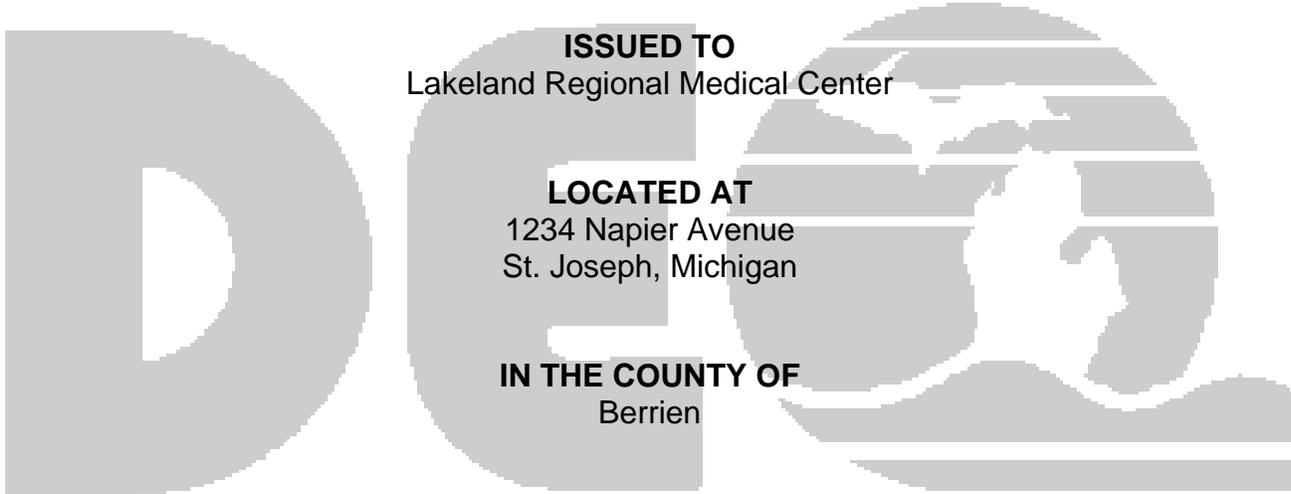


**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION**

November 17, 2009

**PERMIT TO INSTALL  
161-09**



**ISSUED TO**  
Lakeland Regional Medical Center

**LOCATED AT**  
1234 Napier Avenue  
St. Joseph, Michigan

**IN THE COUNTY OF**  
Berrien

**STATE REGISTRATION NUMBER**  
C5704

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203:

**July 10, 2009**

DATE PERMIT TO INSTALL APPROVED:

**November 17, 2009**

SIGNATURE:

DATE PERMIT VOIDED:

SIGNATURE:

DATE PERMIT REVOKED:

SIGNATURE:

**PERMIT TO INSTALL**

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**Common Abbreviations / Acronyms**

<b>Common Acronyms</b>		<b>Pollutant/Measurement Abbreviations</b>	
AQD	Air Quality Division	BTU	British Thermal Unit
ANSI	American National Standards Institute	°C	Degrees Celsius
BACT	Best Available Control Technology	CO	Carbon Monoxide
CAA	Clean Air Act	dscf	Dry standard cubic foot
CEM	Continuous Emission Monitoring	dscm	Dry standard cubic meter
CFR	Code of Federal Regulations	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H <sub>2</sub> S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	hp	Horsepower
GC	General Condition	lb	Pound
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	NO <sub>x</sub>	Oxides of Nitrogen
MDEQ	Michigan Department of Environmental Quality	PM	Particulate Matter
MIOSHA	Michigan Occupational Safety & Health Administration	PM10	PM less than 10 microns diameter
MSDS	Material Safety Data Sheet	PM2.5	PM less than 2.5 microns diameter
NESHAP	National Emission Standard for Hazardous Air Pollutants	pph	Pound per hour
NSPS	New Source Performance Standards	ppm	Parts per million
NSR	New Source Review	ppmv	Parts per million by volume
PS	Performance Specification	ppmw	Parts per million by weight
PSD	Prevention of Significant Deterioration	psia	Pounds per square inch absolute
PTE	Permanent Total Enclosure	psig	Pounds per square inch gauge
PTI	Permit to Install	scf	Standard cubic feet
RACT	Reasonably Available Control Technology	sec	Seconds
ROP	Renewable Operating Permit	SO <sub>2</sub>	Sulfur Dioxide
SC	Special Condition	THC	Total Hydrocarbons
SCR	Selective Catalytic Reduction	tpy	Tons per year
SRN	State Registration Number	µg	Microgram
TAC	Toxic Air Contaminant	VOC	Volatile Organic Compounds
TEQ	Toxicity Equivalence Quotient	yr	Year
VE	Visible Emissions		

\* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

### GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
  - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
  - b) A visible emission limit specified by an applicable federal new source performance standard.
  - c) A visible emission limit specified as a condition of this Permit to Install.
  
