

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day 24	Days Per Week 7	Weeks Per Year 52	Hours Per Year Total 8760	Peak Season (Specify Months) N/A
----------------------------	---------------------------	-----------------------------	-------------------------------------	--

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year 2017-2018					
Primary Fuels			Standby Fuels		
Type Fuel Gas			Type None		
Quantity Per Year 3,710,736.00		Units of Measure lb/yr	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum 0	Maximum 0	Average 0	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum TBD	Maximum TBD	Average 27,573.18 BTU/lb	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: N/A, fuel gas to be generated within the refinery					

SECTION F – COMBUSTION AIR

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: TBD
--	----------------------------------	---------------------------------	--

SECTION G – STACK DATA

Inside Diameter (ft) 1.7	Height Above Grade (ft) 100
Gas Temperature at Exit (Avg. °F) 300.5	Gas Velocity at Exit (Avg. ft/sec) 26.5
Are Emission Control Devices in Place? If YES – Complete SFN 8532 <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Stack Exit Gas Flow Rate	
Average (ACFM) 1,872.75	Average (DSCFM) TBD
Maximum (ACFM) 3,464.12	Maximum (DSCFM) TBD
Are sampling ports available? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes – Describe:	

SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment. Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM ₁₀ Total	4.67E-02	2.05E-01
PM ₁₀ Filterable	1.17E-02	5.12E-02
PM _{2.5} Total	4.67E-02	2.05E-01
PM _{2.5} Filterable	1.17E-02	5.12E-02
PM _{2.5} Condensable	3.50E-02	1.53E-01
Sulfur Dioxide	6.87E-03	3.01E-02
Nitrogen Oxides	3.50E-01	1.53E+00
Carbon Monoxide	3.27E-01	1.43E+00
Greenhouse Gases (CO ₂ e)	N/A	
Other – Specify		
Lead	5.72E-06	2.51E-05
Metal HAP (Total)	8.54E-05	3.74E-04
Organic HAPs (Total)	5.71E-03	2.50E-02
VOC	6.30E-02	2.76E-01
Basis and Calculations for Quantities: Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"		

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
 Division of Air Quality
 918 E Divide Ave., 2nd Floor
 Bismarck, ND 58501-1947
 (701) 328-5188



PERMIT APPLICATION FOR HAZARDOUS AIR POLLUTANT (HAP) SOURCES

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization Meridian Energy Group - Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409) 795-0792	E-mail Address tjohnson@meridianenergygroup.inc
Facility Address (Street & No. or Lat/Long to Nearest Second) 37th Street / 46°52'45"N/103°14'55" W		
City Belfield	State ND	ZIP Code 58622
County Billings	Number of Employees at Location TBD	
Land Area at Plant Site 261 Acres (or)	Sq. Ft.	MSL Elevation at Plant 2,685 feet

Describe Nature of Business/Process Petroleum Refining / Medium Pressure Utility Boiler A

SECTION B – STACK DATA

Inside Diameter (ft) 1.7	Height Above Grade (ft) 100	
Gas Temperature at Exit (°F) 300.5	Gas Velocity at Exit (ft/sec) 26.5	Gas Volume (scfm) 2,404.61
Basis of any Estimates (attach separate sheet if necessary) Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Nearest Residences or Building Utility building	Distance (ft) 0 ft	Direction N/A
Nearest Property Line Fenceline	Distance (ft) 516.5 ft	Direction Southeast

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 202-B-0201A	Mean Particle Diameter (µm) TBD
Flow Rate (scfm) 2,404.61	Drift Velocity (ft/sec) 26.5
Stream Temperature (°F) 300.4	Particulate Concentration (gr/dscf) TBD
Moisture Content (%) TBD	Halogens or Metals Present? Metals
Pressure (in. Hg) TBD	Organic Content (ppmv) 1.93 x10⁻¹
Heat Content (Btu/scfm) TBD	O ₂ Content (%) N/A

SECTION D – POLLUTANT SPECIFIC DATA

(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted Acetaldehyde	Chemical Abstract Services (CAS) Number 75-07-0
Proposed Emission Rate (lb/hr) 3.50x10⁻⁶	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 2.15x10⁻⁴	Vapor Pressure (in. Hg @ °F) 35.51 in Hg @ 68°C
Solubility 1x10⁻⁶ mg/L in water @ 77°F	Molecular Weight (lb/lb-mole) 44.05
Absorptive Properties -	

Pollutant Emitted Benzene	Chemical Abstract Services (CAS) Number 71-43-2
Proposed Emission Rate (lb/hr) 6.13x10⁻⁶	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 2.12 x10⁻⁴	Vapor Pressure (in. Hg @ °F) 3.73 in Hg @ 77 °F
Solubility In water 1.79x10³ mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 78.11
Absorptive Properties -	

Pollutant Emitted Dichlorobenzene	Chemical Abstract Services (CAS) Number Varies
Proposed Emission Rate (lb/hr) 3.50x10⁻⁶	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 6.45x10⁻⁵	Vapor Pressure (in. Hg @ °F) Varies
Solubility Varies	Molecular Weight (lb/lb-mole) 147.00
Absorptive Properties -	

Pollutant Emitted Ethylbenzene	Chemical Abstract Services (CAS) Number 100-41-4
Proposed Emission Rate (lb/hr) 4.64×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.19×10^{-3}	Vapor Pressure (in. Hg @ °F) 0.37 in Hg @ 77°F
Solubility In water 0.014 g/100mL @ 59 °F	Molecular Weight (lb/lb-mole) 106.17
Absorptive Properties -	

Pollutant Emitted Formaldehyde	Chemical Abstract Services (CAS) Number 50-00-0
Proposed Emission Rate (lb/hr) 2.16×10^{-4}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.95×10^{-2}	Vapor Pressure (in. Hg @ °F) 0.15 in Hg @ 77 °F
Solubility In water 4.00×10^5 mg/L @ 68°F	Molecular Weight (lb/lb-mole) 30.03
Absorptive Properties -	

Pollutant Emitted Hexane	Chemical Abstract Services (CAS) Number 110-54-5
Proposed Emission Rate (lb/hr) 5.26×10^{-3}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.65×10^{-1}	Vapor Pressure (in. Hg @ °F) 5.90 in Hg @ 68 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 86.1
Absorptive Properties -	

Pollutant Emitted Naphthalene	Chemical Abstract Services (CAS) Number 91-20-3
Proposed Emission Rate (lb/hr) 1.75×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 3.70×10^{-5}	Vapor Pressure (in. Hg @ °F) 0.003 in Hg @ 77 °F
Solubility In water 31 mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 128.17
Absorptive Properties -	

Pollutant Emitted Toluene	Chemical Abstract Services (CAS) Number 108-88-3
Proposed Emission Rate (lb/hr) 9.64×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 2.83×10^{-4}	Vapor Pressure (in. Hg @ °F) 1.12 in Hg @ 77°F
Solubility In water 526 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 92.14
Absorptive Properties -	

Pollutant Emitted Xylene	Chemical Abstract Services (CAS) Number 95-47-6
Proposed Emission Rate (lb/hr) 7.30×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.86×10^{-3}	Vapor Pressure (in. Hg @ °F) 0.26 in Hg @ 77°F
Solubility In water 178 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 106.16
Absorptive Properties -	

Pollutant Emitted PAH	Chemical Abstract Services (CAS) Number N/A
Proposed Emission Rate (lb/hr) 1.24×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 3.45×10^{-4}	Vapor Pressure (in. Hg @ °F) N/A
Solubility N/A	Molecular Weight (lb/lb-mole) TBD
Absorptive Properties -	

Pollutant Emitted Antimony	Chemical Abstract Services (CAS) Number 7740-36-0
Proposed Emission Rate (lb/hr) 6.07×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/particulate
Concentration in Emission Stream (ppmv) 1.35×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 121.76
Absorptive Properties -	

Pollutant Emitted Arsenic	Chemical Abstract Services (CAS) Number 7440-38-2
Proposed Emission Rate (lb/hr) 2.34×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 8.44×10^{-5}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted Beryllium	Chemical Abstract Services (CAS) Number 7440-41-7
Proposed Emission Rate (lb/hr) 1.52×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 4.56×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 9.01
Absorptive Properties -	

Pollutant Emitted Cadmium	Chemical Abstract Services (CAS) Number 7440-43-9
Proposed Emission Rate (lb/hr) 1.28×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.09×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted Chromium (hexavalent)	Chemical Abstract Services (CAS) Number 1333-82-0
Proposed Emission Rate (lb/hr) 3.27×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 1.70×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility 1,660 g/L in water @ 77°F	Molecular Weight (lb/lb-mole) 51.99
Absorptive Properties -	

Pollutant Emitted Chromium	Chemical Abstract Services (CAS) Number 7440-47-3
Proposed Emission Rate (lb/hr) 1.64×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 8.51×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 51.99
Absorptive Properties -	

Pollutant Emitted Cobalt	Chemical Abstract Services (CAS) Number 7440-48-4
Proposed Emission Rate (lb/hr) 9.58×10^{-7}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 4.40×10^{-5}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 58.93
Absorptive Properties -	

Pollutant Emitted Manganese	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) 4.32×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 2.13×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 54.94
Absorptive Properties -	

Pollutant Emitted Mercury	Chemical Abstract Services (CAS) Number 7439-97-6
Proposed Emission Rate (lb/hr) 2.92×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.94×10^{-5}	Vapor Pressure (in. Hg @ °F) 7.85×10^{-5} in Hg @ 77 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 200.59
Absorptive Properties -	

Pollutant Emitted Nickel	Chemical Abstract Services (CAS) Number 7044-02-0
Proposed Emission Rate (lb/hr) 2.45×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 1.13×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 58.69
Absorptive Properties -	

Pollutant Emitted Selenium	Chemical Abstract Services (CAS) Number 7782-49-2
Proposed Emission Rate (lb/hr) 1.03×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.52×10^{-4}	Vapor Pressure (in. Hg @ °F) 0.29 in Hg @ 807
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 78.96
Absorptive Properties -	

Signature of Applicant 	Date 04/03/17
---	------------------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
FUEL BURNING EQUIPMENT FOR INDIRECT HEATING**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Facility Address (Street & No.) 37th Street		
City Belfield	State ND	ZIP Code 58622
County Billings	Latitude (Nearest Second) 46°52'45"N	Longitude (Nearest Second) 103°14'55" W
Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W	Land Area at Facility Site 261 Acres	MSL Elevation at Facility 2,685 feet

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) 202-B-0201B	Name of Manufacturer TBD
Rated Capacity/Maximum Input TBD	Model Number TBD
Purpose Space Heat _____ % Process Heat 100 %	Purpose Power Generation _____ % Other (Specify % if Multi Purpose) _____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here) <input type="checkbox"/> Pulverized <input type="checkbox"/> General <input type="checkbox"/> Dry Bottom <input type="checkbox"/> Wet Bottom with Fly Ash Reinjection <input type="checkbox"/> Wet Bottom without Fly Ash Reinjection <input type="checkbox"/> Other – Specify:	<input type="checkbox"/> Spreader Stoker with Fly Ash Reinjection <input type="checkbox"/> Spreader Stoker without Fly Ash Reinjection <input type="checkbox"/> Fluidized Bed <input type="checkbox"/> Cyclone <input type="checkbox"/> Hand-Fired
Fuel Oil <input type="checkbox"/> Horizontally Fired <input type="checkbox"/> Tangentially Fired <input type="checkbox"/> Other – Specify:	Gas <input type="checkbox"/> Horizontally Fired <input type="checkbox"/> Tangentially Fired <input type="checkbox"/> Other – Specify: TBD

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day 24	Days Per Week 7	Weeks Per Year 52	Hours Per Year Total 8760	Peak Season (Specify Months) N/A
----------------------------	---------------------------	-----------------------------	-------------------------------------	--

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year 2017-2018					
Primary Fuels			Standby Fuels		
Type Fuel Gas			Type None		
Quantity Per Year 3,710,736.00		Units of Measure lb/yr	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum 0	Maximum 0	Average 0	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum TBD	Maximum TBD	Average 27,573.18 BTU/lb	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: N/A, fuel gas to be generated within the refinery					

SECTION F – COMBUSTION AIR

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: TBD
--	----------------------------------	---------------------------------	--

SECTION G – STACK DATA

Inside Diameter (ft) 1.7	Height Above Grade (ft) 100
Gas Temperature at Exit (Avg. °F) 300.5	Gas Velocity at Exit (Avg. ft/sec) 26.5
Are Emission Control Devices in Place? If YES – Complete SFN 8532 <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Stack Exit Gas Flow Rate	
Average (ACFM) 1,872.75	Average (DSCFM) TBD
Maximum (ACFM) 3,464.12	Maximum (DSCFM) TBD
Are sampling ports available? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes – Describe:	

SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment. Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM ₁₀ Total	4.67E-02	2.05E-01
PM ₁₀ Filterable	1.17E-02	5.12E-02
PM _{2.5} Total	4.67E-02	2.05E-01
PM _{2.5} Filterable	1.17E-02	5.12E-02
PM _{2.5} Condensable	3.50E-02	1.53E-01
Sulfur Dioxide	6.87E-03	3.01E-02
Nitrogen Oxides	3.50E-01	1.53E+00
Carbon Monoxide	3.27E-01	1.43E+00
Greenhouse Gases (CO ₂ e)	N/A	
Other – Specify		
Lead	5.72E-06	2.51E-05
Metal HAP (Total)	8.54E-05	3.74E-04
Organic HAPs (Total)	5.71E-03	2.50E-02
VOC	6.30E-02	2.76E-01
Basis and Calculations for Quantities: Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"		

