

Interoffice Communication

To P. C. Gowan
 From G. D. Johnson
 Date February 28, 1977
 Subject Closed Benzene Sampling Systems (PE-49)
 Des. No. 734-ETH-177-GDJ
 Final Issue

Attached is a class "A" design for improved benzene sampling systems in the Ethylene Unit. The current sampling methods are not suitable to meet the proposed OSHA standard of 1 ppm for two hours exposure.

Strahman sampling values are specified for the quench water, light aromatics, and heavy aromatics streams. These valves eliminate the need for line flushing and have proven satisfactory for the Baltimore Chemical Plant benzene fume abatement program (Table I). Liquified gas type streams, including the caustic tower overhead, demethanizer bottoms, deethanizer bottoms, and depropanizer bottoms, will continue to be sampled in metal sample bombs, but with closed sampling manifolds which vent to a new vent collection header.

Sampling procedures are attached which detail the sampling techniques. Following installation of the design, a survey should be taken to assure meeting the OSHA standard.

A separate Turnaround Work List is attached for those design related items which need immediate attention. This work must be expedited by planning in order that the valve installation and tie-ins be made during the April turnaround.

Anyone having questions concerning the design, please advise.

G. D. Johnson

G. D. Johnson,
 Environmental Health Engineer

Approved by *W. J. Ritter*
 W. J. Ritter,
 Chief Process Engineer

GDJ/psm

MCD 000010887

Attachment

CC: RAC, RHG, WJR, BRD, RLP, WAM, SMF, HGH, WWC, GDO, KJB, JEC, PCH, SFP,
 DHS, PEC, FILE, RDG

TABLE I
CONTROL OF BENZENE EXPOSURE WITH STRAHMAN SAMPLING VALVES
(BALTIMORE PLANT DATA)

Sample Point: Benzene Dryers

<u>BREATHING AIR SAMPLES</u>		
<u>SAMPLE NO.</u>	<u>WITH LINE FLUSHING</u>	<u>WITH STRAHMAN VALVE</u>
1.	20 (ppm)	< 1 (ppm)
2.	2	0
3.	4	0
4.	1	1
5.	2	2
6.	10	0
7.	10	
MEDIAN	4	1

<u>DOWNWIND SAMPLES</u>		
<u>SAMPLE NO.</u>	<u>WITH LINE FLUSHING</u>	<u>WITH STRAHMAN VALVE</u>
1.	70 (ppm)	1 (ppm)
2.	40	0
3.	60	0
4.	1000+	1
5.	40	16
6.	30	2
7.	50	
MEDIAN	50	1

Measurements by Century Organic vapor analyzer, Model OCA-118.

MCD 000010888

ENERGY IMPACT STATEMENT
FOR
CLOSED BENZENE SAMPLING SYSTEM

There is neither an energy increase or reduction with this design.

MCD 000010889

TURNAROUND WORK LIST

1. Install a 3/4" Strahman sampling valve on the 2½" product line at the outlet of the debutanizer bottoms cooler, EA-415.
8. Install a 3/4" Strahman sampling valve on the 4" quench water blow-down line at the settler drum.
9. Install a 3/4" Strahman sampling valve on the quench water circulation line (16"-QW-100-A2A) beneath the settler drum.
10. Install a 3/4" Strahman sampling valve on the heavy aromatics product line (1½"-P-151) downstream of control valve LCV-101.
21. Provide a 3/4" Stainless steel bleeder valve on the deethanizer feed line (4"-P-412) downstream of control valve LCV-402.
35. On the discharge side of demethanizer reflex pump GA-401 provide a 3/4" welded connector and attach a 3/4" stainless steel gate valve. Further, attach a 3/4" flange connection at the outlet side of the valve. (See Basil Drymon for the exact location of the valve.)
36. On the discharge side of the spare demethanizer reflux pump, GA-401S, provide a 3/4" welded connector and attach a 3/4" stainless steel gate valve. Further, attach a 3/4" flange connection at the outlet side of the valve (See Basil Dryman for the exact location of the valve).

MCD 000010890

WORK LIST

REFER TO DWG. NO. LCCP-734-1

1. Install a 3/4" Strahman sampling valve on the 2½" product line at the outlet of the debutanizer bottoms cooler, EA-415.
2. Install a sample bomb and valve manifold on a new Unistrut rack near the depropanizer bottoms control valve, LCV-416. A 500 cc. sample bomb having a 1/4" Whitey needle valves will be used. Manifold valves will be Smith type ball valves - 1/4 turn to open. Inlet and outlet valves to bomb will connect to ½" pipe quick disconnects (MGM No. 203SS).
3. Run line 1/4"-HM-01-P-A2-1 from the 3/4" upstream bleeder valve (at LCV-416) to the sample bomb manifold.
4. Run line 1/4"-HM-02-P-A2-1 from the sample bomb manifold to the 3/4" sample valve (sample point NO. 20) located on the debutanizer feed line (3"-P-497). Remove the other sampling valves located at sampling point No. 20.
5. Run vent line 3/4"-HM-03-P-A2-1 from the sample bomb manifold to a new 2" vent collection (V.C.) header, line 2"-HM-21-N-A13-4-M. The exact location for the tie-in will be specified in a subsequent design.
6. Run line 3/4"-FG-12-N-B2-1 from an existing 3/4" bleeder valve on the Gillis methane gas line (3/4"-NG-AGA), located near the reflux pumps, GA-409 & S, to the sample bomb manifold. Install a pressure reducing valve PCI-400 in line 3/4"-FG-12 near the tie-in to the sampling manifold.
7. Remove the existing sample collection manifold for the light aromatics distillate sample and plug the 3/4" sample valve nearest line 3"-P-713.

REFER TO DWG. NO. LCCP-734-2

8. Install a 3/4" Strahman sampling valve on the 4" quench water blowdown line at the settler drum.
9. Install a 3/4" Strahman sampling valve on the quench water circulation line (16"-QW-100-A2A) beneath the settler drum. Install valve horizontal to grade.
10. Install a 3/4" Strahman sampling valve on the 1½" heavy aromatics product line (1½"-P-151) downstream of control valve LCV-101.
11. Remove the existing 3/4" sampling valve and plug the 3/4" bleeder valve on the 4" quench water blowdown line.

