



Erie Coke Corporation
 P.O. Box 6180
 East Bay Drive
 Erie, PA 16512-6180

August 14, 2017

To: Mr. Randy Wiler

From: K. Thrun

Re: Monthly LDAR Monitoring Report – AUGUST 2017

The following report represents the results for the August 2017 LDAR Monthly Report monitoring period, which was performed on August 3, 2017.

During this month’s monitoring an independent third party auditor (Montrose Air Quality Services) was on site from August 2, 2017 to August 4, 2017 collecting data on this program, consistent with the requirements of the Program Plan and Consent Decree. As of this report date no results have been received, but we have taken progressive actions to execute a number of the auditor’s recommendations.

Monthly Control System Monitoring – AUGUST 2017

<i>Citation</i>	<i>Affected Components</i>	<i>Leak Definition (ppm-v)</i>	<i>Number of Components Screened</i>	<i>Number of Leaking Components</i>	<i>Leaking Component Identification Number(s)</i>
61.132(b)	Valves	500	51	0	0
61.132(b)	Control System Connections and Seals	500	209	0	0
61.135(d)	Exhausters	500	3	0	0
	Total Components		263	0	0

RESULTS: No components were identified as leaking during this survey period.

During this monitoring period Vessel T3 - Tar Dehydrator (new Figure 8) was brought into service for the short term, while the Tar Storage Tank (Figure 1) was temporarily take out of service (6/13/17) for maintenance/inspection. Once the Tar Storage Tank is brought back on-line Vessel T3 will be taken out of service.

The total component count takes into account the number of components added, removed, or re-instated from each category. Any component point additions, removals, re-instatement of points, or corrections (redundant) points appear in the above table and listed the Program Changes Table. The documented drawings (Appendix C, D) and the survey data list (Appendix A) categorizing the components also reflect any changes. This is to ensure that the protocol in improving component categorization and equipment clarity is followed.

Note, there have been some component points that have been made inaccessible due to new safety polices/regulations. These points are in areas that have been deemed unsafe to access for monitoring due to physical limitations. Steps are being formulated to determine if there are measures to correct, so that these points can be once again made accessible safely.

Starting with the Semi-Annual Report #1 dated, May 23, 2013 and all subsequent Monthly reports are now under the direction of and performed by Erie Coke Corporations staff.

Three ECC staff members have been trained to operate the monitoring equipment (Toxic Vapor Analyzer-1000, TVA), K. Thrun, B. Shaw, and K. Adderley. Mr. Thrun, Mr. Shaw, Mr. Adderley were trained on the RM-21 instrument operation and calibration requirements prior to the beginning of this monitoring event. This training was performed by an experienced staff member of GHD, an environmental service company, highly regarded in this type of work.

Mr. Thrun and Mr. Shaw performed the physical monitoring during the August 4, 2017.

PROGRAM CHANGES TABLE
Component Points Added, Removed or Revised

<i>Drawing ID</i>	<i>Dwg. Rev.</i>	<i>Component Points(s) Comments, Revisions</i>
Figure 1	L	Temporarily out of Service, since 6-13-17
Figure 2	J	Added Pt's – 725,726,727,728,729,730,731,732,733,734,735,736, 737,738,739,740,741,742,743,744,745,746 Removed Pt's – 461,462,486
Figure 3	N	Removed Pt's - 188,191,621,631
Figure 4	K	Added Pt's - 747,748,749 Removed Pt's – 405,487,568,569,570 Moved Pt's 647,648 to correct position on drawing
Figure 5	P	Added Pt's – 750,751,753,754,755,756,757,758,759,760,761,762,763,764,765,766 Removed Pt's –125,126,134,389,390,505,506,507,508,509,510,511,512,513, 514,536,537,538,539,540,541,554,555,575,576,577
Figure 6	-	Eliminated
Figure 7	C	Added Note & specified area for monitoring
Figure 8	C	Removed Pt's – 658,660,667,668,678,683,684,688,690,691,692,693,694,695,696, 697,698,699,700,701,702,703,704,705,706,707,708,709,710,711,712,713,714,715, 716,717,718,719,720,721,722

Note: During this month's monitoring, a third party audit was conducted. There were component points that were deemed not necessary to the program monitoring by the auditor. In other cases there were points added.

Attached are the following tables and appendices:

- TABLE 1 - Summary of Surveyed Data with component identifications
& monitored results (attached as pdf & hardcopy attached to report)
- TABLE 2 - Calibration Summary
- APPENDIX A - USEPA Method 21 Calibration Data Sheets
(Attached as pdf & hardcopy attached to report)
- APPENDIX B - Certificate of Analysis for Span & Zero Gas
(Attached as pdf & hardcopy attached to report)
- APPENDIX C - LDAR Monitoring Drawings List
- APPENDIX D - LDAR Drawings
(Attached as pdf & hardcopy attached to report)
- APPENDIX E - TVA-1000 Data Logger Information
(Attached as pdf & hardcopy attached to report)

Note: Appendix A, B, D, & E are both a pdf and hardcopy attachments

Kenneth M. Thrun, Keith Adderley
Engineers

Enc. (Data, Drawings, Meth 21, Gas Analysis)

Cc: Engineering File

**ERIE COKE CORPORATION
2017 MONTHLY LDAR AUGUST REPORT**

**TABLE 1
SUMMARY OF SURVEY DATA**

Refer to attached hardcopy spreadsheet

**TABLE 2
CALIBRATION SUMMARY**

Engineer or Technician	Instrument Serial Number	Certified Span Gas Concentration	Average Zero	Pretest Calibration		Post Test Drift Check		
				Average Span Gas Concentration	Average % Difference	Zero	Span	Drift
KT/BS 8/3/17	0623018663	502	0.02	501	-0.20	1.40	478	4.59

Average Percent Difference:

The average percent difference between each individual measured span values and the certified reference gas valve is as follows.

$$\% \text{ Difference} = [(\text{measured value} - \text{reference value}) \div \text{reference value}] \times 100$$

Data to be recorded.

Drift Formula:

At the conclusion of each day the drift shall be determined and recorded.


$$\text{Drift} = [(\text{initial calibration value} - \text{post-test span value}) \div \text{initial calibration value}] \times 100$$

**ERIE COKE CORPORATION
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**APPENDIX A
USEPA METHOD 21 CALIBRATION DATA SHEETS**

Also refer to attached .pdf file or attached hardcopy





Meth 21 Calib Data
080317.pdf

**APPENDIX B
CERTIFICATE OF ANALYSIS FOR SPAN GAS**


Refer to attached file via email or attached hardcopy




Gas-Span, Certif
32-400841801-1.pdf

Span Gas – Certificate of Analysis




Gas-Zero, Certif
32-400659795-1.pdf

Zero Gas – Certificate of Analysis

**APPENDIX C
LDAR MONITORING DRAWINGS LIST**

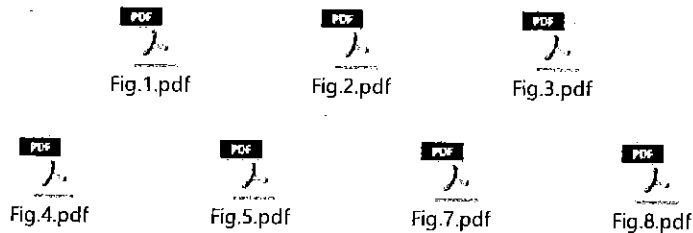
No.	Drawing. No.	Description
1	Figure 1	Tar Storage Tank LDAR Component Point Locations
2	Figure 2	Flushing Liquor Tank LDAR Component Point Locations
3	Figure 3	Hot Drip Tank Connections LDAR Component Point Locations
4	Figure 4	Vessel T33 Tar Dehydrator LDAR Component Point Locations
5	Figure 5	East & West Tar Decanter LDAR Component Point Locations
7	Figure 7	Exhausters 1, 2, 3 LDAR Component Point Locations
8	Figure 8	Vessel T3 - Tar Dehydrator LDAR Component Points

Note: Figure 6 has been merged with Figure 5; therefore Figure 6 has been eliminated.

As of the June Monthly - Figure 1 the Tar Storage is temporarily out of service. Vessel T3-Figure 8 has been introduced to the LDAR program. This vessel is being temporarily utilized during the Tar Storage Tank maintenance/inspection. This will be the same situation as for the August Monthly.

**APPENDIX D
LDAR DRAWINGS**

Refer to attached .pdf file or attached hardcopies



**APPENDIX E
TVA-1000 DATA LOGGER INFORMATION**

Refer to attached .pdf file or attached hardcopies



ERIE COKE CORPORATION LDAR PROGRAM
USEPA METHOD 21 SCREENING DATA
August 2017 MONTHLY DATA

No. #	Process	Type	Tag#	Description	Component Reading (ppmv)	Background Reading (ppmv)	Drawing No. #	Time	Staff	
1	TS	F	006	Flange, at top of vessel, conservation vent	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
2	TS	V	007	Valve above 006	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
3	TS	F	008	Flange, conservation vent		NC	NC	Fig. 1	Temp Out	KT/BS
4	TS	O	009	Conservation vent		NC	NC	Fig. 1	Temp Out	KT/BS
5	TS	V	010	Valve and open end after conservation vent		NC	NC	Fig. 1	Temp Out	KT/BS
6	TS	F	011	Flange, trap mount		NC	NC	Fig. 1	Temp Out	KT/BS
7	TS	V	012	Valve, upper, sightglass		NC	NC	Fig. 1	Temp Out	KT/BS
8	TS	V	013	Valve, lower, sight glass		NC	NC	Fig. 1	Temp Out	KT/BS
9	TS	T	014	Sight glass		NC	NC	Fig. 1	Temp Out	KT/BS
10	TS	V	015	Valve, trap outlet		NC	NC	Fig. 1	Temp Out	KT/BS
11	TS	O	016	Open end of 015		NC	NC	Fig. 1	Temp Out	KT/BS
12	TS	H	017	Manway, on top of tank		Temp Out	NC	Fig. 1	Temp Out	KT/BS
13	TS	T	018	Flange		NC	NC	Fig. 1	Temp Out	KT/BS
14	TS	T	019A	Cap, temporary		NC	NC	Fig. 1	Temp Out	KT/BS
15	TS	V	019	Valve		NC	NC	Fig. 1	Temp Out	KT/BS
16	TS	T	020	Threads, tee		Temp Out	NC	Fig. 1	Temp Out	KT/BS
17	TS	T	021	Vacuum gage		Temp Out	NC	Fig. 1	Temp Out	KT/BS
18	TS	T	022	Threads, transducer mount		Temp Out	NC	Fig. 1	Temp Out	KT/BS
19	TS	F	023	Flange, steam line		Temp Out	NC	Fig. 1	Temp Out	KT/BS
20	TS	V	024	Valve above 023		Temp Out	NC	Fig. 1	Temp Out	KT/BS
21	TS	F	025	Flange, fill line		Temp Out	NC	Fig. 1	Temp Out	KT/BS
22	TS	V	026	Valve, upper 1 of 5, on side of tank, top of ladder		Temp Out	NC	Fig. 1	Temp Out	KT/BS
23	TS	O	027	Open end of valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
24	TS	V	028	Next valve down		Temp Out	NC	Fig. 1	Temp Out	KT/BS
25	TS	O	029	Open end of valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
26	TS	V	030	Next valve down		Temp Out	NC	Fig. 1	Temp Out	KT/BS
27	TS	O	031	Open end of valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
28	TS	V	032	Next valve down		Temp Out	NC	Fig. 1	Temp Out	KT/BS
29	TS	O	033	Open end of valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
30	TS	V	034	Next valve down		Temp Out	NC	Fig. 1	Temp Out	KT/BS
31	TS	O	035	Open end of valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
32	TS	T	059	Threads on tee, exhauster line		Temp Out	NC	Fig. 1	Temp Out	KT/BS
33	TS	T	060	Threads on tee, exhauster line from T33		Temp Out	NC	Fig. 1	Temp Out	KT/BS
34	TS	V	061	Valve before tee, exhauster line from T33		Temp Out	NC	Fig. 1	Temp Out	KT/BS
35	TS	T	062	Threads on plug at tee, exhauster line		NC	NC	Fig. 1	Temp Out	KT/BS
36	TS	T	063	Threads on tee, exhauster line		Temp Out	NC	Fig. 1	Temp Out	KT/BS
37	TS	T	064	Threads before steam venturi		NC	NC	Fig. 1	Temp Out	KT/BS
38	TS	T	065	Threads after steam venturi		NC	NC	Fig. 1	Temp Out	KT/BS
39	TS	T	066	Threads, pipe coupling		Temp Out	NC	Fig. 1	Temp Out	KT/BS
40	TS	T	067	Threads, pipe coupling		Temp Out	NC	Fig. 1	Temp Out	KT/BS
41	TS	V	068	Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
42	TS	V	069	Valve at COG main	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
43	TS	T	210	Threads, elbow, steam line		Temp Out	NC	Fig. 1	Temp Out	KT/BS
44	TS	T	211	Threads, elbow, steam line		Temp Out	NC	Fig. 1	Temp Out	KT/BS
45	TS	T	212	Threads, elbow, steam line		Temp Out	NC	Fig. 1	Temp Out	KT/BS
46	TS	T	213	Threads, elbow, steam line		Temp Out	NC	Fig. 1	Temp Out	KT/BS
47	TS	T	214	Threads, elbow, steam line		Temp Out	NC	Fig. 1	Temp Out	KT/BS
48	TS	T	215	Threads, elbow, steam line		Temp Out	NC	Fig. 1	Temp Out	KT/BS
49	TS	T	216	Threaded connection		Temp Out	NC	Fig. 1	Temp Out	KT/BS
50	TS	V	217	Valve, steam line		Temp Out	NC	Fig. 1	Temp Out	KT/BS

