INDIANA COMMUNITY ACTION ASSOCIATION
Taking Action. Improving Lives.

Gas Appliance Inspection Form

Revised Nov 12th, 2010

Audit Date: ____________

Job/Client Information

Client/Job number: ____________

Client name: ______________________________ Phone: Home: ____________

Work: ____________

Address: ______________________________ Cell: ____________

Client Interview: ______________________________

____

____

Initial Health and Safety Inspection

Ambient CO Level: ________ ppm **Gas odor:** Y ☐ N ☐ **Fire hazards:** Y ☐ N ☐

Mold or moisture issues: Y ☐ N ☐ H&S issues must be addressed before work is started

Equipment Information

Fuel type: ☐ Natural ☐ Propane **Forced air:** Y ☐ N ☐ **Btuh Input:** ____________

Furnace type: ☐ Draft hood ☐ 80% ☐ 90% ☐ Mobile home ☐ Other: ____________

Application: ☐ Up flow ☐ Down flow ☐ Horizontal ☐ Lowboy ☐ Package

Make: ____________ **Model:** ____________ **Serial:** ____________

Furnace Location (CAZ): ____________ **Water heater:** ☐ Gas ☐ Electric

WH Location (CAZ): ____________ **Btuh input:** ____________

This Form and associated tasks must be completed by qualified auditors or heating technicians

Interim column is only completed to verify repairs or requested changes

Interim column must be completed by a qualified technician or auditor

Repairs or furnace replacement must be inspected and signed off before air sealing and insulating

Health and safety repairs needed may be listed on page 7 of form

Is this the final inspection of a job with a new furnace installed? Y ☐ N ☐

If yes, only the CAZ Depressurization, Combustion Safety and Temp Rise sections need to be completed

Other appropriate information will be entered on the New Furnace Installation Inspection form

Gas Piping

	Auditor Y	Auditor N	Tech Y	Tech N	Interim Y	Final Y
Has entire gas system been leak checked and free of leaks?	☐	☐	☐	☐	☐	☐
Does gas system have proper materials and configuration?	☐	☐	☐	☐	☐	☐

Electrical Safety

	Auditor Y	Auditor N	Tech Y	Tech N	Interim Y	Final Y
Is the polarity correct?						
Is the furnace properly grounded?						
Is there a switch or method of disconnect near unit?						

Blower, Burners, Coil and Heat Exchanger

	N/A	Auditor		Tech		Interim	Final
Are there any cracks or holes in the heat exchanger?							
Burners and heat exchanger clean and free of corrosion?							
Condensing secondary heat exhanger clean?	N/A ☐						
Blower assembly and motor clean and serviced?							
Is the A/C coil clean?	N/A ☐						
Is the A/C coil drain system in good working condition?							

If a crack or hole is found, the heat exchanger or furnace must be replaced!

Vent System

Describe what will be the final vent system(s): (e.g. height, connector rises, lateral lengths, diameters - elbows, materials) Furnace: ____________________

Water heater: ____________________

Common vent: ____________________

Other: ____________________

Chimneys

	N/A	Auditor Y	Auditor N	Tech Y	Tech N	Interim Y	Final Y
Has the masonry chimney been re-lined?	N/A ☐						

(Must be lined if: On an outside wall, clay liner cracked, misaligned or missing, interior area exceeds 7 times rule, 80% furnace vented by itself)

	Auditor Y	Auditor N	Tech Y	Tech N	Interim Y	Final Y
Is the top wash sealed and proper cap in place?						
Are chimney penetrations sealed correctly?						

Type B-Vent Systems

	Auditor Y	Auditor N	Tech Y	Tech N	Interim Y	Final Y
Is the vent system of proper materials and configuration?						
Is the vent system clear of blockage? (open and inspect)						
Has the vent system been inspected in the attic also?						

Condensing Furnace Vent Systems

	Auditor Y	Auditor N	Tech Y	Tech N	Interim Y	Final Y
Are vent and combustion air pipes both piped to outside?						
Is the vent system of proper materials and configuration?						