MCD 000010891

12. Disconnect the 3/4" sampling line to the quench water sample cooler and plug the 3/4" bleeder valve on line 16"-QW-100.
13. Remove the 3/4" hose and plug bleeder valve at control valve LCV-101.
14. Remove the 3/4" drain line from the heavy aromatics sampling point and plug valve.

REFER TO DWG. NO. LCCP-734-3

15. Install a 3/4" Strahman sampling valve on a 4" discharge line at the light aromatics transfer pump, P7-911.
16. Remove sample tubing and plug existing sampling valve at the pressure gauge on pump P7-911.
17. Remove the existing 3" hosing at tank T7-901, and blind drain valve.
18. Remove sample tubing and plug 1/4" sample valve located near pressure gauge on tank T7-901.

REFER TO DWG. NO. LCCP-734-4

19. Install a sample bomb and valve manifold on a new Unistrut rack near the demethanizer bottoms control valve LCV-402. A 500 cc. sample bomb having 1/4" Whitey needle valve will be used. Manifold valves will be Smith type ball valves - 1/4 turn to open. Inlet and outlet valves to bomb will connect to 1/2" pipe quick disconnects (MGM No. 203SS).
20. Run line 1/4"-HM-04-C-B2-10 from the 3/4" bleeder valve (at LCV-402) to the sample bomb manifold.
21. Run line 1/4"-HM-05-C-B2-10 from the sample bomb manifold to the deethanizer feed line (6"-P412).
22. Run line 3/4"-FG-14-N-A2-1 from an existing 3/4" bleeder on the methane off-gas (M.O.G.) line 4"-P325-A2A to the demethanizer sample bomb manifold.
23. Run vent line 3/4"-HM-06-C-B2-10 from the demethanizer sampling bomb manifold to a new 2" vent collection header, line 2"-HM-20. The exact location for the tie-in will be specified in a subsequent design for vent collection.
24. Install a sample bomb and valve manifold on a Unistrut rack near the deethanizer bottoms control valve, LCV-403. A 500 cc. sample bomb having 1/4" Whitey needle valves will be used. Manifold valves will be Smith type ball valves - 1/4 turn to open. Inlet and outlet valves to bomb will connect to 1/2" pipe quick disconnects (MGM No. 203SS).

WORK LIST - Continued - page 3

25. Run line 1/4"-HM-07-P-B2-2 from the 3/4" upstream bleeder valve (at LCV-403) to the sample bomb manifold.
26. Run line 1/4"-HM-08-P-B2-2 from the sample bomb manifold to the downstream 3/4" bleeder valve at LCV-403.
27. Run line 3/4"-FG-16-N-A2-1 from the tie-in with line 3/4"-FG-14 to the deethanizer sample bomb manifold.
28. Run vent line 3/4"-HM-09-P-B2-2 from the sample bomb manifold to a new 2" vent collection header, line 2"-HM-20. The exact location of the tie-in will be specified in a subsequent design for vent collection.

REFER TO DWG. NO. LCCP-734-5

29. Install a sample bomb and valve manifold on a Unistrut rack near the sample point No. 9 where the caustic tower overhead sample is presently collected. A 250 cc. sample bomb having 1/4" Whitey needle valves will be used. Manifold valves will be Smith type ball valves - 1/4 turn to open. Inlet and outlet valves to bomb will connect to 1/4" pipe quick disconnects (MGM No. 203SS).
30. Run line 1/4"-HM-10-N-B2-2 from the 3/4" sample valve (at sample point No. 9) to the sample bomb manifold.
31. Run line 3/4"-FG-18-N-A2-1 from a tie-in with a 3/4" bleeder on the methane off-gas line (4"-P-584) located near the fuel gas drum to the sample bomb manifold.
32. Run a 3/4" vent line (HM-11) from the sample bomb manifold to a new 2" vent collection header, line 2"-HM-20. The exact location of this tie-in will be specified in a subsequent design for vent collection.

REFER TO DWG. NO. LCCP-734-6

33. Install four 3/4" Strahman sampling valves on the 3" light aromatic loading lines as shown in the sketch.
34. Remove the existing 3/4" sampling valves and plug pipe connections.

MISCELLANEOUS

35. On the discharge side of demethanizer reflux pump GA-401 provide a 3/4" welded connector and attach a 3/4" stainless steel gate valve. Further, attach a 3/4" flange connection at the outlet side of the valve. (See Basil Drymon for the exact location of the valve.)

MCD 000010893

36. On the discharge side of the spare demethanizer reflux pump, GA-401S, provide a 3/4" welded connector and attach a 3/4" stainless steel gate valve. Further, attach a 3/4" flange connection at the outlet side of the valve (See Basil Dryman for the exact location of the valve).

