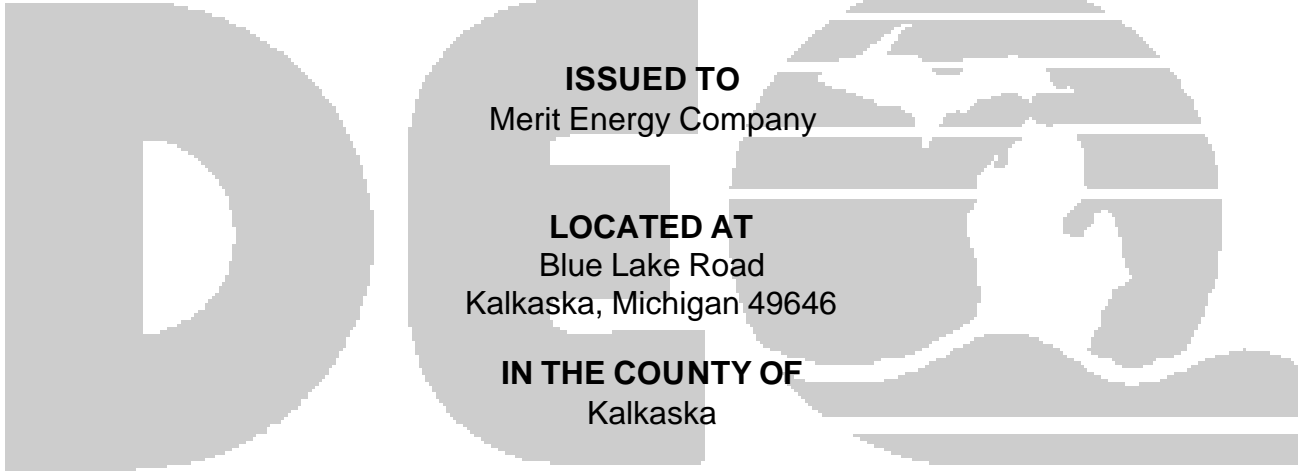


**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

April 15, 2004

NEW SOURCE REVIEW PERMIT TO INSTALL

No. 55-04



ISSUED TO
Merit Energy Company

LOCATED AT
Blue Lake Road
Kalkaska, Michigan 49646

IN THE COUNTY OF
Kalkaska

STATE REGISTRATION NUMBER

B5584

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 Part 5505(1) of Article II, Chapter I, Part 55 (Air Pollution Control) of P.A. 451 of 1994. 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: 2/18/2004	
DATE PERMIT TO INSTALL APPROVED: 4/15/2004	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

Common Abbreviations / Acronyms

Common Acronyms		Pollutant/Measurement Abbreviations	
AQD	Air Quality Division	Btu	British Thermal Unit
BACT	Best Available Control Technology	°C	Degrees Celsius
CAA	Clean Air Act	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	dscf	Dry standard cubic foot
CFR	Code of Federal Regulations	dscm	Dry standard cubic meter
COM	Continuous Opacity Monitoring	°F	Degrees Fahrenheit
EPA	Environmental Protection Agency	gr	Grains
EU	Emission Unit	Hg	Mercury
FG	Flexible Group	hr	Hour
GACS	Gallon of Applied Coating Solids	H ₂ S	Hydrogen Sulfide
GC	General Condition	hp	Horsepower
HAP	Hazardous Air Pollutant	lb	Pound
HVLP	High Volume Low Pressure *	m	Meter
ID	Identification	mg	Milligram
LAER	Lowest Achievable Emission Rate	mm	Millimeter
MACT	Maximum Achievable Control Technology	MM	Million
MAERS	Michigan Air Emissions Reporting System	MW	Megawatts
MAP	Malfunction Abatement Plan	NO _x	Oxides of Nitrogen
MDEQ	Michigan Department of Environmental Quality	PM	Particulate Matter
MSDS	Material Safety Data Sheet	PM-10	Particulate Matter less than 10 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	Reasonable Available Control Technology	sec	Seconds
ROP	Renewable Operating Permit	SO ₂	Sulfur Dioxide
SC	Special Condition Number	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
VE	Visible Emissions	yr	Year

* 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. **[R336.1201(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. **[R336.1201(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 R336.1210, 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. **[R336.1201(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. **[R336.1201(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 R336.1219 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 R336.1219. The written request shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **[R336.1219]**
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. **[R336.1901]**
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). **[R336.1912]**
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 R336.1301, 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 R336.1303. **[R336.1301]**
 - 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 R336.1370(2). **[R336.1370]**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R336.2001 and R336.2003, under any of the conditions listed in R336.2001. **[R336.2001]**

