SJVUAPCD

GENESIS
ENVIRONMENTAL SERVICES COMPANY

CHEVRON U.S.A. INC.
P.O. BOX 1392
BAKERSFIELD, CALIFORNIA 93302

CHEVRON U.S.A.
26C CO-GENERATION PLANT
UNIT #'s 1, 2, 3, & 4

ANNUAL COMPLIANCE TEST
JULY 15 AND 16, 1992

Rec 8/25/91

PREPARED BY:
GENESIS ENVIRONMENTAL SERVICES COMPANY
1145 WEST COLUMBUS AVENUE
BAKERSFIELD, CALIFORNIA 93301

REPORT # 7777-0361

SJVUAPCD PERMIT #'s 4008810, 4008811,
4008812, and 4008813

TEST CONDUCTED BY KEVIN ORTON
RESULTS VERIFIED BY MICHAEL L. BAKALOR
OPERATIONS MANAGER

SUMMARY OF SOURCE TEST RESULTS

Company: Chevron U.S.A. APCD No. 4008810 H
Test Date: 7-15-92 Unit No. #1

EMISSIONS

POLLUTANT	Concentration [redacted]	@12%	PPMv	@15% O2	lb/hr	[redacted]/mmBTU
Particulate						
Sulfate						
Sulfur						
NOx as NO2 (dry)			30.7 30.0 --- 30.4	22.8 22.6 --- 22.7	6.41 6.26 --- 6.34	0.0829 lb/MMBTU
TNMHC (as methane)						
CO			23.7 23.2 --- 23.2	23.7 17.5 --- 17.5	3.01 2.95 --- 2.95	0.0388 lb/MMBTU

COUNTY USE ONLY: INITIAL/A SLC/2101 : 37.6 MM TURBINE w/H2O INJ + 37.0 MM DUCT B (PUC FAS)

COMMENTS:

AAN - 8/26

SUMMARY OF SOURCE TEST RESULTS

Company: Chevron U.S.A. APCD No. 4008811 H
Test Date: 7-15-92 Unit No. # 2

EMISSIONS

POLLUTANT	Concentration dry@3%	@12%	PPMv	@15% O2	lb/hr	Lb/mmBTU
Particulate						
Sulfate						
Sulfur						
NOx as NO2 (dry)			26.8 23.3 --- 25.0	20.6 18.0 --- 19.3	5.54 4.82 --- 5.18	0.0707 lb/MMBTU
TNMHC (as methane)						
CO			44.1 43.6 --- 43.6	44.1 33.6 --- 33.6	5.56 5.49 --- 5.49	0.0750 lb/MMBTU

COUNTY USE ONLY: INITIAL/A SLC, 210.1; PUC FAS 37.6 MM

COMMENTS: TURBINE W H2O INJ, 37.0 MM DUCT B

8/26

SUMMARY OF SOURCE TEST RESULTS

Company: Chevron U.S.A. APCD No. 4008812 H
Test Date: 7-16-92 Unit No. # 3

EMISSIONS

POLLUTANT	Concentration ppmdv	@12%	PPMv	@15% O2	lb/hr	Lb/mmBTU
Particulate						
Sulfate						
Sulfur						
NOx as NO2 (dry)			24.8 25.8 --- 25.3	19.2 20.1 --- 19.7	5.41 5.64 --- 5.52	0.0720 lb/MMBTU
TNMHC (as methane)						
CO			36.0 35.9 --- 35.9	36.0 27.9 --- 27.9	4.79 4.77 --- 4.77	0.0623 lb/MMBTU

COUNTY USE ONLY: SLC; 210.1, PUC CASE 37.6 MM TURBINE W/ INITIAL/A
H2O INJ., 37.0 MM DUCT B.

COMMENTS:

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SUMMARY OF SOURCE TEST RESULTS

Company: Chevron U.S.A. APCD No. 4008813 H
Test Date: 7-16-92 Unit No. #4

EMISSIONS

POLLUTANT	Concentration [illegible]	Concentration @12%	PPMv	PPMv @15% O2	lb/hr	Lb/mmBTU
Particulate						
Sulfate						
Sulfur						
NOx as NO2 (dry)			27.9 27.2 --- 27.6	23.7 23.2 --- 23.4	5.90 5.74 --- 5.82	0.0859 lb/MMBTU
TNMHC (as methane)						
CO			35.4 34.1 --- 34.1	35.4 29.1 --- 29.1	4.55 4.39 --- 4.39	0.0650 lb/MMBTU

COUNTY USE ONLY: INITIAL/A SLC, 2101; PUC GAS F 37.6 MM TURBINE W H2O INJ, 37.0 MM DUCT B1

COMMENTS:

RAN. 8/26

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Introduction

At the request of Mr. Stephen Miller of Chevron U.S.A., Genesis Environmental Services conducted an Annual Compliance Test on four Co-Generation units, located at the 26C Co-Generation Plant.

The purpose of this testing was to comply with San Joaquin Valley Unified Air Pollution Control District rules as required in Permit #'s 4008810, 4008811, 4008812, and 4008813.

The testing was conducted on July 15 and 16 1992, by Mr. Kevin Orton of Genesis Environmental. Testing was performed on unit #'s 1 and 2 on July 15, 1992 and unit #'s 3 and 4 on July 16, 1992. Chevron representative, Mr. Stephen Miller was present during the testing. Mr. Bob Kinsley was the Chevron operator during the testing. San Joaquin Valley Unified Air Pollution Control District representative, Mr. Greg LaFore observed the testing.

Table 1-1a - Table 1-1b contains a summary of test results from this test series. Figure 1-1 contains calculations used to determine the results.

Test Summary
26C Co-Generation Plant
July 15 and 16, 1992

CONSTITUENT	METHOD	QUANTITY
NO_x	CARB-100 (TECO MODEL 10AR)	(DUPLICATE)
O_2	CARB-100 (TELEDYNE MODEL 326RA)	(DUPLICATE)
CO	CARB-100 (TECO MODEL 48)	(DUPLICATE)
Stack Flow	CALCULATED	

TABLE 1-1a

Continuous Monitor Data Summary
Chevron, 26C Cogen Plant
July 15, 1992
Unit # 1

Test	% O2	CO ppm	NOx ppm	SDCFM	CO Lbs/hr	NOx Lbs/hr	NOx lb/MMBTU	CO lb/MMBTU
1	12.97	23.68	30.7	28718	3.01	6.41	0.0833	0.0391
2	13.08	23.2	30.0	28718	2.95	6.26	0.0824	0.0388
AVG.	13.02	23.2	30.4	28718	2.95	6.34	0.0829	0.0388

Continuous Monitor Data Summary
Chevron, 26C Cogen Plant
July 15, 1992
Unit # 2

Test	% O2	CO ppm	NOx ppm	SDCFM	CO Lbs/hr	NOx Lbs/hr	NOx lb/MMBTU	CO lb/MMBTU
1	13.23	44.13	26.8	28445	5.56	5.54	0.0755	0.0758
2	13.25	43.6	23.3	28445	5.49	4.82	0.0658	0.0750
AVG.	13.24	43.6	25.0	28445	5.49	5.18	0.0707	0.0750

TABLE 1-1b

Continuous Monitor Data Summary
Chevron, 26C Cogen Plant
July 15, 1992
Unit # 3

Test	% O2	CO ppm	NOx ppm	SDCFM	CO Lbs/hr	NOx Lbs/hr	NOx lb/MMBTU	CO lb/MMBTU
1	13.30	36.0	24.8	30031	4.79	5.41	0.0704	0.0624
2	13.32	35.9	25.8	30031	4.77	5.64	0.0737	0.0623
AVG.	13.31	35.9	25.3	30031	4.77	5.52	0.0720	0.0623

Continuous Monitor Data Summary
Chevron, 26C Cogen Plant
July 16,1992
Unit # 4

Test	% O2	CO ppm	NOx ppm	SDCFM	CO Lbs/hr	NOx Lbs/hr	NOx lb/MMBTU	CO lb/MMBTU
1	13.95	35.4	27.9	29033	4.55	5.90	0.0869	0.0670
2	13.99	34.1	27.2	29033	4.39	5.74	0.0850	0.0650
AVG.	13.97	34.1	27.6	29033	4.39	5.82	0.0859	0.0650

Figure 1-1

Calculation of Results

1. $$Fd_{68} = \frac{10^6\ (3.64\%H + 1.53\%C + .57\%S + .14\%N - .46\%O)}{GCV}$$

Where: GCV = BTU/lb

$$Fd_{60} = \frac{520}{528}\ Fd$$

Note: Fd_{68} for EPA
Fd_{60} for KCAPCD

2. $$SDCFM = \left[\frac{(Fd)\quad(GCV)}{1440}\quad(FR)\right]\left[\frac{(20.9)}{(20.9-O_2\%)}\right]$$

Where: GCV - 10^6 BTU/cu.ft.
FR - Fuel Rate (cu.ft./day)

3. Corrected to 15% O_2

$$ppm\ @\ 15\%\ O_2 = ppm\ \left[\frac{(5.9)}{(20.9 - O_2\%)}\right]$$

4. C_s = (ppm) (X)

Where: C = pollutant concentration (lbs/scf)

	EPA	KCAPCD
X = NO_x	1.194×10^{-7}	1.212×10^{-7}
X = CO	7.268×10^{-8}	7.377×10^{-8}

5. E = (C_s) (SDCFM) (60)

Where: E = emission rate (lbs/hr)

Section 2.0

Continuous Emission Monitoring

SECTION 2.0

CONTINUOUS EMISSION MONITORING: NOx, CO & O_2

The analyzers utilized in the Genesis continuous monitor test trailer are presented in Table 2-2. Figure 2-1 is a schematic of the continuous monitoring systems. The protocol used to continuously monitor stack gases for NO_x, Oxygen and CO follow CARB Method 100 recommendations.

Stack gas is extracted from the stack using a 316 stainless steel probe. A stainless steel sintered filter (99 percent efficiency @ 0.6 micron particles) is attached to the inlet of the probe. From the sample probe, sample gas is transported through a heated Teflon sample line by a Teflon-lined diaphragm pump to a series of Greenburg-Smith knock-out impingers and condenser system.The clean, dry sample gas is then transported to the continuous analyzer system through a Teflon line. Prior to the analyzers another filter (Balston glass fiber filter, efficiency of 99% @ 0.3 microns) is installed. A series of flowmeters, valves, and a by-pass regulator maintain constant flow through the system at a constant pressure.