Ventilation and Combustion Air

Pre weatherization equipment inputs and available combustion air:

Total Btuh of natural draft equipment in CAZ: ________ Btuh **Divided by 20** ________ cu.ft.
Total Btuh of draft induced equipment in CAZ: ________ Btuh **Divided by 26** ________ cu.ft.
Add the cu.ft. of these two lines together. This is the minimum volume needed: ________ cu.ft.
Calculate volume (L x W x H) that communicates with the CAZ. Available volume ________ cu.ft.

Projected combustion air requirements after modifications are made or equipment is replaced

Total Btuh of natural draft equipment in CAZ: ________ Btuh **Divided by 20** ________ cu.ft.
Total Btuh of draft induced equipment in CAZ: ________ Btuh **Divided by 26** ________ cu.ft.
Add the cu.ft. of these two lines together. This is the minimum volume needed: ________ cu.ft.
Calculate volume (L x W x H) that communicates with the CAZ. Available volume ________ cu.ft.

Furnace Filter

	Auditor Y	Auditor N	Tech Y	Tech N	Interim Y	Final Y
Is the furnace filter clean and properly supported?	☐	☐	☐	☐	☐	☐
Is the filter slot or door in place and sealed?	☐	☐	☐	☐	☐	☐
Was the client educated on care and maintenance?	☐	☐	☐	☐	☐	☐

Filter size: ________ X ________ X ________

Duct System

	Auditor		Tech		Interim	Final
Have all open returns or disconnects been repaired?	☐	☐	☐	☐	☐	☐
Have ducts in unconditioned spaces been sealed/insulated?	☐	☐	☐	☐	☐	☐
Has return duct been sealed on remote filter? **N/A** ☐	☐	☐	☐	☐	☐	☐

Duct sealing done by others: ☐

Thermostat

	Auditor		Tech		Interim	Final
Is the thermostat location functional?	☐	☐	☐	☐	☐	☐
Is the stat level and hole sealed behind the sub base?	☐	☐	☐	☐	☐	☐
Is the heat anticipator or cycle rate set properly?	☐	☐	☐	☐	☐	☐
Record heat anticipator setting: **N/A** ☐	______ **A**		______ **A**		______ **A**	______ **A**

Water Heater

	Auditor		Tech		Interim	Final
Is the water heater level and free of leaks?	☐	☐	☐	☐	☐	☐
Is the T & P relief valve installed and piped properly?	☐	☐	☐	☐	☐	☐

Measure the water temperature at nearest faucet. Set no higher than 120 degrees

Audit	Technician or Interim inspection	Final
______ deg. Adjusted? ☐Y ☐N	______ deg. Adjusted? ☐Y ☐N	______ deg.

CAZ Depressurization Testing

	N/A	Auditor	Tech	Interim	Final
Turn all combustion appliances off or to pilot		☐	☐	☐	☐
Remove forced air furnace filter	N/A ☐	☐	☐	☐	☐
Close all exterior doors, windows and other openings		☐	☐	☐	☐
Close all fireplace and wood stove dampers	N/A ☐	☐	☐	☐	☐
Turn on dryer and all exhaust fans (clean lint trap)		☐	☐	☐	☐
Open all supply registers (close supplies in CAZ)	N/A ☐	☐	☐	☐	☐
Interior door position:					
Fan Off **- Close doors except to rooms with an exhaust appliance**		☐	☐	☐	☐
Fan On **- Smoke doors to rooms with an exhaust appliance**		☐	☐	☐	☐
Blower door exhausting 300 CFM for working fireplace	N/A ☐	☐	☐	☐	☐
Set-up gauge to read CAZ pressure with reference to outside		☐	☐	☐	☐

Determine Worst Case Configuration

	Auditor		Tech			Interim			Final		
CAZ Door:	**Open**	**Closed**		**Open**	**Closed**		**Open**	**Closed**		**Open**	**Closed**
Fan Off	____	____	**Off**	____	____	**Off**	____	____	**Off**	____	____
Fan On*	____	____	**On**	____	____	**On**	____	____	**On**	____	____
Outdoor temp.	____		**OAT**	____		**OAT**	____		**OAT**	____	