MCD 000010894

MCD 000010895

PIPING SCHEDULE

DESIGNATION	Flowing Fluid	SERVICE		NORMAL		DESIGN		Flow Lb./Hr.	Phase	PSI @ 10'
		From	To	Temp. °F.	Press. PSIG	Temp. °F.	Press. PSIG			
1-HM-01-PAZ-1	DEMETANIZER BOTTOMS	LCV-401 SLIDER VALVE	SAMPLE BOMB MANIFOLD	205	150	200	150	—	—	—
1-HM-02-PAZ-1	"	SAMPLE BOMB MANIFOLD	3/4" V.C. LINE LINE 2"-HM-20	205	150	200	150	—	—	—
1-HM-03-PAZ-1	"	SAMPLE BOMB MANIFOLD	2" V.C. HEADER LINE 2"-HM-20	205	ATMOS.	200	150	—	—	—
1-HM-04-C-82-10	DEMETANIZER BOTTOMS	LCV-401 SLIDER VALVE	SAMPLE BOMB MANIFOLD	20	150	190	150	—	—	—
1-HM-05-C-82-10	"	SAMPLE BOMB MANIFOLD	3/4" V.C. LINE LINE 2"-HM-20	20	150	190	150	—	—	—
1-HM-06-C-82-10	"	SAMPLE BOMB MANIFOLD	2" V.C. HEADER LINE 2"-HM-20	20	ATMOS.	190	150	—	—	—
1-HM-07-F-82-2	DEMETANIZER BOTTOMS	LCV-402 SLIDER VALVE	SAMPLE BOMB MANIFOLD	185	395	200	150	—	—	—
1-HM-08-F-82-2	"	SAMPLE BOMB MANIFOLD	LCV-402 SLIDER VALVE	185	200	200	150	—	—	—
1-HM-09-P-82-2	"	SAMPLE BOMB MANIFOLD	2" V.C. HEADER LINE 2"-HM-20	135	ATMOS.	200	150	—	—	—
1-HM-10-N-82-2	CHILLED FLOW OVERHEAD	SAMPLE BOMB MANIFOLD	SAMPLE BOMB MANIFOLD	60	515	200	150	—	—	—
1-HM-11-N-82-2	"	SAMPLE BOMB MANIFOLD	2" V.C. HEADER LINE 2"-HM-20	60	ATMOS.	200	150	—	—	—
1-HM-12-N-82-1	CHILLED FLOW	3/4" V.C. LINE OPPOSITE DEPUTER	SAMPLE BOMB MANIFOLD, POI-100	70	325	100	75	—	—	—
1-HM-13-N-82-1	"	POI-100	SAMPLE BOMB MANIFOLD	70	454.50	100	75	—	—	—
1-HM-14-N-82-1	ALTERNATE SPECIANS	LINE 3/4" V.C. LINE LINE 2"-HM-20	DEMETANIZER BOTTOMS, FLOW	70	150	"	"	—	—	—
1-HM-15-N-82-1	"	LINE 3/4" V.C. LINE	DEMETANIZER BOTTOMS, FLOW	70	150	"	"	—	—	—
1-HM-16-N-82-1	"	LINE 3/4" V.C. LINE	DEMETANIZER BOTTOMS, FLOW	70	150	"	"	—	—	—
1-HM-17-N-82-1	"	LINE 3/4" V.C. LINE	DEMETANIZER BOTTOMS, FLOW	70	150	"	"	—	—	—
1-HM-18-N-82-1	"	LINE 3/4" V.C. LINE	DEMETANIZER BOTTOMS, FLOW	70	150	"	"	—	—	—
1-HM-19-N-82-1	"	LINE 3/4" V.C. LINE	DEMETANIZER BOTTOMS, FLOW	70	150	"	"	—	—	—
1-HM-20-N-82-1	"	LINE 3/4" V.C. LINE	DEMETANIZER BOTTOMS, FLOW	70	150	"	"	—	—	—

Notes:



ENGINEERING CENTER

PONCA CITY, OKLAHOMA

SPECIFICATION SHEET

SELF-CONTAINED

PRESSURE REGULATORS

A.F.E. NO. _____

DATE 2-24-77

W.O. NO. _____

MADE BY 107

INO. NO. _____

APP'D BY _____

REQ. NO. _____

B.M. NO. _____

P.O. NO. _____

PLANT _____

PROJECT

CLOSED BENZENE CHARGING SYSTEM

Item No. and Tag

PCI-400

Service

PURGING SAMPLE BOMB MANIFOLD

Manufacturer

FISHER

Model No.

621

Line Size, Inches

3/2

Stream and Valve

Fluid

GILLIS METHANE

Temp., °F

90

Inlet Pressure, PSIG Norm-Max.

300-325

Outlet Pressure, PSIG Norm-Max.

45-50

Sp. Gr. @ T&P

11.35

Viscosity, @ T&P, cp

0.013

Molecular Weight

16.0

Rate, SCFH Norm-Max.

0-3000

Body Size, Inches

3/4"

Orifice Size, Inches

3/32"

NOTES:

SHEET 3 OF 12 REV. _____

MCD 000010897

1-710



ENGINEERING CENTER

PONCA CITY, OKLAHOMA
SPECIFICATION SHEET
PRESSURE GAGES

A.F.E. NO. _____
DATE 1-4-70 W.O. NO. _____
MADE BY AS INQ. NO. _____
APP'D BY _____ REQ. NO. _____
B.M. NO. _____ P.O. NO. _____

PLANT Long Street Pump Station - PROJECT Upgrade Sewerage Plant

	TAG NO.	REV	QUAN.	RANGE		OPER. PRESS.	SERVICE	ACCESSORIES	NOTES
				TUBE	DIAL				
2									
3									
4	10-1		1		0-100	1/2	DEF. MANIFOLD - PUMPING		
5	10-2		1		0-100	1/2	" "		
6	10-3		1		0-100	1/2	DEF. MANIFOLD - PUMPING		
7	10-4		1		0-100	1/2	" "		
8	10-5		1		0-100	1/2	DEF. MANIFOLD - PUMPING		
9	10-6		1		0-100	1/2	" "		
10	10-7		1		0-100	1/2	DEF. MANIFOLD - PUMPING		
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									