At the onset of each test series, a leak-check is performed on the continuous monitor sampling system. The sample probe is removed from the stack and the inlet is sealed. A leak free system is verified when flow through rotameters to the individual analyzers all drop to zero. A mandatory leak-check is performed at the completion of each test series.

Analyzer calibrations are performed at the start of the test run by introducing zero and span gases for each analyzer and making the necessary adjustments. EPA Protocol 1 certified calibration gas values are recorded on the strip chart and field data sheet. A calibration check is also performed at the end of each one hour test run and recorded on the strip chart. If adjustments are necessary to the analyzers they are made after documentation has been made of any zero or calibration drift. At the conclusion of the test series, a system calibration (bias check) is performed of the sample system. This is accomplished by first removing the sample probe from the stack and allowing ambient air to purge the system. After the system has been purged to verify a zero reading, a system gas which has been named against the standard EPA protocol gas is introduced at the sample nozzle. System pressure and vacuum are maintained as in normal operation during this procedure. The system gas is then allowed to flow through the sample conditioning system to the analyzers. Once a stable reading has been achieved, it is recorded and used to calculate the system efficiency which has a tolerance of 5% of the system gas introduced.

Data is recorded in 10 minute averages for each one hour test run. Table 2-1 gives a summary of 10 minute averages and calculated emission factors.

TABLE 2-1a

Continuous Monitor Data Summary
Ten Minute Averages
Test # 1
Unit # 1

Time	% O2	CO ppm	NOx ppm	SDCFM	CO Lbs/hr	NOx Lbs/hr
940	13.00	23.5	29.6	28718	2.99	6.18
950	13.00	23.6	29.5	28718	3.00	6.16
1000	13.00	24.0	30.3	28718	3.05	6.33
1010	12.95	23.2	31.2	28718	2.95	6.52
1020	12.93	24.0	31.7	28718	3.05	6.62
1030	12.93	23.9	32.0	28718	3.03	6.68
AVG.	12.97	23.7	30.7	28718	3.01	6.41

Calibration Data

	% O2	CO ppm	NOxppm
ZERO	0.00	-0.1	3.4
Span	14.93	34.2	80.00
Gas Value	15.00	34.3	77.00
Zero Factor	0	0	0
Span Factor	0	0	0

TABLE 2-1b

Continuous Monitor Data Summary
Ten Minute Averages
Test # 2
Unit # 1

Time	% O2	CO ppm	NOx ppm	SDCFM	CO Lbs/hr	NOx Lbs/hr
1050	13.08	23.8	29.2	28718	3.02	6.10
1100	13.08	23.4	30.1	28718	2.98	6.29
1010	13.05	23.1	30.8	28718	2.94	6.43
1020	13.08	23.2	30.5	28718	2.95	6.37
1030	13.08	22.8	30.1	28718	2.89	6.29
1040	13.08	22.9	29.2	28718	2.91	6.10
AVG.	13.08	23.2	30.0	28718	2.95	6.26

Calibration Data

	% O2	CO ppm	NOxppm
ZERO	0.00	0.0	0.0
Span	14.99	34.6	75.70
Gas Value	15.00	34.3	77.00
Zero Factor	0	0	0
Span Factor	0	0	0

TABLE 2-1c

Continuous Monitor Data Summary
Ten Minute Averages
Test # 1
Unit # 2

Time	% O2	CO ppm	NOx ppm	SDCFM	CO Lbs/hr	NOx Lbs/hr
1225	13.25	43.3	25.3	28445	5.46	5.23
1235	13.20	41.8	26.3	28445	5.27	5.44
1245	13.20	42.0	26.8	28445	5.29	5.54
1255	13.25	45.8	27.0	28445	5.77	5.58
1305	13.25	46.4	27.4	28445	5.85	5.67
1315	13.25	45.5	27.9	28445	5.73	5.77
AVG.	13.23	44.1	26.8	28445	5.56	5.54

NOTE: CO NOT RUN UNTIL RUN # 2.

Calibration Data

	% O2	CO ppm	NOxppm
ZERO	0.05	0.0	3.7
Span	15.00	34.0	81.00
Gas Value	15.00	34.3	77.00
Zero Factor	0	0	0
Span Factor	0	0	0

TABLE 2-1d

Continuous Monitor Data Summary
Ten Minute Averages
Test # 2
Unit # 2

Time	% O2	CO ppm	NOx ppm	SDCFM	CO Lbs/hr	NOx Lbs/hr
1335	13.25	44.1	23.8	28445	5.56	4.92
1345	13.25	44.8	24.0	28445	5.65	4.96
1355	13.25	44.0	23.3	28445	5.54	4.82
1405	13.25	43.0	23.1	28445	5.42	4.78
1415	13.25	42.6	22.8	28445	5.37	4.72
1425	13.25	43.0	22.7	28445	5.42	4.70
AVG.	13.25	43.6	23.3	28445	5.49	4.82

Calibration Data

	% O2	CO ppm	NOxppm
ZERO	0.08	0.3	-2.0
Span	15.00	34.4	74.90
Gas Value	15.00	34.3	77.00
Zero Factor	0	0	0
Span Factor	0	0	0

TABLE 2-1e

Continuous Monitor Data Summary
Ten Minute Averages
Test # 1
Unit # 3

Time	% O2	CO ppm	NOx ppm	SDCFM	CO Lbs/hr	NOx Lbs/hr
900	13.30	35.5	24.4	30031	4.72	5.33
910	13.28	36.4	24.5	30031	4.84	5.35
920	13.30	36.0	24.7	30031	4.79	5.39
930	13.28	36.3	24.9	30031	4.82	5.44
940	13.30	36.1	25.0	30031	4.80	5.46
950	13.33	36.0	25.0	30031	4.79	5.46
AVG.	13.30	36.0	24.8	30031	4.79	5.41

NOTE: CO NOT RUN UNTIL RUN # 2.

Calibration Data

	% O2	CO ppm	NOxppm
ZERO	0.08	0.0	0.4
Span	15.00	34.1	77.00
Gas Value	15.00	34.3	77.00
Zero Factor	0	0	0
Span Factor	0	0	0

TABLE 2-1f

Continuous Monitor Data Summary
Ten Minute Averages
Test # 2
Unit # 3

Time	% O2	CO ppm	NOx ppm	SDCFM	CO Lbs/hr	NOx Lbs/hr
1010	13.43	36.3	24.9	30031	4.82	5.44
1020	13.33	36.1	25.3	30031	4.80	5.53
1030	13.33	35.9	25.7	30031	4.78	5.61
1040	13.30	35.7	26.0	30031	4.75	5.68
1050	13.30	35.7	26.3	30031	4.75	5.74
1100	13.25	35.6	26.8	30031	4.74	5.85
AVG.	13.32	35.9	25.8	30031	4.77	5.64

Calibration Data

	% O2	CO ppm	NOxppm
ZERO	0.08	-0.1	2.0
Span	14.88	34.1	79.40
Gas Value	15.00	34.3	77.00
Zero Factor	0	0	0
Span Factor	0	0	0

TABLE 2-1g

Continuous Monitor Data Summary
Ten Minute Averages
Test # 1
Unit # 4

Time	% O2	CO ppm	NOx ppm	SDCFM	CO Lbs/hr	NOx Lbs/hr
1130	14.00	35.4	26.0	29033	4.55	5.49
1140	13.95	35.3	27.0	29033	4.53	5.70
1150	13.93	34.5	28.0	29033	4.44	5.91
1200	13.95	35.9	28.7	29033	4.62	6.06
1210	13.93	36.0	28.9	29033	4.63	6.10
1220	13.93	35.4	29.0	29033	4.55	6.12
AVG.	13.95	35.4	27.9	29033	4.55	5.90

NOTE: CO NOT RUN UNTIL RUN # 2.

Calibration Data

	% O2	CO ppm	NOxppm
ZERO	0.00	0.0	3.2
Span	15.00	34.2	80.00
Gas Value	15.00	34.3	77.00
Zero Factor	0	0	0
Span Factor	0	0	0

TABLE 2-1h

Continuous Monitor Data Summary
Ten Minute Averages
Test # 2
Unit # 4

Time	% O2	CO ppm	NOx ppm	SDCFM	CO Lbs/hr	NOx Lbs/hr
1240	13.95	34.1	26.7	29033	4.38	5.64
1250	13.98	33.8	27.2	29033	4.34	5.74
1300	14.00	34.3	27.1	29033	4.41	5.72
1310	14.05	35.0	27.3	29033	4.50	5.76
1320	13.95	34.1	27.3	29033	4.39	5.76
1330	14.00	33.6	27.4	29033	4.32	5.78
AVG.	13.99	34.1	27.2	29033	4.39	5.74

Calibration Data

	% O2	CO ppm	NOxppm
ZERO	0.00	-0.2	0.7
Span	15.00	34.8	77.10
Gas Value	15.00	34.3	77.00
Zero Factor	0	0	0
Span Factor	0	0	0

Table 2-2

Analyzer Specifications

NO_x CHEMILUMINESCENT ANALYZER -- THERMO ELECTRON MODEL 10AR

Response time	(0-90%)	1.5 sec-- NO mode 1.7 sec -- NO_x mode
Zero Drift		Negligible after 1/2 hour warmup
Linearity		less than 1% of full scale
Accuracy		Derived from the NO or NO_2 calibration gas, 1% of full scale
Output		0.100 mV, 0-10 mV, 0-5 V, 0-10 V

O_2 ANALYZER, FUEL TYPE -- TELEDYNE MODEL 326RA

Response Time	(0-90%)	60 seconds
Accuracy		less than 1% of scale at constant temperatures; less than 1% of scale of less than 5%of reading, whichever is greater, over the operating temp. range 0-1 V