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2). **(R 336.1370)**
  
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

**SPECIAL CONDITIONS**

**EMISSION UNIT SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

<b>Emission Unit ID</b>	<b>Emission Unit Description (Process Equipment &amp; Control Devices)</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EUBOILER1	Cleaver-Brooks boiler model D-42, burner model 400-BR, unit #WL-2472 Heat Input Capacity: 33.975 MMBtu/hour Fuel: Natural Gas and No. 2 Fuel Oil Oil Fire Rate: 242 gallons/hour	1975/ November 25, 2002/ June 8, 2006/ November 17, 2009	FGBOILERS
EUBOILER2	Cleaver-Brooks boiler model D-42, burner model 400-BR, unit #WL-2473 Heat Input Capacity: 33.975 MMBtu/hour Fuel: Natural Gas and No. 2 Fuel Oil Oil Fire Rate: 242 gallons/hour	1975/ November 25, 2002/ June 8, 2006/ November 17, 2009	FGBOILERS
EUBOILER3	Bryan Steam LLC - RW 2100 Boiler low-NOx burners and flue gas recirculation Heat Input Capacity: 25.2 MMBtu/hour Fuel: Natural Gas and No. 2 Fuel Oil Oil Fire Rate: 180 gallons/hour	November 17, 2009	FGBOILERS
EUBOILER4	Bryan Steam LLC - RW 2100 Boiler low-NOx burners and flue gas recirculation Heat Input Capacity: 25.2 MMBtu/hour Fuel: Natural Gas and No. 2 Fuel Oil Oil Fire Rate: 180 gallons/hour	November 17, 2009	FGBOILERS
EUBOILER5	Bryan Steam LLC - RW 2100 Boiler low-NOx burners and flue gas recirculation Heat Input Capacity: 25.2 MMBtu/hour Fuel: Natural Gas and No. 2 Fuel Oil Oil Fire Rate: 180 gallons/hour	November 17, 2009	FGBOILERS

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290.

**FLEXIBLE GROUP SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

<b>Flexible Group ID</b>	<b>Flexible Group Description</b>	<b>Associated Emission Unit IDs</b>
FGBOILERS	Five natural gas and No. 2 fuel oil fired boilers. Only three boilers may run at the same time. <b>NOTE:</b> EUBOILER1 and EUBOILER2 are currently operating at the LRMC facility. LRMC intends to maintain and operate three boilers. They will accomplish this by shutting down EUBOILER1 when EUBOILER4 is installed and EUBOILER2 when EUBOILER5 is installed.	EUBOILER1, EUBOILER2, EUBOILER3, EUBOILER4 and EUBOILER5

**The following conditions apply to: FGBOILERS**

**I. EMISSION LIMITS**

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NOx	47.3 tpy	12-month rolling time period as determined at the end of each calendar month	FGBOILERS	GC 13 and SC VI. 1. & 2.	R 336.1205(1)(a) & (3), R 336.2803, R 336.2804, 40CFR52.21(c) &(d)
2. NOx – natural gas	0.03 #/MM Btu	Test Protocol	EUBOILER3, EUBOILER4 and EUBOILER5	GC 13	R 336.1205(1)(a) & (3), R 336.2803, R 336.2804, 40CFR52.21(c) &(d)
3. NOx – fuel oil	0.14 #/MM Btu	Test Protocol	EUBOILER3, EUBOILER4 and EUBOILER5	GC 13	R 336.1205(1)(a) & (3), R 336.2803, R 336.2804, 40CFR52.21(c) &(d)
4. SO2	33.6 tpy	12-month rolling time period as determined at the end of each calendar month	FGBOILERS	GC 13 and SC VI. 1. & 3.	R 336.1205(1)(a) & (3)