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
 Division of Air Quality
 918 E Divide Ave., 2nd Floor
 Bismarck, ND 58501-1947
 (701) 328-5188



PERMIT APPLICATION FOR HAZARDOUS AIR POLLUTANT (HAP) SOURCES

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization Meridian Energy Group - Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409) 795-0792	E-mail Address tjohnson@meridianenergygroup.inc
Facility Address (Street & No. or Lat/Long to Nearest Second) 37th Street / 46°52'45"N/103°14'55" W		
City Belfield	State ND	ZIP Code 58622
County Billings	Number of Employees at Location TBD	
Land Area at Plant Site 261 Acres (or)	Sq. Ft.	MSL Elevation at Plant 2,685 feet

Describe Nature of Business/Process Petroleum Refining / Medium Pressure Utility Boiler B

SECTION B – STACK DATA

Inside Diameter (ft) 1.7	Height Above Grade (ft) 100	
Gas Temperature at Exit (°F) 300.5	Gas Velocity at Exit (ft/sec) 26.5	Gas Volume (scfm) 2,404.61
Basis of any Estimates (attach separate sheet if necessary) Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "BACT Analysis"		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Nearest Residences or Building Utility building	Distance (ft) 0 ft	Direction N/A
Nearest Property Line Fenceline	Distance (ft) 516.5 ft	Direction Southeast

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 202-B-0201B	Mean Particle Diameter (µm) TBD
Flow Rate (scfm) 2,404.61	Drift Velocity (ft/sec) 26.5
Stream Temperature (°F) 300.4	Particulate Concentration (gr/dscf) TBD
Moisture Content (%) TBD	Halogens or Metals Present? Metals
Pressure (in. Hg) TBD	Organic Content (ppmv) 1.93 x10⁻¹
Heat Content (Btu/scfm) TBD	O ₂ Content (%) N/A

SECTION D – POLLUTANT SPECIFIC DATA

(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted Acetaldehyde	Chemical Abstract Services (CAS) Number 75-07-0
Proposed Emission Rate (lb/hr) 3.50x10⁻⁶	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 2.15x10⁻⁴	Vapor Pressure (in. Hg @ °F) 35.51 in Hg @ 68°C
Solubility 1x10⁻⁶ mg/L in water @ 77°F	Molecular Weight (lb/lb-mole) 44.05
Absorptive Properties -	

Pollutant Emitted Benzene	Chemical Abstract Services (CAS) Number 71-43-2
Proposed Emission Rate (lb/hr) 6.13x10⁻⁶	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 2.12 x10⁻⁴	Vapor Pressure (in. Hg @ °F) 3.73 in Hg @ 77 °F
Solubility In water 1.79x10³ mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 78.11
Absorptive Properties -	

Pollutant Emitted Dichlorobenzene	Chemical Abstract Services (CAS) Number Varies
Proposed Emission Rate (lb/hr) 3.50x10⁻⁶	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 6.45x10⁻⁵	Vapor Pressure (in. Hg @ °F) Varies
Solubility Varies	Molecular Weight (lb/lb-mole) 147.00
Absorptive Properties -	

Pollutant Emitted Ethylbenzene	Chemical Abstract Services (CAS) Number 100-41-4
Proposed Emission Rate (lb/hr) 4.64×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.19×10^{-3}	Vapor Pressure (in. Hg @ °F) 0.37 in Hg @ 77°F
Solubility In water 0.014 g/100mL @ 59 °F	Molecular Weight (lb/lb-mole) 106.17
Absorptive Properties -	

Pollutant Emitted Formaldehyde	Chemical Abstract Services (CAS) Number 50-00-0
Proposed Emission Rate (lb/hr) 2.16×10^{-4}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.95×10^{-2}	Vapor Pressure (in. Hg @ °F) 0.15 in Hg @ 77 °F
Solubility In water 4.00×10^5 mg/L @ 68°F	Molecular Weight (lb/lb-mole) 30.03
Absorptive Properties -	

Pollutant Emitted Hexane	Chemical Abstract Services (CAS) Number 110-54-5
Proposed Emission Rate (lb/hr) 5.26×10^{-3}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.65×10^{-1}	Vapor Pressure (in. Hg @ °F) 5.90 in Hg @ 68 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 86.1
Absorptive Properties -	

Pollutant Emitted Naphthalene	Chemical Abstract Services (CAS) Number 91-20-3
Proposed Emission Rate (lb/hr) 1.75×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 3.70×10^{-5}	Vapor Pressure (in. Hg @ °F) 0.003 in Hg @ 77 °F
Solubility In water 31 mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 128.17
Absorptive Properties -	

Pollutant Emitted Toluene	Chemical Abstract Services (CAS) Number 108-88-3
Proposed Emission Rate (lb/hr) 9.64×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 2.83×10^{-4}	Vapor Pressure (in. Hg @ °F) 1.12 in Hg @ 77°F
Solubility In water 526 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 92.14
Absorptive Properties -	

Pollutant Emitted Xylene	Chemical Abstract Services (CAS) Number 95-47-6
Proposed Emission Rate (lb/hr) 7.30×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.86×10^{-3}	Vapor Pressure (in. Hg @ °F) 0.26 in Hg @ 77°F
Solubility In water 178 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 106.16
Absorptive Properties -	

Pollutant Emitted PAH	Chemical Abstract Services (CAS) Number N/A
Proposed Emission Rate (lb/hr) 1.24×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 3.45×10^{-4}	Vapor Pressure (in. Hg @ °F) N/A
Solubility N/A	Molecular Weight (lb/lb-mole) TBD
Absorptive Properties -	

Pollutant Emitted Antimony	Chemical Abstract Services (CAS) Number 7740-36-0
Proposed Emission Rate (lb/hr) 6.07×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/particulate
Concentration in Emission Stream (ppmv) 1.35×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 121.76
Absorptive Properties -	

Pollutant Emitted Arsenic	Chemical Abstract Services (CAS) Number 7440-38-2
Proposed Emission Rate (lb/hr) 2.34×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 8.44×10^{-5}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted Beryllium	Chemical Abstract Services (CAS) Number 7440-41-7
Proposed Emission Rate (lb/hr) 1.52×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 4.56×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 9.01
Absorptive Properties -	

Pollutant Emitted Cadmium	Chemical Abstract Services (CAS) Number 7440-43-9
Proposed Emission Rate (lb/hr) 1.28×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.09×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted Chromium (hexavalent)	Chemical Abstract Services (CAS) Number 1333-82-0
Proposed Emission Rate (lb/hr) 3.27×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 1.70×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility 1,660 g/L in water @ 77°F	Molecular Weight (lb/lb-mole) 51.99
Absorptive Properties -	

Pollutant Emitted Chromium	Chemical Abstract Services (CAS) Number 7440-47-3
Proposed Emission Rate (lb/hr) 1.64×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 8.51×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 51.99
Absorptive Properties -	


Pollutant Emitted Cobalt	Chemical Abstract Services (CAS) Number 7440-48-4
Proposed Emission Rate (lb/hr) 9.58×10^{-7}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 4.40×10^{-5}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 58.93
Absorptive Properties -	

Pollutant Emitted Manganese	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) 4.32×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 2.13×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 54.94
Absorptive Properties -	

Pollutant Emitted Mercury	Chemical Abstract Services (CAS) Number 7439-97-6
Proposed Emission Rate (lb/hr) 2.92×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.94×10^{-5}	Vapor Pressure (in. Hg @ °F) 7.85×10^{-5} in Hg @ 77 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 200.59
Absorptive Properties -	

Pollutant Emitted Nickel	Chemical Abstract Services (CAS) Number 7044-02-0
Proposed Emission Rate (lb/hr) 2.45×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 1.13×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 58.69
Absorptive Properties -	

Pollutant Emitted Selenium	Chemical Abstract Services (CAS) Number 7782-49-2
Proposed Emission Rate (lb/hr) 1.03×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.52×10^{-4}	Vapor Pressure (in. Hg @ °F) 0.29 in Hg @ 807
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 78.96
Absorptive Properties -	

Signature of Applicant 	Date 04/03/17
---	------------------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
FUEL BURNING EQUIPMENT FOR INDIRECT HEATING**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Facility Address (Street & No.) 37th Street		
City Belfield	State ND	ZIP Code 58622
County Billings	Latitude (Nearest Second) 46°52'45"N	Longitude (Nearest Second) 103°14'55" W
Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W	Land Area at Facility Site 261 Acres	MSL Elevation at Facility 2,685 feet

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) 202-B-0201C	Name of Manufacturer TBD
Rated Capacity/Maximum Input TBD	Model Number TBD
Purpose Space Heat _____ % Process Heat 100 %	Purpose Power Generation _____ % Other (Specify % if Multi Purpose) _____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here) <input type="checkbox"/> Pulverized <input type="checkbox"/> General <input type="checkbox"/> Dry Bottom <input type="checkbox"/> Wet Bottom with Fly Ash Reinjection <input type="checkbox"/> Wet Bottom without Fly Ash Reinjection <input type="checkbox"/> Other – Specify:	<input type="checkbox"/> Spreader Stoker with Fly Ash Reinjection <input type="checkbox"/> Spreader Stoker without Fly Ash Reinjection <input type="checkbox"/> Fluidized Bed <input type="checkbox"/> Cyclone <input type="checkbox"/> Hand-Fired
Fuel Oil <input type="checkbox"/> Horizontally Fired <input type="checkbox"/> Tangentially Fired <input type="checkbox"/> Other – Specify:	Gas <input type="checkbox"/> Horizontally Fired <input type="checkbox"/> Tangentially Fired <input type="checkbox"/> Other – Specify: TBD

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day 24	Days Per Week 7	Weeks Per Year 52	Hours Per Year Total 8760	Peak Season (Specify Months) N/A
----------------------------	---------------------------	-----------------------------	-------------------------------------	--

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year 2017-2018					
Primary Fuels			Standby Fuels		
Type Fuel Gas			Type None		
Quantity Per Year 3,710,736.00		Units of Measure lb/yr	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum 0	Maximum 0	Average 0	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum TBD	Maximum TBD	Average 27,573.18 BTU/lb	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: N/A, fuel gas to be generated within the refinery					

SECTION F – COMBUSTION AIR

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: TBD
--	----------------------------------	---------------------------------	--

SECTION G – STACK DATA

Inside Diameter (ft) 1.7	Height Above Grade (ft) 100
Gas Temperature at Exit (Avg. °F) 300.5	Gas Velocity at Exit (Avg. ft/sec) 26.5
Are Emission Control Devices in Place? If YES – Complete SFN 8532 <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Stack Exit Gas Flow Rate	
Average (ACFM) 1,872.75	Average (DSCFM) TBD
Maximum (ACFM) 3,464.12	Maximum (DSCFM) TBD
Are sampling ports available? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes – Describe:	

SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment. Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM ₁₀ Total	4.67E-02	2.05E-01
PM ₁₀ Filterable	1.17E-02	5.12E-02
PM _{2.5} Total	4.67E-02	2.05E-01
PM _{2.5} Filterable	1.17E-02	5.12E-02
PM _{2.5} Condensable	3.50E-02	1.53E-01
Sulfur Dioxide	6.87E-03	3.01E-02
Nitrogen Oxides	3.50E-01	1.53E+00
Carbon Monoxide	3.27E-01	1.43E+00
Greenhouse Gases (CO2e)	N/A	
Other – Specify		
Lead	5.72E-06	2.51E-05
Metal HAP (Total)	8.54E-05	3.74E-04
Organic HAPs (Total)	5.71E-03	2.50E-02
VOC	6.30E-02	2.76E-01
Basis and Calculations for Quantities: Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"		

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
 Division of Air Quality
 918 E Divide Ave., 2nd Floor
 Bismarck, ND 58501-1947
 (701) 328-5188



PERMIT APPLICATION FOR HAZARDOUS AIR POLLUTANT (HAP) SOURCES

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization Meridian Energy Group - Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409) 795-0792	E-mail Address tjohnson@meridianenergygroup.inc
Facility Address (Street & No. or Lat/Long to Nearest Second) 37th Street / 46°52'45"N/103°14'55" W		
City Belfield	State ND	ZIP Code 58622
County Billings	Number of Employees at Location TBD	
Land Area at Plant Site 261 Acres (or)	Sq. Ft.	MSL Elevation at Plant 2,685 feet

Describe Nature of Business/Process Petroleum Refining / Medium Pressure Utility Boiler C

SECTION B – STACK DATA

Inside Diameter (ft) 1.7	Height Above Grade (ft) 100	
Gas Temperature at Exit (°F) 300.5	Gas Velocity at Exit (ft/sec) 26.5	Gas Volume (scfm) 2,404.61
Basis of any Estimates (attach separate sheet if necessary) Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Nearest Residences or Building Utility building	Distance (ft) 0 ft	Direction N/A
Nearest Property Line Fenceline	Distance (ft) 516.5 ft	Direction Southeast