**** Reposition interior doors as needed***

Water Heater Combustion Safety Test

Fire the water heater under "worst case"	**Auditor**	**Tech**	**Interim**	**Final**
	Y N	**Y N**	**Y**	**Y**
Establishes flow in the vent within 5 seconds?	☐ ☐	☐ ☐	☐	☐
Spillage disappears within 2 minutes?	☐ ☐	☐ ☐	☐	☐
Record draft pressure after 5 minutes	____ Pa	____ Pa	____ Pa	____ Pa
	____ "w.c	____ "w.c	____ "w.c	____ "w.c
Record CO in flue gas after 5 minutes - PPM	____ ppm	____ ppm	____ ppm	____ ppm

Furnace Combustion Safety Test

Fire the Furnace (water heater still operating)	**Auditor**	**Tech**	**Interim**	**Final**
Establishes flow in the vent within 5 seconds?	☐ ☐	☐ ☐	☐	☐
Spillage disappears within 2 minutes? N/A ☐	☐ ☐	☐ ☐	☐	☐
Re-test draft on water heater after furnace	____ Pa	____ Pa	____ Pa	____ Pa
flow is established and spillage disappears:	____ "w.c	____ "w.c	____ "w.c	____ "w.c
Did the heating appliance operation cause			**N**	**N**
spillage or a reduction in draft on any other unit?	☐ ☐	☐ ☐	☐	☐
Record furnace draft pressure after 5 minutes	____ Pa	____ Pa	____ Pa	____ Pa
	____ "w.c	____ "w.c	____ "w.c	____ "w.c
Furnace CO in flue gas after 5 minutes - PPM	____ ppm	ppm	____ ppm	____ ppm

CO in each cell on draft hood furnace ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Furnace Operational Testing

	Auditor	Tech	Interim	Final
Supply air temperature	____ °F.	____ °F.	____ °F.	____ °F.
Return air temperature	____ °F.	____ °F.	____ °F.	____ °F.
Temperature rise	____ °F.	____ °F.	____ °F.	____ °F.
Temperature rise: ____ Min. ____ Max.	Y N	Y N	Y	Y
Is the temp. rise within manufacturer specs.?	☐ ☐	☐ ☐	☐	☐
Is pilot safety system operational? N/A ☐	☐ ☐	☐ ☐	☐	☐
Did the limit switch function properly?	☐ ☐	☐ ☐	☐	☐
Record the plenum temperature when tripped:	____ °F.	____ °F.	____ °F.	____ °F.
Record and adjust fan off temperature	____ °F.	____ °F.	____ °F.	____ °F.

Optional: Check firing rate of appliance - required if high CO or unusual temperature rise exists

*** clock meter for natural gas** *** check manifold pressure for propane**

*** 1/4 ft. dial - time 4 revs/do not divide - use 1 ft column** *** 2 ft. dial - time 1 turn - use 2 ft. column**

Dial timed: ☐ 1/4 cu.ft. ☐ 1/2 cu.ft. ☐ 1 ft. ☐ 2 ft. Appliance being tested: ____________

	Auditor	Tech	Interim	Final
Seconds to turn 4 revolutions	____ sec.	____ sec.	____ sec.	____ sec.
Total seconds divided by 4	____ sec.	____ sec.	____ sec.	____ sec.
Cubic feet/hr from clocking table	____ cu.ft.	____ cu.ft.	____ cu.ft.	____ cu.ft.
Btu content per cu.ft. of gas (from gas supplier)	________ Btu/cubic foot			
Clocked input - Btuh - (Cu. ft./hr X Btu/cu. ft.)	____________			

Input must be within 5 % of rated input without going over

	Auditor	Tech	Interim	Final
Furnace gas manifold pressure	____ "w.c.	____ "w.c.	____ "w.c.	____ "w.c.
Manufacturers listed manifold pressure	____ "w.c.			

Additional Appliance or CAZ

Ventilation and Combustion Air - CAZ 2

Combustion air calculations included with other appliances ☐

Pre weatherization equipment inputs and available combustion air:

Total Btuh of natural draft equipment in CAZ: ________ Btuh **Divided by 20** ________ cu.ft.

Total Btuh of draft induced equipment in CAZ: ________ Btuh **Divided by 26** ________ cu.ft.

Add the cu.ft. of these two lines together. This is the minimum volume needed: ________ cu.ft.

Calculate volume (L x W x H) that communicates with the CAZ. Available volume ________ cu.ft.