CO INFRARED ANALYZER -- TECO MODEL 48

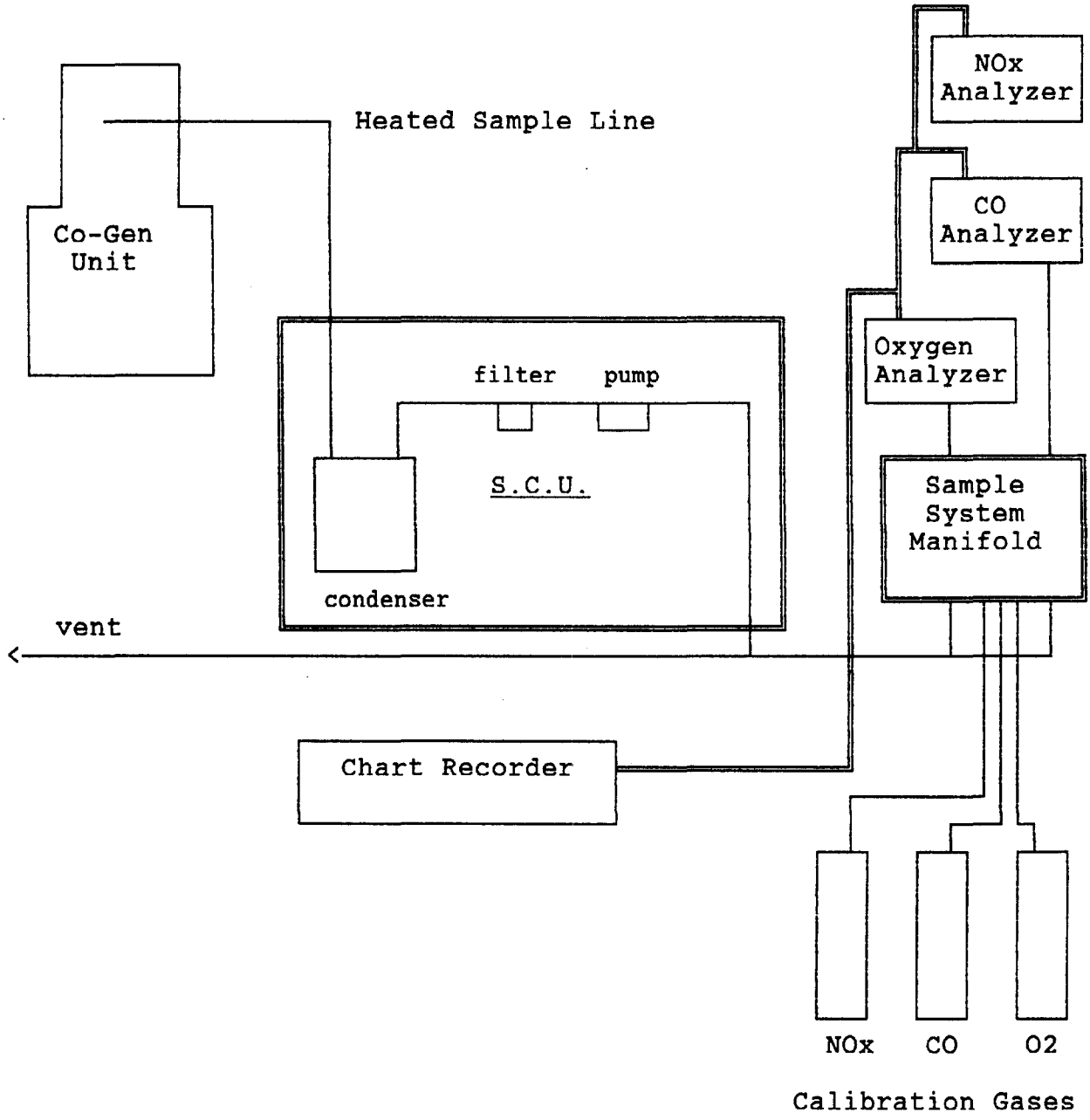
Response Time	(0-90%)	1.2 seconds
Zero Drift		less than 1% / 24 hr full scale
Span Drift		less than 1% / 24 hr full scale
Linearity		1%
Repeatability		less than 0.5% of full scale
Output		0-1 V

STRIP CHART RECORDED (4 PEN) -- Linseis Model 7045

Response Time	less than 0.35 sec.
Span -- Full Scale	1 mV through 10 V
Zero Set	Electronically adjustable full scale with 1 full scale of zero suppression
Accuracy	Plus or minus 0.35 %
Linearity	Plus or minus 0.25 %

Figure 2-1

Continuous Emission Monitoring System



APPENDIX A-1

Fuel Gas Analysis

PACIFIC GAS TECHNOLOGY

2122 Q Street
Bakersfield, California 93301
805/324-1317
Fax: 805/324-2746

GAS ANALYSIS BY CHROMATOGRAPH

GENESIS ENVIRONMENTAL SERVICES
1145 W. Columbus
Bakersfield, CA 93301

SAMPLED:

SUBMITTED: JULY 17, 1992

REPORTED: JULY 23, 1992

Attention: Mike Bakalor

LAB # 2324-1

Sample ID : CHEVRON
26-C COGEN 1-4
FUEL GAS

ANALYZED GAS

	MOLE %	WT %	CHONS WT %	
OXYGEN	0.61	0.97	CARBON	63.33
NITROGEN	3.51	4.87	HYDROGEN	18.68
CARBON DIOXIDE	7.66	16.71	OXYGEN	13.12
HYDROGEN	ND	0.00	NITROGEN	4.87
CARBON MONOXIDE	ND	0.00	SULFUR	0.00
HYDROGEN SULFIDE	ND	0.00		
METHANE	80.96	64.39	F FACTOR:	8534.25
ETHANE	4.78	7.13		
PROPANE	1.89	4.13		
iso-BUTANE	0.19	0.55		
n-BUTANE	0.30	0.86		
iso-PENTANE	0.04	0.14		
n-PENTANE	0.02	0.07		
HEXANE +	0.04	0.17		
TOTAL:	100.00	100.00		

SPECIFIC GRAVITY * : 0.696

SPECIFIC VOLUME : 19.23 cu ft/lb

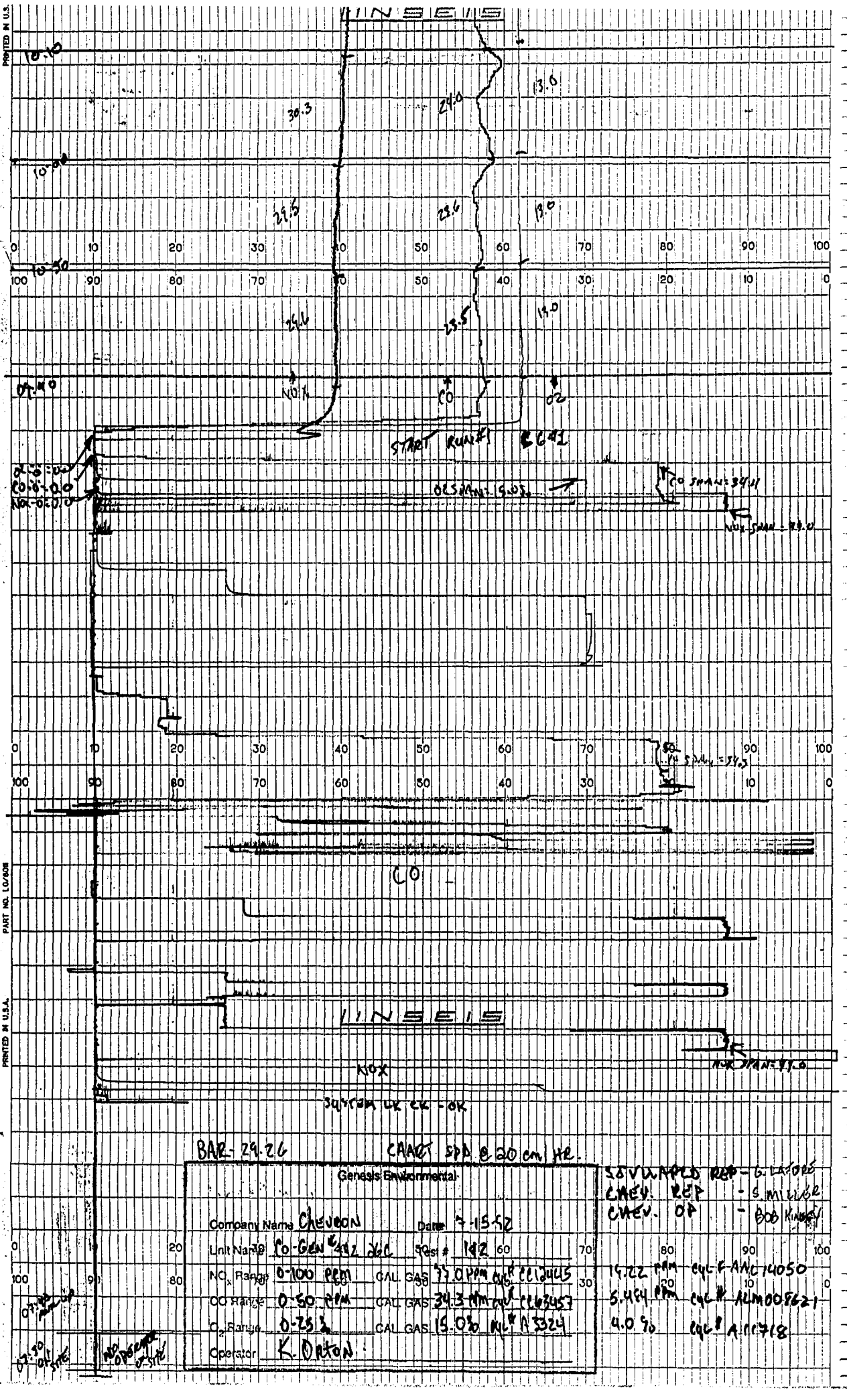
TOTAL SULFUR, as Hydrogen Sulfide : ppm (GC/FPD)

TOTAL * BTU/cu ft	DRY :	972	NET * BTU/cu ft	DRY :	878
	WET :	955		WET :	862
BTU/lb	:	18692	BTU/lb	:	16881