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 202-B-0201C	Mean Particle Diameter (µm) TBD
Flow Rate (scfm) 2,404.61	Drift Velocity (ft/sec) 26.5
Stream Temperature (°F) 300.4	Particulate Concentration (gr/dscf) TBD
Moisture Content (%) TBD	Halogens or Metals Present? Metals
Pressure (in. Hg) TBD	Organic Content (ppmv) 1.93 x10⁻¹
Heat Content (Btu/scfm) TBD	O ₂ Content (%) N/A

SECTION D – POLLUTANT SPECIFIC DATA

(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted Acetaldehyde	Chemical Abstract Services (CAS) Number 75-07-0
Proposed Emission Rate (lb/hr) 3.50x10⁻⁶	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 2.15x10⁻⁴	Vapor Pressure (in. Hg @ °F) 35.51 in Hg @ 68°C
Solubility 1x10⁻⁶ mg/L in water @ 77°F	Molecular Weight (lb/lb-mole) 44.05
Absorptive Properties -	

Pollutant Emitted Benzene	Chemical Abstract Services (CAS) Number 71-43-2
Proposed Emission Rate (lb/hr) 6.13x10⁻⁶	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 2.12 x10⁻⁴	Vapor Pressure (in. Hg @ °F) 3.73 in Hg @ 77 °F
Solubility In water 1.79x10³ mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 78.11
Absorptive Properties -	

Pollutant Emitted Dichlorobenzene	Chemical Abstract Services (CAS) Number Varies
Proposed Emission Rate (lb/hr) 3.50x10⁻⁶	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 6.45x10⁻⁵	Vapor Pressure (in. Hg @ °F) Varies
Solubility Varies	Molecular Weight (lb/lb-mole) 147.00
Absorptive Properties -	

Pollutant Emitted Ethylbenzene	Chemical Abstract Services (CAS) Number 100-41-4
Proposed Emission Rate (lb/hr) 4.64×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.19×10^{-3}	Vapor Pressure (in. Hg @ °F) 0.37 in Hg @ 77°F
Solubility In water 0.014 g/100mL @ 59 °F	Molecular Weight (lb/lb-mole) 106.17
Absorptive Properties -	

Pollutant Emitted Formaldehyde	Chemical Abstract Services (CAS) Number 50-00-0
Proposed Emission Rate (lb/hr) 2.16×10^{-4}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.95×10^{-2}	Vapor Pressure (in. Hg @ °F) 0.15 in Hg @ 77 °F
Solubility In water 4.00×10^5 mg/L @ 68°F	Molecular Weight (lb/lb-mole) 30.03
Absorptive Properties -	

Pollutant Emitted Hexane	Chemical Abstract Services (CAS) Number 110-54-5
Proposed Emission Rate (lb/hr) 5.26×10^{-3}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.65×10^{-1}	Vapor Pressure (in. Hg @ °F) 5.90 in Hg @ 68 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 86.1
Absorptive Properties -	

Pollutant Emitted Naphthalene	Chemical Abstract Services (CAS) Number 91-20-3
Proposed Emission Rate (lb/hr) 1.75×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 3.70×10^{-5}	Vapor Pressure (in. Hg @ °F) 0.003 in Hg @ 77 °F
Solubility In water 31 mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 128.17
Absorptive Properties -	

Pollutant Emitted Toluene	Chemical Abstract Services (CAS) Number 108-88-3
Proposed Emission Rate (lb/hr) 9.64×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 2.83×10^{-4}	Vapor Pressure (in. Hg @ °F) 1.12 in Hg @ 77°F
Solubility In water 526 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 92.14
Absorptive Properties -	

Pollutant Emitted Xylene	Chemical Abstract Services (CAS) Number 95-47-6
Proposed Emission Rate (lb/hr) 7.30×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.86×10^{-3}	Vapor Pressure (in. Hg @ °F) 0.26 in Hg @ 77°F
Solubility In water 178 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 106.16
Absorptive Properties -	

Pollutant Emitted PAH	Chemical Abstract Services (CAS) Number N/A
Proposed Emission Rate (lb/hr) 1.24×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 3.45×10^{-4}	Vapor Pressure (in. Hg @ °F) N/A
Solubility N/A	Molecular Weight (lb/lb-mole) TBD
Absorptive Properties -	

Pollutant Emitted Antimony	Chemical Abstract Services (CAS) Number 7740-36-0
Proposed Emission Rate (lb/hr) 6.07×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/particulate
Concentration in Emission Stream (ppmv) 1.35×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 121.76
Absorptive Properties -	

Pollutant Emitted Arsenic	Chemical Abstract Services (CAS) Number 7440-38-2
Proposed Emission Rate (lb/hr) 2.34×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 8.44×10^{-5}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted Beryllium	Chemical Abstract Services (CAS) Number 7440-41-7
Proposed Emission Rate (lb/hr) 1.52×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 4.56×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 9.01
Absorptive Properties -	

Pollutant Emitted Cadmium	Chemical Abstract Services (CAS) Number 7440-43-9
Proposed Emission Rate (lb/hr) 1.28×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.09×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted Chromium (hexavalent)	Chemical Abstract Services (CAS) Number 1333-82-0
Proposed Emission Rate (lb/hr) 3.27×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 1.70×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility 1,660 g/L in water @ 77°F	Molecular Weight (lb/lb-mole) 51.99
Absorptive Properties -	

Pollutant Emitted Chromium	Chemical Abstract Services (CAS) Number 7440-47-3
Proposed Emission Rate (lb/hr) 1.64×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 8.51×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 51.99
Absorptive Properties -	

Pollutant Emitted Cobalt	Chemical Abstract Services (CAS) Number 7440-48-4
Proposed Emission Rate (lb/hr) 9.58×10^{-7}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 4.40×10^{-5}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 58.93
Absorptive Properties -	

Pollutant Emitted Manganese	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) 4.32×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 2.13×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 54.94
Absorptive Properties -	

Pollutant Emitted Mercury	Chemical Abstract Services (CAS) Number 7439-97-6
Proposed Emission Rate (lb/hr) 2.92×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.94×10^{-5}	Vapor Pressure (in. Hg @ °F) 7.85×10^{-5} in Hg @ 77 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 200.59
Absorptive Properties -	

Pollutant Emitted Nickel	Chemical Abstract Services (CAS) Number 7044-02-0
Proposed Emission Rate (lb/hr) 2.45×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 1.13×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 58.69
Absorptive Properties -	

Pollutant Emitted Selenium	Chemical Abstract Services (CAS) Number 7782-49-2
Proposed Emission Rate (lb/hr) 1.03×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.52×10^{-4}	Vapor Pressure (in. Hg @ °F) 0.29 in Hg @ 807
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 78.96
Absorptive Properties -	

Signature of Applicant 	Date 04/03/17
---	------------------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
FUEL BURNING EQUIPMENT FOR INDIRECT HEATING**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Facility Address (Street & No.) 37th Street		
City Belfield	State ND	ZIP Code 58622
County Billings	Latitude (Nearest Second) 46°52'45"N	Longitude (Nearest Second) 103°14'55" W
Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W	Land Area at Facility Site 261 Acres	MSL Elevation at Facility 2,685 feet

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) 202-B-0201A	Name of Manufacturer TBD
Rated Capacity/Maximum Input TBD	Model Number TBD
Purpose Space Heat _____ % Process Heat 100 %	Purpose Power Generation _____ % Other (Specify % if Multi Purpose) _____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here) <input type="checkbox"/> Pulverized <input type="checkbox"/> General <input type="checkbox"/> Dry Bottom <input type="checkbox"/> Wet Bottom with Fly Ash Reinjection <input type="checkbox"/> Wet Bottom without Fly Ash Reinjection <input type="checkbox"/> Other – Specify:	<input type="checkbox"/> Spreader Stoker with Fly Ash Reinjection <input type="checkbox"/> Spreader Stoker without Fly Ash Reinjection <input type="checkbox"/> Fluidized Bed <input type="checkbox"/> Cyclone <input type="checkbox"/> Hand-Fired
Fuel Oil <input type="checkbox"/> Horizontally Fired <input type="checkbox"/> Tangentially Fired <input type="checkbox"/> Other – Specify:	Gas <input type="checkbox"/> Horizontally Fired <input type="checkbox"/> Tangentially Fired <input type="checkbox"/> Other – Specify: TBD

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day 24	Days Per Week 7	Weeks Per Year 52	Hours Per Year Total 8760	Peak Season (Specify Months) N/A
----------------------------	---------------------------	-----------------------------	-------------------------------------	--

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year 2017-2018					
Primary Fuels			Standby Fuels		
Type Fuel Gas			Type None		
Quantity Per Year 3,710,736.00		Units of Measure lb/yr	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum 0	Maximum 0	Average 0	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum TBD	Maximum TBD	Average 27,573.18 BTU/lb	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: N/A, fuel gas to be generated within the refinery					

SECTION F – COMBUSTION AIR

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: TBD
--	----------------------------------	---------------------------------	--

SECTION G – STACK DATA

Inside Diameter (ft) 1.7	Height Above Grade (ft) 100
Gas Temperature at Exit (Avg. °F) 300.5	Gas Velocity at Exit (Avg. ft/sec) 26.5
Are Emission Control Devices in Place? If YES – Complete SFN 8532 <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Stack Exit Gas Flow Rate	
Average (ACFM) 1,872.75	Average (DSCFM) TBD
Maximum (ACFM) 3,464.12	Maximum (DSCFM) TBD
Are sampling ports available? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes – Describe:	

SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment. Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM ₁₀ Total	4.67E-02	2.05E-01
PM ₁₀ Filterable	1.17E-02	5.12E-02
PM _{2.5} Total	4.67E-02	2.05E-01
PM _{2.5} Filterable	1.17E-02	5.12E-02
PM _{2.5} Condensable	3.50E-02	1.53E-01
Sulfur Dioxide	6.87E-03	3.01E-02
Nitrogen Oxides	3.50E-01	1.53E+00
Carbon Monoxide	3.27E-01	1.43E+00
Greenhouse Gases (CO ₂ e)	N/A	
Other – Specify		
Lead	5.72E-06	2.51E-05
Metal HAP (Total)	8.54E-05	3.74E-04
Organic HAPs (Total)	5.71E-03	2.50E-02
VOC	6.30E-02	2.76E-01
Basis and Calculations for Quantities: Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"		

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
 Division of Air Quality
 918 E Divide Ave., 2nd Floor
 Bismarck, ND 58501-1947
 (701) 328-5188



PERMIT APPLICATION FOR HAZARDOUS AIR POLLUTANT (HAP) SOURCES

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization Meridian Energy Group - Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409) 795-0792	E-mail Address tjohnson@meridianenergygroup.inc
Facility Address (Street & No. or Lat/Long to Nearest Second) 37th Street / 46°52'45"N/103°14'55" W		
City Belfield	State ND	ZIP Code 58622
County Billings	Number of Employees at Location TBD	
Land Area at Plant Site 261 Acres (or)	Sq. Ft.	MSL Elevation at Plant 2,685 feet

Describe Nature of Business/Process Petroleum Refining / Medium Pressure Utility Boiler D

SECTION B – STACK DATA

Inside Diameter (ft) 1.7	Height Above Grade (ft) 100	
Gas Temperature at Exit (°F) 300.5	Gas Velocity at Exit (ft/sec) 26.5	Gas Volume (scfm) 2,404.61
Basis of any Estimates (attach separate sheet if necessary) Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Nearest Residences or Building Utility building	Distance (ft) 0 ft	Direction N/A
Nearest Property Line Fenceline	Distance (ft) 516.5 ft	Direction Southeast

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 202-B-0201D	Mean Particle Diameter (µm) TBD
Flow Rate (scfm) 2,404.61	Drift Velocity (ft/sec) 26.5
Stream Temperature (°F) 300.4	Particulate Concentration (gr/dscf) TBD
Moisture Content (%) TBD	Halogens or Metals Present? Metals
Pressure (in. Hg) TBD	Organic Content (ppmv) 1.93 x10⁻¹
Heat Content (Btu/scfm) TBD	O ₂ Content (%) N/A

SECTION D – POLLUTANT SPECIFIC DATA

(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted Acetaldehyde	Chemical Abstract Services (CAS) Number 75-07-0
Proposed Emission Rate (lb/hr) 3.50x10⁻⁶	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 2.15x10⁻⁴	Vapor Pressure (in. Hg @ °F) 35.51 in Hg @ 68°C
Solubility 1x10⁻⁶ mg/L in water @ 77°F	Molecular Weight (lb/lb-mole) 44.05
Absorptive Properties -	

Pollutant Emitted Benzene	Chemical Abstract Services (CAS) Number 71-43-2
Proposed Emission Rate (lb/hr) 6.13x10⁻⁶	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 2.12 x10⁻⁴	Vapor Pressure (in. Hg @ °F) 3.73 in Hg @ 77 °F
Solubility In water 1.79x10³ mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 78.11
Absorptive Properties -	

Pollutant Emitted Dichlorobenzene	Chemical Abstract Services (CAS) Number Varies
Proposed Emission Rate (lb/hr) 3.50x10⁻⁶	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 6.45x10⁻⁵	Vapor Pressure (in. Hg @ °F) Varies
Solubility Varies	Molecular Weight (lb/lb-mole) 147.00
Absorptive Properties -	

