΔP	1.65	tare 617	fin 639		

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg	CO lpm
1	1	0	858.658	1.25	1.40	189	95	93	220	55	2	1.0
2	2	5	862.0	1.40	1.60	190	98	94	240	50	2	1.0
3	3	10	865.7	1.40	1.60	189	106	94	250	50	2	1.0
4	4	15	869.3	1.60	1.80	185	92	92	225	53	2	1.0
5	5	20	872.2	1.40	1.60	186	101	91	230	55	2	1.0
6	6	25	876.1	1.20	1.35	186	111	92	230	56	2	1.0
7												
8	1	30/0	879.201	1.30	1.50	185	112	93	225	60	2	1.0
9	2	5	883.1	1.40	1.60	185	114	95	200	56	2	1.0
10	3	10	886.1	1.50	1.70	185	118	97	225	56	2	1.0
11	4	15	889.9	1.70	1.90	181	122	99	230	60	2	1.0
12	5	20	893.8	1.50	1.70	185	124	100	190	60	2	1.0
13	6	25	897.4	1.35	1.55	180	125	106	195	60	2	1.0
14	end	60	900.847									
15												
16												
17												
18			leak check: .036 → .039 - .003 cfm @ 10" Hg									
19			pitot + @ 4.5									
20			pitot - @ 3.6									
21												
22												
23												
24												
25												
26												
27												
28												
29												
31												
32												
33												
34			42.189	1.1889	1.6083	185.5		102.42				
35												

PARTICULATE CATCH ANALYSIS AND SAMPLE CUSTODY RECORD:

SAMPLES/PROJECT: Kirby - Silsbee DSB / Dryer No. 1

DATE TAKEN: 2-24-92 SAMPLING TEAM: Russell / Moore / McKnight

SAMPLES RECOVERED BY: DGR DATE RECOVERED: 2-24-92

SAMPLE ID/ANALYSES REQUIRED: No. OF CONTAINERS: 9

D1 R1 Probe Wash - Gravimetric	D1R1 Filter - grav.	D1R1 BAK - ext grav
D1R2 " " "	D1R2 " "	D1R2 BAK - "
D1R3 " " "	D1R3 " "	D1R2 BAK "
Acetone BLANK - gravimetric		

CUSTODY EXCHANGES: (declare purpose, date and time, personnel)

Samples recovered, stored, transported to lab by David G. Russell

~~Custody exchanged to [illegible] for analysis~~

Analysis performed by DGR - No custody exchange

Filter treatment: Filters oven dried 2 hours at 105° C, desiccated at least 24 hours, weighed to constant weight

FILTERS:

RUN NO.	1	2	3	
FILTER NO.	409	408	410	
FILTER TARE, gms	.5662	.5673	.5663	
1st weighing	.7906	.7445	.7517	
2nd weighing	.7907	.7446	.7517	
3rd weighing				
FINAL WEIGHT, gms.	.7907	.7446	.7517	
NET GAIN, gms.	.2245	.1773	.1854	

Probe wash treatment: Transferred to a tared beaker, acetone evaporated over low heat, desiccated at least 24 hours, weighed to constant weight.

PROBE WASH:

RUN NO.	1	2	3	
CONTAINER ID	D1R1	D1R2	D1R3	
VOLUME INTACT?	✓	✓	✓	
VOLUME, ml	120	150	155	
TARE WT., gms.	(2) 104.7550	(4) 108.4637	(7) 111.5447	
1st weighing	104.7777	108.4742	111.5598	
2nd weighing	104.7773	108.4739	111.5599	
3rd weighing				
FINAL WEIGHT, gms.	104.7773	108.4739	111.5599	
NET GAIN, gms.	.0223	.0102	.0152	
LESS BLANK, gms.	-.0001	-.0001	-.0001	

PARTICULATE SAMPLE WEIGHT, mg.