SPECIAL CONDITIONS

Emission Unit Identification

Emission Unit ID	Emission Unit Description	Stack Identification
EUBLU27SGSP	SOUR GAS SWEETENING PLANT, Natural gas, crude oil, condensate, and brine fluids are extracted from wells drilled into a production reservoir. These materials are transmitted through flow lines, generally located within a five mile radius of the central production facility. The temperature of this stream of material is increased by inline heaters and the fluids are then separated and stored in fixed roof tanks. The gas is compressed by internal combustion driven compressors, fueled by natural gas. There is hydrogen sulfide present in some of the gas which is removed by an amine process and burned at the flare. Water vapor is removed from the gas by glycol dehydration and the remaining gas is sold.	SVOL34FLARE
EUBLU27COMP1	Natural Gas Fired Reciprocating Compressor Engine.	SVBLU27COMP1
EUBLU27DEHY	Glycol dehydrator.	SVOL34FLARE

Flexible Group Identification

Flexible Group ID	Emission Units Included in Flexible Group	Stack Identification
FGFACILITY	All process equipment at the stationary source including equipment covered by other permits, grand-fathered equipment and exempt equipment, and emission units EUBLU27SGSP, EUBLU27COMP1, and EUBLU27DEHY.	NA

The following conditions apply to: EUBLU27SGSP

Emission Limits

- 1.1 Sulfur dioxide emissions from this facility shall not exceed 1500 pounds for any consecutive 24 hour period. This is equivalent to a mass flow rate of hydrogen sulfide to the flare of 797 pounds for any consecutive 24 hour period. **[R 336.1403 (5)(a)]**

Process/Operational Limits

- 1.2 The permittee shall not operate this facility unless all emergency relief valves are vented to the flare or equivalent control equipment. **[(R 336.1403(5)(c))]**
- 1.3 The permittee shall not operate this facility unless all storage tanks are vented to the flare or equivalent control system. **[(R 336.1403 (5)(c))]**.
- 1.4 The sour gas sweetening plant shall not be operated unless the flare is installed and operating properly. **[(R 336.1403(1))]**

- 1.5 The permittee shall maintain a continuously burning pilot flame at the flare. [(R 336.1403(2))]
- 1.6 In the event the pilot flame at the flare is extinguished, shut-in of the facility shall commence automatically within one second. [(R 336.1403(2))]
- 1.7 In the event the pilot flame is extinguished, operation of the facility shall not be restarted unless corrective measures taken to reignite the flame are successful. [(R 336.1403(2))]
- 1.8 The in-shed hydrogen sulfide monitoring system shall be designed, installed, and maintained to provide a visual alarm when the hydrogen sulfide concentration is more than 50 ppm. [(R 336.1403(5)(d))]
- 1.9 The in-shed hydrogen sulfide monitoring system shall automatically begin a safe and orderly shutdown of all process inflow streams to the facility if the concentration of hydrogen sulfide is more than 100 ppm in any building enclosing a sweetening process. [(R 336.1403(5)(e))]
- 1.10 All process inflow streams to the facility shall be shut down if the hydrogen sulfide concentration in any building enclosing a sweetening process exceeds 100 ppm. In this event, full operation of the sweetening facility may be resumed only after successful corrective measures have been applied. [(R 336.1403(5)(e))]

Equipment

- 1.11 Permittee shall maintain the fencing and warning signs and/or other measures as necessary to prevent unauthorized individuals from entering the plant property or buildings. Signs shall read "Danger -- Poison Gas" and shall be spaced no more than 100 feet apart with at least one sign on each side of the plant property. [(R 336.1403 (5)(b))]

Monitoring

- 1.12 The permittee shall continuously monitor the concentration of hydrogen sulfide in any building enclosing a sweetening process. The sensor shall be placed as close to process equipment as practicable. [R336.1403(5)(d)]
- 1.13 The monitoring program shall include a determination of the hydrogen sulfide concentration using colorimetric detector tubes or the equivalent, and a determination of the volumetric flow rate. Sulfur dioxide emissions shall be calculated from the hydrogen sulfide mass flow rate using the following (million cubic feet of gas produced per day)X(grains of H₂S per 100 cubic feet of gas produced per day)X 2.7=lb SO₂ per day. Alternative calculations must be approved by the AQD District Supervisor. [R336.1403(5)(a)]
- 1.14 The hydrogen sulfide concentration shall be tested at least quarterly. [R 336.1403(5)(a)]

Recordkeeping/Reporting/Notification

- 1.15 The permittee shall maintain records of total facility fuel gas usage per calendar year. [R336.1403(5)(a)]
- 1.16 The permittee shall maintain records of truck loading (truck slips) per calendar year. [R336.1403(5)(a)]
- 1.17 The permittee shall maintain records of crude oil production per calendar year. [R336.1403(5)(a)]
- 1.18 The permittee shall observe and record the visible emissions from the flare at least once per calendar day. If visible emissions are greater than normal visible emissions during routine operations, then the permittee shall take and record the necessary corrective actions. [R336.1403(5)(a)]