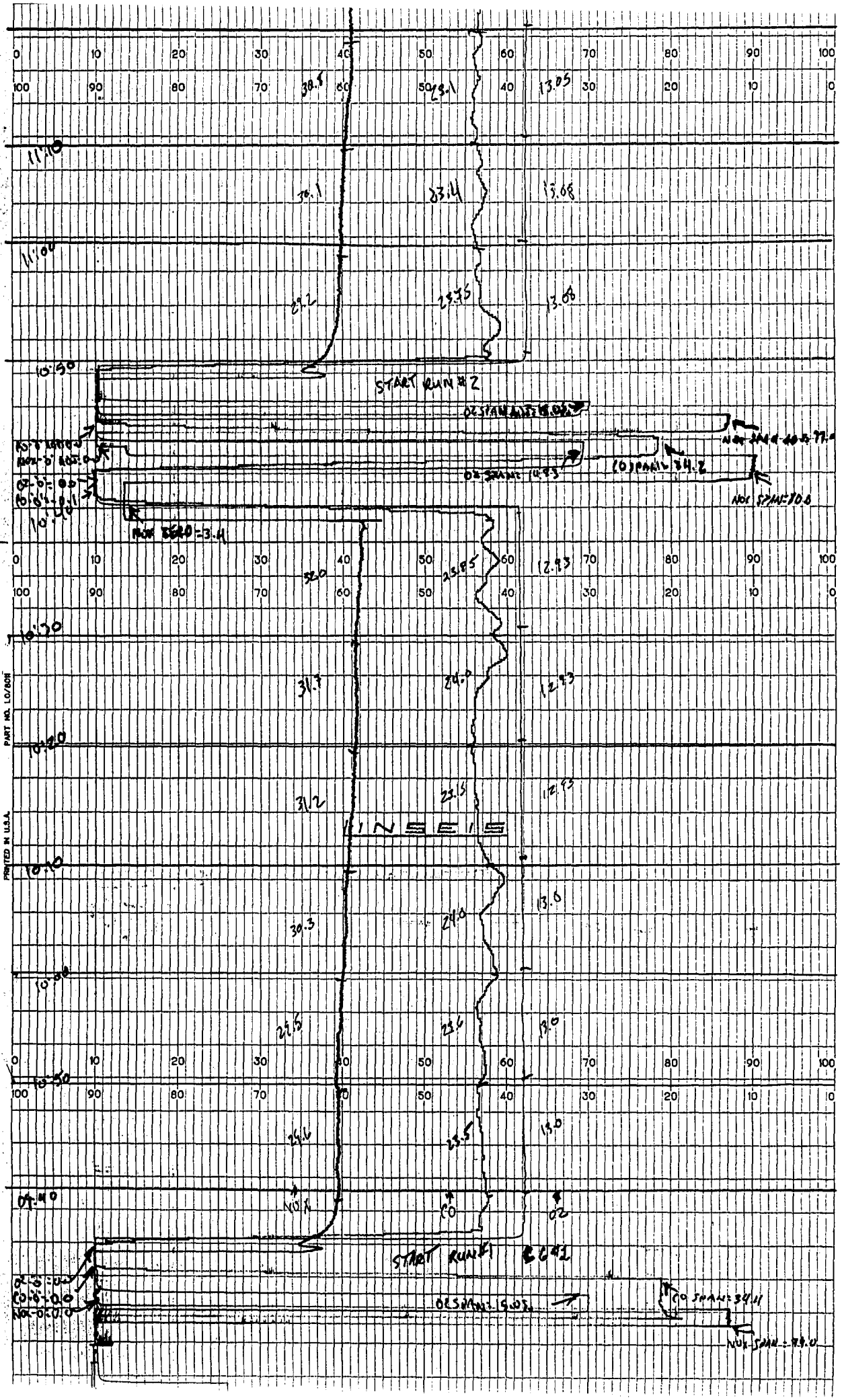
* CALCULATED ACCORDING TO : ASTM D-3588

APPENDIX A-2

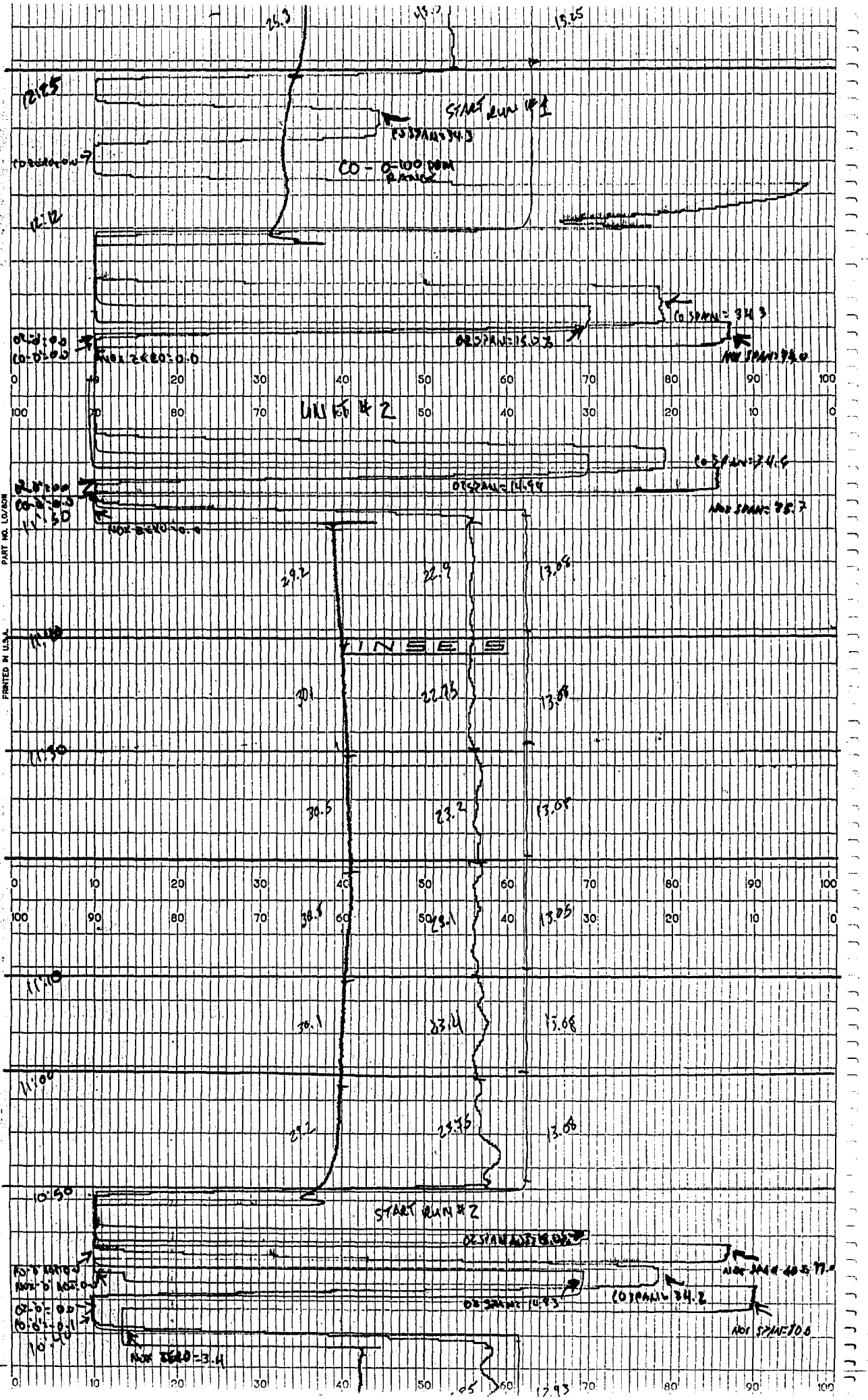
Raw Data



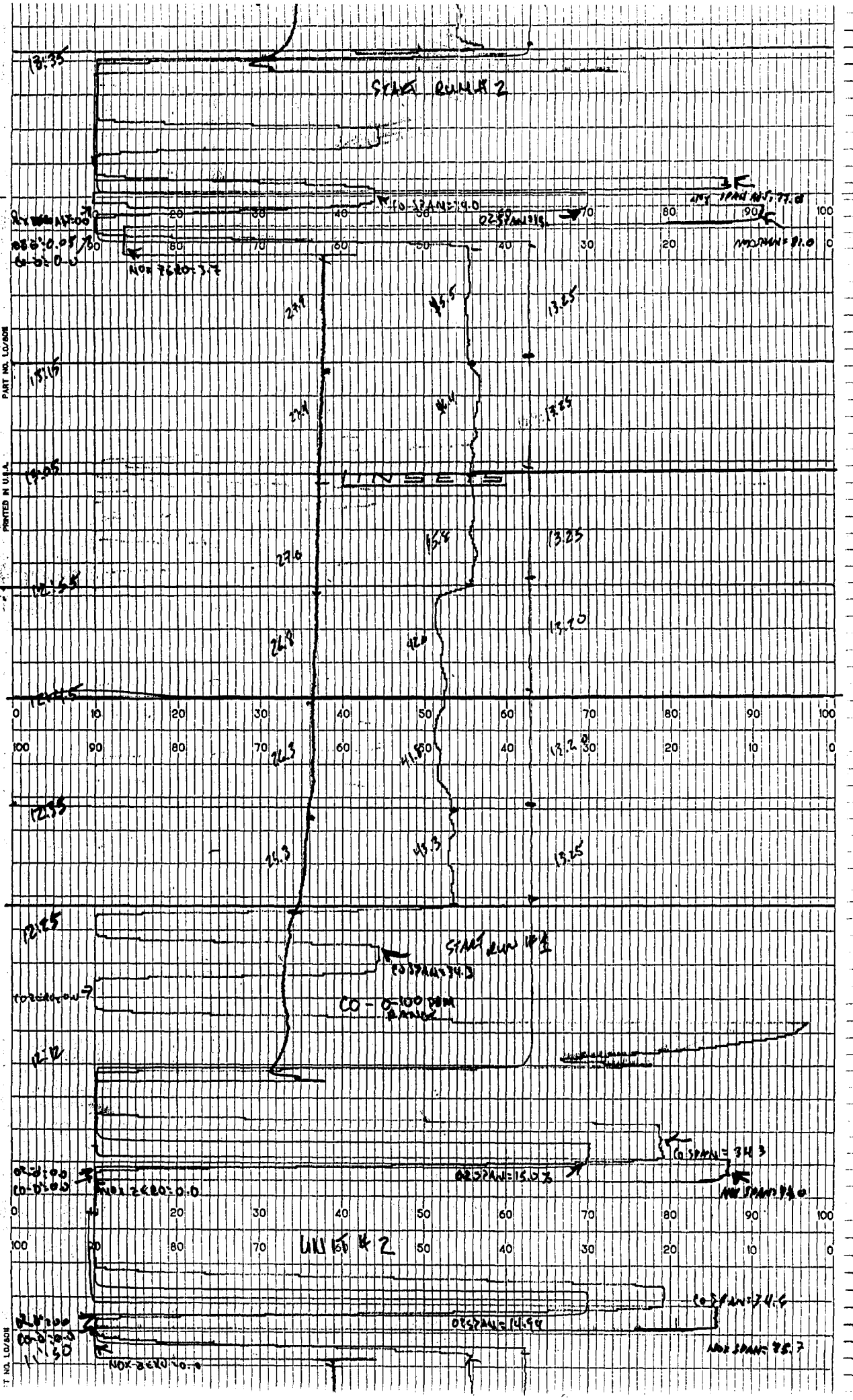
LINSEIS
10:10
10:00
10:50
09:40
30.3
24.0
13.0
29.5
23.6
13.0
24.6
23.5
13.0
NOX
CO
O2
START RUN #1
CO SPAN = 34.1
NOX SPAN = 99.0
CO
LINSEIS
NOX
SYSTEM LK CK - OK
BAR - 29.26
CHART SPD @ 20 cm HR.
Genesis Environmental
Company Name Chevron
Date 7-15-92
Unit Name Co-Gen #492 26C
Test # 142
NOx Range 0-100 PPM
CAL. GAS 77.0 PPM cyl # CC12445
CO Range 0-50 PPM
CAL. GAS 34.3 PPM cyl # CC63457
O2 Range 0-25 %
CAL. GAS 15.0% cyl # A3324
Operator K. Orton
SOVUAPCD REP - G. LAFORE
CHEV. REP - S. MILLER
CHEV. OP - BOB KINSEY
19.22 PPM cyl # AAC14050
5.484 PPM cyl # ALM008621
4.0 % cyl # A11718