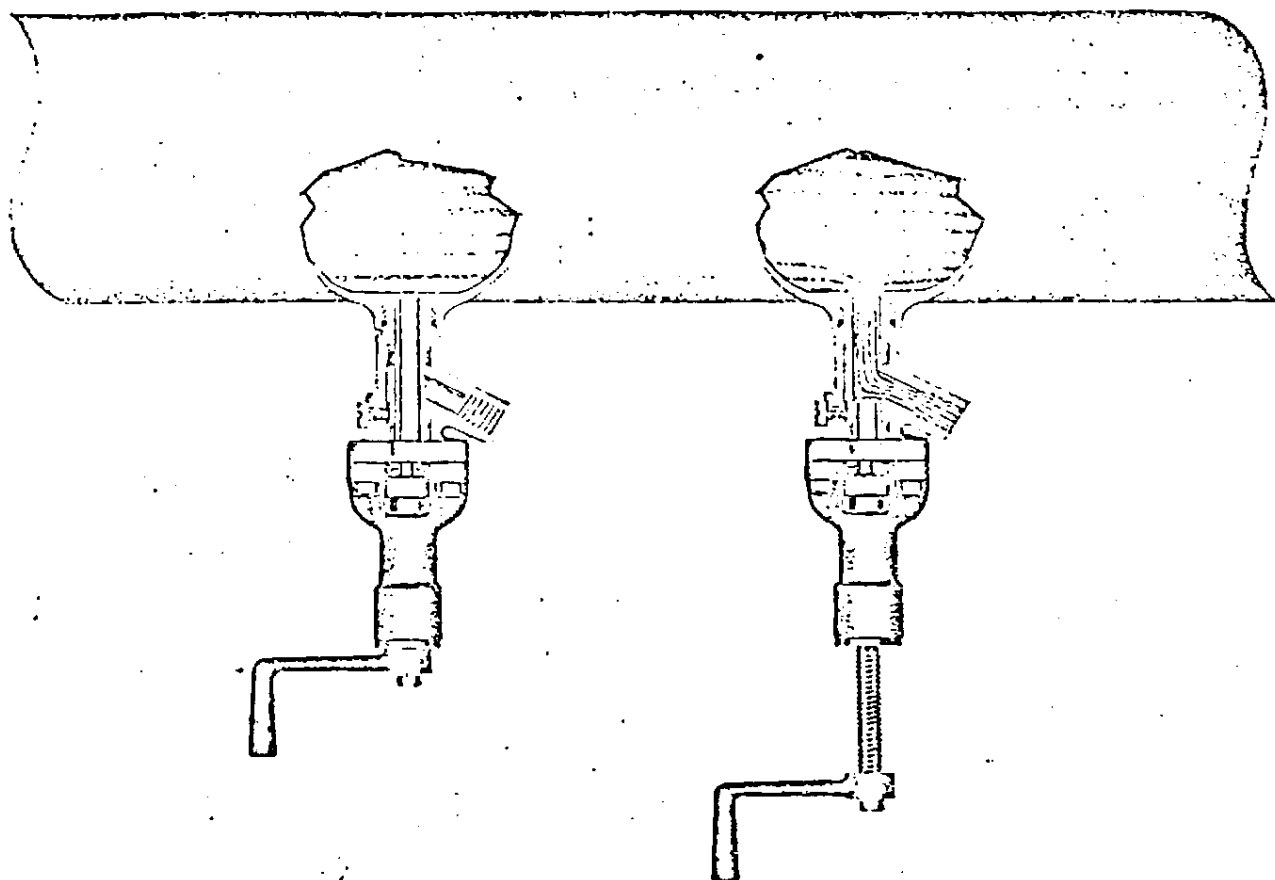
NOTES

4-447-S

MCD 000010898

INSTRUMENT SOCIETY OF AMERICA

SHEET 1 OF 12 REV _____



Strahman Valves has designed this new Sampling Valve to produce samples without failure. No settlement or clogging can ever stop this valve from producing a live sample.

This new type Sampling Valve is so constructed that, when in a closed position the stainless steel piston extends to the inner surface of the vessel or pipe, to which it is connected. When this piston is retracted to the open position, a sample is guaranteed because it is impossible for any foreign material to gather in the valve, due to the fact that the piston takes up the whole interior of the valve to itself.

This valve is sealed by two Teflon Rings, one above the discharge port and the other below. When necessary, these Rings can be re-compressed against the piston by tightening the packing gland. This new type of seal is much more positive than the old-fashioned disc type. If these Teflon Rings become worn, it is a simple matter to replace them.

Shown above are two Sampling Valves, one in the open position, and, the other closed, illustrating how the piston fills the whole interior of the valve when closed, and, how the piston, when retracted, leaves an entirely empty body for the material to pass through. It also illustrates that a minimum of turbulence is created due to the fact that the piston is flush with the inside of the pipe.

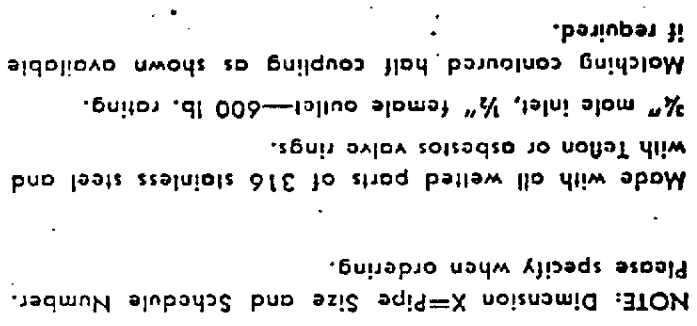
These Sampling Valves are made for installation in existing systems by welding a $\frac{3}{4}$ " half coupling into the pipe or vessel, from which samples are required. They are made with the $\frac{3}{4}$ " male pipe thread inlet and $\frac{1}{2}$ " female pipe thread discharge.

To simplify installation in both existing and proposed construction it is, therefore, only necessary to weld a $\frac{3}{4}$ " half coupling at any spot from which a sample may be required.

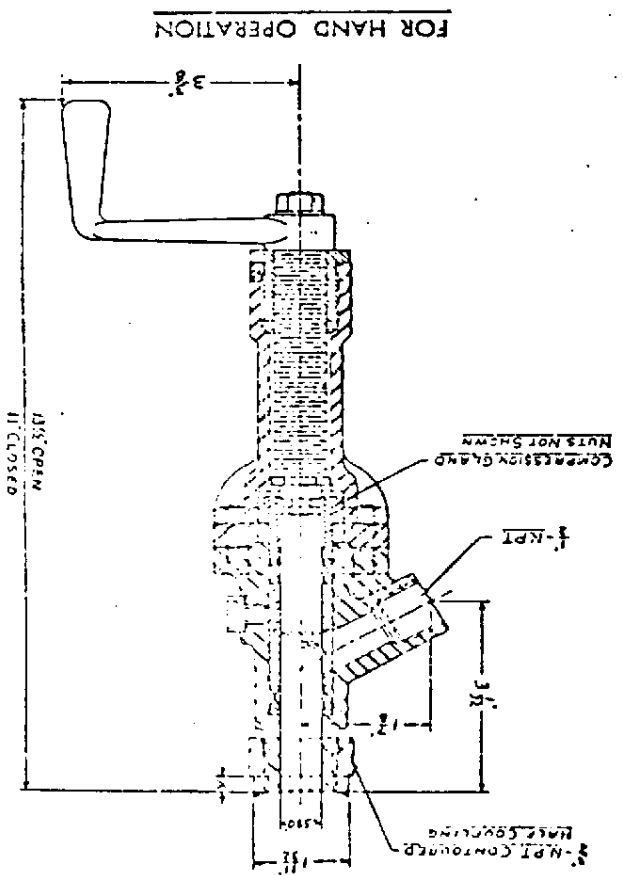
Matching half couplings furnished on request.