51	TS	T	218	Threads, tee		Temp Out	NC	Fig. 1	Temp Out	KT/BS
52	TS	T	219	Threads, tee		Temp Out	NC	Fig. 1	Temp Out	KT/BS
53	TS	T	220	Threads, tee		Temp Out	NC	Fig. 1	Temp Out	KT/BS
54	TS	V	221	Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
55	TS	V	222	Gage, suction		Temp Out	NC	Fig. 1	Temp Out	KT/BS
56	TS	T	223	Pipe from tank to tee 224		Temp Out	NC	Fig. 1	Temp Out	KT/BS
57	TS	T	224	Threads, tee		Temp Out	NC	Fig. 1	Temp Out	KT/BS
58	TS	T	225	Threads, tee plug		Temp Out	NC	Fig. 1	Temp Out	KT/BS
59	TS	T	226	Threads, tee plug		Temp Out	NC	Fig. 1	Temp Out	KT/BS
60	TS	T	227	Threads, tee		Temp Out	NC	Fig. 1	Temp Out	KT/BS
61	TS	F	340	Flange fitting on Tank	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
62	TS	T	341	Elbow	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
63	TS	T	342	Elbow	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
64	TS	F	343	Flange, on bottom of Breather	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
65	TS	T	344	Threads, elbow	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
66	TS	T	345	Threads, elbow	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
67	TS	T	362	Breather Assembly Pot 1	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
68	TS	T	363	Breather Assembly Pot 2	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
69	TS	T	364	Coupling	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
70	TS	T	365	Elbow	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
71	TS	T	366	Threads, pipe in Tee	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
72	TS	V	376	Valve	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
73	TS	V	377	Valve		NC	NC	Fig. 1	Temp Out	KT/BS
74	TS	V	378	Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
75	TS	V	379	Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
76	TS	T	397	Threads to Guage		Temp Out	NC	Fig. 1	Temp Out	KT/BS
77	TS	T	399	Pipe from tank to 025		Temp Out	NC	Fig. 1	Temp Out	KT/BS
78	TS	T	400	Pipe from tank to 023		Temp Out	NC	Fig. 1	Temp Out	KT/BS
79	TS	T	401	Elbow between 023 & 024		Temp Out	NC	Fig. 1	Temp Out	KT/BS
80	TS	T	402	Coupling near 211		Temp Out	NC	Fig. 1	Temp Out	KT/BS
81	TS	T	403	Coupling near 211		Temp Out	NC	Fig. 1	Temp Out	KT/BS
82	TS	T	404	Union Connector		Temp Out	NC	Fig. 1	Temp Out	KT/BS
83	TS	T	412	Threads, pipe in Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
84	TS	T	413	Threads, pipe in Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
85	TS	T	414	Threads, pipe in Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
86	TS	T	415	Threads, pipe in Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
87	TS	T	416	Threads, pipe in Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
88	TS	T	417	Threads, pipe in Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
89	TS	T	418	Threads, pipe in Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
90	TS	T	419	Threads, pipe in Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
91	TS	T	420	Threads, pipe in Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
92	TS	T	421	Threads, pipe in Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
93	TS	T	422	Threads, pipe in Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
94	TS	T	423	Cross Thread		Temp Out	NC	Fig. 1	Temp Out	KT/BS
95	TS	T	424	Cross Plug		Temp Out	NC	Fig. 1	Temp Out	KT/BS
96	TS	T	425	Cross Plug		Temp Out	NC	Fig. 1	Temp Out	KT/BS
97	TS	T	426	Cross Thread		Temp Out	NC	Fig. 1	Temp Out	KT/BS
98	TS	T	427	Cross Thread		Temp Out	NC	Fig. 1	Temp Out	KT/BS
99	TS	T	428	Cross Plug		Temp Out	NC	Fig. 1	Temp Out	KT/BS
100	TS	T	429	Cross Plug		Temp Out	NC	Fig. 1	Temp Out	KT/BS
101	TS	T	430	Cross Thread		Temp Out	NC	Fig. 1	Temp Out	KT/BS
102	TS	T	431	Cross Thread		Temp Out	NC	Fig. 1	Temp Out	KT/BS
103	TS	T	432	Cross Plug		Temp Out	NC	Fig. 1	Temp Out	KT/BS
104	TS	T	433	Cross Plug		Temp Out	NC	Fig. 1	Temp Out	KT/BS
105	TS	T	434	Cross Thread		Temp Out	NC	Fig. 1	Temp Out	KT/BS

106	TS	T	435	Cross Thread		Temp Out	NC	Fig. 1	Temp Out	KT/BS
107	TS	T	436	Cross Plug		Temp Out	NC	Fig. 1	Temp Out	KT/BS
108	TS	T	437	Cross Plug		Temp Out	NC	Fig. 1	Temp Out	KT/BS
109	TS	T	438	Cross Thread		Temp Out	NC	Fig. 1	Temp Out	KT/BS
110	TS	T	439	Cross Thread		Temp Out	NC	Fig. 1	Temp Out	KT/BS
111	TS	T	440	Cross Plug		Temp Out	NC	Fig. 1	Temp Out	KT/BS
112	TS	T	441	Cross Plug		Temp Out	NC	Fig. 1	Temp Out	KT/BS
113	TS	T	442	Cross Thread		Temp Out	NC	Fig. 1	Temp Out	KT/BS
114	TS	T	443	Tank Pipe Connection		Temp Out	NC	Fig. 1	Temp Out	KT/BS
115	TS	T	444	Tank Pipe Connection	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
116	TS	T	445	Threads, pipe in Valve	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
117	TS	T	446	Threads, pipe in Valve	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
118	TS	T	447	Coupling	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
119	TS	T	448	Coupling	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
120	TS	T	449	Threads, Elbow	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
121	TS	T	450	Threads, pipe in Tee	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
122	TS	T	451	Threads, pipe in Tee		Temp Out	NC	Fig. 1	Temp Out	KT/BS
123	TS	T	452	Threads, pipe in Tee		Temp Out	NC	Fig. 1	Temp Out	KT/BS
124	TS	T	453	Threads, pipe in Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
125	TS	T	454	Threads, pipe in Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
126	TS	T	455	Threads, pipe in Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
127	TS	T	456	Threads, pipe in Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
128	TS	T	457	Threads, pipe in Valve	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
129	TS	T	458	Threads, pipe in Valve	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
130	TS	T	459	Threads, pipe in Valve	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
131	TS	T	460	Threads, pipe in Valve	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
132	TS	T	556	Threads, pipe in Tee	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
133	TS	T	557	Threads, pipe in Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
134	TS	T	591	Coupling (by 066, 067)		Temp Out	NC	Fig. 1	Temp Out	KT/BS
135	TS	T	592	Coupling		NC	NC	Fig. 1	Temp Out	KT/BS
136	TS	T	593	Coupling		NC	NC	Fig. 1	Temp Out	KT/BS
137	TS	T	594	Coupling		NC	NC	Fig. 1	Temp Out	KT/BS
138	TS	T	595	Threads, pipe in Valve	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
139	TS	V	596	Valve	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
140	TS	T	597	Threads, pipe in Valve	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
141	TS	T	599	Connector between 366 and 068	Unsafe to monitor	NC	NC	Fig. 1	Temp Out	KT/BS
142	TS	T	600	Threads, pipe in Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
143	TS	T	601	Threads, pipe in Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
144	TS	O	602	Open End on Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS
145	TS	T	634	Threads, pipe to Valve (024)		Temp Out	NC	Fig. 1	Temp Out	KT/BS
146	TS	T	635	Threads, pipe to Valve (024)		Temp Out	NC	Fig. 1	Temp Out	KT/BS
147	TS	T	636	Threads, pipe to Valve (379)		Temp Out	NC	Fig. 1	Temp Out	KT/BS
148	TS	O	637	Open End on Valve		Temp Out	NC	Fig. 1	Temp Out	KT/BS

149	FL	V	070	Valve		NC	NC	Fig. 2	10:20AM	KT/BS
150	FL	V	071	Valve threaded connection		NC	NC	Fig. 2	10:20AM	KT/BS
151	FL	O	072	Valve threaded connection		NC	NC	Fig. 2	10:20AM	KT/BS
152	FL	V	073	Valve	<i>Insulated</i>	NC	NC	Fig. 2	10:20AM	KT/BS
153	FL	T	074	Threads, pipe in Valve	<i>Insulated</i>	NC	NC	Fig. 2	10:20AM	KT/BS
154	FL	T	075	Threads, pipe in Valve	<i>Insulated</i>	NC	NC	Fig. 2	10:20AM	KT/BS
155	FL	T	076	Threads, pipe in Valve		NC	NC	Fig. 2	10:20AM	KT/BS
156	FL	F	086	Flange on Tank		2	2	Fig. 2	10:20AM	KT/BS
157	FL	T	087	Valve threaded connection		3	2	Fig. 2	10:20AM	KT/BS
158	FL	V	088	Valve		3	2	Fig. 2	10:20AM	KT/BS
159	FL	V	089	Valve		3	2	Fig. 2	10:20AM	KT/BS
160	FL	O	090	Open end of 089		3	2	Fig. 2	10:20AM	KT/BS
161	FL	V	091	Valve	<i>Insulated</i>	NC	NC	Fig. 2	10:20AM	KT/BS
162	FL	O	092	Open end of 091	<i>Insulated</i>	NC	NC	Fig. 2	10:20AM	KT/BS
163	FL	V	093	Valve	<i>Insulated</i>	NC	NC	Fig. 2	10:20AM	KT/BS
164	FL	H	094	Hatch on dome		3	2	Fig. 2	10:20AM	KT/BS
165	FL	V	095	Valve on vent pipe		3	2	Fig. 2	10:20AM	KT/BS
166	FL	O	096	Open end of Elbow near Valve 095		3	2	Fig. 2	10:20AM	KT/BS
167	FL	F	097	Flange, exhauster line		3	2	Fig. 2	10:20AM	KT/BS
168	FL	F	098	Flange, fill line, side of tank		3	2	Fig. 2	10:20AM	KT/BS
169	FL	F	099	Flange, next on fill line		3	2	Fig. 2	10:20AM	KT/BS
170	FL	V	100	Valve, exhauster line		NC	NC	Fig. 2	10:20AM	KT/BS
171	FL	T	101	Threads, pipe tee		2	2	Fig. 2	10:20AM	KT/BS
172	FL	T	102	Threads, pipe tee		3	2	Fig. 2	10:20AM	KT/BS
173	FL	V	103	Valve		3	2	Fig. 2	10:20AM	KT/BS
174	FL	T	104	Threads, pipe in Valve		3	2	Fig. 2	10:20AM	KT/BS
175	FL	T	105	Threads, elbow		2	2	Fig. 2	10:20AM	KT/BS
176	FL	T	106	Threads, elbow		2	2	Fig. 2	10:20AM	KT/BS
177	FL	V	107	Valve		2	2	Fig. 2	10:20AM	KT/BS
178	FL	T	108	Threads, pipe reducer in Tee		2	2	Fig. 2	10:20AM	KT/BS
179	FL	V	109	Valve		2	2	Fig. 2	10:20AM	KT/BS
180	FL	T	110	Threads, vacuum gage		2	2	Fig. 2	10:20AM	KT/BS
181	FL	V	209	Valve		3	2	Fig. 2	10:20AM	KT/BS
182	FL	T	375	Coupling	<i>Insulated</i>	NC	NC	Fig. 2	10:20AM	KT/BS
183	FL	T	380	Coupling		2	2	Fig. 2	10:20AM	KT/BS
184	FL	T	381	Threads, pipe in Tee		2	2	Fig. 2	10:20AM	KT/BS
185	FL	T	382	Plug in Tee	<i>Insulated</i>	NC	NC	Fig. 2	10:20AM	KT/BS
186	FL	V	383	Valve	<i>Insulated</i>	NC	NC	Fig. 2	10:20AM	KT/BS
187	FL	V	384	Valve		2	2	Fig. 2	10:20AM	KT/BS
188	FL		397	Gauge		2	2	Fig. 2	10:20AM	KT/BS
189	FL	T	461	Tank Pipe Connection	<i>Removed</i>	NC	NC	Fig. 2	10:20AM	KT/BS
190	FL	T	462	Tank Pipe Connection	<i>Removed</i>	NC	NC	Fig. 2	10:20AM	KT/BS
191	FL	T	463	Threads, Pipe to Valve		3	2	Fig. 2	10:20AM	KT/BS
192	FL	T	464	Threads, Pipe to Valve		3	2	Fig. 2	10:20AM	KT/BS
193	FL	T	465	Threads, Elbow		3	2	Fig. 2	10:20AM	KT/BS
194	FL	O	466	Threads, Pipe to Valve	<i>Insulated</i>	NC	NC	Fig. 2	10:20AM	KT/BS
195	FL	T	467	Threads, Pipe to Valve	<i>Insulated</i>	NC	NC	Fig. 2	10:20AM	KT/BS
196	FL	T	468	Threads, Pipe to Valve		2	2	Fig. 2	10:20AM	KT/BS
197	FL	T	469	Threads, Pipe to Valve		2	2	Fig. 2	10:20AM	KT/BS
198	FL	T	470	Coupling		2	2	Fig. 2	10:20AM	KT/BS
199	FL	T	471	Coupling		2	2	Fig. 2	10:20AM	KT/BS
200	FL	T	472	Threads, pipe in Tee		2	2	Fig. 2	10:20AM	KT/BS
201	FL	T	473	Threads, Pipe to Valve		2	2	Fig. 2	10:20AM	KT/BS
202	FL	T	474	Threads, Pipe to Valve		2	2	Fig. 2	10:20AM	KT/BS
203	FL	T	475	Threads, pipe in Tee		2	2	Fig. 2	10:20AM	KT/BS
204	FL	T	476	Threads, pipe in Tee		2	2	Fig. 2	10:20AM	KT/BS
205	FL	O	477	Open End on Valve		2	2	Fig. 2	10:20AM	KT/BS
206	FL	T	478	Threads, pipe in Valve		3	2	Fig. 2	10:20AM	KT/BS