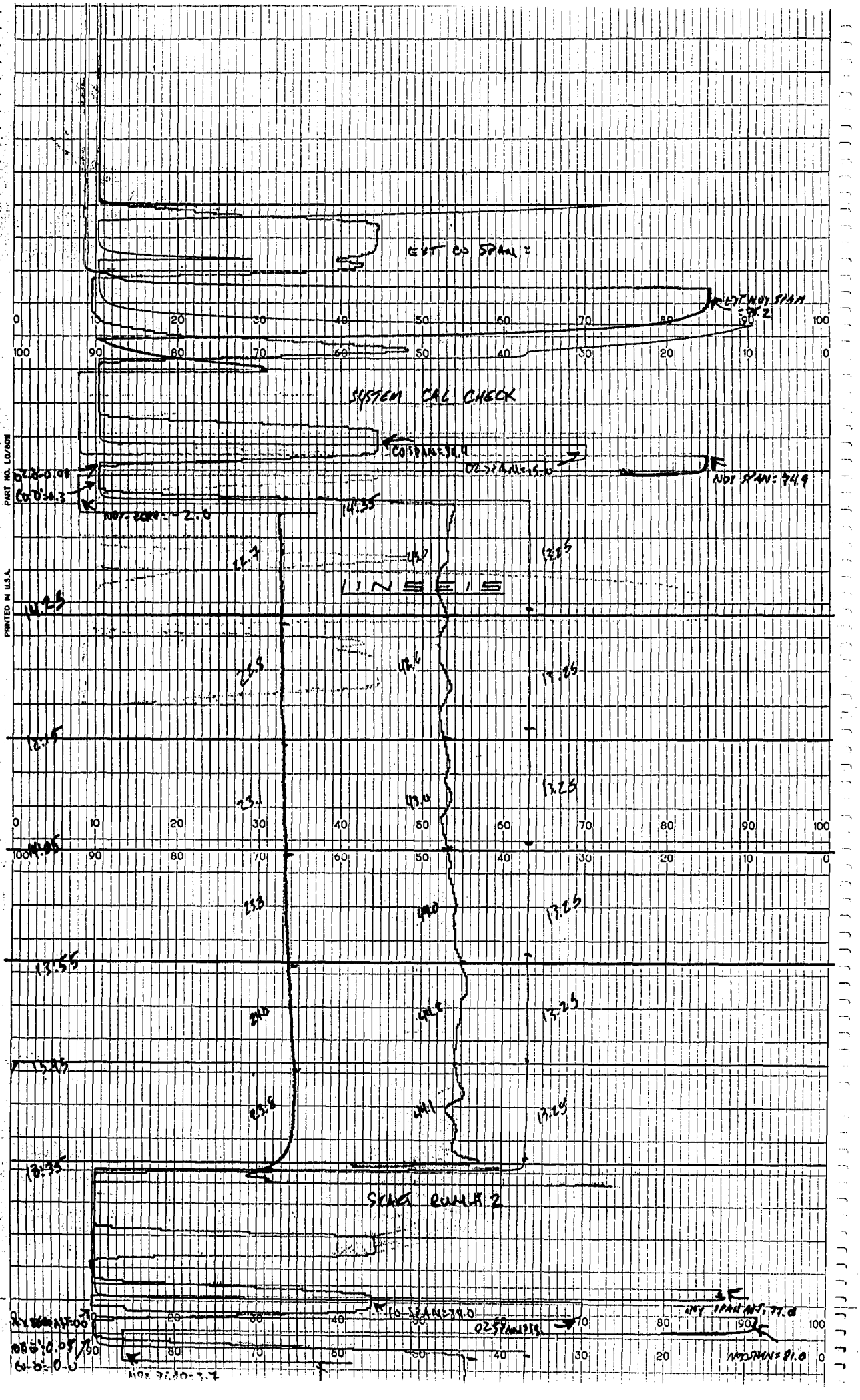
START RUN #2
START RUN #1
LINSEIS
PART NO. LO/8011
PRINTED IN U.S.A.

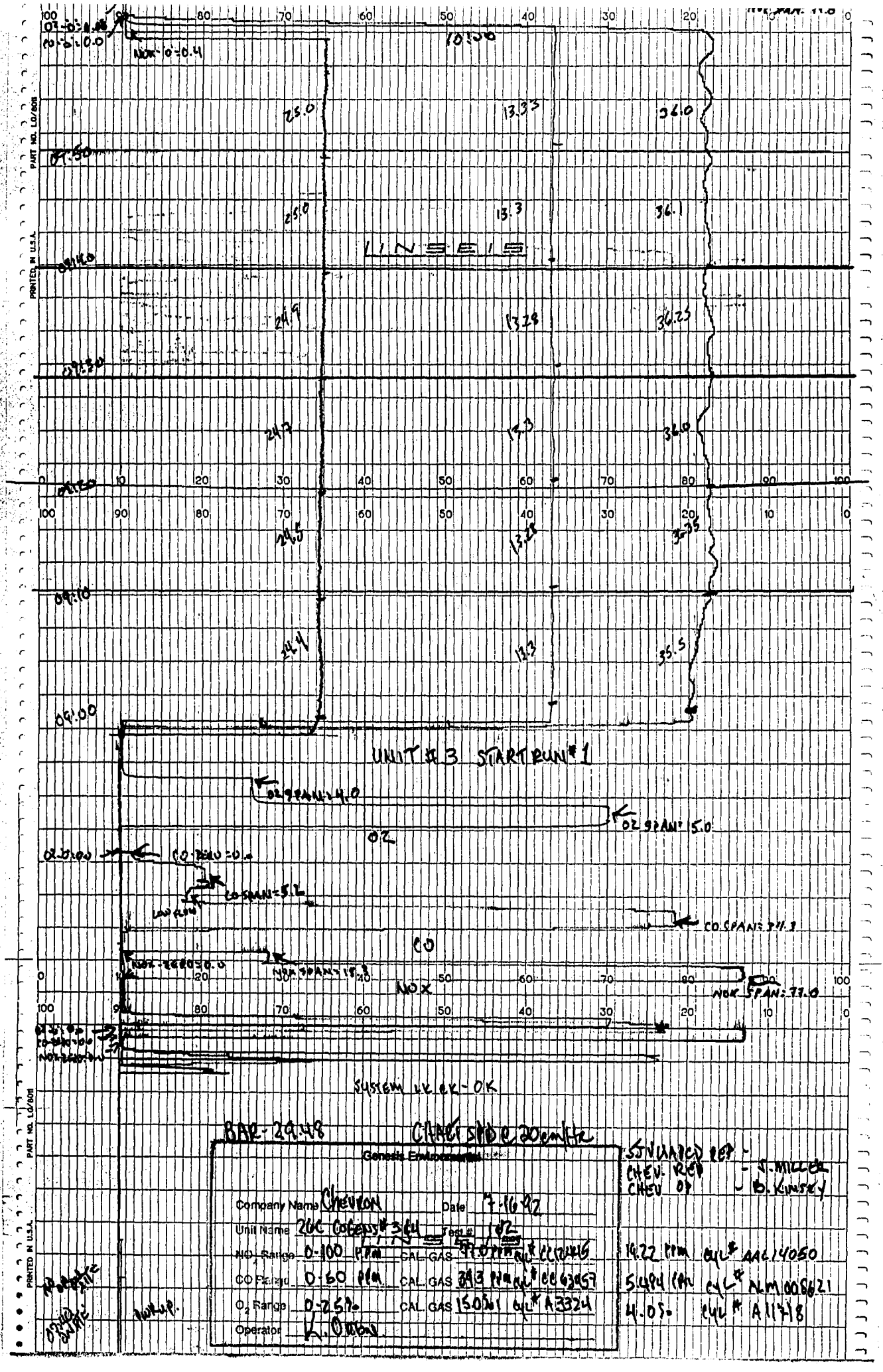


START RUN #1
CO - 0-100 PPM RANGE
CO SPAN = 34.3
UNIT #2
CO SPAN = 34.6
NOX SPAN = 75.7
START RUN #2
CO SPAN = 34.2
NOX ZERO = 3.4
PART NO. LO/80M
PRINTED IN U.S.A.