FIG. SV-700

3/4" CONToured HALF COUPLING



FOR AIR CYLINDER OPERATION

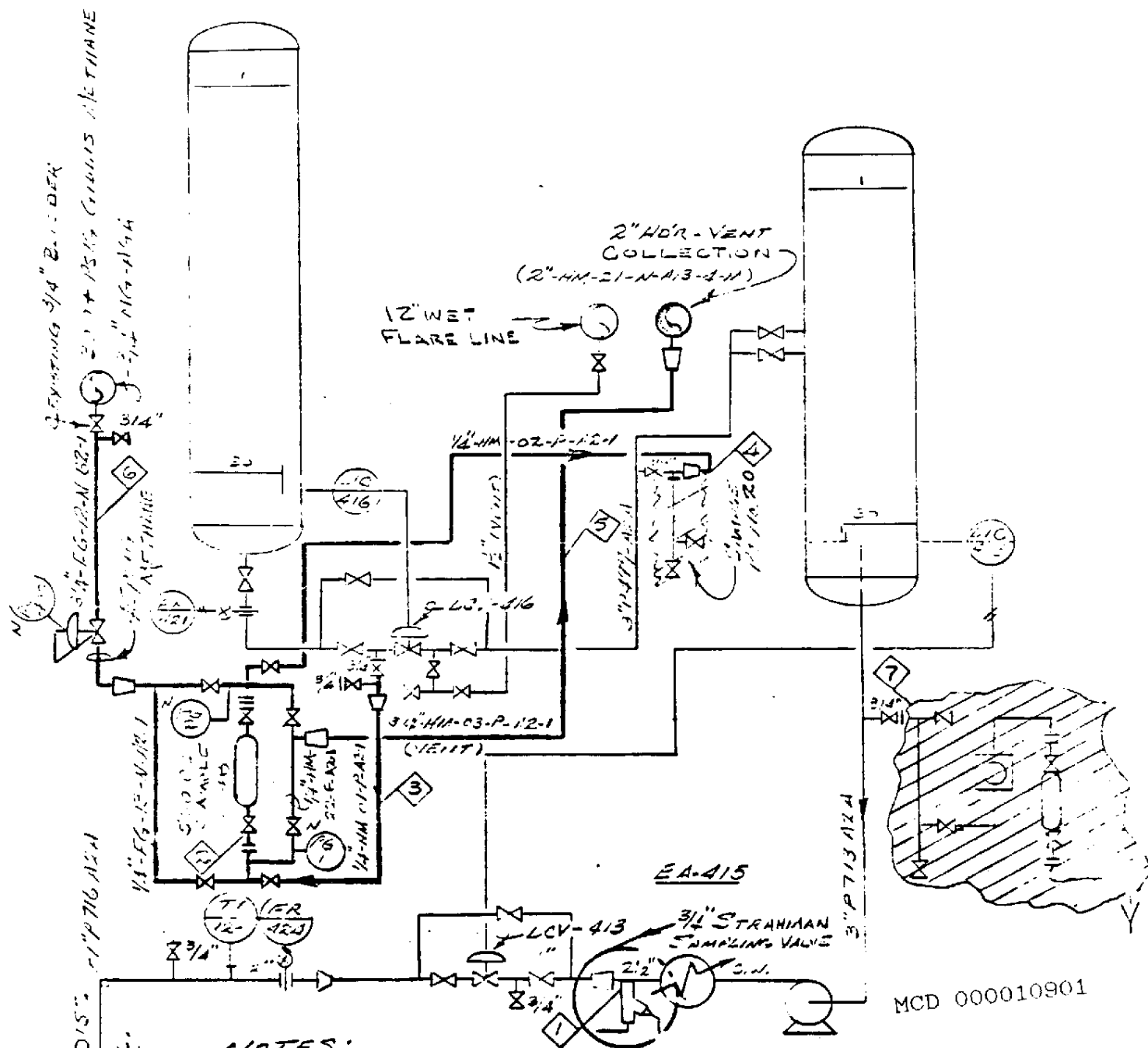


DA-404

DEPROPANIZER

DA-407

DEBUTANIZER



NOTES:

1. AROMATIC SAMPLE BOMB MANIFOLD ON A
UNISTRUT RACK OR EQUIV.

P&I DIAGRAM

CLOSED BENZENE SAMPLING SYSTEMS
FOR DEPROPANIZER BOTTOMS AND
LIGHT AROMATIC DISTILLATE STREAMS
GOU/12-21-76 DWG. NO. LCCP-734-1

MCD 000010901

GA-413 ± 2

LEGEND

— EXISTING
— NEW

REMOVES PLUG

◇ - WORK LIST ITEM

[illegible]

