MBPA Home Performance
FIELD DATA COLLECTION FORM

Test Date: _____

Customer Information

Name					
Address					
City		State		Zip	
Phone:	( )	Email:			
Electric Provider		Account Number			
Heating Fuel Provider		Account Number			

Customer Top Concerns:

1.	
2.	
3.	

Zero CO detector outside (Follow manufactures instructions) **Record outdoor temperature**: _____ F

General Building Data

Building Age		# of Occupants		Building Type (check one)	☐ Single Family
# of Stories		Ceiling Height			☐ Duplex
Sq. Ft. Conditioned Floor Area		House Volume			☐ Split Level
					☐ Mobile Home
Rental Unit: ☐ Yes	☐ No				
Landlord Name:					
Landlord Address:					

Weather Condition:

Foundation Type:	
Siding Type:	

Blower Door Test Results & Air Leakage Sites

Pre Blower Door Test		CFM50	Post Blower Door Test		CFM 50
Air Changes Per Hour @50 Pa (CFM50*60/Volume)			Pre		Post

Air Leakage Sites (check all that apply):

☐ Chimneys	☐ Soil Stacks	☐ Electrical Penetrations
☐ Plumbing Penetrations	☐ Pocket Doors	☐ Tongue & Groove Ceiling
☐ Mechanical Chase	☐ Void Around Stairwell	☐ Band Joist
☐ Windows	☐ Sill Plate	☐ Drop Soffit
☐ Porch Ceiling	☐ Recessed lights _____ #	☐ Open Partition Wall at Top Plate
☐ Other:		
☐ Other:		

Insulation Values

Insulation Area	Sq Ft to Insulate	Pre R-Value	Post R-Value	Insulation Area	Sq Ft to Insulate	Pre R-Value	Post R-Value
Open Joist Attic				Sidewalls			
Closed Floor Attic				Int. Foundation			
Sloped Ceiling				Ext. Foundation			
Gable End Walls				Floor			
Knee Wall Attic				Mobile Home Floor			
Cathedral				Mobile Home Wall			
Sill Box				Mobile Home Ceiling			
Other				HUD label:			
				MN Pre-Fab Seal:			

Equipment verification:

Htg 1: _____ Model #:_____ AFUE:_____ ECM___
Htg 2: _____ Model #:_____ AFUE:_____ ECM___
A/C 1: _____ Model #:_____ SEER:_____Tons____
Evaporator Coil #:_____ Condenser Coil #:_____
A/C 2: _____ Model #:_____ SEER:_____Tons ____
Evaporator Coil #:_____ Condenser Coil #:_____
Water Heater: _____ Model #:_____ EF:_____

Heating Equipment (Existing Unit)

Heating thermostat setpoint _____ setback _____ Hours:___
Cooling thermostat setpoint _____ setback _____ Hours:___

Heating System Fuel Type: ☐ Natural Gas ☐ Propane (LP) ☐ Oil ☐ Electric ☐ Other:

Existing Heating System Type (check one): ☐ Forced Air ☐ Boiler (steam) ☐ Boiler (water)

☐ Heat Pump ☐ Wall Furnace ☐ Room Space Heater ☐ Electric Baseboard ☐ Other:

Existing Heating System (check One): ☐ Atmospheric ☐ Condensing ☐ Induced Draft

Existing Unit Age:	Existing AFUE: %	Recommend Replacement? ☐ Yes ☐ No	Fuel Switch Opportunity? ☐ Yes ☐ No

*If an un-vented fuel fired room space heater is operable in a conditioned space, work cannot proceed under Home Performance with ENERGY STAR.

Water Heating Equipment (Existing Unit)

Hot Water measured temperature _____F

Water Heater Fuel Type ☐ Natural Gas ☐ Propane (LP) ☐ Oil ☐ Electric ☐ Other:

Water Heater Type (check one): ☐ Atmospheric ☐ Power Vented ☐ Electric ☐ Other:

Existing Unit Age:	Existing Gallons	Recommend Replacement ☐ Yes ☐ No	Fuel Switch Opportunity? ☐ Yes ☐ No

Optional Test: Pressure Drop Across A Coil

Pressure Drop: w.c. or PA		Pressure Drop: w.c. or PA	
Temperature:		Temperature:	

Combustion Safety Testing

Test Setup Procedures

Turn combustion appliance to pilot (Preventing operation during set-up)
Record house ambient CO level. _____ ppm
Put house in winter condition. (Including latching or locking windows)
Install hose; CAZ WRT (with respect to) Outside.
Check furnace filter, replace if dirty when possible.
Close all operable vents (Example -- Fireplace damper).
Clean lint filter in dryer.