207	FL	T	479	Threads, pipe in Valve		3	2	Fig. 2	10:20AM	KT/BS
208	FL	T	480	Coupling	<i>Insulated</i>	NC	NC	Fig. 2	10:20AM	KT/BS
209	FL	T	481	Coupling	<i>Insulated</i>	NC	NC	Fig. 2	10:20AM	KT/BS
210	FL	T	482	Threads, Pipe to Valve	<i>Insulated</i>	NC	NC	Fig. 2	10:20AM	KT/BS
211	FL	T	483	Threads, Pipe to Valve	<i>Insulated</i>	NC	NC	Fig. 2	10:20AM	KT/BS
212	FL	T	484	Threads, Pipe to Valve		3	2	Fig. 2	10:20AM	KT/BS
213	FL	T	485	Threads, Pipe to Valve		3	2	Fig. 2	10:20AM	KT/BS
214	FL	T	486	Tank Pipe Connection	<i>Removed</i>	NC	NC	Fig. 2	10:20AM	KT/BS
215	FL	T	558	Threads on Tee		2	2	Fig. 2	10:20AM	KT/BS
216	FL	T	559	Threads on Tee	<i>Insulated</i>	NC	NC	Fig. 2	10:20AM	KT/BS
217	FL	T	560	Threads on Tee	<i>Insulated</i>	NC	NC	Fig. 2	10:20AM	KT/BS
218	FL	T	561	Threads on Tee		2	2	Fig. 2	10:20AM	KT/BS
219	FL	V	603	Valve		2	2	Fig. 2	10:20AM	KT/BS
220	FL	T	604	Threads, pipe in Valve		2	2	Fig. 2	10:20AM	KT/BS
221	FL	V	605	Valve		2	2	Fig. 2	10:20AM	KT/BS
222	FL	T	606	Threads, pipe in Valve		2	2	Fig. 2	10:20AM	KT/BS
223	FL	T	607	Coupling		2	2	Fig. 2	10:20AM	KT/BS
224	FL	T	608	Coupling		2	2	Fig. 2	10:20AM	KT/BS
225	FL	T	609	Coupling		2	2	Fig. 2	10:20AM	KT/BS
226	FL	T	610	Threads, pipe in Tee		2	2	Fig. 2	10:20AM	KT/BS
227	FL	T	611	Threads, pipe in Tee		2	2	Fig. 2	10:20AM	KT/BS
228	FL	T	612	Threads, pipe in Tee		2	2	Fig. 2	10:20AM	KT/BS
229	FL	T	613	Threads, pipe in Valve		2	2	Fig. 2	10:20AM	KT/BS
230	FL	V	614	Valve		2	2	Fig. 2	10:20AM	KT/BS
231	FL	T	615	Threads, pipe in Valve		2	2	Fig. 2	10:20AM	KT/BS
232	FL		616	Gauge		2	2	Fig. 2	10:20AM	KT/BS
233	FL	T	617	Threads, pipe in Elbow		2	2	Fig. 2	10:20AM	KT/BS
234	FL	T	618	Threads, pipe in Elbow		2	2	Fig. 2	10:20AM	KT/BS
235	FL	T	619	Threads, pipe in Valve		2	2	Fig. 2	10:20AM	KT/BS
236	FL	T	620	Threads, pipe in Valve		2	2	Fig. 2	10:20AM	KT/BS
237	FL	T	638	Threads, pipe in Elbow		3	2	Fig. 2	10:20AM	KT/BS
238	FL	T	639	Threads, pipe in Elbow		3	2	Fig. 2	10:20AM	KT/BS
239	FL	T	640	Threadolet connection		3	2	Fig. 2	10:20AM	KT/BS
240	FL	T	641	Flange		2	2	Fig. 2	10:20AM	KT/BS
241	FL	T	642	Flange		2	2	Fig. 2	10:20AM	KT/BS
242	FL	T	643	Flange		2	2	Fig. 2	10:20AM	KT/BS
243	FL	V	725	Valve		3	2	Fig. 2	10:20AM	KT/BS
244	FL	F	726	Flange on Valve		3	2	Fig. 2	10:20AM	KT/BS
245	FL	T	727	Union		3	2	Fig. 2	10:20AM	KT/BS
246	FL	T	728	Union		3	2	Fig. 2	10:20AM	KT/BS
247	FL	T	729	Union		3	2	Fig. 2	10:20AM	KT/BS
248	FL	T	730	Threadolet connection		2	2	Fig. 2	10:20AM	KT/BS
249	FL	T	731	Threads, pipe in Valve		2	2	Fig. 2	10:20AM	KT/BS
250	FL	V	732	Valve		2	2	Fig. 2	10:20AM	KT/BS
251	FL	T	733	Threads, pipe in Valve		2	2	Fig. 2	10:20AM	KT/BS
252	FL	T	734	Threads, Reducer in Valve		2	2	Fig. 2	10:20AM	KT/BS
253	FL	T	735	Threadolet connection		3	2	Fig. 2	10:20AM	KT/BS
254	FL	T	736	Threads, pipe in Valve		3	2	Fig. 2	10:20AM	KT/BS
255	FL	V	737	Valve		3	2	Fig. 2	10:20AM	KT/BS
256	FL	T	738	Threads, pipe in Valve		3	2	Fig. 2	10:20AM	KT/BS
257	FL	T	739	Threads, pipe in Tee		3	2	Fig. 2	10:20AM	KT/BS
258	FL	T	740	Threads, pipe in Tee		3	2	Fig. 2	10:20AM	KT/BS
259	FL	T	741	Threads, pipe in Tee		3	2	Fig. 2	10:20AM	KT/BS
260	FL	T	742	Threads, Cap		3	2	Fig. 2	10:20AM	KT/BS
261	FL	T	743	Threads, pipe in Tee		3	2	Fig. 2	10:20AM	KT/BS
262	FL	T	744	Threads, plug in Tee		3	2	Fig. 2	10:20AM	KT/BS
263	FL	T	745	Threads, Tee		3	2	Fig. 2	10:20AM	KT/BS
264	FL	T	746	Threads, Reducer in Tee		3	2	Fig. 2	10:20AM	KT/BS

265	DT	H	150	1/4 Circle Mounting plate for pipes 1 - 10	NC	NC	Fig. 3	10:03AM	KT/BS
266	DT	F	151	Pipe #1, Flange at mounting plate	2	2	Fig. 3	10:03AM	KT/BS
267	DT	T	152	Pipe #1, effluent of elbow	2	2	Fig. 3	10:03AM	KT/BS
268	DT	T	153	Pipe #1, influent of elbow	2	2	Fig. 3	10:03AM	KT/BS
269	DT	T	154	Pipe #1, pipe coupling	2	2	Fig. 3	10:03AM	KT/BS
270	DT	F	155	Pipe #2, flange at mounting plate	3	2	Fig. 3	10:03AM	KT/BS
271	DT	F	156	Pipe #2, flange above tank	3	2	Fig. 3	10:03AM	KT/BS
272	DT	T	157	Pipe #2, effluent of elbow	3	2	Fig. 3	10:03AM	KT/BS
273	DT	T	158	Pipe #2, influent of elbow	3	2	Fig. 3	10:03AM	KT/BS
274	DT	F	159	Pipe #3, flange at mounting plate	3	2	Fig. 3	10:03AM	KT/BS
275	DT	F	160	Pipe #3, flange above tank	3	2	Fig. 3	10:03AM	KT/BS
276	DT	T	161	Pipe #3, effluent of elbow	3	2	Fig. 3	10:03AM	KT/BS
277	DT	T	162	Pipe #3, influent of elbow	3	2	Fig. 3	10:03AM	KT/BS
278	DT	F	163	Pipe #4, flange at mounting plate	2	2	Fig. 3	10:03AM	KT/BS
279	DT	F	164	Pipe #4, flange above tank	2	2	Fig. 3	10:03AM	KT/BS
280	DT	T	165	Pipe #4, cap above welded tee	3	2	Fig. 3	10:03AM	KT/BS
281	DT	F	166	Pipe #4, flange back along pipe	3	2	Fig. 3	10:03AM	KT/BS
282	DT	F	167	Pipe #5, flange at mounting plate	3	2	Fig. 3	10:03AM	KT/BS
283	DT	F	168	Pipe #5, flange above tank	3	2	Fig. 3	10:03AM	KT/BS
284	DT	T	169	Pipe #5, cap above welded tee	3	2	Fig. 3	10:03AM	KT/BS
285	DT	F	170	Pipe #5, flange back along pipe	3	2	Fig. 3	10:03AM	KT/BS
286	DT	F	171	Pipe #6, flange at mounting plate	2	2	Fig. 3	10:03AM	KT/BS
287	DT	F	172	Pipe #6, flange above tank	3	2	Fig. 3	10:03AM	KT/BS
288	DT	T	173	Pipe #6, cap above welded tee	3	2	Fig. 3	10:03AM	KT/BS
289	DT	F	174	Pipe #6, flange back along pipe	2	2	Fig. 3	10:03AM	KT/BS
290	DT	F	175	Pipe #7, flange at mounting plate	3	2	Fig. 3	10:03AM	KT/BS
291	DT	F	176	Pipe #7, flange above tank	3	2	Fig. 3	10:03AM	KT/BS
292	DT	T	177	Pipe #7, cap above welded tee	2	2	Fig. 3	10:03AM	KT/BS
293	DT	F	178	Pipe #7, flange back along pipe	2	2	Fig. 3	10:03AM	KT/BS
294	DT	F	179	Pipe #8, flange at mounting plate	3	2	Fig. 3	10:03AM	KT/BS
295	DT	F	180	Pipe #8, flange above tank	NC	NC	Fig. 3	10:03AM	KT/BS
296	DT	F	181	Flange	3	2	Fig. 3	10:03AM	KT/BS
297	DT	F	182	Pipe #8, flange back along pipe	NC	NC	Fig. 3	10:03AM	KT/BS
298	DT	F	183	Pipe #9, flange at mounting plate	3	2	Fig. 3	10:03AM	KT/BS
299	DT	F	184	Pipe #9, flange above tank	3	2	Fig. 3	10:03AM	KT/BS
300	DT	T	185	Pipe #9, cap above welded tee	3	2	Fig. 3	10:03AM	KT/BS
301	DT	F	186	Pipe #9, flange back along pipe	2	2	Fig. 3	10:03AM	KT/BS
302	DT	F	187	Blank flange at tank (was pipe #10)	2	2	Fig. 3	10:03AM	KT/BS
303	DT	H	188	Circular cover plate, tank access	Removed	NC	Fig. 3	10:03AM	KT/BS
304	DT	H	189	Manway	2	2	Fig. 3	10:03AM	KT/BS
305	DT	O	190	Float on manway	2	2	Fig. 3	10:03AM	KT/BS
306	DT	T	191	Pipe from Tank	Removed	NC	Fig. 3	10:03AM	KT/BS
307	DT	T	192	Threaded union, vacuum gage mount, exhauster line	2	2	Fig. 3	10:03AM	KT/BS
308	DT	T	193	Vacuum gage mount, valve influent, exhauster line	2	2	Fig. 3	10:03AM	KT/BS
309	DT	V	194	Vacuum gage mount, valve stem, exhauster line	2	2	Fig. 3	10:03AM	KT/BS
310	DT	T	195	Vacuum gage mount, valve effluent, exhauster line	2	2	Fig. 3	10:03AM	KT/BS
311	DT		196	Vacuum gage, exhauster line	2	2	Fig. 3	10:03AM	KT/BS
312	DT	T	197	Threaded union, steam connection, exhauster line	3	2	Fig. 3	10:03AM	KT/BS
313	DT	T	198	Valve influent, steam connection, exhauster line	3	2	Fig. 3	10:03AM	KT/BS
314	DT	V	199	Valve stem, steam connection, exhauster line	3	2	Fig. 3	10:03AM	KT/BS
315	DT	T	200	Valve effluent, steam connection, exhauster line	3	2	Fig. 3	10:03AM	KT/BS
316	DT	T	201	Shutoff valve influent, exhauster line	2	2	Fig. 3	10:03AM	KT/BS