◇ WORK LIST ITEM

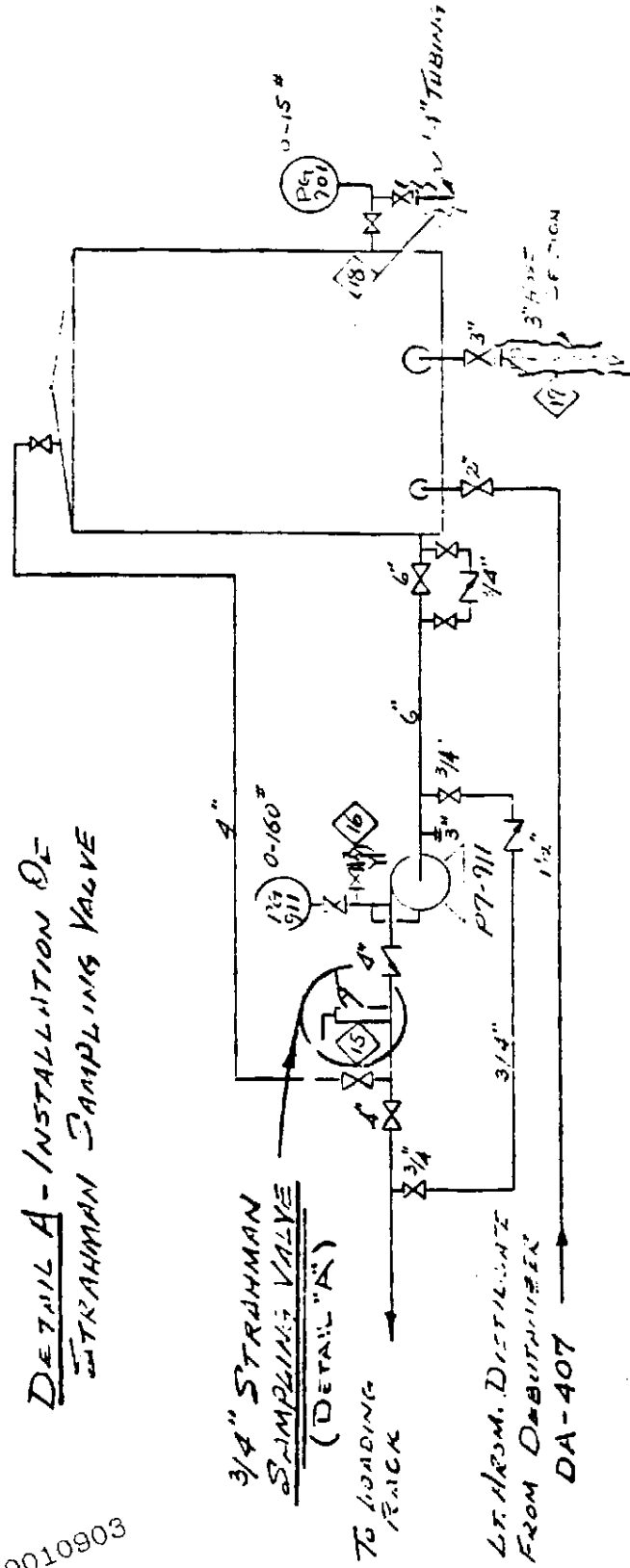
1. 1st CT Sample 20-10-A 70g - 22"
2. 2nd Day 2001-15-E 60g - 20"

MCD 000010902

Wichita, Kan. 22-11

61617 000000 100
DISCOUNT BANK

DETAIL A - INSTALLATION OF
STRAHMAN SAMPLING VALVE



P. F. I. DINGRAM

CLOSED BENTLEY CHAIRMAN SYSTEM
 CHAIRMAN BENTLEY CHAIRMAN
 BENTLEY CHAIRMAN BENTLEY

6210.1.274

NO	DATE	DESCRIPTION	AMOUNT	CHECK NO	DATE	DESCRIPTION	AMOUNT	CHECK NO
1	1/1/19	1/1/19	1/1/19	1/1/19	1/1/19	1/1/19	1/1/19	1/1/19
2	2/1/19	2/1/19	2/1/19	2/1/19	2/1/19	2/1/19	2/1/19	2/1/19
3	3/1/19	3/1/19	3/1/19	3/1/19	3/1/19	3/1/19	3/1/19	3/1/19
4	4/1/19	4/1/19	4/1/19	4/1/19	4/1/19	4/1/19	4/1/19	4/1/19
5	5/1/19	5/1/19	5/1/19	5/1/19	5/1/19	5/1/19	5/1/19	5/1/19
6	6/1/19	6/1/19	6/1/19	6/1/19	6/1/19	6/1/19	6/1/19	6/1/19
7	7/1/19	7/1/19	7/1/19	7/1/19	7/1/19	7/1/19	7/1/19	7/1/19
8	8/1/19	8/1/19	8/1/19	8/1/19	8/1/19	8/1/19	8/1/19	8/1/19
9	9/1/19	9/1/19	9/1/19	9/1/19	9/1/19	9/1/19	9/1/19	9/1/19
10	10/1/19	10/1/19	10/1/19	10/1/19	10/1/19	10/1/19	10/1/19	10/1/19
11	11/1/19	11/1/19	11/1/19	11/1/19	11/1/19	11/1/19	11/1/19	11/1/19
12	12/1/19	12/1/19	12/1/19	12/1/19	12/1/19	12/1/19	12/1/19	12/1/19
13	1/1/20	1/1/20	1/1/20	1/1/20	1/1/20	1/1/20	1/1/20	1/1/20
14	2/1/20	2/1/20	2/1/20	2/1/20	2/1/20	2/1/20	2/1/20	2/1/20
15	3/1/20	3/1/20	3/1/20	3/1/20	3/1/20	3/1/20	3/1/20	3/1/20
16	4/1/20	4/1/20	4/1/20	4/1/20	4/1/20	4/1/20	4/1/20	4/1/20
17	5/1/20	5/1/20	5/1/20	5/1/20	5/1/20	5/1/20	5/1/20	5/1/20
18	6/1/20	6/1/20	6/1/20	6/1/20	6/1/20	6/1/20	6/1/20	6/1/20
19	7/1/20	7/1/20	7/1/20	7/1/20	7/1/20	7/1/20	7/1/20	7/1/20
20	8/1/20	8/1/20	8/1/20	8/1/20	8/1/20	8/1/20	8/1/20	8/1/20
21	9/1/20	9/1/20	9/1/20	9/1/20	9/1/20	9/1/20	9/1/20	9/1/20
22	10/1/20	10/1/20	10/1/20	10/1/20	10/1/20	10/1/20	10/1/20	10/1/20
23	11/1/20	11/1/20	11/1/20	11/1/20	11/1/20	11/1/20	11/1/20	11/1/20
24	12/1/20	12/1/20	12/1/20	12/1/20	12/1/20	12/1/20	12/1/20	12/1/20
25	1/1/21	1/1/21	1/1/21	1/1/21	1/1/21	1/1/21	1/1/21	1/1/21
26	2/1/21	2/1/21	2/1/21	2/1/21	2/1/21	2/1/21	2/1/21	2/1/21
27	3/1/21	3/1/21	3/1/21	3/1/21	3/1/21	3/1/21	3/1/21	3/1/21
28	4/1/21	4/1/21	4/1/21	4/1/21	4/1/21	4/1/21	4/1/21	4/1/21
29	5/1/21	5/1/21	5/1/21	5/1/21	5/1/21	5/1/21	5/1/21	5/1/21
30	6/1/21	6/1/21	6/1/21	6/1/21	6/1/21	6/1/21	6/1/21	6/1/21
31	7/1/21	7/1/21	7/1/21	7/1/21	7/1/21	7/1/21	7/1/21	7/1/21
32	8/1/21	8/1/21	8/1/21	8/1/21	8/1/21	8/1/21	8/1/21	8/1/21
33	9/1/21	9/1/21	9/1/21	9/1/21	9/1/21	9/1/21	9/1/21	9/1/21
34	10/1/21	10/1/21	10/1/21	10/1/21	10/1/21	10/1/21	10/1/21	10/1/21
35	11/1/21	11/1/21	11/1/21	11/1/21	11/1/21	11/1/21	11/1/21	11/1/21
36	12/1/21	12/1/21	12/1/21	12/1/21	1			

716. 1. 9. CF 12.