Pollutant Emitted Ethylbenzene	Chemical Abstract Services (CAS) Number 100-41-4
Proposed Emission Rate (lb/hr) 4.64×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.19×10^{-3}	Vapor Pressure (in. Hg @ °F) 0.37 in Hg @ 77°F
Solubility In water 0.014 g/100mL @ 59 °F	Molecular Weight (lb/lb-mole) 106.17
Absorptive Properties -	

Pollutant Emitted Formaldehyde	Chemical Abstract Services (CAS) Number 50-00-0
Proposed Emission Rate (lb/hr) 2.16×10^{-4}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.95×10^{-2}	Vapor Pressure (in. Hg @ °F) 0.15 in Hg @ 77 °F
Solubility In water 4.00×10^5 mg/L @ 68°F	Molecular Weight (lb/lb-mole) 30.03
Absorptive Properties -	

Pollutant Emitted Hexane	Chemical Abstract Services (CAS) Number 110-54-5
Proposed Emission Rate (lb/hr) 5.26×10^{-3}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.65×10^{-1}	Vapor Pressure (in. Hg @ °F) 5.90 in Hg @ 68 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 86.1
Absorptive Properties -	

Pollutant Emitted Naphthalene	Chemical Abstract Services (CAS) Number 91-20-3
Proposed Emission Rate (lb/hr) 1.75×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 3.70×10^{-5}	Vapor Pressure (in. Hg @ °F) 0.003 in Hg @ 77 °F
Solubility In water 31 mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 128.17
Absorptive Properties -	

Pollutant Emitted Toluene	Chemical Abstract Services (CAS) Number 108-88-3
Proposed Emission Rate (lb/hr) 9.64×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 2.83×10^{-4}	Vapor Pressure (in. Hg @ °F) 1.12 in Hg @ 77°F
Solubility In water 526 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 92.14
Absorptive Properties -	

Pollutant Emitted Xylene	Chemical Abstract Services (CAS) Number 95-47-6
Proposed Emission Rate (lb/hr) 7.30×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.86×10^{-3}	Vapor Pressure (in. Hg @ °F) 0.26 in Hg @ 77°F
Solubility In water 178 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 106.16
Absorptive Properties -	

Pollutant Emitted PAH	Chemical Abstract Services (CAS) Number N/A
Proposed Emission Rate (lb/hr) 1.24×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 3.45×10^{-4}	Vapor Pressure (in. Hg @ °F) N/A
Solubility N/A	Molecular Weight (lb/lb-mole) TBD
Absorptive Properties -	

Pollutant Emitted Antimony	Chemical Abstract Services (CAS) Number 7740-36-0
Proposed Emission Rate (lb/hr) 6.07×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/particulate
Concentration in Emission Stream (ppmv) 1.35×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 121.76
Absorptive Properties -	

Pollutant Emitted Arsenic	Chemical Abstract Services (CAS) Number 7440-38-2
Proposed Emission Rate (lb/hr) 2.34×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 8.44×10^{-5}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted Beryllium	Chemical Abstract Services (CAS) Number 7440-41-7
Proposed Emission Rate (lb/hr) 1.52×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 4.56×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 9.01
Absorptive Properties -	

Pollutant Emitted Cadmium	Chemical Abstract Services (CAS) Number 7440-43-9
Proposed Emission Rate (lb/hr) 1.28×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.09×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted Chromium (hexavalent)	Chemical Abstract Services (CAS) Number 1333-82-0
Proposed Emission Rate (lb/hr) 3.27×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 1.70×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility 1,660 g/L in water @ 77°F	Molecular Weight (lb/lb-mole) 51.99
Absorptive Properties -	

Pollutant Emitted Chromium	Chemical Abstract Services (CAS) Number 7440-47-3
Proposed Emission Rate (lb/hr) 1.64×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 8.51×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 51.99
Absorptive Properties -	

Pollutant Emitted Cobalt	Chemical Abstract Services (CAS) Number 7440-48-4
Proposed Emission Rate (lb/hr) 9.58×10^{-7}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 4.40×10^{-5}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 58.93
Absorptive Properties -	

Pollutant Emitted Manganese	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) 4.32×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 2.13×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 54.94
Absorptive Properties -	

Pollutant Emitted Mercury	Chemical Abstract Services (CAS) Number 7439-97-6
Proposed Emission Rate (lb/hr) 2.92×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.94×10^{-5}	Vapor Pressure (in. Hg @ °F) 7.85×10^{-5} in Hg @ 77 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 200.59
Absorptive Properties -	

Pollutant Emitted Nickel	Chemical Abstract Services (CAS) Number 7044-02-0
Proposed Emission Rate (lb/hr) 2.45×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 1.13×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg Q 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 58.69
Absorptive Properties -	

Pollutant Emitted Selenium	Chemical Abstract Services (CAS) Number 7782-49-2
Proposed Emission Rate (lb/hr) 1.03×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.52×10^{-4}	Vapor Pressure (in. Hg @ °F) 0.29 in Hg @ 807
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 78.96
Absorptive Properties -	

Signature of Applicant 	Date 04/03/17
---	------------------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
FUEL BURNING EQUIPMENT FOR INDIRECT HEATING**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Facility Address (Street & No.) 37th Street		
City Belfield	State ND	ZIP Code 58622
County Billings	Latitude (Nearest Second) 46°52'45"N	Longitude (Nearest Second) 103°14'55" W
Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W	Land Area at Facility Site 261 Acres	MSL Elevation at Facility 2,685 feet

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) 202-B-0202A	Name of Manufacturer TBD
Rated Capacity/Maximum Input TBD	Model Number TBD
Purpose Space Heat _____ % Process Heat 100 %	Purpose Power Generation _____ % Other (Specify % if Multi Purpose) _____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here) <input type="checkbox"/> Pulverized <input type="checkbox"/> General <input type="checkbox"/> Dry Bottom <input type="checkbox"/> Wet Bottom with Fly Ash Reinjection <input type="checkbox"/> Wet Bottom without Fly Ash Reinjection <input type="checkbox"/> Other – Specify:	<input type="checkbox"/> Spreader Stoker with Fly Ash Reinjection <input type="checkbox"/> Spreader Stoker without Fly Ash Reinjection <input type="checkbox"/> Fluidized Bed <input type="checkbox"/> Cyclone <input type="checkbox"/> Hand-Fired
Fuel Oil <input type="checkbox"/> Horizontally Fired <input type="checkbox"/> Tangentially Fired <input type="checkbox"/> Other – Specify:	Gas <input type="checkbox"/> Horizontally Fired <input type="checkbox"/> Tangentially Fired <input type="checkbox"/> Other – Specify: TBD

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day 24	Days Per Week 7	Weeks Per Year 52	Hours Per Year Total 8760	Peak Season (Specify Months) N/A
----------------------------	---------------------------	-----------------------------	-------------------------------------	--

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year 2017-2018					
Primary Fuels			Standby Fuels		
Type Fuel Gas			Type None		
Quantity Per Year 6,986,976.00		Units of Measure lb/yr	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum 0	Maximum 0	Average 0	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum TBD	Maximum TBD	Average 27,582.75 BTU/lb	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: N/A, fuel gas to be generated within the refinery					

SECTION F – COMBUSTION AIR

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: TBD
--	----------------------------------	---------------------------------	--

SECTION G – STACK DATA

Inside Diameter (ft) 2	Height Above Grade (ft) 100
Gas Temperature at Exit (Avg. °F) 300.4	Gas Velocity at Exit (Avg. ft/sec) 34.6
Are Emission Control Devices in Place? If YES – Complete SFN 8532 <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Stack Exit Gas Flow Rate	
Average (ACFM) 1,872.75	Average (DSCFM) TBD
Maximum (ACFM) 6,523.00	Maximum (DSCFM) TBD
Are sampling ports available? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes – Describe:	

SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment. Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM ₁₀ Total	8.80E-02	3.85E-01
PM ₁₀ Filterable	2.20E-02	9.64E-02
PM _{2.5} Total	8.80E-02	3.85E-01
PM _{2.5} Filterable	2.20E-02	9.64E-02
PM _{2.5} Condensable	6.60E-02	2.89E-01
Sulfur Dioxide	1.29E-02	5.67E-02
Nitrogen Oxides	6.60E-01	2.89E+00
Carbon Monoxide	6.16E-01	2.70E+00
Greenhouse Gases (CO ₂ e)	N/A	
Other – Specify		
Lead	1.08E-05	4.72E-05
Metal HAP (Total)	1.61E-04	7.05E-04
Organic HAPs (Total)	1.08E-02	4.71E-02
VOC	1.19E-01	5.20E-01
Basis and Calculations for Quantities: Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"		

Signature of Applicant	
	Date 04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
 Division of Air Quality
 918 E Divide Ave., 2nd Floor
 Bismarck, ND 58501-1947
 (701) 328-5188



PERMIT APPLICATION FOR HAZARDOUS AIR POLLUTANT (HAP) SOURCES

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization Meridian Energy Group - Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409) 795-0792	E-mail Address tjohnson@meridianenergygroup.inc
Facility Address (Street & No. or Lat/Long to Nearest Second) 37th Street / 46°52'45"N/103°14'55" W		
City Belfield	State ND	ZIP Code 58622
County Billings	Number of Employees at Location TBD	
Land Area at Plant Site 261 Acres (or)	Sq. Ft.	MSL Elevation at Plant 2,685 feet

Describe Nature of Business/Process Petroleum Refining / High Pressure Utility Boiler A

SECTION B – STACK DATA

Inside Diameter (ft) 2.0	Height Above Grade (ft) 100	
Gas Temperature at Exit (°F) 300.4	Gas Velocity at Exit (ft/sec) 34.6	Gas Volume (scfm) 4,528.52
Basis of any Estimates (attach separate sheet if necessary) Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Nearest Residences or Building Utility building	Distance (ft) 0 ft	Direction N/A
Nearest Property Line Fenceline	Distance (ft) 560.3 ft	Direction Southeast

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 202-B-0202A	Mean Particle Diameter (µm) TBD
Flow Rate (scfm) 4,528.52	Drift Velocity (ft/sec) 34.6
Stream Temperature (°F) 300.4	Particulate Concentration (gr/dscf) TBD
Moisture Content (%) TBD	Halogens or Metals Present? Metals
Pressure (in. Hg) TBD	Organic Content (ppmv) 1.93 x10⁻¹
Heat Content (Btu/scfm) TBD	O ₂ Content (%) N/A

SECTION D – POLLUTANT SPECIFIC DATA

(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted Acetaldehyde	Chemical Abstract Services (CAS) Number 75-07-0
Proposed Emission Rate (lb/hr) 6.60x10⁻⁵	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 2.15x10⁻³	Vapor Pressure (in. Hg @ °F) 35.51 in Hg @ 68°C
Solubility 1x10⁻⁶ mg/L in water @ 77°F	Molecular Weight (lb/lb-mole) 44.05
Absorptive Properties -	

Pollutant Emitted Benzene	Chemical Abstract Services (CAS) Number 71-43-2
Proposed Emission Rate (lb/hr) 1.16x10⁻⁵	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 2.12 x10⁻⁴	Vapor Pressure (in. Hg @ °F) 3.73 in Hg @ 77 °F
Solubility In water 1.79x10³ mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 78.11
Absorptive Properties -	

Pollutant Emitted Dichlorobenzene	Chemical Abstract Services (CAS) Number Varies
Proposed Emission Rate (lb/hr) 6.60x10⁻⁶	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 6.45x10⁻⁵	Vapor Pressure (in. Hg @ °F) Varies
Solubility Varies	Molecular Weight (lb/lb-mole) 147.00
Absorptive Properties -	

Pollutant Emitted Ethylbenzene	Chemical Abstract Services (CAS) Number 100-41-4
Proposed Emission Rate (lb/hr) 8.80×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.19×10^{-3}	Vapor Pressure (in. Hg @ °F) 0.37 in Hg @ 77°F
Solubility In water 0.014 g/100mL @ 59 °F	Molecular Weight (lb/lb-mole) 106.17
Absorptive Properties -	

Pollutant Emitted Formaldehyde	Chemical Abstract Services (CAS) Number 50-00-0
Proposed Emission Rate (lb/hr) 4.07×10^{-4}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.95×10^{-2}	Vapor Pressure (in. Hg @ °F) 0.15 in Hg @ 77 °F
Solubility In water 4.00×10^5 mg/L @ 68°F	Molecular Weight (lb/lb-mole) 30.03
Absorptive Properties -	

Pollutant Emitted Hexane	Chemical Abstract Services (CAS) Number 110-54-5
Proposed Emission Rate (lb/hr) 9.90×10^{-3}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.65×10^{-1}	Vapor Pressure (in. Hg @ °F) 5.90 in Hg @ 68 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 86.1
Absorptive Properties -	

Pollutant Emitted Naphthalene	Chemical Abstract Services (CAS) Number 91-20-3
Proposed Emission Rate (lb/hr) 3.30×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 3.70×10^{-5}	Vapor Pressure (in. Hg @ °F) 0.003 in Hg @ 77 °F
Solubility In water 31 mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 128.17
Absorptive Properties -	