317	DT	V	202	Shutoff valve stem, exhauster line		2	2	Fig. 3	10:03AM	KT/BS
318	DT	T	203	Shutoff valve effluent, exhauster line		2	2	Fig. 3	10:03AM	KT/BS
319	DT	T	204	Pipe coupling above valve 202, exhauster line		2	2	Fig. 3	10:03AM	KT/BS
320	DT	T	205	45 degree union influent, exhauster line		2	2	Fig. 3	10:03AM	KT/BS
321	DT	T	206	45 degree union effluent, exhauster line		2	2	Fig. 3	10:03AM	KT/BS
322	DT	T	207	45 degree union influent, exhauster line		2	2	Fig. 3	10:03AM	KT/BS
323	DT	T	208	45 degree union effluent, exhauster line		2	2	Fig. 3	10:03AM	KT/BS
324	DT	T	317	Plug		3	2	Fig. 3	10:03AM	KT/BS
325	DT	V	318	Tee with Plug		NC	NC	Fig. 3	10:03AM	KT/BS
326	DT	T	319	Threads, pipe in Valve		NC	NC	Fig. 3	10:03AM	KT/BS
327	DT	T	320	Threads, elbow	<i>Moved to Figure 5</i>	NC	NC	Fig. 3	10:03AM	KT/BS
328	DT	T	321	Threads, elbow	<i>Moved to Figure 5</i>	NC	NC	Fig. 3	10:03AM	KT/BS
329	DT	T	322	Threads, elbow	<i>Moved to Figure 5</i>	NC	NC	Fig. 3	10:03AM	KT/BS
330	DT	T	323	Threads, elbow	<i>Moved to Figure 5</i>	NC	NC	Fig. 3	10:03AM	KT/BS
331	DT	T	324	Union	<i>Moved to Figure 5</i>	NC	NC	Fig. 3	10:03AM	KT/BS
332	DT	V	325	Valve at COG main	<i>Moved to Figure 5</i>	NC	NC	Fig. 3	10:03AM	KT/BS
333	DT	I	385	Flange		3	2	Fig. 3	10:03AM	KT/BS
334	DT	T	562	Threads, coupling	<i>Moved to Figure 5</i>	NC	NC	Fig. 3	10:03AM	KT/BS
335	DT	T	563	Threads, coupling	<i>Moved to Figure 5</i>	NC	NC	Fig. 3	10:03AM	KT/BS
336	DT	T	564	Threads, Pipe to Valve	<i>Moved to Figure 5</i>	NC	NC	Fig. 3	10:03AM	KT/BS
337	DT	T	565	Threads, Pipe to Valve	<i>Moved to Figure 5</i>	NC	NC	Fig. 3	10:03AM	KT/BS
338	DT	I	593	Flanged connection off of Tank		2	2	Fig. 3	10:03AM	KT/BS
339	DT	H	621	Welded Hatch on Tank	<i>Removed</i>	NC	NC	Fig. 3	10:03AM	KT/BS
340	DT	T	629	Threads on Union		2	2	Fig. 3	10:03AM	KT/BS
341	DT	T	630	Threads on Union		2	2	Fig. 3	10:03AM	KT/BS
342	DT	H	631	Welded Hatch on Tank	<i>Removed</i>	NC	NC	Fig. 3	10:03AM	KT/BS
343	DT	T	632	Coupling		2	2	Fig. 3	10:03AM	KT/BS
344	DT	T	633	Coupling		2	2	Fig. 3	10:03AM	KT/BS
345	DT	T	646	Threads, Pipe to Tee		2	2	Fig. 3	10:03AM	KT/BS

346	T33	F	036	Flange, recirculation line		3	2	Fig. 4	11:03AM	KT/BS
347	T33	H	037	Manway		3	2	Fig. 4	11:03AM	KT/BS
348	T33	V	038	Valve above 037		3	2	Fig. 4	11:03AM	KT/BS
349	T33	O	039	Open end of 038		3	2	Fig. 4	11:03AM	KT/BS
350	T33	I	040	Flange, steam line		3	2	Fig. 4	11:03AM	KT/BS
351	T33	H	041	Manway		5	2	Fig. 4	11:03AM	KT/BS
352	T33	I	042	Flange above 041		NC	NC	Fig. 4	11:03AM	KT/BS
353	T33	I	043	Flange, transducer mount		NC	NC	Fig. 4	11:03AM	KT/BS
354	T33	T	044	Threads, transducer mount		NC	NC	Fig. 4	11:03AM	KT/BS
355	T33	T	045	Compression fittings & threads, manway to valve 046		NC	NC	Fig. 4	11:03AM	KT/BS
356	T33	V	046	Valve above manway		NC	NC	Fig. 4	11:03AM	KT/BS
357	T33	O	047	Open end of valve		NC	NC	Fig. 4	11:03AM	KT/BS
358	T33	F	048	Flange, dip stick access port (pipe nipple)		3	2	Fig. 4	11:03AM	KT/BS
359	T33	V	049	Valve (Cap changed to Valve)		3	2	Fig. 4	11:03AM	KT/BS
360	T33	I	050	Flange, exhauster line		3	2	Fig. 4	11:03AM	KT/BS
361	T33	V	051	Valve, vacuum gage mount		3	2	Fig. 4	11:03AM	KT/BS
362	T33	T	052	Vacuum gage		3	2	Fig. 4	11:03AM	KT/BS
363	T33	V	053	Valve, exhauster line, first in series		3	2	Fig. 4	11:03AM	KT/BS
364	T33	V	054	Valve, exhauster line, second valve in series		2	2	Fig. 4	11:03AM	KT/BS
365	T33	T	055	Threads, pipe to Valve		3	2	Fig. 4	11:03AM	KT/BS
366	T33	T	056	Threads, pipe to Valve		3	2	Fig. 4	11:03AM	KT/BS
367	T33	V	057	Valve		3	2	Fig. 4	11:03AM	KT/BS
368	T33	T	386	Tee		2	2	Fig. 4	11:03AM	KT/BS
369	T33	T	387	Plug in Tee		2	2	Fig. 4	11:03AM	KT/BS
370	T33	V	388	Valve		2	2	Fig. 4	11:03AM	KT/BS
371	T33	T	405	Pipe from Tank to 048	Removed	NC	NC	Fig. 4	11:03AM	KT/BS
372	T33	T	487	Tank Pipe Connection	Removed	NC	NC	Fig. 4	11:03AM	KT/BS
373	T33	T	488	Coupling		3	2	Fig. 4	11:03AM	KT/BS
374	T33	T	489	Threads, Pipe to Valve		3	2	Fig. 4	11:03AM	KT/BS
375	T33	T	490	Threads, Pipe to Valve		3	2	Fig. 4	11:03AM	KT/BS
376	T33	I	491	Valve Flange connection		3	2	Fig. 4	11:03AM	KT/BS
377	T33	I	492	Valve Flange connection		3	2	Fig. 4	11:03AM	KT/BS
378	T33	T	493	Plug		3	2	Fig. 4	11:03AM	KT/BS
379	T33	T	494	Tee Thread		2	2	Fig. 4	11:03AM	KT/BS
380	T33	T	495	Tee Plug		3	2	Fig. 4	11:03AM	KT/BS
381	T33	T	496	Tee Thread		3	2	Fig. 4	11:03AM	KT/BS
382	T33	T	497	Threads, Pipe to Valve		2	2	Fig. 4	11:03AM	KT/BS
383	T33	T	498	Threads, Pipe to Valve		2	2	Fig. 4	11:03AM	KT/BS
384	T33	T	499	Threads, Pipe to Valve		2	2	Fig. 4	11:03AM	KT/BS
385	T33	T	500	Threads, Pipe to Valve		2	2	Fig. 4	11:03AM	KT/BS
386	T33	T	501	Threads, Pipe to Valve		3	2	Fig. 4	11:03AM	KT/BS
387	T33	T	502	Threads, Pipe to Valve		3	2	Fig. 4	11:03AM	KT/BS
388	T33	T	503	Threads, Pipe to Valve		2	2	Fig. 4	11:03AM	KT/BS
389	T33	O	504	Open End on Valve		2	2	Fig. 4	11:03AM	KT/BS
390	T33	T	566	Thread on Elbow		3	2	Fig. 4	11:03AM	KT/BS
391	T33	T	567	Thread on Elbow		3	2	Fig. 4	11:03AM	KT/BS
392	T33	T	568	Tank Pipe Connection	Removed	NC	NC	Fig. 4	11:03AM	KT/BS
393	T33	T	569	Tank Pipe Connection	Removed	NC	NC	Fig. 4	11:03AM	KT/BS
394	T33	T	570	Tank Pipe Connection	Removed	NC	NC	Fig. 4	11:03AM	KT/BS
395	T33	T	572	Coupling		5	2	Fig. 4	11:03AM	KT/BS
396	T33	T	573	Coupling		5	2	Fig. 4	11:03AM	KT/BS
397	T33	T	574	Coupling		5	2	Fig. 4	11:03AM	KT/BS
398	T33	F	647	Flange		2	2	Fig. 4	11:03AM	KT/BS
399	T33	F	648	Flange		2	2	Fig. 4	11:03AM	KT/BS
400	T33	I	747	Flange on Valve		3	2	Fig. 4	11:03AM	KT/BS
401	T33	V	748	Valve		3	2	Fig. 4	11:03AM	KT/BS
402	T33	I	749	Flange on Valve		3	2	Fig. 4	11:03AM	KT/BS

403	TD	V	111	Valve, west tar decanter exhauster line		2	2	Fig. 5	1:48PM	KT/BS
404	TD	f	112	Flange, line in front of exhauster line		3	2	Fig. 5	1:48PM	KT/BS
405	TD	V	113	Valve, effluent to 112		2	2	Fig. 5	1:48PM	KT/BS
406	TD	V	114	Valve, very large, next pipe line in		3	2	Fig. 5	1:48PM	KT/BS
407	TD	V	115	Valve, very large, next pipe line in		3	2	Fig. 5	1:48PM	KT/BS
408	TD	V	116	Valve, large, next pipe line in		3	2	Fig. 5	1:48PM	KT/BS
409	TD	f	117	Flange below 116		3	2	Fig. 5	1:48PM	KT/BS
410	TD	V	118	Valve, vent		2	2	Fig. 5	1:48PM	KT/BS
411	TD	T	119	Threads, tee		3	2	Fig. 5	1:48PM	KT/BS
412	TD	T	120	Threads, tee		3	2	Fig. 5	1:48PM	KT/BS
413	TD	T	121	Threads, tee		3	2	Fig. 5	1:48PM	KT/BS
414	TD		122	Cable cover seal, west side		2	2	Fig. 5	1:48PM	KT/BS
415	TD		123	Cable cover seal, west side		3	2	Fig. 5	1:48PM	KT/BS
416	TD	V	124	Valve, east tar decanter, adjacent to 113		3	2	Fig. 5	1:48PM	KT/BS
417	TD	V	125	Valve, vacuum gage on exhauster line	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
418	TD	T	126	Plug	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
419	TD	V	127	Valve, large, west side, in front of funnel		NC	NC	Fig. 5	1:48PM	KT/BS
420	TD	f	128	Flange above 510		3	2	Fig. 5	1:48PM	KT/BS
421	TD	V	129	Valve, very large, east of 127		3	2	Fig. 5	1:48PM	KT/BS
422	TD	V	130	Valve, very large, east of 129		2	2	Fig. 5	1:48PM	KT/BS
423	TD	V	131	Valve		3	2	Fig. 5	1:48PM	KT/BS
424	TD	f	132	Flange below valve 129		3	2	Fig. 5	1:48PM	KT/BS
425	TD	V	134	Valve, exhauster line, east side of vessel	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
426	TD	V	137	Valve		2	2	Fig. 5	1:48PM	KT/BS
427	TD	f	138	Flange		2	2	Fig. 5	1:48PM	KT/BS
428	TD	f	139	Flange below valve 130		2	2	Fig. 5	1:48PM	KT/BS
429	TD		140	Cable pully frame, east side		4	2	Fig. 5	1:48PM	KT/BS
430	TD		141	Cable pully frame, east side		3	2	Fig. 5	1:48PM	KT/BS
431	TD	V	291	Valve		NC	NC	Fig. 5	1:48PM	KT/BS
432	TD	O	292	Open end		NC	NC	Fig. 5	1:48PM	KT/BS
433	TD	V	293	Valve		NC	NC	Fig. 5	1:48PM	KT/BS
434	TD	O	294	Open end		NC	NC	Fig. 5	1:48PM	KT/BS
435	TD	V	295	Valve		3	2	Fig. 5	1:48PM	KT/BS
436	TD	O	296	Open end		NC	NC	Fig. 5	1:48PM	KT/BS
437	TD	V	297	Valve		3	2	Fig. 5	1:48PM	KT/BS
438	TD	V	300	Valve, vacuum gage		2	2	Fig. 5	1:48PM	KT/BS
439	TD		301	Vacuum gage		2	2	Fig. 5	1:48PM	KT/BS
440	TD	T	302	Pipe union	<i>Insulated</i>	NC	NC	Fig. 5	1:37PM	KT/BS
441	TD	T	303	Threads, steam venturi	<i>Insulated</i>	NC	NC	Fig. 5	1:37PM	KT/BS
442	TD	T	304	Threads, steam venturi	<i>Insulated</i>	NC	NC	Fig. 5	1:37PM	KT/BS
443	TD	T	305	Pipe union	<i>Insulated</i>	NC	NC	Fig. 5	1:37PM	KT/BS
444	TD	T	306	Threads, elbow	<i>Insulated</i>	NC	NC	Fig. 5	1:37PM	KT/BS
445	TD	T	307	Threads, elbow	<i>Insulated</i>	NC	NC	Fig. 5	1:37PM	KT/BS
446	TD	T	308	Threads, elbow	<i>Insulated</i>	NC	NC	Fig. 5	1:37PM	KT/BS
447	TD	T	309	Threads, elbow	<i>Insulated</i>	NC	NC	Fig. 5	1:37PM	KT/BS
448	TD	T	310	Pipe union	<i>Insulated</i>	NC	NC	Fig. 5	1:37PM	KT/BS
449	TD	T	311	Elbow, Threads		2	2	Fig. 5	1:37PM	KT/BS
450	TD	T	312	Elbow, Threads		2	2	Fig. 5	1:37PM	KT/BS
451	TD	F	313	Flange, Valve mount		2	2	Fig. 5	1:37PM	KT/BS
452	TD	V	314	Valve at COG main		2	2	Fig. 5	1:37PM	KT/BS
453	TD	F	315	Flange, Valve mount		2	2	Fig. 5	1:37PM	KT/BS
454	TD	T	320	Elbow		2	2	Fig. 5	1:37PM	KT/BS
455	TD	T	321	Elbow		2	2	Fig. 5	1:37PM	KT/BS
456	TD	T	322	Elbow		2	2	Fig. 5	1:37PM	KT/BS
457	TD	T	323	Elbow		2	2	Fig. 5	1:37PM	KT/BS
458	TD	T	324	Coupling		2	2	Fig. 5	1:37PM	KT/BS
459	TD	V	325	Valve		2	2	Fig. 5	1:37PM	KT/BS
460	TD	F	346	Flange, elbow		3	2	Fig. 5	1:48PM	KT/BS
461	TD	F	347	Flange, elbow		3	2	Fig. 5	1:48PM	KT/BS
462	TD	F	348	Flange, tee		3	2	Fig. 5	1:48PM	KT/BS
463	TD	f	349	Flange, tee		2	2	Fig. 5	1:48PM	KT/BS
464	TD	f	350	Flange, elbow		3	2	Fig. 5	1:48PM	KT/BS
465	TD	F	351	Flange, elbow		3	2	Fig. 5	1:48PM	KT/BS
466	TD	F	352	Flange, elbow		3	2	Fig. 5	1:48PM	KT/BS
467	TD	F	353	Flange, elbow		3	2	Fig. 5	1:48PM	KT/BS
468	TD	F	354	Flange, elbow		3	2	Fig. 5	1:48PM	KT/BS
469	TD	F	355	Flange, tee		3	2	Fig. 5	1:48PM	KT/BS
470	TD	f	356	Flange, tee		3	2	Fig. 5	1:48PM	KT/BS
471	TD	F	357	Flange, elbow		3	2	Fig. 5	1:48PM	KT/BS
472	TD	T	358	Flange, elbow		3	2	Fig. 5	1:48PM	KT/BS