**II. MATERIAL LIMITS**

- The permittee shall only burn natural gas or No. 2 fuel oil in FGBOILERS. **(R 336.1205(1)(a) & (3))**
- The fuel usage for FGBOILERS shall not exceed 4,730,400 gallons of fuel oil per 12-month rolling time period as determined at the end of each calendar month, or as determined by the following equation. **(R 336.1205(1)(a) & (3))**

$$\frac{(\text{FO usage} \times \text{FO Heating Value} \times \text{FO Emission Factor}) + (\text{NG usage} \times \text{NG Heating Value} \times \text{NG Emission Factor})}{2000 \text{ lb/ton}} \leq 47.3 \text{ TPY NOx}$$

Where,

- FO usage = amount of fuel oil used in gallons per 12-month rolling time period
- FO Heating Value = 140,000 Btu/gallon
- FO Emission Factor = 0.14 lb/MMBtu
- NG Usage = amount of natural gas used in cubic feet per 12-month rolling time period
- NG Heating Value = 1020 Btu/scf
- NG Emission Factor (EUBOILER1 and EUBOILER2) = 0.14 lb/MMBtu
- NG Emission Factor (EUBOILER3, EUBOILER4 and EUBOILER5) = 0.03 lb/MMBtu

- The sulfur content of the fuel oil shall not exceed 0.10 percent by weight. **(R 336.1205(1)(a) & (3), R 336.1401)**

**III. PROCESS/OPERATIONAL RESTRICTIONS**

- The permittee shall not operate more than three boilers at any one time in FGBOILERS. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

2. The permittee shall obtain the following information from the fuel oil supplier for each shipment of fuel oil for EUBOILER3, EUBOILER4 and EUBOILER5:
  - a. The name of the oil supplier;
  - b. A certification from the oil supplier that the oil complies with the specifications under the definition of distillate oil in 40 CFR 60.41(c); and
  - c. The sulfur content of the oil.  
**(R 336.1205(1)(a) and (3), 40 CFR 60.42(c)(h))**
3. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and SUBPART Dc, as they apply to EUBOILER3, EUBOILER4 and EUBOILER5. **(40 CFR Part 60 Subparts A & SUBPART Dc)**

#### **IV. DESIGN/EQUIPMENT PARAMETERS**

1. The permittee shall not operate EUBOILER3, EUBOILER4 and EUBOILER5 unless the low-NO<sub>x</sub> burners and flue gas recirculation systems are installed, maintained, and operated in a satisfactory manner. **(R 336.1205, R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1702, R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d), 40 CFR Part 60 Subpart Dc)**

#### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. N/A

#### **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years and made available to the Department upon request. **(R 336.1201(3))**

1. The permittee shall keep monthly natural gas and fuel oil usage records, in a format acceptable to the AQD District Supervisor, indicating the amount of natural gas used, in cubic feet, and fuel oil used, in gallons, on a calendar month basis. The records must indicate the total amount of natural gas and fuel oil used in each boiler in FGBOILERS. **(R 336.1205(3))**
2. The permittee shall calculate the NO<sub>x</sub> emission rates from FGBOILERS for each calendar month and 12-month rolling time period, using fuel usage records and an emission factor (AP-42, manufacturer's or test data) that is approved by the AQD District Supervisor. **(R 336.1205(3))**
3. The permittee shall calculate the SO<sub>2</sub> emission rates from FGBOILERS for each calendar month and 12-month rolling time period, using fuel usage records, sulfur content records and an emission factor (AP-42, manufacturer's or test data) that is approved by the AQD District Supervisor. **(R 336.1205(3))**
4. The permittee shall maintain a complete copy of the sulfur content, as supplied by the fuel oil vendor, for each shipment of fuel used in each boiler in FGBOILERS. **(R 336.1205(3))**

#### **VII. REPORTING**

1. The permittee shall provide written notification of construction and operation to comply with the federal Standards of Performance for New Stationary Sources, 40 CFR 60.7. The permittee shall submit this notification to the AQD District Supervisor within the time frames specified in 40 CFR 60.7. **(40 CFR 60.7, 40 CFR 60.48c (a))**

**VIII. STACK/VENT RESTRICTIONS**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter/Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVBOILERS	48	118	R 336.1225 R 336.2803, R 336.2804, 40CFR52.21(c) &(d)

**IX. OTHER REQUIREMENTS**

1. N/A