Pollutant Emitted Toluene	Chemical Abstract Services (CAS) Number 108-88-3
Proposed Emission Rate (lb/hr) 1.82×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 2.83×10^{-4}	Vapor Pressure (in. Hg @ °F) 1.12 in Hg @ 77°F
Solubility In water 526 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 92.14
Absorptive Properties -	

Pollutant Emitted Xylene	Chemical Abstract Services (CAS) Number 95-47-6
Proposed Emission Rate (lb/hr) 1.38×10^{-4}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.86×10^{-3}	Vapor Pressure (in. Hg @ °F) 0.26 in Hg @ 77°F
Solubility In water 178 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 106.16
Absorptive Properties -	

Pollutant Emitted PAH	Chemical Abstract Services (CAS) Number N/A
Proposed Emission Rate (lb/hr) 2.34×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 3.45×10^{-4}	Vapor Pressure (in. Hg @ °F) N/A
Solubility N/A	Molecular Weight (lb/lb-mole) TBD
Absorptive Properties -	

Pollutant Emitted Antimony	Chemical Abstract Services (CAS) Number 7740-36-0
Proposed Emission Rate (lb/hr) 1.14×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/particulate
Concentration in Emission Stream (ppmv) 1.35×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 121.76
Absorptive Properties -	

Pollutant Emitted Arsenic	Chemical Abstract Services (CAS) Number 7440-38-2
Proposed Emission Rate (lb/hr) 4.40×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 8.44×10^{-5}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted Beryllium	Chemical Abstract Services (CAS) Number 7440-41-7
Proposed Emission Rate (lb/hr) 2.86×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 4.56×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 9.01
Absorptive Properties -	

Pollutant Emitted Cadmium	Chemical Abstract Services (CAS) Number 7440-43-9
Proposed Emission Rate (lb/hr) 2.42×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.09×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted Chromium (hexavalent)	Chemical Abstract Services (CAS) Number 1333-82-0
Proposed Emission Rate (lb/hr) 6.16×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 1.70×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility 1,660 g/L in water @ 77°F	Molecular Weight (lb/lb-mole) 51.99
Absorptive Properties -	

Pollutant Emitted Chromium	Chemical Abstract Services (CAS) Number 7440-47-3
Proposed Emission Rate (lb/hr) 3.08×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 8.51×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 51.99
Absorptive Properties -	


Pollutant Emitted Cobalt	Chemical Abstract Services (CAS) Number 7440-48-4
Proposed Emission Rate (lb/hr) 1.80×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 4.40×10^{-5}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 58.93
Absorptive Properties -	

Pollutant Emitted Manganese	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) 8.14×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 2.13×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 54.94
Absorptive Properties -	

Pollutant Emitted Mercury	Chemical Abstract Services (CAS) Number 7439-97-6
Proposed Emission Rate (lb/hr) 5.50×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.94×10^{-5}	Vapor Pressure (in. Hg @ °F) 7.85×10^{-5} in Hg @ 77 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 200.59
Absorptive Properties -	

Pollutant Emitted Nickel	Chemical Abstract Services (CAS) Number 7044-02-0
Proposed Emission Rate (lb/hr) 4.62×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.52×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg Q 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 58.69
Absorptive Properties -	

Pollutant Emitted Selenium	Chemical Abstract Services (CAS) Number 7782-49-2
Proposed Emission Rate (lb/hr) 1.94×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.52×10^{-4}	Vapor Pressure (in. Hg @ °F) 0.29 in Hg @ 807
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 78.96
Absorptive Properties -	

Signature of Applicant 	Date 04/03/17
--	------------------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
FUEL BURNING EQUIPMENT FOR INDIRECT HEATING**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Facility Address (Street & No.) 37th Street		
City Belfield	State ND	ZIP Code 58622
County Billings	Latitude (Nearest Second) 46°52'45"N	Longitude (Nearest Second) 103°14'55" W
Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W	Land Area at Facility Site 261 Acres	MSL Elevation at Facility 2,685 feet

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) 202-B-0202B	Name of Manufacturer TBD
Rated Capacity/Maximum Input TBD	Model Number TBD
Purpose Space Heat _____ % Process Heat 100 %	Purpose Power Generation _____ % Other (Specify % if Multi Purpose) _____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here) <input type="checkbox"/> Pulverized <input type="checkbox"/> General <input type="checkbox"/> Dry Bottom <input type="checkbox"/> Wet Bottom with Fly Ash Reinjection <input type="checkbox"/> Wet Bottom without Fly Ash Reinjection <input type="checkbox"/> Other – Specify:	<input type="checkbox"/> Spreader Stoker with Fly Ash Reinjection <input type="checkbox"/> Spreader Stoker without Fly Ash Reinjection <input type="checkbox"/> Fluidized Bed <input type="checkbox"/> Cyclone <input type="checkbox"/> Hand-Fired
Fuel Oil <input type="checkbox"/> Horizontally Fired <input type="checkbox"/> Tangentially Fired <input type="checkbox"/> Other – Specify:	Gas <input type="checkbox"/> Horizontally Fired <input type="checkbox"/> Tangentially Fired <input type="checkbox"/> Other – Specify: TBD

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day 24	Days Per Week 7	Weeks Per Year 52	Hours Per Year Total 8760	Peak Season (Specify Months) N/A
----------------------------	---------------------------	-----------------------------	-------------------------------------	--

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year 2017-2018					
Primary Fuels			Standby Fuels		
Type Fuel Gas			Type None		
Quantity Per Year 6,986,976.00		Units of Measure lb/yr	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum 0	Maximum 0	Average 0	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum TBD	Maximum TBD	Average 27,582.75 BTU/lb	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: N/A, fuel gas to be generated within the refinery					

SECTION F – COMBUSTION AIR

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: TBD
--	----------------------------------	---------------------------------	--

SECTION G – STACK DATA


Inside Diameter (ft) 2	Height Above Grade (ft) 100
Gas Temperature at Exit (Avg. °F) 300.4	Gas Velocity at Exit (Avg. ft/sec) 34.6
Are Emission Control Devices in Place? If YES – Complete SFN 8532 <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Stack Exit Gas Flow Rate	
Average (ACFM) 1,872.75	Average (DSCFM) TBD
Maximum (ACFM) 6,523.00	Maximum (DSCFM) TBD
Are sampling ports available? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes – Describe:	

SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment. Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM ₁₀ Total	8.80E-02	3.85E-01
PM ₁₀ Filterable	2.20E-02	9.64E-02
PM _{2.5} Total	8.80E-02	3.85E-01
PM _{2.5} Filterable	2.20E-02	9.64E-02
PM _{2.5} Condensable	6.60E-02	2.89E-01
Sulfur Dioxide	1.29E-02	5.67E-02
Nitrogen Oxides	6.60E-01	2.89E+00
Carbon Monoxide	6.16E-01	2.70E+00
Greenhouse Gases (CO ₂ e)	N/A	
Other – Specify		
Lead	1.08E-05	4.72E-05
Metal HAP (Total)	1.61E-04	7.05E-04
Organic HAPs (Total)	1.08E-02	4.71E-02
VOC	1.19E-01	5.20E-01
Basis and Calculations for Quantities: Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"		

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
 Division of Air Quality
 918 E Divide Ave., 2nd Floor
 Bismarck, ND 58501-1947
 (701) 328-5188



PERMIT APPLICATION FOR HAZARDOUS AIR POLLUTANT (HAP) SOURCES

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization Meridian Energy Group - Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc
Facility Address (Street & No. or Lat/Long to Nearest Second) 37th Street / 46°52'45"N/103°14'55" W		
City Belfield	State ND	ZIP Code 58622
County Billings	Number of Employees at Location TBD	
Land Area at Plant Site 261 Acres (or)	Sq. Ft.	MSL Elevation at Plant 2,685 feet

Describe Nature of Business/Process Petroleum Refining / High Pressure Utility Boiler B

SECTION B – STACK DATA

Inside Diameter (ft) 2.0	Height Above Grade (ft) 100	
Gas Temperature at Exit (°F) 300.4	Gas Velocity at Exit (ft/sec) 34.6	Gas Volume (scfm) 4,528.52
Basis of any Estimates (attach separate sheet if necessary) Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "BACT Analysis"		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Nearest Residences or Building Utility building	Distance (ft) 0 ft	Direction N/A
Nearest Property Line Fenceline	Distance (ft) 566.6 ft	Direction Southeast

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 202-B-0202B	Mean Particle Diameter (µm) TBD
Flow Rate (scfm) 4,528.52	Drift Velocity (ft/sec) 34.6
Stream Temperature (°F) 300.4	Particulate Concentration (gr/dscf) TBD
Moisture Content (%) TBD	Halogens or Metals Present? Metals
Pressure (in. Hg) TBD	Organic Content (ppmv) 1.93 x10⁻¹
Heat Content (Btu/scfm) TBD	O ₂ Content (%) N/A

SECTION D – POLLUTANT SPECIFIC DATA

(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted Acetaldehyde	Chemical Abstract Services (CAS) Number 75-07-0
Proposed Emission Rate (lb/hr) 6.60x10⁻⁵	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 2.15x10⁻³	Vapor Pressure (in. Hg @ °F) 35.51 in Hg @ 68°C
Solubility 1x10⁻⁶ mg/L in water @ 77°F	Molecular Weight (lb/lb-mole) 44.05
Absorptive Properties -	

Pollutant Emitted Benzene	Chemical Abstract Services (CAS) Number 71-43-2
Proposed Emission Rate (lb/hr) 1.16x10⁻⁵	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 2.12 x10⁻⁴	Vapor Pressure (in. Hg @ °F) 3.73 in Hg @ 77 °F
Solubility In water 1.79x10³ mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 78.11
Absorptive Properties -	

Pollutant Emitted Dichlorobenzene	Chemical Abstract Services (CAS) Number Varies
Proposed Emission Rate (lb/hr) 6.60x10⁻⁶	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 6.45x10⁻⁵	Vapor Pressure (in. Hg @ °F) Varies
Solubility Varies	Molecular Weight (lb/lb-mole) 147.00
Absorptive Properties -	

Pollutant Emitted Ethylbenzene	Chemical Abstract Services (CAS) Number 100-41-4
Proposed Emission Rate (lb/hr) 8.80×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.19×10^{-3}	Vapor Pressure (in. Hg @ °F) 0.37 in Hg @ 77°F
Solubility In water 0.014 g/100mL @ 59 °F	Molecular Weight (lb/lb-mole) 106.17
Absorptive Properties -	

Pollutant Emitted Formaldehyde	Chemical Abstract Services (CAS) Number 50-00-0
Proposed Emission Rate (lb/hr) 4.07×10^{-4}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.95×10^{-2}	Vapor Pressure (in. Hg @ °F) 0.15 in Hg @ 77 °F
Solubility In water 4.00×10^5 mg/L @ 68°F	Molecular Weight (lb/lb-mole) 30.03
Absorptive Properties -	

Pollutant Emitted Hexane	Chemical Abstract Services (CAS) Number 110-54-5
Proposed Emission Rate (lb/hr) 9.90×10^{-3}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.65×10^{-1}	Vapor Pressure (in. Hg @ °F) 5.90 in Hg @ 68 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 86.1
Absorptive Properties -	

Pollutant Emitted Naphthalene	Chemical Abstract Services (CAS) Number 91-20-3
Proposed Emission Rate (lb/hr) 3.30×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 3.70×10^{-5}	Vapor Pressure (in. Hg @ °F) 0.003 in Hg @ 77 °F
Solubility In water 31 mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 128.17
Absorptive Properties -	

Pollutant Emitted Toluene	Chemical Abstract Services (CAS) Number 108-88-3
Proposed Emission Rate (lb/hr) 1.82×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 2.83×10^{-4}	Vapor Pressure (in. Hg @ °F) 1.12 in Hg @ 77°F
Solubility In water 526 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 92.14
Absorptive Properties -	

Pollutant Emitted Xylene	Chemical Abstract Services (CAS) Number 95-47-6
Proposed Emission Rate (lb/hr) 1.38×10^{-4}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.86×10^{-3}	Vapor Pressure (in. Hg @ °F) 0.26 in Hg @ 77°F
Solubility In water 178 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 106.16
Absorptive Properties -	

Pollutant Emitted PAH	Chemical Abstract Services (CAS) Number N/A
Proposed Emission Rate (lb/hr) 2.34×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 3.45×10^{-4}	Vapor Pressure (in. Hg @ °F) N/A
Solubility N/A	Molecular Weight (lb/lb-mole) TBD
Absorptive Properties -	

Pollutant Emitted Antimony	Chemical Abstract Services (CAS) Number 7740-36-0
Proposed Emission Rate (lb/hr) 1.14×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/particulate
Concentration in Emission Stream (ppmv) 1.35×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 121.76
Absorptive Properties -	

Pollutant Emitted Arsenic	Chemical Abstract Services (CAS) Number 7440-38-2
Proposed Emission Rate (lb/hr) 4.40×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 8.44×10^{-5}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted Beryllium	Chemical Abstract Services (CAS) Number 7440-41-7
Proposed Emission Rate (lb/hr) 2.86×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 4.56×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 9.01
Absorptive Properties -	

Pollutant Emitted Cadmium	Chemical Abstract Services (CAS) Number 7440-43-9
Proposed Emission Rate (lb/hr) 2.42×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.09×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted Chromium (hexavalent)	Chemical Abstract Services (CAS) Number 1333-82-0
Proposed Emission Rate (lb/hr) 6.16×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 1.70×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility 1,660 g/L in water @ 77°F	Molecular Weight (lb/lb-mole) 51.99
Absorptive Properties -	