RUN NO.	1			
filter + probe	266.7	187.4	200.5	

SILSBEE, TX

KIRBY/SILSBEE

Source category: Reconstituted wood products
Plant name : Louisiana-Pacific
Test date :
Process :

Date:
Location:
Ref. No.: 1

Basis for process rate :

M25A

TTC Reported as Carbon

[filter @ M5 temp all 5 dryers]

New PM-10 & cond

as Carbon

Source	Type of control	Pollutant	Run No.	Emission rate, lb/hr	Process rate, ton/hr	Emission factor kg/Mg	Emission factor lb/ton
Dryer No. 1	Multiclone	filt. PM	1	15.87	6.90	1.15	2.30
		filt. PM	2	13.84	7.05	0.98	1.96
		filt. PM	3	15.55	7.05	1.10	2.21
		AVERAGE				1.08	2.16
		cond. inorg. PM	1	0.19	6.90	0.014	0.028
		cond. inorg. PM	2	0.08	7.05	0.006	0.011
		cond. inorg. PM	3	0.03	7.05	0.002	0.004
		AVERAGE				0.007	0.014
		cond. org. PM	1	0.73	6.90	0.053	0.106
		cond. org. PM	2	0.61	7.05	0.043	0.087
		cond. org. PM	3	0.88	7.05	0.062	0.125
		AVERAGE				0.053	0.106
		PM-10	1	18.02	7.90	1.14	2.28
		PM-10	2	18.99	7.90	1.20	2.40
		PM-10	3	18.39	7.90	1.16	2.33
		AVERAGE				1.17	2.34
		cond. PM	1	1.34	7.90	0.085	0.169
		cond. PM	2	0.60	7.90	0.038	0.076
		cond. PM	3	0.93	7.90	0.059	0.118
		AVERAGE				0.060	0.121
		CO	1	12	6.90	0.88	1.8
		CO	2	19	7.05	1.31	2.62
		CO	3	14	7.05	1.00	2.00
		AVERAGE				1.07	2.13
		CO2	1	2,125	6.90	154	308
		CO2	2	2,087	7.05	148	296
		CO2	3	1,749	7.05	124	248
		AVERAGE				142	284
		formaldehyde	1	0.2600	9.80	0.0133	0.0265
		formaldehyde	2	0.1400	9.80	0.007	0.0143
		formaldehyde	3	0.1000	9.80	0.005	0.0102
		AVERAGE				0.0085	0.0170
		total hydrocarbon	1	42.6	6.90	3.09	6.17
		total hydrocarbon	2	36.8	7.05	2.61	5.22
		total hydrocarbon	3	46.0	7.05	3.26	6.52
		AVERAGE				2.99	5.97
Dryer No. 2	Multiclone	filt. PM	1	18.75	7.50	1.25	2.50
		filt. PM	2	12.14	7.50	0.81	1.62

Source category: Reconstituted wood products
Plant name : Louisiana-Pacific
Test date :
Process :

Date:
Location:
Ref. No.:
Basis for process rate :

Source	Type of control	Pollutant	Run No.	Emission rate, lb/hr	Process rate, ton/hr	Emission factor kg/Mg	Emission factor lb/ton
		filt. PM	3	11.61	7.50	0.77	1.55
		AVERAGE				0.94	1.89
		cond. inorg. PM	1	0.21	7.50	0.014	0.028
		cond. inorg. PM	2	0.02	7.50	0.001	0.003
		cond. inorg. PM	3	0.06	7.50	0.004	0.008
		AVERAGE				0.006	0.013
		cond. org. PM	1	0.81	7.50	0.054	0.108
		cond. org. PM	2	1.21	7.50	0.081	0.161
		cond. org. PM	3	1.15	7.50	0.077	0.153
		AVERAGE				0.070	0.141
		PM-10	1	17.87	7.35	1.22	2.43
		PM-10	2	15.38	7.35	1.05	2.09
		PM-10	3	12.50	7.35	0.85	1.70
		AVERAGE				1.04	2.07
		cond. PM	1	0.54	7.35	0.037	0.074
		cond. PM	2	0.32	7.35	0.021	0.043
		cond. PM	3	0.29	7.35	0.020	0.040
		AVERAGE				0.026	0.052
		CO	1	15	7.5	0.98	1.96
		CO	2	23	7.5	1.52	3.04
		CO	3	15	7.5	0.97	1.95
		AVERAGE				1.16	2.32
		CO2	1	1,743	7.5	116	232
		CO2	2	1,688	7.5	113	225
		CO2	3	1,464	7.5	98	195
		AVERAGE				109	218
		formaldehyde	1	0.1700	7.20	0.0118	0.0236
		formaldehyde	2	0.1000	7.20	0.007	0.0139
		formaldehyde	3	0.4000	7.35	0.027	0.0544
		AVERAGE				0.0153	0.0306
	as Carbon	total hydrocarbon	1	44.3	7.50	2.95	5.91
		total hydrocarbon	2	37.4	7.50	2.49	4.99
		total hydrocarbon	3	35.4	7.50	2.36	4.72
		AVERAGE				2.60	5.20
Dryer No. 3	Multiclone	filt. PM	1	12.22	7.10	0.86	1.72
		filt. PM	2	12.12	7.75	0.78	1.56
		filt. PM	3	12.60	7.75	0.81	1.63
		AVERAGE				0.82	1.64