Projected combustion air requirements after modifications are made or equipment is replaced

Total Btuh of natural draft equipment in CAZ: ________ Btuh **Divided by 20** ________ cu.ft.

Total Btuh of draft induced equipment in CAZ: ________ Btuh **Divided by 26** ________ cu.ft.

Add the cu.ft. of these two lines together. This is the minimum volume needed: ________ cu.ft.

Calculate volume (L x W x H) that communicates with the CAZ. Available volume cu.ft.

Additional appliance or CAZ (continued)

CAZ 2

	N/A	Auditor	Tech	Interim	Final
CAZ Depressurization test included with other appliances ☐					
Turn all combustion appliances off or to pilot		☐	☐	☐	☐
Remove forced air furnace filter	N/A ☐	☐	☐	☐	☐
Close all exterior doors, windows and other openings		☐	☐	☐	☐
Close all fireplace and wood stove dampers	N/A ☐	☐	☐	☐	☐
Turn on dryer and all exhaust fans (clean lint trap)		☐	☐	☐	☐
Open all supply registers (close supplies in CAZ)	N/A ☐	☐	☐	☐	☐
Interior door position:					
Fan Off **- Close doors except to rooms with an exhaust appliance**		☐	☐	☐	☐
Fan On **- Smoke doors to rooms with an exhaust appliance**		☐	☐	☐	☐
Blower door exhausting 300 CFM for working fireplace	N/A ☐	☐	☐	☐	☐
Set-up gauge to read CAZ pressure with reference to outside		☐	☐	☐	☐

Determine Worst Case Configuration - CAZ 2

	Auditor		Tech		Interim		Final	
CAZ Door:	**Open**	**Closed**	**Open**	**Closed**	**Open**	**Closed**	**Open**	**Closed**
Fan Off	____	____	**Off** ____	____	**Off** ____	____	**Off** ____	____
Fan On*	____	____	**On** ____	____	**On** ____	____	**On** ____	____
Outdoor temp.	____		**OAT** ____		**OAT** ____		**OAT** ____	

**** Reposition interior doors as needed***

Additional Appliance Testing

Type of Appliance: ____________________

	N/A	Auditor	Tech	Interim	Final
		Y N	Y N	Y	Y
Establishes flow in the vent within 5 seconds?		☐ ☐	☐ ☐	☐	☐
Spillage disappears within 2 minutes?	N/A ☐	☐ ☐	☐ ☐	☐	☐
				N	N
Did the additional appliance operation cause spillage or a reduction in draft on any other unit?		☐ ☐	☐ ☐	☐	☐
Record draft pressure after 5 minutes		____ Pa	____ Pa	____ Pa	____ Pa
		____ "w.c	____ "w.c	____ "w.c	____ "w.c
Record CO in flue gas after 5 minutes - PPM		ppm	ppm	ppm	ppm
CO in each cell on draft hood furnace		☐☐☐☐☐	☐☐☐☐☐	☐☐☐☐☐	☐☐☐☐☐
Temperature rise	N/A ☐	____ °F.	____ °F.	____ °F.	____ °F.
		Y N	Y N	Y	Y
Is the temp. rise within manufacturer specs.?		☐ ☐	☐ ☐	☐	☐
Is pilot safety system operational?	N/A ☐	☐ ☐	☐ ☐	☐	☐
Did limit switch function properly?	N/A ☐	☐ ☐	☐ ☐	☐	☐
Record/Adjust fan "off" temperature	N/A ☐	°F.	°F.	°F.	°F.
Clean and Tune provided as needed?	N/A ☐	☐ ☐	☐ ☐	☐	☐

Mechanical Work Needed

		Completed	
1	______________________	Y ☐	N ☐
2	______________________	Y ☐	N ☐
3	______________________	Y ☐	N ☐
4	______________________	Y ☐	N ☐
5	______________________	Y ☐	N ☐
6	______________________	Y ☐	N ☐
7	______________________	Y ☐	N ☐
8	______________________	Y ☐	N ☐
9	______________________	Y ☐	N ☐
10	______________________	Y ☐	N ☐