Combustion Appliance Zone Pressure / (CAZ) Pressures (Pa.)

	Pre test	Post test
1. Baseline test: (Interior doors open, exhaust appliances off)		
2. Turn on all exhaust appliances in Home		
3. Turn on furnace air handler		

4. Close interior doors and as you do so measure the pressure difference between main body and the room you are closing off. (If neg. leave door open, if pos. keep door closed.)

5. Close basement door (or door to CAZ) and determine position based on CAZ WRT outside (If the reading becomes more negative – leave door closed. If reading becomes more positive, open door).

6. Check CAZ wrt outside, determine if furnace fan contributes to depressurization.

7. Record worst case depressurization.		

NOTES:
Make observation of any supply or return grills in the CAZ
Inspect integrity and design of venting system
Check for blocked supply or return registers
Remember to check for backdrafting at diverter of water heater when running furnace in combined test.
Recommend a CO detector in all homes when atmospherically vented appliances, gas ranges, or attached garages are present

<u>Backdraft and CO testing results of atmospherically vented appliances</u>

Cycle combustion appliances for 3min. then record, Draft, CO and if any Spillage occurs.

Appliance	Draft Test				Carbon Monoxide				Spillage Y/N			
	Stand Alone Test		Combined Test		Stand Alone Test		Combined Test		Stand Alone Test		Combined Test	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Water Heater												
Heating System												
Other												

A combined test cycling heating system and water heater must be performed if both are tied together before the masonry chimney. Induced draft furnaces do not have to be tested for draft or CO but must be fired for the combined test.

Combustion Safety Test Action Levels - Carbon Monoxide level is tested before the diverter

There are very specific references in the Mechanical Code as to who can shut down a heating system, unless the local authority has listed an Energy Auditor as someone who can do this, the action is not allowed. Notice of a heating system or Domestic Hot Water problem should be given to the local authority immediately.

CO test results	And/Or	Draft Test Results	Action
>0	And	Fails	Work may not proceed. Arrangements must be made to correct drafting problems. Disclosure form must be signed
0 - 25ppm	And	Passes	System is OK
26 – 99 ppm	And	Passes	Recommend a clean and tune
>100 ppm	Or	Fails	Arrangements must be made to correct high C0 levels and/or venting problem before work can proceed. Disclosure form must be signed
>200ppm	And	Passes	Work may not proceed until the system is serviced and the problem is corrected. Shut off equipment Disclosure form must be signed

Minimum Acceptable Draft Readings

Acceptable Draft Test Readings -- Outdoor Temperature:						
F	<20	21-40	41-60	61-80	>80	F
pa	-5	-4	-3	-2	-1	Pa
w.c.i.	-.02	-.016	-.012	-.008	-.004	w.c.i.

pa = pascals
w.c.i. = inches of water column

House depressurization: *Record pressure in main body (w.r.t. outside) with a sequential series of mechanical fans operating.*

Type	Baseline	Kit. exhaust	Bath exhaust	Clothes dryer	Air handler	HRV/ERV	Other
(+/-) Pressure							

☐ **Unable to perform test due to:** _____

House Depressurization Limits (HDL)			
Appliance	Chimney Height (ft)	Unlined Chimneys on Exterior Wall	Metal Lined, Insulated or Interior Chimneys
Gas Fired Furnace	13 or less	5 pa	5 pa
Boiler, DHW Heater	14 – 20	5 pa	6 pa
	21 +	5 pa	7 pa
Oil Fired Furnace	13 or less	4 pa	4 pa
Boiler, DHW Heater	14 – 20	4 pa	5 pa
	21 +	4 pa	6 pa
Fireplace	N/A	3 pa	4 pa
(From: CMCH Chimney Safety Users' Manual (Reference #4 in Appendix A) Note: Under summertime conditions, actual HDL's may be lower than shown above.			

Location	Tested flow	Ventilation equipment type	Rated flow	Notes
		Type: ☐ **Exhaust fan** ☐ **ERV/HRV** ☐ **Central Ex.**		
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		Type: ☐ **Exhaust fan** ☐ **ERV/HRV** ☐ **Central Ex.**		

Utility Billing Data:

1. Collect and record measured energy use data and influential variables for the pre-retrofit period. At a minimum, include the following for each month for which energy use data are collected and recorded:

    a. Monthly average outdoor temperature from the weather station (NOAA) most representative of the actual building site
    b. Monthly heating degree days (HDD) and cooling degree days (CDD) or cooling degree hours (CDH), as appropriate, from the weather station (NOAA) most representative of the actual building site.