473	TD	V	359	Valve		NC	NC	Fig. 5	1:48PM	KT/BS
474	TD	F	360	Flange, tee		NC	NC	Fig. 5	1:48PM	KT/BS
475	TD	F	361	Flange, tee		NC	NC	Fig. 5	1:48PM	KT/BS
476	TD	V	367	Valve		3	2	Fig. 5	1:48PM	KT/BS
477	TD	T	368	Tee	<i>Insulated</i>	NC	NC	Fig. 5	1:48PM	KT/BS
478	TD	V	369	Valve		3	2	Fig. 5	1:48PM	KT/BS
479	TD	T	370	Elbow	<i>Insulated</i>	NC	NC	Fig. 5	1:48PM	KT/BS
480	TD	V	371	Valve		2	2	Fig. 5	1:48PM	KT/BS
481	TD	T	372	Elbow	<i>Insulated</i>	NC	NC	Fig. 5	1:48PM	KT/BS
482	TD	T	373	Coupling	<i>Insulated</i>	NC	NC	Fig. 5	1:48PM	KT/BS
483	TD	V	374	Valve		3	2	Fig. 5	1:48PM	KT/BS
484	TD	T	389	Coupling	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
485	TD	T	390	Coupling	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
486	TD	I	391	Flange		3	2	Fig. 5	1:48PM	KT/BS
487	TD	I	392	Flange		3	2	Fig. 5	1:48PM	KT/BS
488	TD		393	Cable cover seal, west side		3	2	Fig. 5	1:48PM	KT/BS
489	TD		394	Cable cover seal, west side		7	2	Fig. 5	1:48PM	KT/BS
490	TD		395	Cable cover seal, east side		50	2	Fig. 5	1:48PM	KT/BS
491	TD		396	Cable cover seal, east side		5	2	Fig. 5	1:48PM	KT/BS
492	TD	I	406	Flange on Valve		3	2	Fig. 5	1:48PM	KT/BS
493	TD	I	407	Flange on Valve		3	2	Fig. 5	1:48PM	KT/BS
494	TD	I	408	Flange, by COG Main		2	2	Fig. 5	1:37PM	KT/BS
495	TD	T	409	Cap near COG Main, on Valve 410		2	2	Fig. 5	1:37PM	KT/BS
496	TD	V	410	Valve at COG main		2	2	Fig. 5	1:37PM	KT/BS
497	TD	T	411	Threads, pipe to Valve 410		2	2	Fig. 5	1:37PM	KT/BS
498	TD	T	505	Tank Pipe Connection	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
499	TD	T	506	Tank Pipe Connection	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
500	TD	T	507	Tank Pipe Connection	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
501	TD	T	508	Tank Pipe Connection	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
502	TD	T	509	Tank Pipe Connection	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
503	TD	T	510	Tank Pipe Connection	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
504	TD	T	511	Tank Pipe Connection	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
505	TD	T	512	Tank Pipe Connection	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
506	TD	T	513	Tank Pipe Connection	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
507	TD	T	514	Tank Pipe Connection	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
508	TD	F	515	Flange on Valve		3	2	Fig. 5	1:48PM	KT/BS
509	TD	F	516	Flange on Valve		3	2	Fig. 5	1:48PM	KT/BS
510	TD	F	517	Flange		NC	NC	Fig. 5	1:48PM	KT/BS
511	TD	F	518	Flange on Valve		3	2	Fig. 5	1:48PM	KT/BS
512	TD	T	519	Threads, Pipe to Valve		2	2	Fig. 5	1:48PM	KT/BS
513	TD	T	520	Threads, Pipe to Valve		2	2	Fig. 5	1:48PM	KT/BS
514	TD	T	521	Threads, Pipe to Valve		2	2	Fig. 5	1:48PM	KT/BS
515	TD	T	522	Threads, Pipe to Valve		2	2	Fig. 5	1:48PM	KT/BS
516	TD	O	523	Open end on Valve		2	2	Fig. 5	1:48PM	KT/BS
517	TD	T	524	Threads, Pipe to Valve		2	2	Fig. 5	1:48PM	KT/BS
518	TD	T	525	Threads, Pipe to Valve		3	2	Fig. 5	1:48PM	KT/BS
519	TD	T	526	Threads, Pipe to Valve		3	2	Fig. 5	1:48PM	KT/BS
520	TD	T	527	Threads, Pipe to Valve		3	2	Fig. 5	1:48PM	KT/BS
521	TD	T	528	Threads, Pipe to Valve		3	2	Fig. 5	1:48PM	KT/BS
522	TD	F	529	Flange		3	2	Fig. 5	1:48PM	KT/BS
523	TD	F	530	Flange		3	2	Fig. 5	1:48PM	KT/BS
524	TD	F	531	Flange		2	2	Fig. 5	1:48PM	KT/BS
525	TD	F	532	Flange, blank on Valve		3	2	Fig. 5	1:48PM	KT/BS
526	TD	I	533	Flange on Valve		2	2	Fig. 5	1:48PM	KT/BS
527	TD	T	534	Threads, Pipe to Valve		3	2	Fig. 5	1:48PM	KT/BS
528	TD	T	535	Threads, Pipe to Valve		3	2	Fig. 5	1:48PM	KT/BS
529	TD	T	536	Coupling	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
530	TD	T	537	Coupling	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
531	TD	T	538	Coupling	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
532	TD	T	539	Coupling	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
533	TD	T	540	Threads, Pipe to Valve	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
534	TD	T	541	Threads, Pipe to Valve	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
535	TD	T	542	Threads, Pipe to Valve		3	2	Fig. 5	1:48PM	KT/BS

536	TD	T	543	Threads, Pipe to Valve		3	2	Fig. 5	1:48PM	KT/BS
537	TD	T	544	Threads, pipe in Tee	<i>Insulated</i>	NC	NC	Fig. 5	1:48PM	KT/BS
538	TD	T	545	Threads, Pipe to Valve (369)		3	2	Fig. 5	1:48PM	KT/BS
539	TD	T	546	Plug		3	2	Fig. 5	1:48PM	KT/BS
540	TD	T	547	Threads, pipe in Tee	<i>Insulated</i>	NC	NC	Fig. 5	1:48PM	KT/BS
541	TD	T	548	Elbow, Threads	<i>Insulated</i>	NC	NC	Fig. 5	1:48PM	KT/BS
542	TD	T	549	Threads, Pipe to Valve		2	2	Fig. 5	1:48PM	KT/BS
543	TD	T	550	Threads, pipe in Valve		2	2	Fig. 5	1:48PM	KT/BS
544	TD	T	551	Elbow, Threads	<i>Insulated</i>	NC	NC	Fig. 5	1:48PM	KT/BS
545	TD	T	552	Coupling	<i>Insulated</i>	NC	NC	Fig. 5	1:48PM	KT/BS
546	TD	T	553	Coupling	<i>Insulated</i>	NC	NC	Fig. 5	1:48PM	KT/BS
547	TD	T	554	Threads, pipe in Valve	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
548	TD	T	555	Threads, pipe in Valve	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
549	TD	T	562	Coupling		2	2	Fig. 5	1:37PM	KT/BS
550	TD	T	563	Coupling		2	2	Fig. 5	1:37PM	KT/BS
551	TD	T	564	Threads, pipe to Valve		2	2	Fig. 5	1:37PM	KT/BS
552	TD	T	565	Threads, pipe to Valve		2	2	Fig. 5	1:37PM	KT/BS
553	TD	F	571	Flange on Valve		2	2	Fig. 5	1:48PM	KT/BS
554	TD	F	572	Flange on Valve		2	2	Fig. 5	1:48PM	KT/BS
555	TD	F	573	Flange on Valve		2	2	Fig. 5	1:48PM	KT/BS
556	TD	F	574	Flange on Valve		2	2	Fig. 5	1:48PM	KT/BS
557	TD	T	575	Threads, Pipe to Tee	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
558	TD	T	576	Threads, Pipe to Tee	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
559	TD	T	577	Threads, Pipe to Tee	<i>Removed</i>	NC	NC	Fig. 5	1:48PM	KT/BS
560	TD	T	578	Coupling		NC	NC	Fig. 5	1:48PM	KT/BS
561	TD	T	579	Coupling		NC	NC	Fig. 5	1:48PM	KT/BS
562	TD	T	580	Coupling		NC	NC	Fig. 5	1:48PM	KT/BS
563	TD	T	581	Threads, Pipe to Valve		NC	NC	Fig. 5	1:48PM	KT/BS
564	TD	V	582	Valve		NC	NC	Fig. 5	1:48PM	KT/BS
565	TD	T	583	Threads, Pipe to Valve		NC	NC	Fig. 5	1:48PM	KT/BS
566	TD	T	584	Coupling		NC	NC	Fig. 5	1:48PM	KT/BS
567	TD	T	585	Coupling		NC	NC	Fig. 5	1:48PM	KT/BS
568	TD	T	586	Coupling		NC	NC	Fig. 5	1:48PM	KT/BS
569	TD	T	587	Elbow		NC	NC	Fig. 5	1:48PM	KT/BS
570	TD	T	588	Coupling		3	2	Fig. 5	1:48PM	KT/BS
571	TD	T	589	Coupling		3	2	Fig. 5	1:48PM	KT/BS
572	TD	T	590	Coupling		3	2	Fig. 5	1:48PM	KT/BS
573	TD	T	622	Coupling		NC	NC	Fig. 5	1:37PM	KT/BS
574	TD	T	623	Coupling		NC	NC	Fig. 5	1:37PM	KT/BS
575	TD	F	624	Flange plate on tank		3	2	Fig. 5	1:48PM	KT/BS
576	TD	T	625	Threads, pipe to Valve		3	2	Fig. 5	1:48PM	KT/BS
577	TD	V	626	Valve		3	2	Fig. 5	1:48PM	KT/BS
578	TD	T	627	Threads, pipe to Valve		3	2	Fig. 5	1:48PM	KT/BS
579	TD	T	628	Cap, threads		3	2	Fig. 5	1:48PM	KT/BS
580	TD	T	644	Plug		3	2	Fig. 5	1:48PM	KT/BS
581	TD	T	645	Flange on COG Main		2	2	Fig. 5	1:37PM	KT/BS
582	TD	T	649	Pipe to Tank		2	2	Fig. 5	1:37PM	KT/BS
583	TD	T	650	Union		2	2	Fig. 5	1:37PM	KT/BS
584	TD	T	651	Union		2	2	Fig. 5	1:37PM	KT/BS
585	TD	T	652	Union		2	2	Fig. 5	1:37PM	KT/BS
586	TD	T	653	Threads, pipe to Valve		2	2	Fig. 5	1:37PM	KT/BS
587	TD	V	654	Valve		2	2	Fig. 5	1:37PM	KT/BS
588	TD	T	655	Threads, pipe to Valve		2	2	Fig. 5	1:37PM	KT/BS
589	TD	T	656	Threads, pipe to Elbow		2	2	Fig. 5	1:37PM	KT/BS
590	TD	T	657	Plug		2	2	Fig. 5	1:37PM	KT/BS
591	TD	F	724	Flange		3	2	Fig. 5	1:48PM	KT/BS