Source category: Reconstituted wood products
Plant name : Louisiana-Pacific
Test date :
Process :

Date:
Location:
Ref. No.:
Basis for process rate :

Source	Type of control	Pollutant	Run No.	Emission rate, lb/hr	Process rate, ton/hr	Emission factor kg/Mg	Emission factor lb/ton
		cond. inorg. PM	1	0.30	7.10	0.021	0.042
		cond. inorg. PM	2	0.01	7.75	0.001	0.001
		cond. inorg. PM	3	0.22	7.75	0.014	0.028
		AVERAGE				0.012	0.024
		cond. org. PM	1	0.63	7.10	0.044	0.089
		cond. org. PM	2	1.04	7.75	0.067	0.134
		cond. org. PM	3	0.46	7.75	0.030	0.059
		AVERAGE				0.047	0.094
		PM-10	1	18.60	9.00	1.03	2.07
		PM-10	2	15.94	9.00	0.89	1.77
		PM-10	3	16.16	9.00	0.90	1.80
		AVERAGE				0.94	1.88
		cond. PM	1	0.58	9.00	0.032	0.064
		cond. PM	2	0.42	9.00	0.023	0.046
		cond. PM	3	0.42	9.00	0.024	0.047
		AVERAGE				0.026	0.053
		CO	1	2	7.10	0.14	0.3
		CO	2	5	7.75	0.34	0.69
		CO	3	4	7.75	0.26	0.52
		AVERAGE				0.25	0.50
		CO2	1	1,563	7.10	110	220
		CO2	2	1,672	7.75	108	216
		CO2	3	1,551	7.75	100	200
		AVERAGE				106	212
		formaldehyde	1	0.5300	7.10	0.0373	0.0746
		formaldehyde	2	0.4000	7.10	0.028	0.0563
		formaldehyde	3	0.2500	7.75	0.016	0.0323
		AVERAGE				0.0272	0.0544
	as Carbon	total hydrocarbon	1	41.2	7.10	2.90	5.80
		total hydrocarbon	2	47.6	7.75	3.07	6.14
		total hydrocarbon	3	47.3	7.75	3.05	6.10
		AVERAGE				3.01	6.02
Dryer No. 4	Multiclone	filt. PM	1	12.89	9.05	0.71	1.42
		filt. PM	2	13.45	9.05	0.74	1.49
		filt. PM	3	12.98	7.60	0.85	1.71
		AVERAGE				0.77	1.54
		cond. inorg. PM	1	0.03	9.05	0.002	0.003
		cond. inorg. PM	2	0.22	9.05	0.012	0.024

Source category: Reconstituted wood products
Plant name : Louisiana-Pacific
Test date :
Process :

Date:
Location:
Ref. No.:
Basis for process rate :