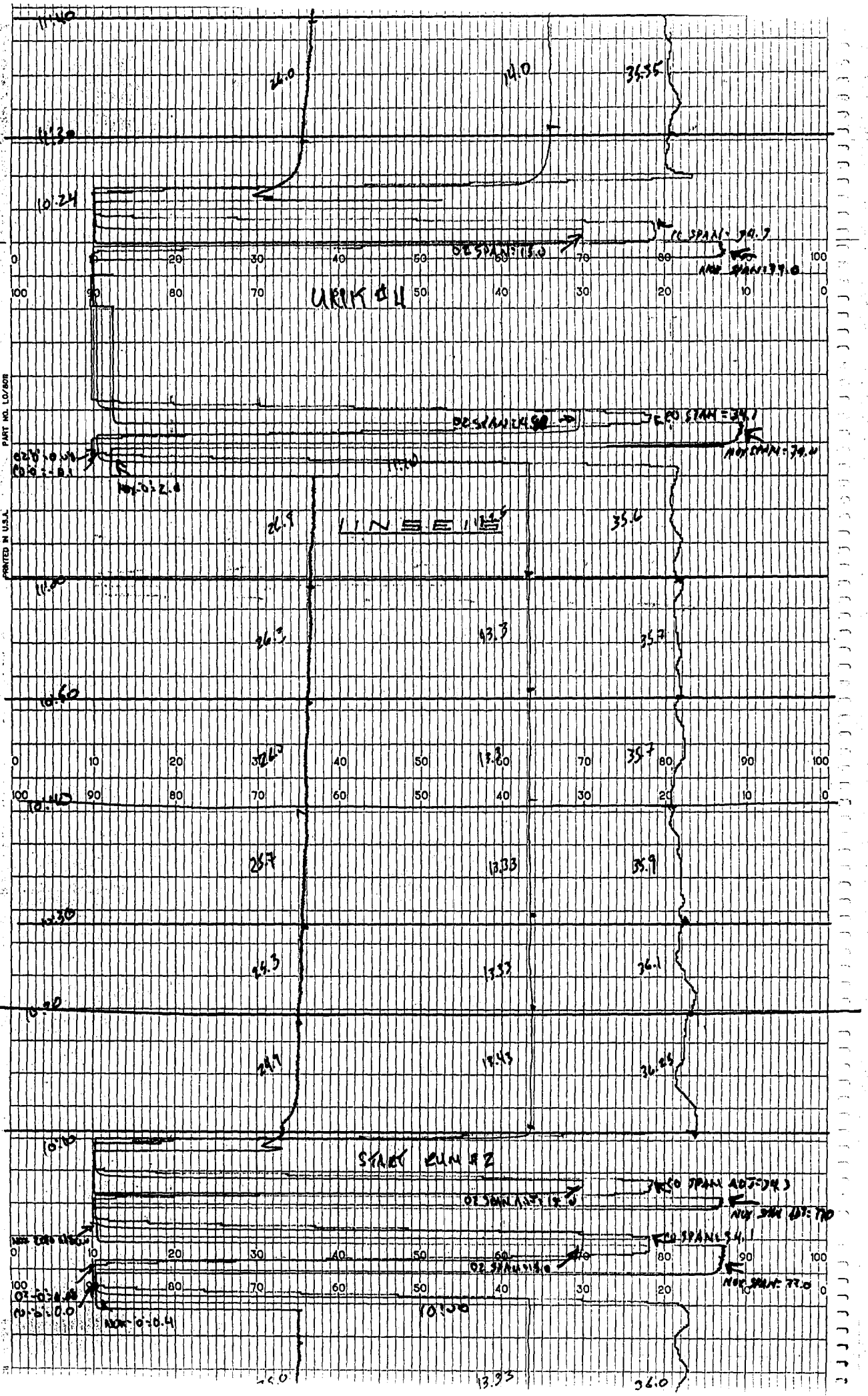


START RUN # 2
CO SPAN = 34.0
NOX SPAN = 81.0
NOX ZERO = 3.7
LINSEYS
START RUN # 1
CO SPAN = 34.3
CO - 0-100 PPM RANGE
CO SPAN = 34.3
NOX ZERO = 0.0
UNIT # 2
CO SPAN = 34.6
NOX SPAN = 85.7
NOX ZERO = 0.0
PART NO. LO/80II
PRINTED IN U.S.A.

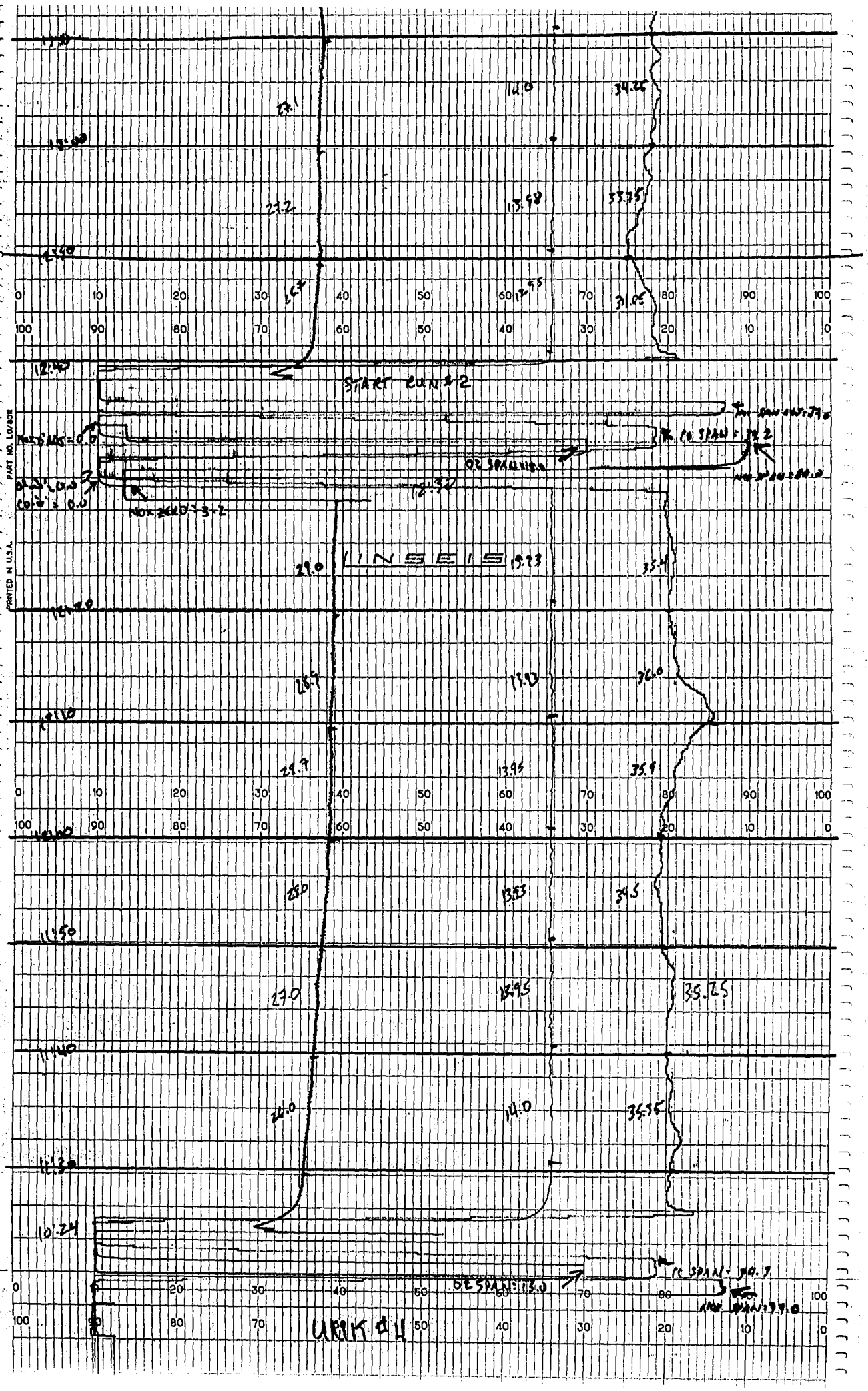

EXT CO SPAN =
EXT NOX SPAN = 75.2
SYSTEM CAL CHECK
CO SPAN = 34.4
NOX SPAN = 74.9
LINSEIS
START RUN # 2
CO SPAN = 34.0
NOX SPAN = 81.0
PART NO. LO/80N
PRINTED IN U.S.A.