592	EX	E	142	Exhauster #1		6	3	Fig. 7	11:29AM	KT/BS
593	EX	E	143	Exhauster #2		3	3	Fig. 7	11:35AM	KT/BS
594	EX	E	144	Exhauster #3		3	3	Fig. 7	11:24AM	KT/BS
595	T3	T	658	Pipe to Tank	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
596	T3	F	659	Flange		3	2	Fig. 8	10:47AM	KT/BS
597	T3	T	660	Pipe to Tank	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
598	T3	F	661	Flange		3	2	Fig. 8	10:47AM	KT/BS
599	T3	T	662	Plug		3	2	Fig. 8	10:47AM	KT/BS
600	T3	F	663	Flanged Port A		3	2	Fig. 8	10:47AM	KT/BS
601	T3	F	664	Flanged Port B		3	2	Fig. 8	10:47AM	KT/BS
602	T3	H	665	Hatch		3	2	Fig. 8	10:47AM	KT/BS
603	T3	T	666	Flange		3	2	Fig. 8	10:47AM	KT/BS
604	T3	T	667	Seal	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
605	T3	T	668	Pipe to Tank	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
606	T3	T	669	Threads, pipe to Elbow		3	2	Fig. 8	10:47AM	KT/BS
607	T3	T	670	Threads, pipe to Elbow		3	2	Fig. 8	10:47AM	KT/BS
608	T3	T	671	Threads, pipe to Elbow		3	2	Fig. 8	10:47AM	KT/BS
609	T3	T	672	Threads, pipe to Elbow		3	2	Fig. 8	10:47AM	KT/BS
610	T3	T	673	Threads, pipe to Valve		3	2	Fig. 8	10:47AM	KT/BS
611	T3	V	674	Valve		3	2	Fig. 8	10:47AM	KT/BS
612	T3	T	675	Threads, pipe to Valve		3	2	Fig. 8	10:47AM	KT/BS
613	T3	T	676	Threads, pipe to Elbow		3	2	Fig. 8	10:47AM	KT/BS
614	T3	O	677	Open end of Elbow		3	2	Fig. 8	10:47AM	KT/BS
615	T3	T	678	Pipe to Tank	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
616	T3	F	679	Flange		3	2	Fig. 8	10:47AM	KT/BS
617	T3	T	680	Threads, pipe to Valve		3	2	Fig. 8	10:47AM	KT/BS
618	T3	V	681	Valve		3	2	Fig. 8	10:47AM	KT/BS
619	T3	T	682	Threads, pipe to Valve		3	2	Fig. 8	10:47AM	KT/BS
620	T3	T	683	Pipe to Tank	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
621	T3	F	684	Flange	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
622	T3	T	685	Threads, pipe to Valve		2	2	Fig. 8	10:47AM	KT/BS
623	T3	V	686	Valve		2	2	Fig. 8	10:47AM	KT/BS
624	T3	T	687	Threads, pipe to Valve		2	2	Fig. 8	10:47AM	KT/BS
625	T3	T	688	Union	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
626	T3	T	689	Union	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
627	T3	T	690	Union	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
628	T3	T	691	Threads, Pipe to Tee	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
629	T3	T	692	Threads, Pipe to Tee	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
630	T3	T	693	Threads, pipe to Valve	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
631	T3	V	694	Valve	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
632	T3	T	695	Threads, pipe to Valve	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
633	T3	T	696	Threads, Pipe to Tee	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
634	T3	T	697	Threads, pipe to Elbow	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
635	T3	T	698	Threads, pipe to Elbow	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
636	T3	T	699	Threads, pipe to Valve	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
637	T3	V	700	Valve	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
638	T3	T	701	Threads, pipe to Valve	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
639	T3	T	702	Union	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
640	T3	T	703	Union	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
641	T3	T	704	Union	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
642	T3	T	705	Threads, pipe to Elbow	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
643	T3	T	706	Threads, pipe to Elbow	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
644	T3	T	707	Threads, pipe to Elbow	Removed	NC	NC	Fig. 8	10:47AM	KT/BS

645	T3	T	708	Threads, pipe to Elbow	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
646	T3	T	709	Union	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
647	T3	T	710	Union	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
648	T3	T	711	Union	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
649	T3	T	712	Plug on Tank	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
650	T3	F	713	Flange on Tank	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
651	T3	F	714	Flange on Tank	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
652	T3	T	715	Plug on Tank	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
653	T3	T	716	Plug on Tank	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
654	T3	F	717	Flange on Tank	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
655	T3	I	718	Flange on Tank	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
656	T3	T	719	Plug on Tank	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
657	T3	F	720	Flange on Valve (bottom side of Tank)	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
658	T3	V	721	Valve	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
659	T3	F	722	Flange on Valve (bottom side of Tank)	Removed	NC	NC	Fig. 8	10:47AM	KT/BS
660	T3	T	723	Flange on Tank		3	2	Fig. 8	10:47AM	KT/BS

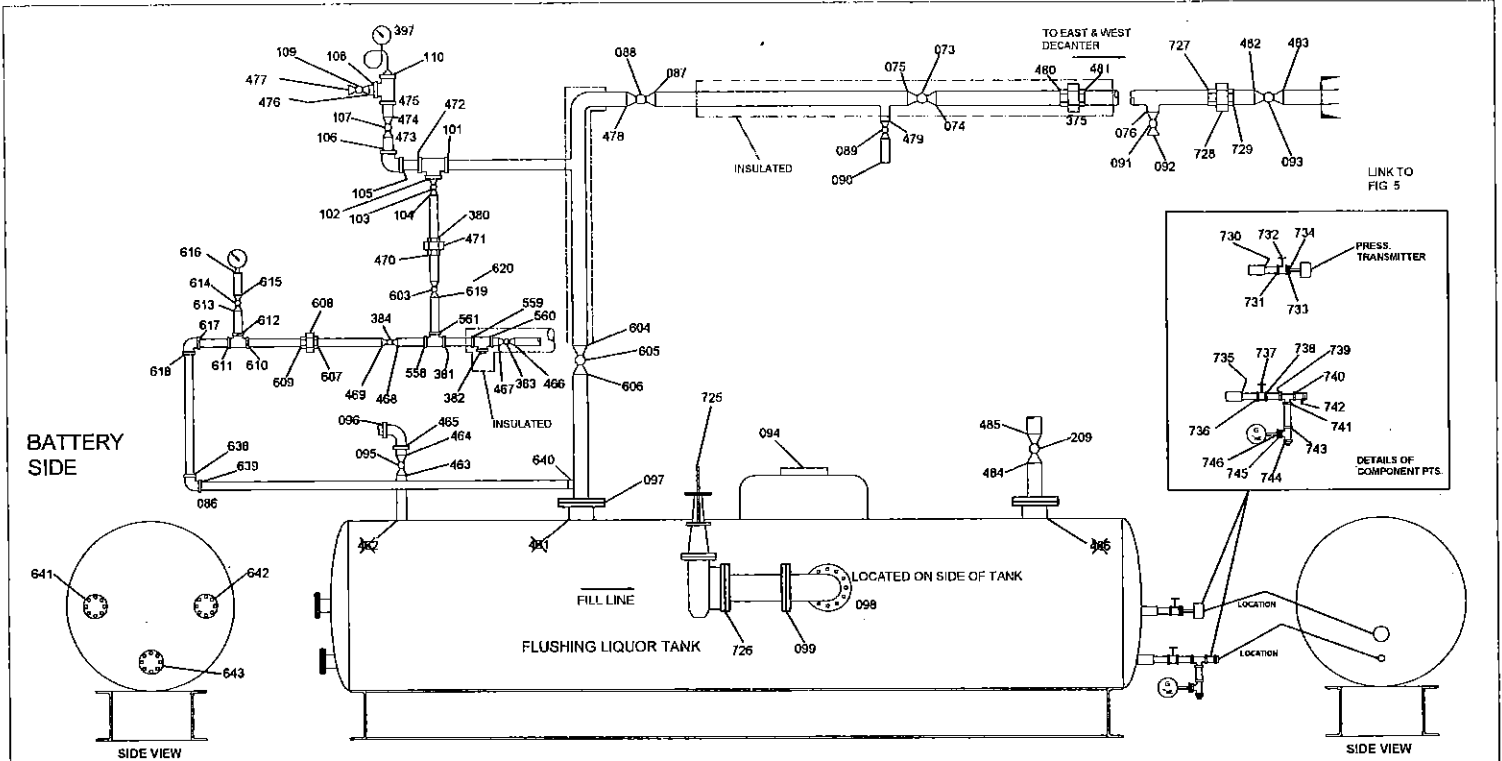
Key to component types

E	=	Exhauster or exhaust vent
F	=	Flange
G	=	Gauge
H	=	Hatch or manway
S	=	Seal
O	=	Open end of valve or line
T	=	Threaded or compression fittings
V	=	Valve
A	=	Agitator

Key to processes

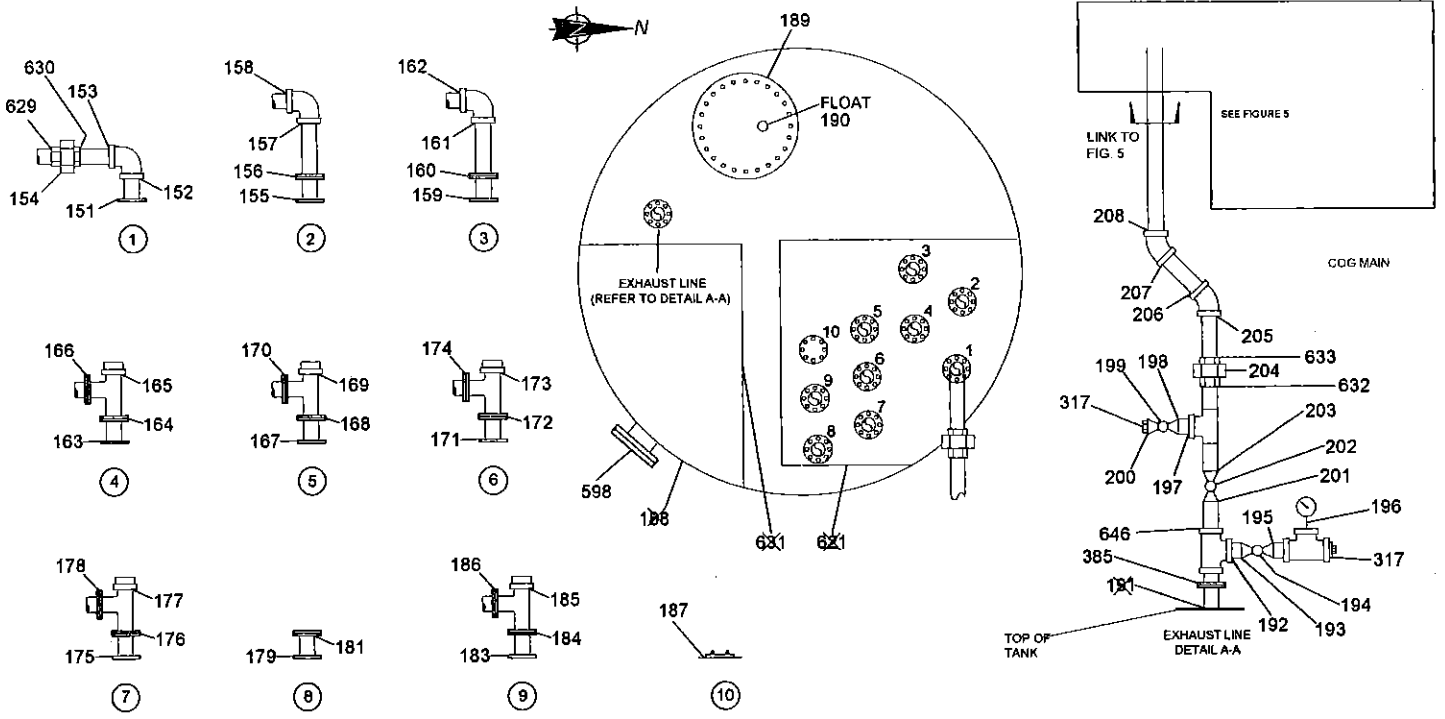
TS	=	Tar storage tank
TD	=	Tar decanter
DT	=	Hot Drip Tank
T33	=	Tar dehydrator
T33	=	Tar dehydrator
FL	=	Flushing liquor tank
EX	=	Exhauster

Note Keys: NC - No Component



NOTE 1: All component points where 'X' appears over number have been removed per Third Party Audit recommendations. They have been deemed not necessary to program (Aug. 3, 2017) at this time.