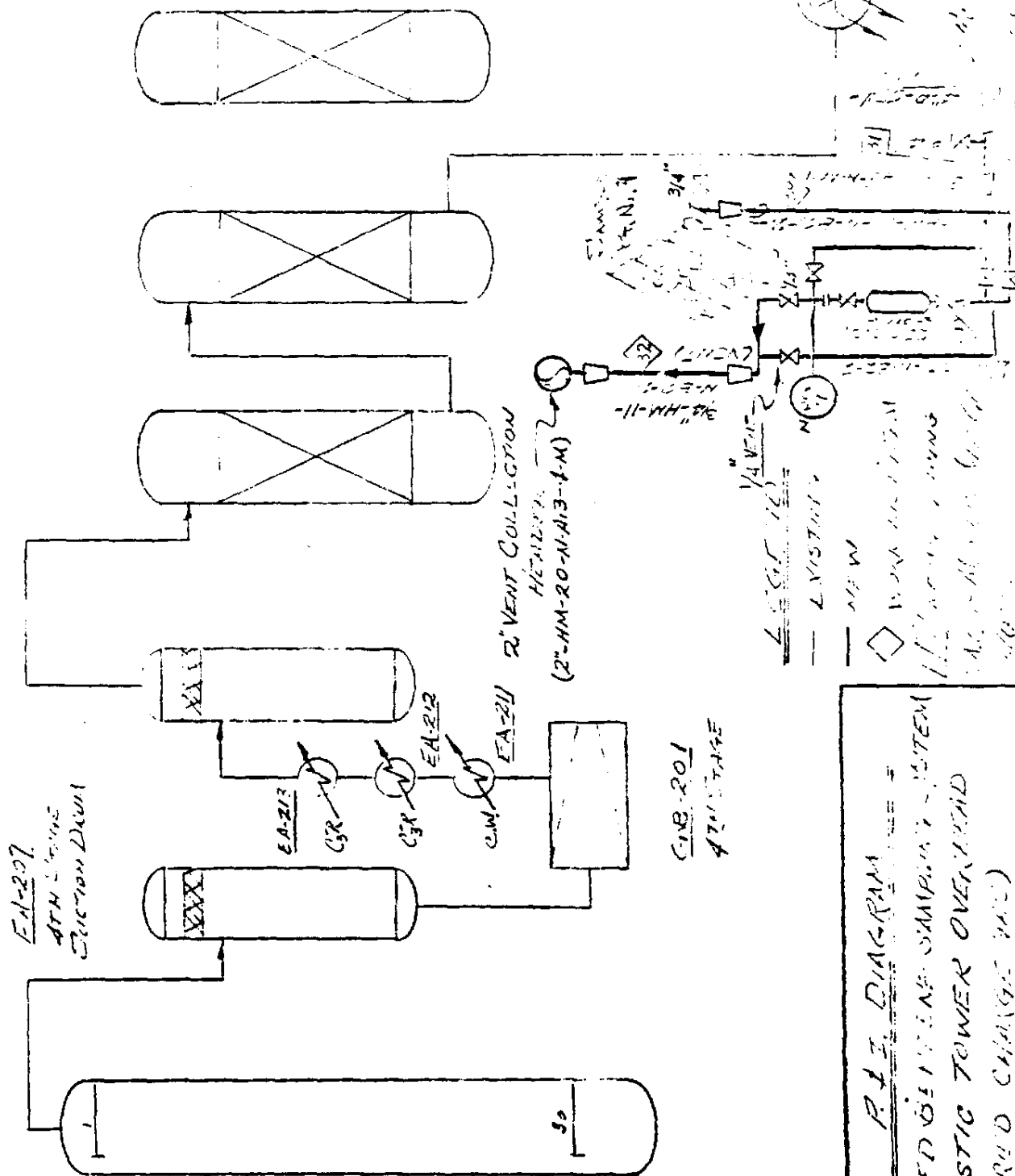
MCD 000010903

CAUSTIC WATER
WASH TOWER

WILLIAM J. BROWN

FD-207A, B, C

Dr. Wm. C. D. D. D.



REI DIAGRAM

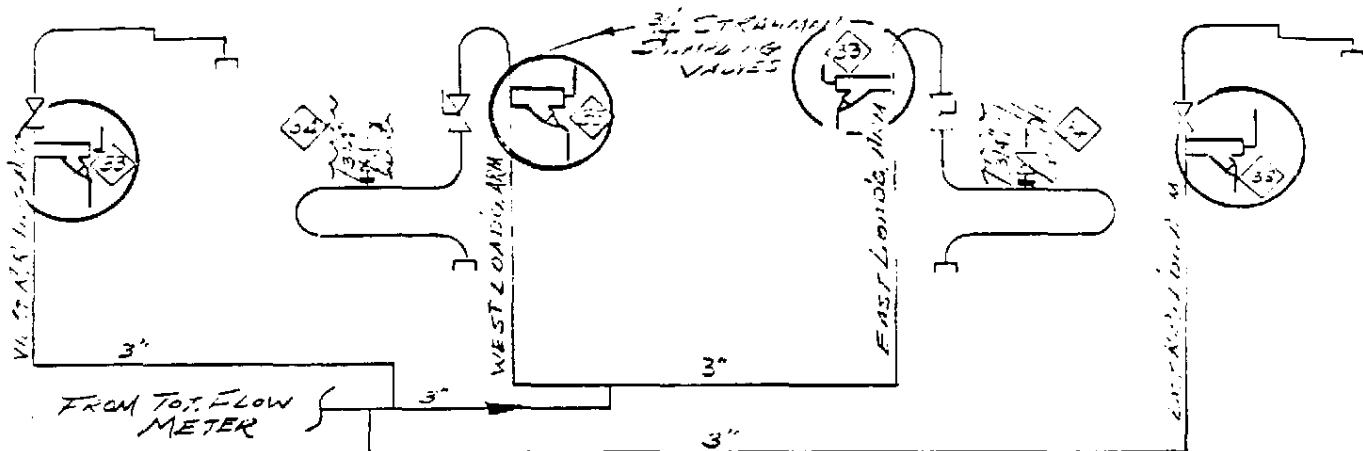
CAUSTIC TOWER OVERHEAD
(DRUM CHANGE VALVE)