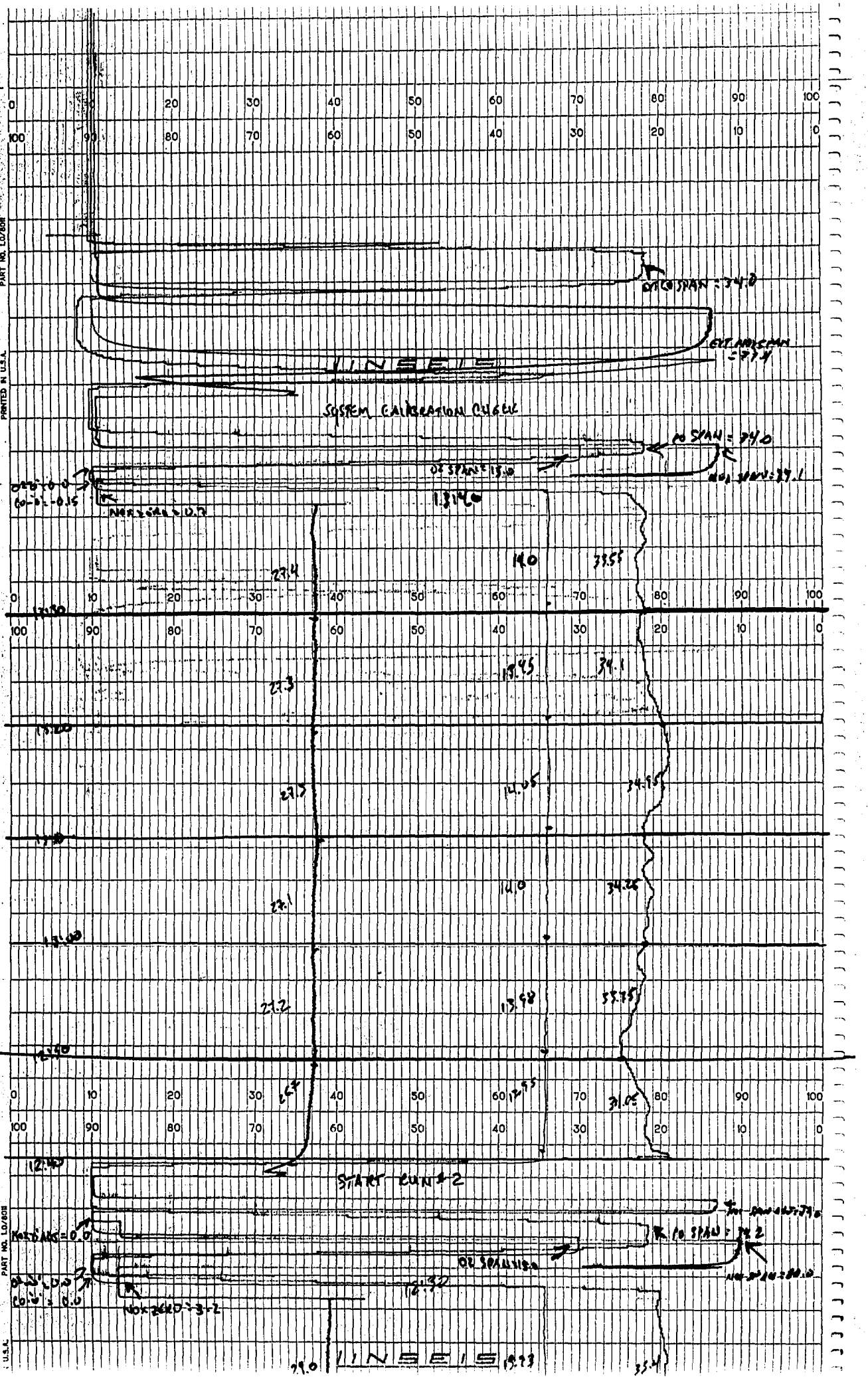


LINSEIS
UNIT #3 START RUN #1
O2
CO
NOX
SYSTEM LK CK - OK
BAR - 29.48
CHART SPD @ 20cm/hr
Genesis Environmental
Company Name CHEVRON
Date 7-16-92
Unit Name 26C COGENS #3&4
Test # 1&2
NO Range 0-100 PPM
CAL. GAS 77.0 PPM CYL # CC12446
CO Range 0-60 PPM
CAL. GAS 34.3 PPM CYL # CC63457
O2 Range 0-25%
CAL. GAS 15.0% CYL # A3324
Operator K. Orton
SJVUAPCD REP -
CHEV. REP - J. MILLER
CHEV OP - B. KINSEY
19.22 PPM CYL # AAL14050
5.494 CYL # ALM008621
4.0% CYL # A11718



11:40
11:30
10:24
26.0
14.0
35.55
CO SPAN = 34.7
O2 SPAN = 15.0
NOX SPAN = 77.0
URIK #4
CO SPAN = 34.1
NOX SPAN = 74.4
NOX 0 = 2.0
11:10
LINSEIS
26.9
35.6
11:00
26.3
13.3
35.7
10:50
26.0
13.3
35.7
10:40
25.7
13.33
35.9
10:30
25.3
13.33
36.1
10:20
24.7
13.43
36.25
10:10
START RUN #2
CO SPAN ADJ = 34.3
O2 SPAN ADJ = 15.0
NOX SPAN ADJ = 77.0
CO SPAN = 34.1
O2 SPAN = 15.0
NOX SPAN = 77.0
NOX 0 = 0.4
10:00
13.33
36.0
PART NO. LO/80R
PRINTED IN U.S.A.


START RUN #2
LINSEIS
URIK #4
PART NO. LO/80R
PRINTED IN U.S.A.



SYSTEM CALIBRATION CHECK
START RUN #2
LINSEIS

GENESIS ENVIRONMENTAL SERVICES COMPANY

Company Chevron Date 7-15-92

Site/Unit 26C Cogen #1 Test Run 1

Time	%02	CO ppm drift not corrected	SO2 ppm drift not corrected	NOx ppm drift not corrected
09:40	13.0	23.5	N/A	29.6
09:50	13.0	23.6		29.5
10:00	13.0	24.0		30.3
10:10	12.95	23.15		31.2
10:20	12.93	24.0		31.7
10:30	12.93	23.85		32.0
Mean				

Calibration	%02	CO ppm	SO2 ppm	NOx ppm
zero reading	0.0	-0.1	N/A	3.4
span reading	14.93	34.2		80.0
span gas value	15.0	34.3		77.0
cylinder I.D. O2	15.0% - A3324		4.0% - A11718	
cylinder I.D CO	34.3 - CC63457		5484 - ALM00R21	
cylinder I.D SO2	Ø		Ø	
cylinder I.D NOx	77.0 - CC12445		19.22 - AAL14050	

c: frmcal

GENESIS ENVIRONMENTAL SERVICES COMPANY

Company Chevron Date 7-15-92

Site/Unit 26C - Cogen #1 Test Run 2

Time	%02	CO ppm drift not corrected	SO2 ppm drift not corrected	NOx ppm drift not corrected
10:50	13.08	23.75	N/A	29.2
11:00	13.08	23.40		30.1
11:10	13.05	23.1		30.8
11:20	13.08	23.2		30.5
11:30	13.08	22.75		30.1
11:40	13.08	22.90		29.2
Mean				

Calibration	%02	CO ppm	SO2 ppm	NOx ppm
zero reading	0.0	0.0	N/A	0.0
span reading	14.99	34.6		75.7
span gas value	15.0	34.3		77.0

cylinder I.D. O2	15.0% - A3324	4.0% - A11718
cylinder I.D CO	34.3PPM - CC63457	5.48% - ALM008621
cylinder I.D SO2	Ø	Ø
cylinder I.D NOx	77.0 - CC12445	19.22 - AAL14050

c: frmcal

GENESIS ENVIRONMENTAL SERVICES COMPANY

Company Chevron Date 7-15-92

Site/Unit 26C Co.Gen.#2 Test Run 1

Time	%02	CO ppm drift not corrected	SO2 ppm drift not corrected	NOx ppm drift not corrected
12:25	13.25	43.3	N/A	25.3
12:35	13.20	41.8		26.3
12:45	13.20	42.0		26.8
12:55	13.25	45.8		27.0
13:05	13.25	46.4		27.4
13:15	13.25	45.5		27.9
Mean				

Calibration	%02	CO ppm	SO2 ppm	NOx ppm
zero reading	0.05	0.0	N/A	3.7
span reading	15.0	34.0		81.0
span gas value	15.0%	34.3		77.0

cylinder I.D. 02	15.0% - A3324	4.0% - 411418
cylinder I.D CO	34.3 - CC63457	5.484 - ALM008621
cylinder I.D SO2	ø	ø
cylinder I.D NOx	77.0 - CC12445	19.22 - AAL14050

c: frmcal

GENESIS ENVIRONMENTAL SERVICES COMPANY

Company Chevron Date 7-16-92

Site/Unit 26C Cogen #3 Test Run 1

Time	%02	CO ppm drift not corrected	SO2 ppm drift not corrected	NOx ppm drift not corrected
09:00	13.30	35.5	N/A	24.4
09:10	13.28	36.35		24.5
09:20	13.30	36.0		24.7
09:30	13.28	36.25		24.9
09:40	13.30	36.10		25.0
09:50	13.33	36.0		25.0
Mean				

Calibration	%02	CO ppm	SO2 ppm	NOx ppm
zero reading	0.08	0.0	N/A	0.4
span reading	15.0	34.1		77.0
span gas value	15.0%	34.3		77.0
cylinder I.D. O2	15.0% - A3324		4.0% - A-11718	
cylinder I.D CO	34.3 - CC63457		5.484 - ALM008621	
cylinder I.D SO2	Ø		Ø	
cylinder I.D NOx	77.0 - CC12445		19.22 - AAL14050	

c: frmcal

GENESIS ENVIRONMENTAL SERVICES COMPANY

Company Chevron Date 7-15-92

Site/Unit 26C Co Gen #2 Test Run 2

Time	%O2	CO ppm drift not corrected	SO2 ppm drift not corrected	NOx ppm drift not corrected
13:35	13.25	44.1	N/A	23.8
13:45	13.25	44.8		24.0
13:55	13.25	44.0		23.3
14:05	13.25	43.0		23.1
14:15	13.25	42.6		22.8
14:25	13.25	43.0		22.7
Mean				

Calibration	%O2	CO ppm	SO2 ppm	NOx ppm
zero reading	0.08	0.3	N/A	-2.0
span reading	15.0	34.4		74.9
span gas value	15.0%	34.3		77.0
cylinder I.D. O2	15.0% - A3324		4.0% - A11718	
cylinder I.D CO	34.3 - CC63457		5.454 - ALM008621	
cylinder I.D SO2	∅		∅	
cylinder I.D NOx	77.0 - CC12445		19.22 - AAL 14050	

c: frmcal

GENESIS ENVIRONMENTAL SERVICES COMPANY

Company CHEVRON Date 7-16-92.

Site/Unit 26C CO-GEN #3 Test Run 2

Time	%02	CO ppm drift not corrected	SO2 ppm drift not corrected	NOx ppm drift not corrected
10:10	13.43	36.25	N/A	24.9
10:20	13.33	36.1		25.3
10:30	13.33	35.9		25.7
10:40	13.30	35.7		26.0
10:50	13.30	35.7		26.3
11:00	13.25	35.6		26.8
Mean				

Calibration	%02	CO ppm	SO2 ppm	NOx ppm
zero reading	0.08	-0.1	N/A	2.0
span reading	14.88	34.1		79.4
span gas value	15.0	34.3		77.0
cylinder I.D. O2	15.0% - A3324		4.0% - A11718	
cylinder I.D CO	34.3 - CC63457		5.484 - ALM008621	
cylinder I.D SO2	∅		∅	
cylinder I.D NOx	77.0 - CC12445		19.22 - AAL 14050	

c: frmcal

GENESIS ENVIRONMENTAL SERVICES COMPANY

Company Chevron Date 7-16-92

Site/Unit 26C COGEN #4 Test Run 1

Time	%02	CO ppm drift not corrected	SO2 ppm drift not corrected	NOx ppm drift not corrected
11:30	14.0	35.35	N/A	26.0
11:40	13.95	35.25		27.0
11:50	13.93	34.5		28.0
12:00	13.95	35.9		28.7
12:10	13.93	36.0		28.9
12:20	13.93	35.4		29.0
Mean				

Calibration	%02	CO ppm	SO2 ppm	NOx ppm
zero reading	0.0	0.0	N/A	3.2
span reading	15.0	34.2		80.0
span gas value	15.0%	34.3		77.0

cylinder I.D. 02	15.0% - A3324	4.0 % A-11718
cylinder I.D CO	34.3 - CC63457.	5.4% - ALM008621.
cylinder I.D SO2	Ø.	Ø
cylinder I.D NOx	77.0 - CC12445	19.22 - AAL 14050

c: frmcal

GENESIS ENVIRONMENTAL SERVICES COMPANY

Company Chevron Date 7-16-92

Site/Unit 26C - Coker #4 Test Run 2.