Pollutant Emitted Chromium	Chemical Abstract Services (CAS) Number 7440-47-3
Proposed Emission Rate (lb/hr) 3.08×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 8.51×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 51.99
Absorptive Properties -	


Pollutant Emitted Cobalt	Chemical Abstract Services (CAS) Number 7440-48-4
Proposed Emission Rate (lb/hr) 1.80×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 4.40×10^{-5}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 58.93
Absorptive Properties -	

Pollutant Emitted Manganese	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) 8.14×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 2.13×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 54.94
Absorptive Properties -	

Pollutant Emitted Mercury	Chemical Abstract Services (CAS) Number 7439-97-6
Proposed Emission Rate (lb/hr) 5.50×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.94×10^{-5}	Vapor Pressure (in. Hg @ °F) 7.85×10^{-5} in Hg @ 77 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 200.59
Absorptive Properties -	

Pollutant Emitted Nickel	Chemical Abstract Services (CAS) Number 7044-02-0
Proposed Emission Rate (lb/hr) 4.62×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.52×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg Q 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 58.69
Absorptive Properties -	

Pollutant Emitted Selenium	Chemical Abstract Services (CAS) Number 7782-49-2
Proposed Emission Rate (lb/hr) 1.94×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.52×10^{-4}	Vapor Pressure (in. Hg @ °F) 0.29 in Hg @ 807
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 78.96
Absorptive Properties -	

Signature of Applicant 	Date 04/03/17
---	------------------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
FUEL BURNING EQUIPMENT FOR INDIRECT HEATING**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Facility Address (Street & No.) 37th Street		
City Belfield	State ND	ZIP Code 58622
County Billings	Latitude (Nearest Second) 46°52'45"N	Longitude (Nearest Second) 103°14'55" W
Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W	Land Area at Facility Site 261 Acres	MSL Elevation at Facility 2,685 feet

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) 202-B-0202C	Name of Manufacturer TBD
Rated Capacity/Maximum Input TBD	Model Number TBD
Purpose Space Heat _____ % Process Heat 100 %	Purpose Power Generation _____ % Other (Specify % if Multi Purpose) _____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here) <input type="checkbox"/> Pulverized <input type="checkbox"/> General <input type="checkbox"/> Dry Bottom <input type="checkbox"/> Wet Bottom with Fly Ash Reinjection <input type="checkbox"/> Wet Bottom without Fly Ash Reinjection <input type="checkbox"/> Other – Specify:	<input type="checkbox"/> Spreader Stoker with Fly Ash Reinjection <input type="checkbox"/> Spreader Stoker without Fly Ash Reinjection <input type="checkbox"/> Fluidized Bed <input type="checkbox"/> Cyclone <input type="checkbox"/> Hand-Fired
Fuel Oil <input type="checkbox"/> Horizontally Fired <input type="checkbox"/> Tangentially Fired <input type="checkbox"/> Other – Specify:	Gas <input type="checkbox"/> Horizontally Fired <input type="checkbox"/> Tangentially Fired <input type="checkbox"/> Other – Specify: TBD

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day 24	Days Per Week 7	Weeks Per Year 52	Hours Per Year Total 8760	Peak Season (Specify Months) N/A
----------------------------	---------------------------	-----------------------------	-------------------------------------	--

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year 2017-2018					
Primary Fuels			Standby Fuels		
Type Fuel Gas			Type None		
Quantity Per Year 6,986,976.00		Units of Measure lb/yr	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum 0	Maximum 0	Average 0	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum TBD	Maximum TBD	Average 27,582.75 BTU/lb	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: N/A, fuel gas to be generated within the refinery					

SECTION F – COMBUSTION AIR

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: TBD
--	----------------------------------	---------------------------------	--

SECTION G – STACK DATA

Inside Diameter (ft) 2		Height Above Grade (ft) 100	
Gas Temperature at Exit (Avg. °F) 300.4		Gas Velocity at Exit (Avg. ft/sec) 34.6	
Are Emission Control Devices in Place? If YES – Complete SFN 8532 <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Stack Exit Gas Flow Rate			
Average (ACFM) 1,872.75		Average (DSCFM) TBD	
Maximum (ACFM) 6,523.00		Maximum (DSCFM) TBD	
Are sampling ports available? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes – Describe:			

SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment. Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM ₁₀ Total	8.80E-02	3.85E-01
PM ₁₀ Filterable	2.20E-02	9.64E-02
PM _{2.5} Total	8.80E-02	3.85E-01
PM _{2.5} Filterable	2.20E-02	9.64E-02
PM _{2.5} Condensable	6.60E-02	2.89E-01
Sulfur Dioxide	1.29E-02	5.67E-02
Nitrogen Oxides	6.60E-01	2.89E+00
Carbon Monoxide	6.16E-01	2.70E+00
Greenhouse Gases (CO ₂ e)	N/A	
Other – Specify		
Lead	1.08E-05	4.72E-05
Metal HAP (Total)	1.61E-04	7.05E-04
Organic HAPs (Total)	1.08E-02	4.71E-02
VOC	1.19E-01	5.20E-01
Basis and Calculations for Quantities: Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"		

Signature of Applicant 	Date 04/03/17
---	------------------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
 Division of Air Quality
 918 E Divide Ave., 2nd Floor
 Bismarck, ND 58501-1947
 (701) 328-5188



PERMIT APPLICATION FOR HAZARDOUS AIR POLLUTANT (HAP) SOURCES

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization Meridian Energy Group - Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409) 795-0792	E-mail Address tjohnson@meridianenergygroup.inc
Facility Address (Street & No. or Lat/Long to Nearest Second) 37th Street / 46°52'45"N/103°14'55" W		
City Belfield	State ND	ZIP Code 58622
County Billings	Number of Employees at Location TBD	
Land Area at Plant Site 261 Acres (or)	Sq. Ft.	MSL Elevation at Plant 2,685 feet

Describe Nature of Business/Process Petroleum Refining / High Pressure Utility Boiler C

SECTION B – STACK DATA

Inside Diameter (ft) 2.0	Height Above Grade (ft) 100	
Gas Temperature at Exit (°F) 300.4	Gas Velocity at Exit (ft/sec) 34.6	Gas Volume (scfm) 4,528.52
Basis of any Estimates (attach separate sheet if necessary) Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Nearest Residences or Building Utility building	Distance (ft) 0 ft	Direction N/A
Nearest Property Line Fenceline	Distance (ft) 516.5 ft	Direction Southeast

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 202-B-0202C	Mean Particle Diameter (µm) TBD
Flow Rate (scfm) 4,528.52	Drift Velocity (ft/sec) 34.6
Stream Temperature (°F) 300.4	Particulate Concentration (gr/dscf) TBD
Moisture Content (%) TBD	Halogens or Metals Present? Metals
Pressure (in. Hg) TBD	Organic Content (ppmv) 1.93 x10⁻¹
Heat Content (Btu/scfm) TBD	O ₂ Content (%) N/A

SECTION D – POLLUTANT SPECIFIC DATA

(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted Acetaldehyde	Chemical Abstract Services (CAS) Number 75-07-0
Proposed Emission Rate (lb/hr) 6.60x10⁻⁵	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 2.15x10⁻³	Vapor Pressure (in. Hg @ °F) 35.51 in Hg @ 68°C
Solubility 1x10⁻⁶ mg/L in water @ 77°F	Molecular Weight (lb/lb-mole) 44.05
Absorptive Properties -	

Pollutant Emitted Benzene	Chemical Abstract Services (CAS) Number 71-43-2
Proposed Emission Rate (lb/hr) 1.16x10⁻⁵	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 2.12 x10⁻⁴	Vapor Pressure (in. Hg @ °F) 3.73 in Hg @ 77 °F
Solubility In water 1.79x10³ mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 78.11
Absorptive Properties -	

Pollutant Emitted Dichlorobenzene	Chemical Abstract Services (CAS) Number Varies
Proposed Emission Rate (lb/hr) 6.60x10⁻⁶	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) 6.45x10⁻⁵	Vapor Pressure (in. Hg @ °F) Varies
Solubility Varies	Molecular Weight (lb/lb-mole) 147.00
Absorptive Properties -	

Pollutant Emitted Ethylbenzene	Chemical Abstract Services (CAS) Number 100-41-4
Proposed Emission Rate (lb/hr) 8.80×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.19×10^{-3}	Vapor Pressure (in. Hg @ °F) 0.37 in Hg @ 77°F
Solubility In water 0.014 g/100mL @ 59 °F	Molecular Weight (lb/lb-mole) 106.17
Absorptive Properties -	

Pollutant Emitted Formaldehyde	Chemical Abstract Services (CAS) Number 50-00-0
Proposed Emission Rate (lb/hr) 4.07×10^{-4}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.95×10^{-2}	Vapor Pressure (in. Hg @ °F) 0.15 in Hg @ 77 °F
Solubility In water 4.00×10^5 mg/L @ 68°F	Molecular Weight (lb/lb-mole) 30.03
Absorptive Properties -	

Pollutant Emitted Hexane	Chemical Abstract Services (CAS) Number 110-54-5
Proposed Emission Rate (lb/hr) 9.90×10^{-3}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.65×10^{-1}	Vapor Pressure (in. Hg @ °F) 5.90 in Hg @ 68 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 86.1
Absorptive Properties -	

Pollutant Emitted Naphthalene	Chemical Abstract Services (CAS) Number 91-20-3
Proposed Emission Rate (lb/hr) 3.30×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 3.70×10^{-5}	Vapor Pressure (in. Hg @ °F) 0.003 in Hg @ 77 °F
Solubility In water 31 mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 128.17
Absorptive Properties -	

Pollutant Emitted Toluene	Chemical Abstract Services (CAS) Number 108-88-3
Proposed Emission Rate (lb/hr) 1.82×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 2.83×10^{-4}	Vapor Pressure (in. Hg @ °F) 1.12 in Hg @ 77°F
Solubility In water 526 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 92.14
Absorptive Properties -	

Pollutant Emitted Xylene	Chemical Abstract Services (CAS) Number 95-47-6
Proposed Emission Rate (lb/hr) 1.38×10^{-4}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 1.86×10^{-3}	Vapor Pressure (in. Hg @ °F) 0.26 in Hg @ 77°F
Solubility In water 178 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 106.16
Absorptive Properties -	

Pollutant Emitted PAH	Chemical Abstract Services (CAS) Number N/A
Proposed Emission Rate (lb/hr) 2.34×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) 3.45×10^{-4}	Vapor Pressure (in. Hg @ °F) N/A
Solubility N/A	Molecular Weight (lb/lb-mole) TBD
Absorptive Properties -	

Pollutant Emitted Antimony	Chemical Abstract Services (CAS) Number 7740-36-0
Proposed Emission Rate (lb/hr) 1.14×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/particulate
Concentration in Emission Stream (ppmv) 1.35×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 121.76
Absorptive Properties -	

Pollutant Emitted Arsenic	Chemical Abstract Services (CAS) Number 7440-38-2
Proposed Emission Rate (lb/hr) 4.40×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 8.44×10^{-5}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted Beryllium	Chemical Abstract Services (CAS) Number 7440-41-7
Proposed Emission Rate (lb/hr) 2.86×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 4.56×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 9.01
Absorptive Properties -	

Pollutant Emitted Cadmium	Chemical Abstract Services (CAS) Number 7440-43-9
Proposed Emission Rate (lb/hr) 2.42×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.09×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted Chromium (hexavalent)	Chemical Abstract Services (CAS) Number 1333-82-0
Proposed Emission Rate (lb/hr) 6.16×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 1.70×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility 1,660 g/L in water @ 77°F	Molecular Weight (lb/lb-mole) 51.99
Absorptive Properties -	

Pollutant Emitted Chromium	Chemical Abstract Services (CAS) Number 7440-47-3
Proposed Emission Rate (lb/hr) 3.08×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 8.51×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 51.99
Absorptive Properties -	

Pollutant Emitted Cobalt	Chemical Abstract Services (CAS) Number 7440-48-4
Proposed Emission Rate (lb/hr) 1.80×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 4.40×10^{-5}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 58.93
Absorptive Properties -	

Pollutant Emitted Manganese	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) 8.14×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 2.13×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg @ 77 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 54.94
Absorptive Properties -	

Pollutant Emitted Mercury	Chemical Abstract Services (CAS) Number 7439-97-6
Proposed Emission Rate (lb/hr) 5.50×10^{-6}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.94×10^{-5}	Vapor Pressure (in. Hg @ °F) 7.85×10^{-5} in Hg @ 77 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 200.59
Absorptive Properties -	

Pollutant Emitted Nickel	Chemical Abstract Services (CAS) Number 7044-02-0
Proposed Emission Rate (lb/hr) 4.62×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.52×10^{-4}	Vapor Pressure (in. Hg @ °F) 0 in Hg Q 77°F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 58.69
Absorptive Properties -	

Pollutant Emitted Selenium	Chemical Abstract Services (CAS) Number 7782-49-2
Proposed Emission Rate (lb/hr) 1.94×10^{-5}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Inorganic/Particulate
Concentration in Emission Stream (ppmv) 3.52×10^{-4}	Vapor Pressure (in. Hg @ °F) 0.29 in Hg @ 807
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 78.96
Absorptive Properties -	