- 1.19 The permittee shall record the mass flow rate of hydrogen sulfide either entering the plant or going to the waste gas flare. [R 336.1403(5)(a)]
- 1.20 The permittee shall record the sulfur dioxide emissions from the sour gas sweetening plant. [R336.1403(5)(a)]
- 1.21 Quarterly reporting of the daily amount of gas sweetened, daily mass flow rate of hydrogen sulfide through the plant and daily sulfur dioxide emissions from the plant. This monitoring data shall be submitted in the format below to the local District or Office Supervisor, Air Quality Division within 30 days following the end of the quarter in which the data were collected, unless an alternative method is approved by the AQD District Supervisor. [R 336.1403(5)(a)]

Month:	Plant Name:			
Date:	Gas sweetened (MMCF/d)	H ₂ S Content (grains / 100 cubic feet)	Mass Flow Rate H ₂ S (lb/24 hr. period)	Mass Flow Rate SO ₂ (lb/24 hr. period)
1.				
2.				

Stack/Vent Restrictions

Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirements
1.22 SVOL34FLARE	4	50	R336.1403(2)
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.			

The following conditions apply to: EUBLU27COMP1

Material Usage Limits

- 2.1 Permittee shall burn only sweet natural gas as fuel in the compressor. [40 CFR 52.21 (c) & (d)]

Monitoring

- 2.2 Permittee shall monitor and record natural gas usage for the compressor. [40 CFR 52.21 (c) & (d)]

Stack/Vent Restrictions

Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirements
2.3 SVBLU27COMP1	NA	NA	R336.1901
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.			

The following conditions apply to: EUBLU27DEHY

Process/Operational Limits

- 3.1 The glycol dehydrator shall be vented to the flare, or a condenser, or other equivalent air pollution control device. [R336.1403(5)(c)]

3.2 The glycol dehydrator shall not be operated unless the flare, or a condenser, or other equivalent air pollution control device is operating properly. [R 336.1403(5)(c)]

Recordkeeping/Reporting/Notification

3.3 The permittee shall maintain records of the glycol circulation rate. [R336.1702]

Stack/Vent Restrictions

Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirements
3.4 SVOL34FLARE	NA	NA	R336.1901
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.			

The following conditions apply to: FGFACILITY

Emission Limits

	Pollutant	Equipment	Limit	Time Period	Testing/Monitoring Method	Applicable Requirements
4.1a	NOx	FGFACILITY	89 tpy	12-month rolling time period*	SC 4.5	R336.1205(3), 40 CFR 52.21(c)&(d)
4.1b	CO	FGFACILITY	89 tpy	12-month rolling time period*	SC 4.4	R336.1205(3), 40 CFR 52.21 (d)
4.1c	VOC	FGFACILITY	40 tpy	12-month rolling time period*	SC 4.7	R336.1205(3)
4.1d	SO2	FGFACILITY	40 tpy	12-month rolling time period*	SC 4.6	R336.1205(3), 40 CFR 52.21 (c)&(d)
4.1e	PM	FGFACILITY	25 tpy	12-month rolling time period*	SC 4.6	R336.1205(3), 40 CFR 52.21 (c)&(d)
4.1f	PM-10	FGFACILITY	15 tpy	12-month rolling time period*	SC 4.6	R336.1205(3), 40 CFR 52.21 (c)&(d)
4.1g	Each HAP	FGFACILITY	Less than 9 tpy	12-month rolling time period*	SC 4.6	R336.1205(3)
4.1h	Total HAPs	FGFACILITY	Less than 22 tpy	12-month rolling time period*	SC 4.6	R336.1205(3)
* 12-month rolling time period as determined at the end of each calendar month.						

Material Usage Limits

4.2 The permittee shall not burn more than 15,000,000 standard cubic feet of natural gas in FGFACILITY per 12-month rolling time period as determined at the end of each calendar month. [R336.1205(3), 40 CFR 52.21(c) & (d)]

Recordkeeping / Reporting / Notification

4.3 The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period records of the amount of natural gas burned for FGFACILITY. All records shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1205(3), 40 CFR 52.21(c) & (d)]

- 4.4 All required calculations shall be completed in a format acceptable to the AQD District Supervisor and made available by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **[R336.1205(1)]**
- 4.5 The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period calculations of CO emission rates for FGFACILITY. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1205(3), 40 CFR 52.21(d)]**
- 4.6 The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period calculations of NOx, SO2, PM, PM-10, individual HAP and total HAPs emission rates for FGFACILITY. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1205(3), 40 CFR 52.21(c)&(d)]**
- 4.7 The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period calculations of VOC emission rates for FGFACILITY. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1205(3)]**