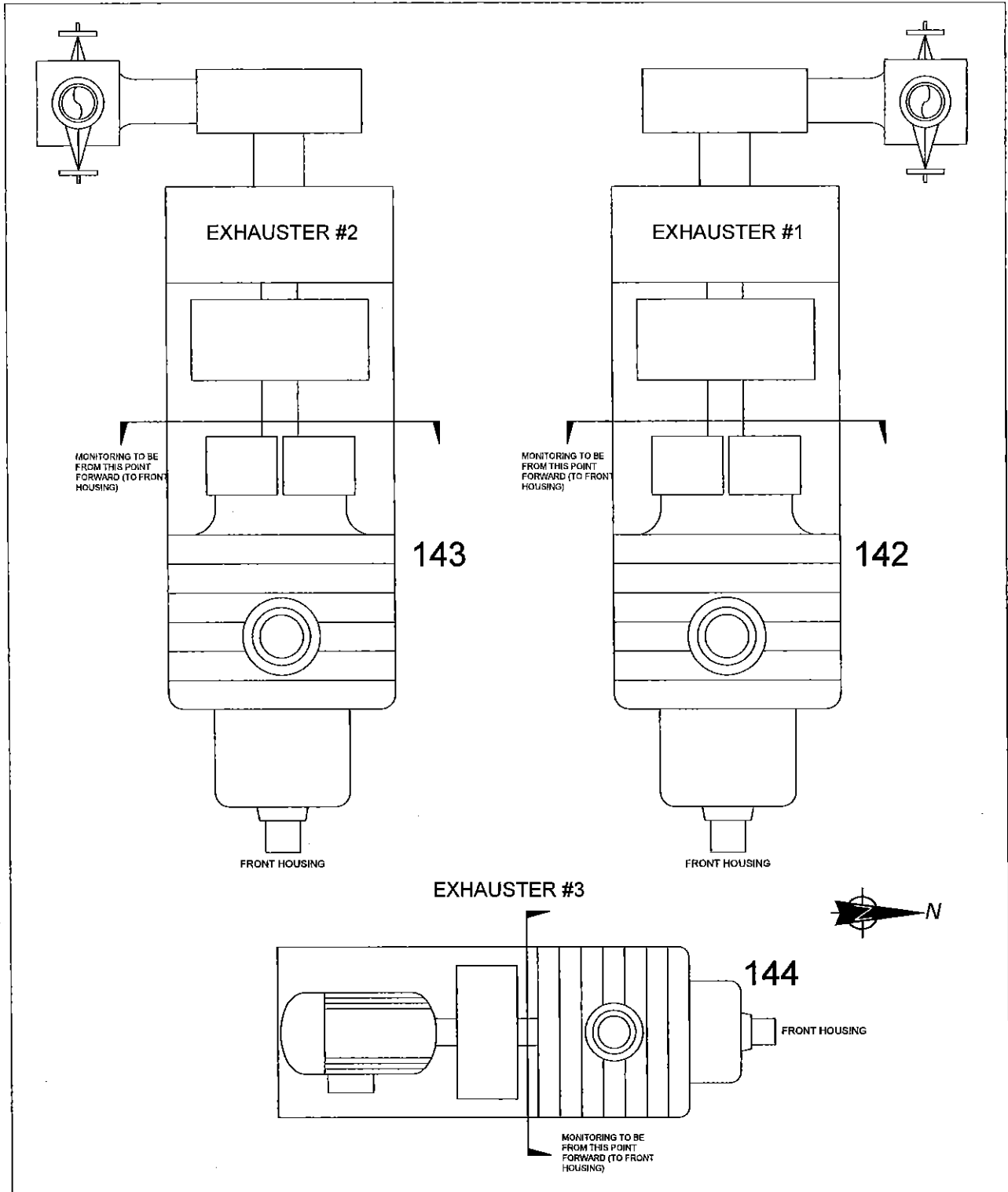
ERIE COKE CORPORATION									
FIGURE 2 - FLUSHING LIQUOR TANK					LEAK COMPONENT POINT LOCATIONS				
NO.	DATE	BY	REVISION	DESCRIPTION	NO.	DATE	BY	REVISION	DESCRIPTION
1	10-01	WJ	1	ISSUED LEAK & HOLD TAG	1	10-01	WJ	1	ISSUED LEAK & HOLD TAG
2	10-02	WJ	2	ISSUED PPT INSPECTION/REPAIR AND LEAK IN HOLD - "HOLD LINE TAG"	2	10-02	WJ	2	ISSUED PPT INSPECTION/REPAIR AND LEAK IN HOLD - "HOLD LINE TAG"
3	10-03	WJ	3	PPT INSPECTION/REPAIR AND LEAK IN HOLD - "HOLD LINE TAG"	3	10-03	WJ	3	PPT INSPECTION/REPAIR AND LEAK IN HOLD - "HOLD LINE TAG"
4	10-04	WJ	4	ISSUED PPT INSPECTION/REPAIR AND LEAK IN HOLD - "HOLD LINE TAG"	4	10-04	WJ	4	ISSUED PPT INSPECTION/REPAIR AND LEAK IN HOLD - "HOLD LINE TAG"
5	10-05	WJ	5	ISSUED PPT INSPECTION/REPAIR AND LEAK IN HOLD - "HOLD LINE TAG"	5	10-05	WJ	5	ISSUED PPT INSPECTION/REPAIR AND LEAK IN HOLD - "HOLD LINE TAG"
6	10-06	WJ	6	ISSUED PPT INSPECTION/REPAIR AND LEAK IN HOLD - "HOLD LINE TAG"	6	10-06	WJ	6	ISSUED PPT INSPECTION/REPAIR AND LEAK IN HOLD - "HOLD LINE TAG"
7	10-07	WJ	7	ISSUED PPT INSPECTION/REPAIR AND LEAK IN HOLD - "HOLD LINE TAG"	7	10-07	WJ	7	ISSUED PPT INSPECTION/REPAIR AND LEAK IN HOLD - "HOLD LINE TAG"
8	10-08	WJ	8	ISSUED PPT INSPECTION/REPAIR AND LEAK IN HOLD - "HOLD LINE TAG"	8	10-08	WJ	8	ISSUED PPT INSPECTION/REPAIR AND LEAK IN HOLD - "HOLD LINE TAG"
9	10-09	WJ	9	ISSUED PPT INSPECTION/REPAIR AND LEAK IN HOLD - "HOLD LINE TAG"	9	10-09	WJ	9	ISSUED PPT INSPECTION/REPAIR AND LEAK IN HOLD - "HOLD LINE TAG"
10	10-10	WJ	10	ISSUED PPT INSPECTION/REPAIR AND LEAK IN HOLD - "HOLD LINE TAG"	10	10-10	WJ	10	ISSUED PPT INSPECTION/REPAIR AND LEAK IN HOLD - "HOLD LINE TAG"



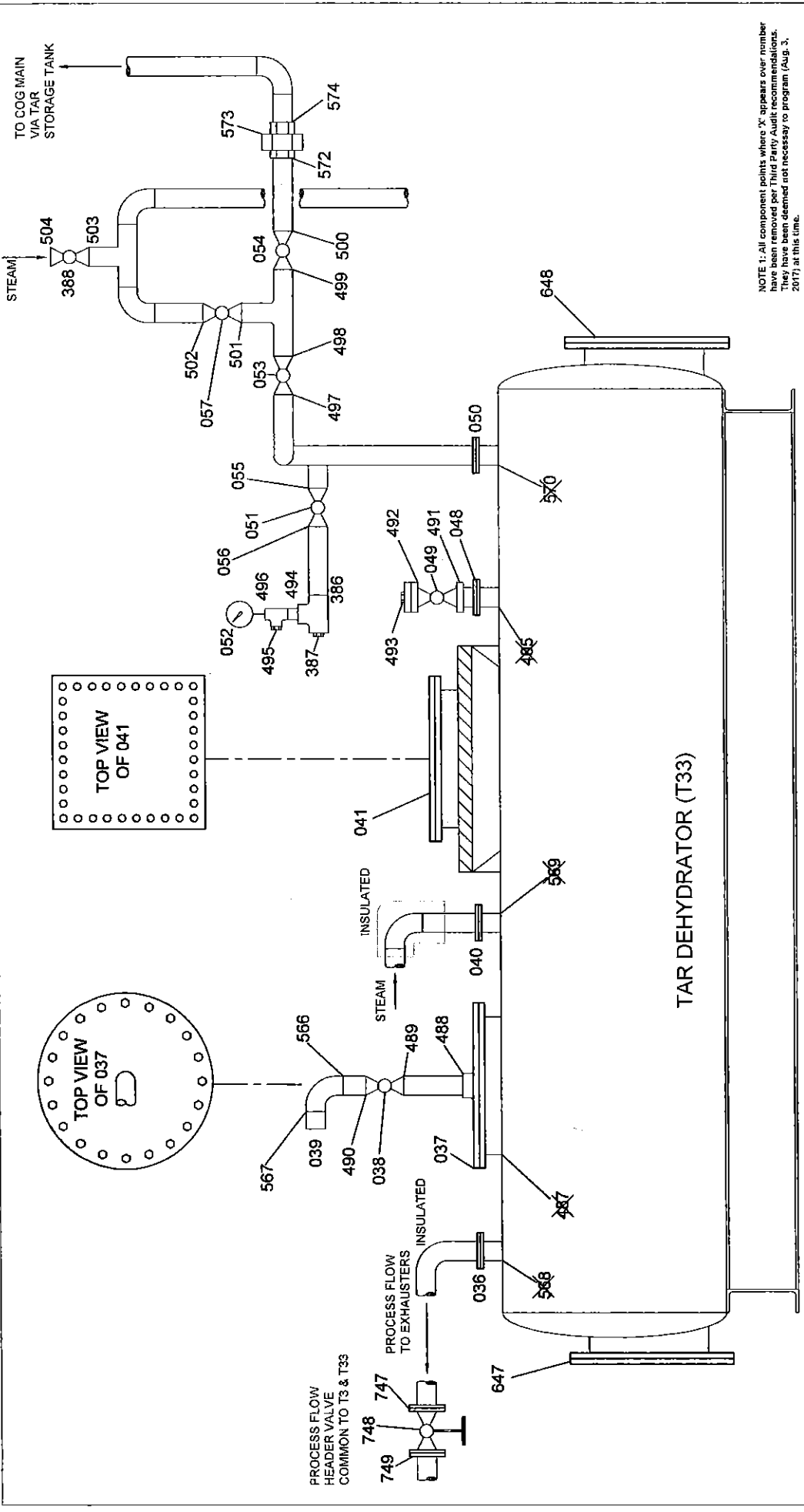
NOTE 1: All component points where 'X' appears over number have been removed per Third Party Audit recommendations. They have been deemed not necessary to program (Aug. 3, 2017) at this time.

NO.	REV.	DESCRIPTION	DATE	BY	CHKD.	APP.	REVISIONS
1	1	ISSUED FOR CONSTRUCTION	11/15/11	...	...	...	...
2	1	ISSUED FOR CONSTRUCTION	11/15/11	...	...	...	...
3	1	ISSUED FOR CONSTRUCTION	11/15/11	...	...	...	...
4	1	ISSUED FOR CONSTRUCTION	11/15/11	...	...	...	...
5	1	ISSUED FOR CONSTRUCTION	11/15/11	...	...	...	...
6	1	ISSUED FOR CONSTRUCTION	11/15/11	...	...	...	...
7	1	ISSUED FOR CONSTRUCTION	11/15/11	...	...	...	...
8	1	ISSUED FOR CONSTRUCTION	11/15/11	...	...	...	...
9	1	ISSUED FOR CONSTRUCTION	11/15/11	...	...	...	...
10	1	ISSUED FOR CONSTRUCTION	11/15/11	...	...	...	...

ERIE COKE CORPORATION
 FIG. 3 - HOT DRIP TANK CONNECTIONS
 LOAD COMPONENT POINT LOCATIONS
 DRAWING NO. 111111
 SHEET NO. 1 OF 1
 DATE 11/15/11
 PROJECT NO. 111111



				ERIE COKE CORPORATION					
				DRAWN TITLE: EXHAUSTERS					
C	5-9-17	KMT	ADDED NOTE & SPECIFIED AREA FOR MONITORING	DRAWN MODIFIED BY:	KMT	DATE	3-15-13	SCALE:	NTS
B	9-12-13	KMT	IMPROVED IMAGE OF EXHAUSTER 1,2; ADDED PT #'s 142,143,144	DRAWING #	Figure 7			REV. No.	C
REV. No.	DATE	BY	REVISIONS						



NOTE 1: All component points where 'X' appears over number have been removed per Third Party Audit recommendations. They have been deemed not necessary to program (Aug. 3, 2017) at this time.