Signature of Applicant 	Date 04/03/17
---	------------------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
VOLATILE ORGANIC COMPOUNDS STORAGE TANK**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8535 (10-13)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – TANK DATA

Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W				
County Billings		Source ID Number 203-T-0301		
Capacity	Barrels 110,999	Gallons 4,661,958		
Dimensions	Diameter 115'	Height 60'	Length	Width
Shape	<input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Spherical <input type="checkbox"/> Other – Specify:			
Materials of Construction	Carbon Steel			
Construction	<input type="checkbox"/> Riveted <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Other – Specify:			
Color	Beige			
Condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
Status	<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing (Give Date Constructed):			
Type of Tank	<input type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating <input type="checkbox"/> Variable Vapor Space <input checked="" type="checkbox"/> Internal Floating <input type="checkbox"/> Pressure (low or high) <input type="checkbox"/> Other – Specify:			
Type of Roof	<input type="checkbox"/> Pan <input checked="" type="checkbox"/> Double Deck <input type="checkbox"/> Pontoon <input type="checkbox"/> Other – Specify:			
Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal	
	<input type="checkbox"/> Primary Seal Only <input checked="" type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Shoe Mounted Secondary Seal	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	

SECTION C – TANK CONTENTS

Crude Oil, (RVP 6.8 – 7 psi)

SECTION D – VAPOR DISPOSAL

Atmosphere Vapor Recovery Unit Flare Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure -	Maximum Reid Vapor Pressure 6.8 - 7

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) TBD	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15) N/A
Average Throughput (gallons per day) 770,000	Tank Turnovers per Year 60.25

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:

Name of Solvent N/A	Name of Material Dissolved N/A
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal) N/A	

SECTION H – AIR CONTAMINANTS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
Benzene	4.58×10^{-3}	2.01×10^{-2}	VOC from TANKS 4.0.9d software modeled runs. HAPs from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"
Biphenyl	9.17×10^{-5}	4.02×10^{-4}	
Cresol	2.75×10^{-4}	1.20×10^{-3}	
Cumene	2.29×10^{-4}	1.00×10^{-3}	
Ethylbenzene	7.33×10^{-4}	3.21×10^{-3}	
Hexane	3.85×10^{-2}	1.69×10^{-1}	
Naphthalene	2.75×10^{-4}	1.20×10^{-3}	
Phenol	4.13×10^{-4}	1.81×10^{-3}	
Toluene	3.44×10^{-3}	1.51×10^{-2}	
Xylene	2.84×10^{-3}	1.24×10^{-2}	
VOC	2.80×10^{-1}	1.22	

* Include an estimate of greenhouse gas emissions (CO₂e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to:	<input type="checkbox"/> 40 CFR 60, Subpart K	<input type="checkbox"/> 40 CFR 60, Subpart Ka	<input checked="" type="checkbox"/> 40 CFR 60, Subpart Kb
Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb being adhered to, where applicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No – Explain:			

Signature of Applicant		Date	04/03/17
------------------------	---	------	----------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
VOLATILE ORGANIC COMPOUNDS STORAGE TANK**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8535 (10-13)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – TANK DATA

Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W				
County Billings		Source ID Number 203-T-0302		
Capacity	Barrels 110,999	Gallons 4,661,958		
Dimensions	Diameter 115'	Height 60'	Length	Width
Shape	<input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Spherical <input type="checkbox"/> Other – Specify:			
Materials of Construction	Carbon Steel			
Construction	<input type="checkbox"/> Riveted <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Other – Specify:			
Color	Beige			
Condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
Status	<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing (Give Date Constructed):			
Type of Tank	<input type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating <input type="checkbox"/> Variable Vapor Space <input checked="" type="checkbox"/> Internal Floating <input type="checkbox"/> Pressure (low or high) <input type="checkbox"/> Other – Specify:			
Type of Roof	<input type="checkbox"/> Pan <input checked="" type="checkbox"/> Double Deck <input type="checkbox"/> Pontoon <input type="checkbox"/> Other – Specify:			
Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal	
	<input type="checkbox"/> Primary Seal Only <input checked="" type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Shoe Mounted Secondary Seal	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	

SECTION C – TANK CONTENTS

Crude Oil, (RVP 6.8 – 7 psi)

SECTION D – VAPOR DISPOSAL

Atmosphere Vapor Recovery Unit Flare Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure -	Maximum Reid Vapor Pressure 6.8 - 7

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) TBD	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15) N/A
Average Throughput (gallons per day) 770,000	Tank Turnovers per Year 60.25

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:

Name of Solvent N/A	Name of Material Dissolved N/A
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal) N/A	

SECTION H – AIR CONTAMINANTS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
Benzene	4.58×10^{-3}	2.01×10^{-2}	VOC from TANKS 4.0.9d software modeled runs. HAPs from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"
Biphenyl	9.17×10^{-5}	4.02×10^{-4}	
Cresol	2.75×10^{-4}	1.20×10^{-3}	
Cumene	2.29×10^{-4}	1.00×10^{-3}	
Ethylbenzene	7.33×10^{-4}	3.21×10^{-3}	
Hexane	3.85×10^{-2}	1.69×10^{-1}	
Naphthalene	2.75×10^{-4}	1.20×10^{-3}	
Phenol	4.13×10^{-4}	1.81×10^{-3}	
Toluene	3.44×10^{-3}	1.51×10^{-2}	
Xylene	2.84×10^{-3}	1.24×10^{-2}	
VOC	2.80×10^{-1}	1.22	

* Include an estimate of greenhouse gas emissions (CO₂e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to:	<input type="checkbox"/> 40 CFR 60, Subpart K	<input type="checkbox"/> 40 CFR 60, Subpart Ka	<input checked="" type="checkbox"/> 40 CFR 60, Subpart Kb
Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb being adhered to, where applicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No – Explain:			

Signature of Applicant		Date	04/03/17
------------------------	---	------	----------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
VOLATILE ORGANIC COMPOUNDS STORAGE TANK**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8535 (10-13)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – TANK DATA

Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W				
County Billings		Source ID Number 203-T-0305		
Capacity	Barrels 64,996	Gallons 2,729,832		
Dimensions	Diameter 88'	Height 60'	Length	Width
Shape	<input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Spherical <input type="checkbox"/> Other – Specify:			
Materials of Construction	Carbon Steel			
Construction	<input type="checkbox"/> Riveted <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Other – Specify:			
Color	Beige			
Condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
Status	<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing (Give Date Constructed):			
Type of Tank	<input type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating <input type="checkbox"/> Variable Vapor Space <input checked="" type="checkbox"/> Internal Floating <input type="checkbox"/> Pressure (low or high) <input type="checkbox"/> Other – Specify:			
Type of Roof	<input type="checkbox"/> Pan <input checked="" type="checkbox"/> Double Deck <input type="checkbox"/> Pontoon <input type="checkbox"/> Other – Specify:			
Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal	
	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Shoe Mounted Secondary Seal	<input type="checkbox"/> Primary Seal Only <input checked="" type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	

SECTION C – TANK CONTENTS

Desulfurized Heavy Naphtha, (RVP 1.2 psi)

SECTION D – VAPOR DISPOSAL

Atmosphere Vapor Recovery Unit Flare Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure -	Maximum Reid Vapor Pressure 1.2

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) TBD	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15) N/A
Average Throughput (gallons per day) 81,285	Tank Turnovers per Year 26.78

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:	
Name of Solvent N/A	Name of Material Dissolved N/A
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal) N/A	

SECTION H – AIR CONTAMINANTS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
2-Methyl naphthalene	3.8E-04	1.7E-03	<p>VOC from TANKS 4.0.9d software modeled runs.</p> <p>HAPs from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries</p> <p>See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"</p>
Anthracene	2.6E-05	1.1E-04	
Benzene	7.6E-03	3.3E-02	
Biphenyl	1.8E-05	8.0E-05	
Chrysene	2.3E-05	9.9E-05	
Cresol	1.4E-03	6.2E-03	
Cumene	1.6E-03	7.1E-03	
Ethylbenzene	3.3E-03	1.5E-02	
Fluorene	3.9E-05	1.7E-04	
Hexane	4.5E-02	2.0E-01	
Methanol	4.1E-04	1.8E-03	
Methyl isobutyl ketone	3.5E-02	1.5E-01	
Methyl tertiary-butyl ether	3.3E-02	1.5E-01	
Naphthalene	8.2E-04	3.6E-03	
Phenanthrene	1.6E-04	7.1E-04	
Phenol	9.7E-05	4.3E-04	
Pyrene	4.2E-05	1.8E-04	
Styrene	7.1E-03	3.1E-02	
Toluene	1.9E-02	8.5E-02	
Xylene	1.5E-02	6.6E-02	
VOC	2.26E-02	9.92E-02	

* Include an estimate of greenhouse gas emissions (CO₂e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to:	<input type="checkbox"/> 40 CFR 60, Subpart K	<input type="checkbox"/> 40 CFR 60, Subpart Ka	<input checked="" type="checkbox"/> 40 CFR 60, Subpart Kb
Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb being adhered to, where applicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No – Explain:			

Signature of Applicant		Date	04/03/17
------------------------	---	------	----------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
VOLATILE ORGANIC COMPOUNDS STORAGE TANK**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8535 (10-13)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – TANK DATA

Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W				
County Billings		Source ID Number 203-T-0331		
Capacity	Barrels 33,312	Gallons 1,399,104		
Dimensions	Diameter 63'	Height 60'	Length	Width
Shape	<input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Spherical <input type="checkbox"/> Other – Specify:			
Materials of Construction	Carbon Steel			
Construction	<input type="checkbox"/> Riveted <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Other – Specify:			
Color	Beige			
Condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
Status	<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing (Give Date Constructed):			
Type of Tank	<input type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating <input type="checkbox"/> Variable Vapor Space <input checked="" type="checkbox"/> Internal Floating <input type="checkbox"/> Pressure (low or high) <input type="checkbox"/> Other – Specify:			
Type of Roof	<input type="checkbox"/> Pan <input checked="" type="checkbox"/> Double Deck <input type="checkbox"/> Pontoon <input type="checkbox"/> Other – Specify:			
Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal	
	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Shoe Mounted Secondary Seal	<input type="checkbox"/> Primary Seal Only <input checked="" type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	

SECTION C – TANK CONTENTS

Light Naphtha, (RVP 15 psia)

SECTION D – VAPOR DISPOSAL

Atmosphere Vapor Recovery Unit Flare Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure -	Maximum Reid Vapor Pressure 15

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) TBD	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15) N/A
Average Throughput (gallons per day) 139,810	Tank Turnovers per Year 35.61

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:	
Name of Solvent N/A	Name of Material Dissolved N/A
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal) N/A	

SECTION H – AIR CONTAMINANTS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
2-Methyl naphthalene	1.9E-04	8.5E-04	<p>VOC from TANKS 4.0.9d software modeled runs.</p> <p>HAPs from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries</p> <p>See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"</p>
Anthracene	1.3E-05	5.8E-05	
Benzene	3.9E-03	1.7E-02	
Biphenyl	9.4E-06	4.1E-05	
Chrysene	1.2E-05	5.1E-05	
Cresol	7.2E-04	3.2E-03	
Cumene	8.3E-04	3.6E-03	
Ethylbenzene	1.7E-03	7.5E-03	
Fluorene	2.0E-05	8.7E-05	
Hexane	2.3E-02	1.0E-01	
Methanol	2.1E-04	9.2E-04	
Methyl isobutyl ketone	1.8E-02	7.8E-02	
Methyl tertiary-butyl ether	1.7E-02	7.5E-02	
Naphthalene	4.2E-04	1.8E-03	
Phenanthrene	8.3E-05	3.6E-04	
Phenol	5.0E-05	2.2E-04	
Pyrene	2.2E-05	9.5E-05	
Styrene	3.7E-03	1.6E-02	
Toluene	1.0E-02	4.4E-02	
Xylene	7.8E-03	3.4E-02	
VOC	8.59E-02	3.76E-01	

* Include an estimate of greenhouse gas emissions (CO₂e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to:	<input type="checkbox"/> 40 CFR 60, Subpart K	<input type="checkbox"/> 40 CFR 60, Subpart Ka	<input checked="" type="checkbox"/> 40 CFR 60, Subpart Kb
Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb being adhered to, where applicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No – Explain:			

Signature of Applicant		Date	04/03/17
------------------------	---	------	----------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
VOLATILE ORGANIC COMPOUNDS STORAGE TANK**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8535 (10-13)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – TANK DATA

Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W				
County Billings		Source ID Number 203-T-0332		
Capacity	Barrels 33,312	Gallons 1,399,104		
Dimensions	Diameter 63'	Height 60'	Length	Width
Shape	<input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Spherical <input type="checkbox"/> Other – Specify:			
Materials of Construction	Carbon Steel			
Construction	<input type="checkbox"/> Riveted <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Other – Specify:			
Color	Beige			
Condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
Status	<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing (Give Date Constructed):			
Type of Tank	<input type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating <input type="checkbox"/> Variable Vapor Space <input checked="" type="checkbox"/> Internal Floating <input type="checkbox"/> Pressure (low or high) <input type="checkbox"/> Other – Specify:			
Type of Roof	<input type="checkbox"/> Pan <input checked="" type="checkbox"/> Double Deck <input type="checkbox"/> Pontoon <input type="checkbox"/> Other – Specify:			
Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal	
	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Shoe Mounted Secondary Seal	<input type="checkbox"/> Primary Seal Only <input checked="" type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	