Additional Comments: ______________________

Initial audit performed by: ______________________ Date: __________

Mechanical work performed by: ______________________ Date: __________

Mechanical inspection performed by: ______________________ Date: __________

Final inspection performed by: ______________________ Date: __________

Agency reviewer: ______________________ Date: __________

INCAA Pg. 1

Seconds for one revolution	Gas Meter Dial Used: One Half cu. Ft.	One cu. Ft.	Two cu. Ft.	Five cu. Ft.	Ten cu. ft.
	Cubic Feet Per Hour				
10	180	360	720	1800	3600
11	164	327	655	1634	3272
12	150	300	600	1500	3000
13	138	277	555	1385	2770
14	129	257	514	1286	2572
15	120	240	480	1200	2400
16	112	225	450	1125	2250
17	106	212	424	1059	2118
18	100	200	400	1000	2000
19	95	189	379	947	1894
20	90	180	360	900	1800
21	86	171	343	857	1714
22	82	164	327	818	1636
23	78	157	313	783	1566
24	75	150	300	750	1500
25	72	144	288	720	1440
26	69	138	277	692	1384
27	67	133	267	667	1334
28	64	129	257	643	1286
29	62	124	248	621	1242

INCAA Pg. 3

Seconds for one revolution	Gas Meter Dial Used: One Half cu. Ft.	One cu. Ft.	Two cu. Ft.	Five cu. Ft.	Ten cu. ft.
	Cubic Feet Per Hour				
50	36	72	144	360	720
51	35	71	141	353	706
52	35	69	138	346	692
53	34	68	136	340	680
54	33	67	133	333	666
55	33	65	131	327	654
56	32	64	129	321	642
57	32	63	126	316	632
58	31	62	124	310	620
59	30	61	122	305	610
60	30	60	120	300	600
62	29	58	116	290	580
64	29	56	112	281	562
66	29	54	109	273	546
68	28	53	106	265	530
70	26	51	103	257	514
72	25	50	100	250	500
74	24	48	97	243	486
76	24	47	95	237	474
78	23	46	92	231	462

INCAA Pg. 2

Seconds for one revolution	Gas Meter Dial Used: One Half cu. Ft.	One cu. Ft.	Two cu. Ft.	Five cu. Ft.	Ten cu. ft.
	Cubic Feet Per Hour				
30	60	120	240	600	1200
31	58	116	232	581	1162
32	56	113	225	563	1126
33	55	109	218	545	1090
34	53	106	212	529	1058
35	51	103	206	514	1028
36	50	100	200	500	1000
37	49	97	195	486	972
38	47	95	189	474	948
39	46	92	185	462	924
40	45	90	180	450	900
41	44	88	176	440	880
42	43	86	172	430	860
43	42	84	167	420	840
44	41	82	164	410	820
45	40	80	160	400	800
46	39	78	157	391	782
47	38	77	153	383	766
48	37	75	150	375	750
49	37	73	147	367	734

INCAA Pg. 4

Seconds for one revolution	Gas Meter Dial Used: One Half cu. Ft.	One cu. Ft.	Two cu. Ft.	Five cu. Ft.	Ten cu. ft.
	Cubic Feet Per Hour				
80	22	45	90	225	450
82	22	44	88	220	440
84	21	43	86	214	428
86	21	42	84	209	418
88	20	41	82	205	410
90	20	40	80	200	400
94	19	38	76	192	384
98	18	37	74	184	368
100	18	36	72	180	360
104	17	35	69	173	346
108	17	33	67	167	334
112	16	32	64	161	322
116	15	31	62	155	310
120	15	30	60	150	300
130	14	28	55	138	276
140	13	26	51	129	258
150	12	24	48	120	240
160	11	22	45	113	226
170	11	21	42	106	212
180	10	20	40	100	200

Minimum Draft Pressure Requirements

Outdoor Temperature	Inches of water column	Pascals
Greater than 80 degrees F	Negative 0.005 " w.c.	Negative 1 Pa
Between 60 and 80 degrees F.	Negative 0.008" w.c.	Negative 2 Pa
Between 40 and 60 degrees F.	Negative 0.012" w.c.	Negative 3 Pa
Between 20 and 40 degrees F.	Negative 0.016" w.c.	Negative 4 Pa
Less than 20 degrees F.	Negative 0.02" w.c.	Negative 5 Pa