Source	Type of control	Pollutant	Run No.	Emission rate, lb/hr	Process rate, ton/hr	Emission factor kg/Mg	Emission factor lb/ton
		cond. inorg. PM	3	0.09	7.60	0.006	0.012
		AVERAGE				0.007	0.013
		cond. org. PM	1	0.82	9.05	0.045	0.091
		cond. org. PM	2	1.31	9.05	0.072	0.145
		cond. org. PM	3	0.86	7.60	0.057	0.113
		AVERAGE				0.058	0.116
		PM-10	1	18.20	7.90	1.15	2.30
		PM-10	2	19.18	7.90	1.21	2.43
		PM-10	3	19.97	7.90	1.26	2.53
		AVERAGE				1.21	2.42
		cond. PM	1	0.74	7.90	0.047	0.094
		cond. PM	2	0.81	7.90	0.051	0.103
		cond. PM	3	0.90	7.90	0.057	0.114
		AVERAGE				0.052	0.104
		CO	1	24	9.05	1.30	2.60
		CO	2	5	9.05	0.30	0.60
		CO	3	5	7.6	0.32	0.63
		AVERAGE				0.64	1.28
		CO2	1	2,026	9.05	112	224
		CO2	2	2,211	9.05	122	244
		CO2	3	2,160	7.6	142	284
		AVERAGE				125	251
		formaldehyde	1	0.3700	8.20	0.0226	0.0451
		formaldehyde	2	0.5600	8.20	0.034	0.0683
		formaldehyde	3	0.5800	8.20	0.035	0.0707
		AVERAGE				0.0307	0.0614
		total hydrocarbon	1	38.5	9.05	2.13	4.25
		total hydrocarbon	2	36.8	9.05	2.03	4.07
		total hydrocarbon	3	38.5	7.60	2.53	5.07
		AVERAGE				2.23	4.46
Dryer No. 5	Multiclone	filt. PM	1	17.11	7.80	1.10	2.19
		filt. PM	2	13.50	7.80	0.87	1.73
		filt. PM	3	14.45	7.80	0.93	1.85
		AVERAGE				0.96	1.93
		cond. inorg. PM	1	0.22	7.80	0.014	0.028
		cond. inorg. PM	2	0.09	7.80	0.006	0.012
		cond. inorg. PM	3	0.06	7.80	0.004	0.008
		AVERAGE				0.008	0.016

Source category: Reconstituted wood products
Plant name : Louisiana-Pacific
Test date :
Process :

Date:
Location:
Ref. No.:
Basis for process rate :

Source	Type of control	Pollutant	Run No.	Emission rate, lb/hr	Process rate, ton/hr	Emission factor kg/Mg	Emission factor lb/ton
		cond. org. PM	1	0.76	7.80	0.049	0.097
		cond. org. PM	2	0.66	7.80	0.042	0.085
		cond. org. PM	3	0.87	7.80	0.056	0.112
		AVERAGE				0.049	0.098
		PM-10	1	18.06	7.50	1.20	2.41
		PM-10	2	17.02	7.50	1.13	2.27
		PM-10	3	19.47	7.50	1.30	2.60
		AVERAGE				1.21	2.42
		cond. PM	1	0.62	7.50	0.041	0.082
		cond. PM	2	0.50	7.50	0.033	0.067
		cond. PM	3	0.38	7.50	0.025	0.051
		AVERAGE				0.033	0.067
		CO	1	5	7.8	0.31	0.61
		CO	2	4	7.8	0.26	0.53
		CO	3	3	7.8	0.22	0.44
		AVERAGE				0.26	0.53
		CO2	1	2,202	7.8	141	282
		CO2	2	2,148	7.8	138	275
		CO2	3	2,166	7.8	139	278
		AVERAGE				139	278
		formaldehyde	1	0.3400	7.65	0.0222	0.0444
		formaldehyde	2	0.3600	7.65	0.024	0.0471
		formaldehyde	3	0.3400	7.65	0.022	0.0444
		AVERAGE				0.0227	0.0453
	as Carbon	total hydrocarbon	1	43.7	7.8	2.80	5.60
		total hydrocarbon	2	35.3	7.8	2.26	4.53
		total hydrocarbon	3	39.1	7.8	2.51	5.01
		AVERAGE				2.52	5.05