Time	%02	CO ppm drift not corrected	SO2 ppm drift not corrected	NOx ppm drift not corrected
12:40	13.95	34.05	N/A	26.7
12:50	13.98	33.75		27.2
13:00	14.0	34.25		27.1
13:10	14.05	34.95		27.3
13:20	13.95	34.1		27.3
13:30	14.0	33.55		27.4
Mean				

Calibration	%02	CO ppm	SO2 ppm	NOx ppm
zero reading	0.0	-0.15	N/A	0.7
span reading	15.0			77.1
span gas value	15.0%	34.3		77.0
cylinder I.D. O2	15.0% - A3324		4.0% A-11718	
cylinder I.D CO	34.3 - CC63457		5.484 - ALM008621	
cylinder I.D SO2	✓		✓	
cylinder I.D NOx	77.0 - CC12445		19.22 - AAL14050	

c: frmcal

APPENDIX A-3

Calibrations and Certifications

Scott Specialty Gases

a division of Scott Environmental Technology, Inc.

1290 COMBERMERE STREET, TROY, MICHIGAN 48084 (313) 589-2950

Shipped From : Scott Michigan
Our Project # : 524303
Your P.O. # : 7187
Expiration Date : 12-11-92
Cylinder Number : ALM-008621
Cylinder Pressure : 1900 psig

omer :
GENESIS ENVIRONMENTAL
1145 W. COLUMBUS AVENUE
BAKERSFIELD, CA. 93301

* * * * CERTIFICATE OF ANALYSIS - EPA PROTOCOL GASES * * * *
PERFORMED ACCORDING TO SECTION 3.0.4
Certified Per Traceability Procedure # G1
Protocol # 1
File # PO-0441
Certified Accuracy 1 % NBS Traceable

CERTIFIED EPA PROTOCOL

NALYZED CYLINDER		REFERENCE STD			INSTRUMENTATION		
MPONENT	CERTIFIED CONC.	SRM # (CRM #)	CYLINDER NUMBER	CONC.	INSTR/MODEL/SERIAL #	LAST CALIBRATION DATE	ANALYTICAL PRINCIPLE
BON MONOXIDE	5.484 PPM	1677A	CAL-6727	9.970 PPM	HORIBA/OPE-144E	4-10-91	NON-DISPERSIVE INFRARED
		GMIS*	ALM-010433	10.01 PPM	560172153		

ANCE GAS : NITROGEN

FIRST ANALYSIS DATE : 6-5-91

RO S V)	TEST GAS (mV)	RESULTS PPM	REFERENCE GAS CONC.	(mV)	RESULTS PPM
0	11.60	5.443	9.970 PPM	21.50	9.895
0	11.60	5.443		21.50	9.895
0	11.60	5.443		21.50	9.895

CALCULATED RESULTS 5.484
5.484
5.484

AVERAGE : 5.484 PPM

SECOND ANALYSIS DATE : 6-11-91

ZERO GAS (mV)	TEST GAS (mV)	RESULTS PPM	REFERENCE GAS CONC.	(mV)	RESULTS PPM
0.00	11.60	5.443	9.970 PPM	21.50	9.895
0.00	11.60	5.443		21.50	9.895
0.00	11.60	5.443		21.50	9.895

CALCULATED RESULTS 5.484
5.484
5.484

AVERAGE : 5.484 PPM

CALIBRATION CURVE : 3 rd DEGREE

SRM # (CRM #)	CONC. PPM	SPLIT PT (%)	DVM (mV)	FITTED VALUE	PERCENT ERROR
	10.05	100	22.20	10.01	-0.45
1677A	9.970	99	21.50	9.895	-0.75
	9.900	99	21.40	9.876	-0.24
	4.988	50	10.80	4.964	-0.48
	0.0000	0	0.00	0.0000	0.00
		0		0.0000	0.00
		0		0.00	0.00
GMIS	4.988	LOW	10.80	4.964	-0.48
1677A	9.97		21.50	9.90	-0.75

GMIS - GAS MANUFACTURER'S INTERNAL STANDARD

Analyst : Earl P. Dorn Approved By : J. Shapiro

The only liability of this Company for gas which fails to comply with this analysis shall be replacement thereof by the Company without extra cost.

Scott Specialty Gases, Inc.

Shipped From: 2600 CAJON BLVD. SAN BERNARDINO CA 92411-0000
Phone: 714-887-2571 Fax: 714-887-0549

CERTIFICATE OF ANALYSIS

GENESIS ENVIRONMENTAL
ATTN: MIKE BAKALOR
1145 W. COLUMBUS AVENUE

BAKERSFIELD CA 93301

PROJECT #: 02-16930
PO#: 7223
ITEM #: 02023332 2A
DATE: 11/25/91

CYLINDER #: A3324

ANALYTICAL ACCURACY: +/-1%

COMPONENT	REQUESTED GAS CONC	MOLES	ANALYSIS (MOLES)	
OXYGEN	15.	PCT	15.00	PCT
NITROGEN		BAL		BAL

CERTIFIED

CYLINDER PRESSURE 2000 PSI

ANALYST: MAYNARD JOHNSON

APPROVED BY: DR ARMAND LANGE PHD

Scott Specialty Gases, Inc.

Shipped From: 2600 CAJON BLVD. SAN BERNARDINO CA 92411-0000
Phone: 714-887-2571 Fax: 714-887-0549

CERTIFICATE OF ANALYSIS

GENESIS ENVIRONMENTAL
ATTN: MIKE BAKALOR
1145 W. COLUMBUS AVENUE

BAKERSFIELD CA 93301

PROJECT #: 02-16930
PO#: 7223
ITEM #: 02023332 2A
DATE:11/25/91

CYLINDER #: A11718

ANALYTICAL ACCURACY: +/-1%

COMPONENT	REQUESTED GAS CONC MOLES		ANALYSIS (MOLES)	
OXYGEN	4.	PCT	4.000	PCT
NITROGEN		BAL		BAL

CERTIFIED

ANALYST: MAYNARD JOHNSON

APPROVED BY: DR ARMAND LANGE PHD

SCOTT-MARRIN, INC.
6531 BOX SPRINGS BLVD. • RIVERSIDE, CA 92507
TELEPHONE (714) 653-6780 • FAX (714) 653-2430

REPORT OF ANALYSIS
EPA PROTOCOL GAS MIXTURES

GENE01

TO: DATE : 03/27/92

GENESIS ENVIRONMENTAL
1145 W. COLUMBUS
BAKERSFIELD, CA 93301-

IMPORTANT ANALYSIS REPORT
Please forward to user
of calibration gases.

CUSTOMER ORDER NUMBER: VERBAL: KEVIN

COMPONENT	CONCENTRATION(v/v)	REFERENCE STANDARD	ANALYZER MAKE,MODEL,S/N,DETECTION	EXPIRATION DATE	REPLICATE ANALYSIS DATA	
CYLINDER NO.:	CC12445					
			Monitor Labs Model 8440		03/19/92	03/26/92
Nitric Oxide	77.0 ± 0.8 ppm	GMIS	S/N 136	09/26/93	77.0 ppm	77.1 ppm
		Cylinder #	Continuous		77.2 ppm	76.8 ppm
Nitrogen,O2-Free Balance		CC88868	Chemiluminescence		76.9 ppm	77.2 ppm
Cylinder Pressure: 2000 psig		@ 102.7 ppm	Last Cal Date: 03/05/92	Mean:	77.0 ppm	77.0 ppm

ppm = umole/mole % = mole-%

The above analyses were performed in accordance with EPA-1987 Traceability Protocol # 1, Section 3.0.4, Procedure G1.

Analyst: B.E. Gross

Approved: J.T. Marrin

The only liability of this company for gas which fails to comply with this analysis shall be replacement or reanalysis thereof by the company without extra cost.

SCOTT-MARRIN, INC.
2001 THIRD ST. • UNIT H • RIVERSIDE, CA 92507
TELEPHONE (714) 784-1240

REPORT OF ANALYSIS
EPA PROTOCOL GAS MIXTURES

GENE01

TO:

KEVIN ORTON
GENESIS ENVRIONMENTAL SERVICES
1145 W. COLUMBUS AVE.
BAKERSFIELD, CA 93301

DATE : 11/13/91

CUSTOMER ORDER NUMBER: KEVIN ORTON

PAGE 1

COMPONENT	CONCENTRATION (v/v)	REFERENCE STANDARD	ANALYZER MAKE, MODEL, S/N, DETECTION	EXPIRATION DATE	REPLICATE ANALYSIS DATA	
CYLINDER NO.:	CC63457					
			Carle Insts Model 8000		11/04/91	11/11/91
Carbon Monoxide	34.3 ± 0.3 ppm	GMIS	S/N 8249	05/11/93	34.3 ppm	34.2 ppm
		Cylinder #	Methanation/FID		34.3 ppm	34.3 ppm
Nitrogen	Balance	CC12564	Gas Chromatography		34.4 ppm	34.2 ppm
Cylinder Pressure: 2000 psig		@ 42.3 ppm	Last Cal Date: 10/22/91	Mean:	34.3 ppm	34.2 ppm

ppm = umole/mole   % = mole-%

The above analyses were performed in accordance with EPA-1987 Traceability Protocol # 1, Section 3.0.4, Procedure G1.

Analyst: M.J. Monson   Approved: J.T. Marrin

The only liability of this company for gas which fails to comply with this analysis shall be replacement or reanalysis thereof by the company without extra cost.

STANDARD CALIBRATION GASES IN ALUMINUM CYLINDERS