45

Dr. J. H. H. H. H.

5th. 7/11. 12.

MCD 000010905



LIGHT AROMATIC LOADING RACK
PIPING MODIFIED

MCD 000010906

P&I. DIAGRAM
CLOSED BENZENE SAMPLING SYSTEMS
SAMPLING LIGHT AROM. DISTILLATE
AT LOADING RACK
GDU/2-7-77 DWG. No. LCCP-734-6

LEGEND
— EXISTING
— NEW
◇ WORK LIST ITEM
~~---~~ REMOVE

SAMPLING PROCEDURE FOR
STRAHMAN SAMPLING VALVES

Refer to Dwg. No. 734-3, Detail "A"

1. Insert $\frac{1}{4}$ " tubing to bottom of a 4 oz. bottle.
2. Turn valve handle slowly outward until liquid flows. Fill bottle three-fourths full.
3. Close valve and cap bottle immediately. Avoid breathing vapors and contact of liquid with skin.

MCD 000010907

SAMPLING PROCEDURE FOR
THE DEPROPANIZER BOTTOMS (LCCP-734-1)

(THIS PROCEDURE REQUIRES THAT ALL 1/4" VALVES BE CLOSED BEFORE STARTING)

1. Check that a 500 cc (type ICC-3E-1800) sample bomb is connected in place.
2. Open the 1/4" needle valves (2) on the sample bomb.
3. Open the 1/4" valve on the inlet line to the sample bomb. The pressure will indicate on the inlet gauge (160 psig maximum).
4. Open the 1/4" valve on the outlet line and allow the sample bomb to purge with flow for fifteen seconds.
5. Close the 1/4" needle valves (2) on the sample bomb.
6. Close the 1/4" valve on the inlet line.
7. Close the 1/4" valve on the outlet line.
8. Open 1/4" vent valves (2) on the sample manifold. Check that both pressure gauges depressure to 12 psig.
9. Open the 1/4" Gillis methane purge valves (2). Note that the pressure rises on the pressure gauge (50 psig maximum). Purge the sample bomb connection for fifteen seconds.
10. Close the 1/4" Gillis methane purge valves. Note that the pressure gauges depressure to about 12 psig. This is the minimum pressure of the vent collection header.
11. Close the 1/4" vent valves (2).
12. Break union connections and remove the sample bomb. Install a returned sample bomb in its place. This assures the sampling manifold is kept completely closed at all times.

MCD 000010908

SAMPLING PROCEDURE FOR
DEMETHANIZER BOTTOMS AND DEETHANIZER BOTTOMS (LCCP-734-4)

(THIS PROCEDURE REQUIRES THAT ALL 1/4" VALVES BE CLOSED BEFORE STARTING)

1. Check that a 500 cc (type ICC-3E-1800) sample bomb is connected in place.
2. Open the 1/4" needle valves (2) on the sample bomb.
3. Open the 1/4" valve on the inlet line to the sample bomb. The pressure will indicate on the inlet gauge.
4. Open the 1/4" valve on the outlet line and allow the sample bomb to purge with flow for fifteen seconds.
5. Close the 1/4" needle valves (2) on the sample bomb.
6. Close the 1/4" valve on the inlet line.
7. Close the 1/4" valve on the outlet line.
8. Open 1/4" vent valves (2) on the sample manifold. Check that both pressure gauges depressure to 12 psig.
9. Open the 1/4" M.O.G. purge valves (2). Note that the pressure rises on the pressure gauge (100 psig maximum). Purge the sample bomb connections fifteen seconds.
10. Close the 1/4" M.O.G. purge valves (2). Note that the pressure gauges depressure to about 12 psig. This is the minimum pressure of the vent collection header.
11. Close the 1/4" vent valves (2).
12. Break union connections and remove sample bomb. Install a returned sample bomb in its place. This assures the system is kept completely closed at all times.

MCD 000010909

SAMPLING PROCEDURE FOR
CAUSTIC TOWER OVERHEAD (LCCP-734-5)

(THIS PROCEDURE REQUIRES THAT ALL 1/4" VALVES BE CLOSED BEFORE STARTING)

1. Check that a 250 cc. (type ICC-3E-1800) sample bomb is connected in place. Check that the 1/4" vent valve is closed.
2. Open the 1/4" needle valves (2) on the sample bomb.
3. Open the 1/4" inlet valve. Note the pressure indicates on the inlet gauge.
4. Open the 1/4" outlet valve and let the sample bomb purge with flow for fifteen seconds.
5. Close the 1/4" needle valves (2) on the sample bomb.
6. Close the 1/4" inlet valve.
7. Close the 1/4" outlet valve.
8. Open the 1/4" vent valve on the sample manifold. Check that the pressure gauge depressure to 12 psig pressure.
9. Open the 1/4" M.O.G. purge valves (2). Note that the pressure rises on the pressure gauge (85 psig maximum). Purge the sample bomb connections fifteen seconds.
10. Close the 1/4" M.O.G. purge valves (2). Note that the pressure gauge depressures to about 12 psig. This is minimum pressure of the vent collection header.
11. Close the 1/4" vent valve.
12. Break union connections and remove the sample bomb. Install a returned sample bomb in place of the filled bomb. This keeps the system completely closed at all times.

MCD 000010910