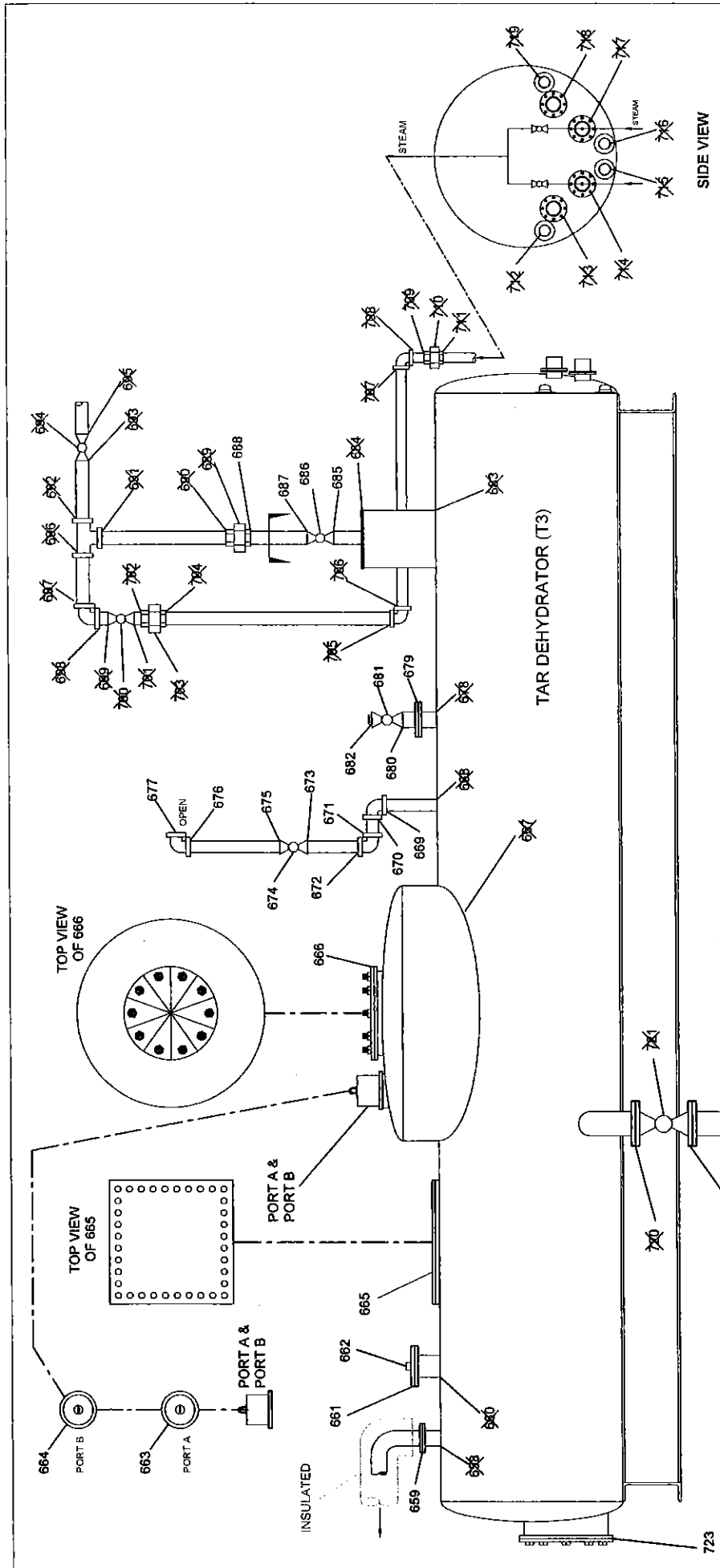
ERIE COKE CORPORATION

DRRAW TITLE: Figure 4 - TAR DEHYDRATOR LDAR COMPONENT POINT LOCATIONS

REVISION NO.	DATE	BY	SCALE	NIS	K
1	10-30-15	TL			
2	4-24-15	BM			
3	10-30-14	BM			
4	10-30-13	BM			

REVISIONS

REV. NO.	DATE	BY	DESCRIPTION
K	8-8-17	BM	ADDED P.T. 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648
J	5-20-17	BM	ADDED P.T. 048, 049, 050, 051, 052, 053, 054, 055, 056, 057, 058, 059, 060, 061, 062, 063, 064, 065, 066, 067, 068, 069, 070, 071, 072, 073, 074, 075, 076, 077, 078, 079, 080, 081, 082, 083, 084, 085, 086, 087, 088, 089, 090, 091, 092, 093, 094, 095, 096, 097, 098, 099, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648
I	1-30-17	BM	ADDED COMPONENTS TO THE VIEW OF 037 & THE VIEW OF 041
H	10-30-15	BM	ADDED P.T. 372, 373, 374
G	3-20-15	BM	ADDED P.T. 048 THROUGH 054, 056, 057, 058, 059, 060
F	10-30-15	TL	ADDED P.T. 648
E	4-24-15	BM	REMOVED P.T. 048, 049, 050, 051, 052, 053, 054
D	10-30-14	BM	P.T. 048 IS NOW A BALL VALVE & APPROVED DRAWING LAYOUT (I.E. TAKE BALL FROM)
C	10-30-14	BM	REMOVE P.T. 048, 049, 048, 049
B	5-20-13	BM	REMOVE P.T. 048, 049, 048, 049
A			



ERIE COKE CORPORATION

Figure 8 - TAR DEHYDRATOR (T3)

Figure 8 - TAR DEHYDRATOR (T3) L&M COMPONENT POINT LOCATIONS

REV. NO.	DATE	BY	CHKD.	INTS.
1	4-14-17	MS	MS	MS
2	2-14-17	MS	MS	MS
3	8-3-17	MS	MS	MS

Figure 8

REV. NO.

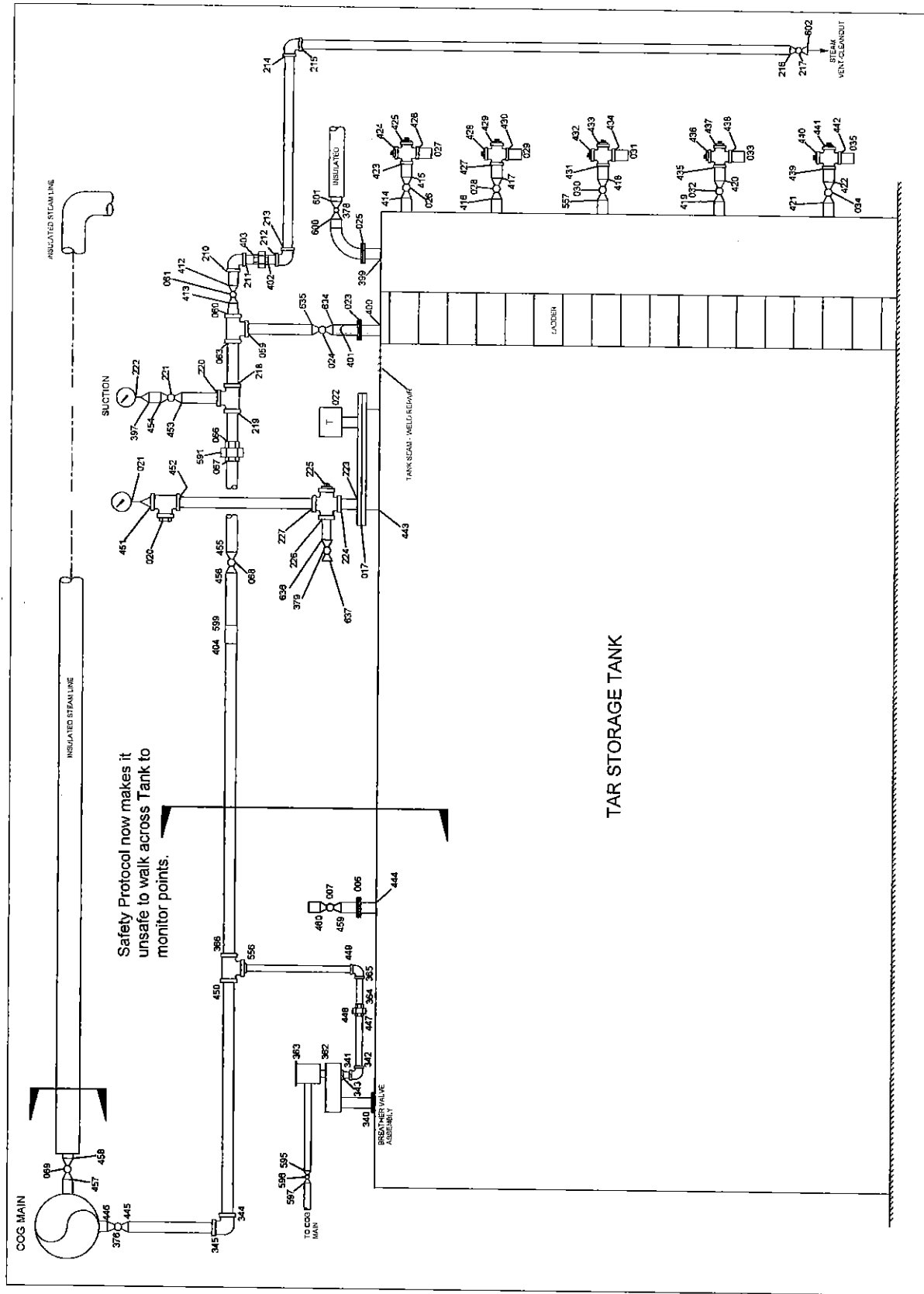
DATE

BY

CHKD.

INTS.

NOTE 1: All component points where 'X' appears over number have been removed per Third Party Audit recommendations. They have been deemed not necessary to program (Aug. 3, 2017) at this time.



Safety Protocol now makes it unsafe to walk across Tank to monitor points.

TAR STORAGE TANK

ERIE COKE CORPORATION	
TAR STORAGE TANK	
TANK SEAM - WELD BEARING	
LADDER	
STEAM VENT-CLAMPOUT	
1	2-1/2" 150#
2	2-1/2" 150#
3	2-1/2" 150#
4	2-1/2" 150#
5	2-1/2" 150#
6	2-1/2" 150#
7	2-1/2" 150#
8	2-1/2" 150#
9	2-1/2" 150#
10	2-1/2" 150#
11	2-1/2" 150#
12	2-1/2" 150#
13	2-1/2" 150#
14	2-1/2" 150#
15	2-1/2" 150#
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18	2-1/2" 150#
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95	2-1/2" 150#
96	2-1/2" 150#
97	2-1/2" 150#
98	2-1/2" 150#
99	2-1/2" 150#
100	2-1/2" 150#

USEPA Method 21 Calibration Data

Test Location:
 Analyzer Make & Model

Erick
Tonawanda Coke
TVA-1000

Date
 Analyzer S/N

8-3-17
0623018663

	Zero Air	Span Gas (Methane in Air)
Manufacturer/Source	Airgas	Airgas
Cylinder ID	AIC280A	X02A199C801428
Expiration Date	1-22-2024	1-17-25
Concentration (ppmv)	< 10	502

• **Pre-test Inspection**

Hydrogen Tank Pressure (psig)	1800
Hydrogen Supply Pressure (psig)	11.5
Battery OK? (Y/N)	Y (8.0v)

• **Pre-test Calibration**

Run	1	2	3	Average
Zero Gas Reading (ppmv)	0.0	0.0	0.05	0.02
Span Gas Reading (ppmv)	516	497	495	501
% Diff. from cylinder ppmv				-0.20%
Response Time in Sec (Probe)	3	3	3	3
Response Time in Sec (Short Lance)	4	4	4	4
Response Time in Sec (Long Lance)	5	5	5	5

Average span gas reading (calibration precision) must be $\leq 10\%$ of the certified value.
 Response time is the time lapse from connecting the span gas, to the reading reaches 90% of the span concentration.
 Upscale Response Time must be ≤ 30 seconds

Performed by: B. SHAW Date and Time: 8-3-17 | 9:45am

• **Post-test Calibration Check**

Zero gas reading (ppmv)	0.40
Span gas reading (ppmv)	478
Drift (%)	4.59%

Performed by: B. SHAW Date and Time: 8-3-17 | 2:45pm

Comments/Notes: MONTHLY LDAR AUG 2017

On 8-3-17, I reviewed the monitoring data that I collected today and to the best of my knowledge and belief, the data accurately represent the monitoring that I performed today.

Signed B. Shaw Kenneth J. Shaw

Airgas USA, LLC

2009 BELLAIRE AVE
ROYAL OAK, MI 48067
248-399-8020
Airgas.com

CERTIFICATE OF ANALYSIS

Grade of Product: CEM-CAL ZERO

Customer: ERIE COKE CORP
Part Number: AJ CZ80A
Cylinder Number: LL11144
Laboratory: MIC - Royal Oak-32 (SAP) - MI
Analysis Date: Jan 22, 2016
Lot Number: 32-400659795-1

Reference Number: 32-400659795-1
Cylinder Volume: 81.0 CF
Cylinder Pressure: 2000 PSIG
Valve Outlet: 590

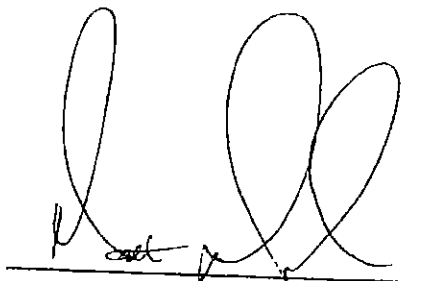
Expiration Date: Jan 22, 2024

ANALYTICAL RESULTS

Component	Requested Purity	Certified Concentration
AIR		
Carbon Dioxide	< 1.0 PPM	< 1.00 PPM
NOx	< 0.1 PPM	< .100 PPM
Sulfur Dioxide	< 0.1 PPM	< .100 PPM
THC	< 0.1 PPM	< .100 PPM
Percent Oxygen	20-21 %	20.60 %
Carbon Monoxide	< 0.5 PPM	< .500 PPM

Permanent Notes: Airgas certifies that the contents of this cylinder meet the requirements of 40 CFR 72.2

Impurities verified against analytical standards traceable to NIST by weight and/or analysis.



Approved for Release

SPAN
1-25-17

CERTIFICATE OF ANALYSIS

Grade of Product: CERTIFIED STANDARD-SPEC

Customer:	OAKWOOD	Reference Number:	32-400841801-1
Part Number:	X02AI99C801428	Cylinder Volume:	75.9 CF
Cylinder Number:	109520X	Cylinder Pressure:	2014 PSIG
Laboratory:	112 - Royal Oak-32 (SAP) - MI	Valve Outlet:	590
Analysis Date:	Jan 17, 2017		
Lot Number:	32-400841801-1		

Expiration Date: Jan 17, 2025

Product composition verified by direct comparison to calibration standards traceable to N.I.S.T. weights and/or N.I.S.T. Gas Mixture reference materials.

ANALYTICAL RESULTS

Component	Req Conc	Actual Concentration (Mole %)	Analytical Uncertainty
METHANE	500.0 PPM	502.0 PPM	+/- 2%
AIR	Balance		



A handwritten signature in black ink, appearing to be 'ROR', written over a horizontal line.

Approved for Release