SECTION C – TANK CONTENTS

Light Naphtha, (RVP 15 psia)

SECTION D – VAPOR DISPOSAL

Atmosphere Vapor Recovery Unit Flare Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure	Maximum Reid Vapor Pressure
-	15

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) TBD	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15) N/A
Average Throughput (gallons per day) 139,810	Tank Turnovers per Year 35.61

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:	
Name of Solvent N/A	Name of Material Dissolved N/A
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal) N/A	

SECTION H – AIR CONTAMINANTS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
2-Methyl naphthalene	1.9E-04	8.5E-04	<p>VOC from TANKS 4.0.9d software modeled runs.</p> <p>HAPs from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries</p> <p>See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"</p>
Anthracene	1.3E-05	5.8E-05	
Benzene	3.9E-03	1.7E-02	
Biphenyl	9.4E-06	4.1E-05	
Chrysene	1.2E-05	5.1E-05	
Cresol	7.2E-04	3.2E-03	
Cumene	8.3E-04	3.6E-03	
Ethylbenzene	1.7E-03	7.5E-03	
Fluorene	2.0E-05	8.7E-05	
Hexane	2.3E-02	1.0E-01	
Methanol	2.1E-04	9.2E-04	
Methyl isobutyl ketone	1.8E-02	7.8E-02	
Methyl tertiary-butyl ether	1.7E-02	7.5E-02	
Naphthalene	4.2E-04	1.8E-03	
Phenanthrene	8.3E-05	3.6E-04	
Phenol	5.0E-05	2.2E-04	
Pyrene	2.2E-05	9.5E-05	
Styrene	3.7E-03	1.6E-02	
Toluene	1.0E-02	4.4E-02	
Xylene	7.8E-03	3.4E-02	
VOC	8.59E-02	3.76E-01	

* Include an estimate of greenhouse gas emissions (CO₂e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to:	<input type="checkbox"/> 40 CFR 60, Subpart K	<input type="checkbox"/> 40 CFR 60, Subpart Ka	<input checked="" type="checkbox"/> 40 CFR 60, Subpart Kb
Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb being adhered to, where applicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No – Explain:			

Signature of Applicant		Date	04/03/17
------------------------	---	------	----------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
VOLATILE ORGANIC COMPOUNDS STORAGE TANK**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8535 (10-13)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – TANK DATA

Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W				
County Billings		Source ID Number 203-T-0306		
Capacity	Barrels 33,312	Gallons 1,399,104		
Dimensions	Diameter 63'	Height 60'	Length	Width
Shape	<input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Spherical <input type="checkbox"/> Other – Specify:			
Materials of Construction	Carbon Steel			
Construction	<input type="checkbox"/> Riveted <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Other – Specify:			
Color	Beige			
Condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
Status	<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing (Give Date Constructed):			
Type of Tank	<input type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating <input type="checkbox"/> Variable Vapor Space <input checked="" type="checkbox"/> Internal Floating <input type="checkbox"/> Pressure (low or high) <input type="checkbox"/> Other – Specify:			
Type of Roof	<input type="checkbox"/> Pan <input checked="" type="checkbox"/> Double Deck <input type="checkbox"/> Pontoon <input type="checkbox"/> Other – Specify:			
Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal	
	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Shoe Mounted Secondary Seal	<input type="checkbox"/> Primary Seal Only <input checked="" type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	

SECTION C – TANK CONTENTS

Reformate, (RVP 3 psi)

SECTION D – VAPOR DISPOSAL

Atmosphere Vapor Recovery Unit Flare Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure -	Maximum Reid Vapor Pressure 3

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) TBD	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15) N/A
Average Throughput (gallons per day) 217,342	Tank Turnovers per Year 46.90

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:	
Name of Solvent N/A	Name of Material Dissolved N/A
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal) N/A	

SECTION H – AIR CONTAMINANTS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
2-Methyl naphthalene	1.9E-04	8.5E-04	<p>VOC from TANKS 4.0.9d software modeled runs.</p> <p>HAPs from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries</p> <p>See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"</p>
Anthracene	1.3E-05	5.8E-05	
Benzene	3.9E-03	1.7E-02	
Biphenyl	9.4E-06	4.1E-05	
Chrysene	1.2E-05	5.1E-05	
Cresol	7.2E-04	3.2E-03	
Cumene	8.3E-04	3.6E-03	
Ethylbenzene	1.7E-03	7.5E-03	
Fluorene	2.0E-05	8.7E-05	
Hexane	2.3E-02	1.0E-01	
Methanol	2.1E-04	9.2E-04	
Methyl isobutyl ketone	1.8E-02	7.8E-02	
Methyl tertiary-butyl ether	1.7E-02	7.5E-02	
Naphthalene	4.2E-04	1.8E-03	
Phenanthrene	8.3E-05	3.6E-04	
Phenol	5.0E-05	2.2E-04	
Pyrene	2.2E-05	9.5E-05	
Styrene	3.7E-03	1.6E-02	
Toluene	1.0E-02	4.4E-02	
Xylene	7.8E-03	3.4E-02	
VOC	6.39E-02	2.80E-01	

* Include an estimate of greenhouse gas emissions (CO₂e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to:	<input type="checkbox"/> 40 CFR 60, Subpart K	<input type="checkbox"/> 40 CFR 60, Subpart Ka	<input checked="" type="checkbox"/> 40 CFR 60, Subpart Kb
Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb being adhered to, where applicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No – Explain:			

Signature of Applicant		Date	04/03/17
------------------------	---	------	----------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
VOLATILE ORGANIC COMPOUNDS STORAGE TANK**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8535 (10-13)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – TANK DATA

Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W				
County Billings		Source ID Number 203-T-0307		
Capacity	Barrels 33,312	Gallons 1,399,104		
Dimensions	Diameter 63'	Height 60'	Length	Width
Shape	<input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Spherical <input type="checkbox"/> Other – Specify:			
Materials of Construction	Carbon Steel			
Construction	<input type="checkbox"/> Riveted <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Other – Specify:			
Color	Beige			
Condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
Status	<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing (Give Date Constructed):			
Type of Tank	<input type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating <input type="checkbox"/> Variable Vapor Space <input checked="" type="checkbox"/> Internal Floating <input type="checkbox"/> Pressure (low or high) <input type="checkbox"/> Other – Specify:			
Type of Roof	<input type="checkbox"/> Pan <input checked="" type="checkbox"/> Double Deck <input type="checkbox"/> Pontoon <input type="checkbox"/> Other – Specify:			
Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal	
	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Shoe Mounted Secondary Seal	<input type="checkbox"/> Primary Seal Only <input checked="" type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	

SECTION C – TANK CONTENTS

Reformate, (RVP 3 psi)

SECTION D – VAPOR DISPOSAL

Atmosphere Vapor Recovery Unit Flare Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure	Maximum Reid Vapor Pressure
-	3

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) TBD	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15) N/A
Average Throughput (gallons per day) 217,342	Tank Turnovers per Year 46.90

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:	
Name of Solvent N/A	Name of Material Dissolved N/A
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal) N/A	

SECTION H – AIR CONTAMINANTS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
2-Methyl naphthalene	1.9E-04	8.5E-04	<p>VOC from TANKS 4.0.9d software modeled runs.</p> <p>HAPs from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries</p> <p>See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"</p>
Anthracene	1.3E-05	5.8E-05	
Benzene	3.9E-03	1.7E-02	
Biphenyl	9.4E-06	4.1E-05	
Chrysene	1.2E-05	5.1E-05	
Cresol	7.2E-04	3.2E-03	
Cumene	8.3E-04	3.6E-03	
Ethylbenzene	1.7E-03	7.5E-03	
Fluorene	2.0E-05	8.7E-05	
Hexane	2.3E-02	1.0E-01	
Methanol	2.1E-04	9.2E-04	
Methyl isobutyl ketone	1.8E-02	7.8E-02	
Methyl tertiary-butyl ether	1.7E-02	7.5E-02	
Naphthalene	4.2E-04	1.8E-03	
Phenanthrene	8.3E-05	3.6E-04	
Phenol	5.0E-05	2.2E-04	
Pyrene	2.2E-05	9.5E-05	
Styrene	3.7E-03	1.6E-02	
Toluene	1.0E-02	4.4E-02	
Xylene	7.8E-03	3.4E-02	
VOC	6.39E-02	2.80E-01	

* Include an estimate of greenhouse gas emissions (CO₂e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to:	<input type="checkbox"/> 40 CFR 60, Subpart K	<input type="checkbox"/> 40 CFR 60, Subpart Ka	<input checked="" type="checkbox"/> 40 CFR 60, Subpart Kb
Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb being adhered to, where applicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No – Explain:			

Signature of Applicant		Date	04/03/17
------------------------	---	------	----------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
VOLATILE ORGANIC COMPOUNDS STORAGE TANK**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8535 (10-13)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – TANK DATA

Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W				
County Billings		Source ID Number 203-T-0308		
Capacity	Barrels 64,996	Gallons 2,729,832		
Dimensions	Diameter 88'	Height 60'	Length	Width
Shape	<input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Spherical <input type="checkbox"/> Other – Specify:			
Materials of Construction	Carbon Steel			
Construction	<input type="checkbox"/> Riveted <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Other – Specify:			
Color	Beige			
Condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
Status	<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing (Give Date Constructed):			
Type of Tank	<input type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating <input type="checkbox"/> Variable Vapor Space <input checked="" type="checkbox"/> Internal Floating <input type="checkbox"/> Pressure (low or high) <input type="checkbox"/> Other – Specify:			
Type of Roof	<input type="checkbox"/> Pan <input checked="" type="checkbox"/> Double Deck <input type="checkbox"/> Pontoon <input type="checkbox"/> Other – Specify:			
Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal	
	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Shoe Mounted Secondary Seal	<input type="checkbox"/> Primary Seal Only <input checked="" type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	

SECTION C – TANK CONTENTS

Gasoline, (RVP 13-15 psi)

SECTION D – VAPOR DISPOSAL

Atmosphere Vapor Recovery Unit Flare Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure -	Maximum Reid Vapor Pressure 13-15

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) TBD	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15) N/A
Average Throughput (gallons per day) 361,200	Tank Turnovers per Year 55.73

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:	
Name of Solvent N/A	Name of Material Dissolved N/A
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal) N/A	

SECTION H – AIR CONTAMINANTS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
2-Methyl naphthalene	3.8E-04	1.7E-03	<p>VOC from TANKS 4.0.9d software modeled runs.</p> <p>HAPs from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries</p> <p>See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"</p>
Anthracene	2.6E-05	1.1E-04	
Benzene	7.6E-03	3.3E-02	
Biphenyl	1.8E-05	8.0E-05	
Chrysene	2.3E-05	9.9E-05	
Cresol	1.4E-03	6.2E-03	
Cumene	1.6E-03	7.1E-03	
Ethylbenzene	3.3E-03	1.5E-02	
Fluorene	3.9E-05	1.7E-04	
Hexane	4.5E-02	2.0E-01	
Methanol	4.1E-04	1.8E-03	
Methyl isobutyl ketone	3.5E-02	1.5E-01	
Methyl tertiary-butyl ether	3.3E-02	1.5E-01	
Naphthalene	8.2E-04	3.6E-03	
Phenanthrene	1.6E-04	7.1E-04	
Phenol	9.7E-05	4.3E-04	
Pyrene	4.2E-05	1.8E-04	
Styrene	7.1E-03	3.1E-02	
Toluene	1.9E-02	8.5E-02	
Xylene	1.5E-02	6.6E-02	
VOC	1.15E-01	5.02E-01	

* Include an estimate of greenhouse gas emissions (CO₂e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to:	<input type="checkbox"/> 40 CFR 60, Subpart K	<input type="checkbox"/> 40 CFR 60, Subpart Ka	<input checked="" type="checkbox"/> 40 CFR 60, Subpart Kb
Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb being adhered to, where applicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No – Explain:			

Signature of Applicant		Date	04/03/17
------------------------	---	------	----------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
VOLATILE ORGANIC COMPOUNDS STORAGE TANK**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8535 (10-13)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – TANK DATA

Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W				
County Billings		Source ID Number 203-T-0309		
Capacity	Barrels 64,996	Gallons 2,729,832		
Dimensions	Diameter 88'	Height 60'	Length	Width
Shape	<input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Spherical <input type="checkbox"/> Other – Specify:			
Materials of Construction	Carbon Steel			
Construction	<input type="checkbox"/> Riveted <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Other – Specify:			
Color	Beige			
Condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
Status	<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing (Give Date Constructed):			
Type of Tank	<input type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating <input type="checkbox"/> Variable Vapor Space <input checked="" type="checkbox"/> Internal Floating <input type="checkbox"/> Pressure (low or high) <input type="checkbox"/> Other – Specify:			
Type of Roof	<input type="checkbox"/> Pan <input checked="" type="checkbox"/> Double Deck <input type="checkbox"/> Pontoon <input type="checkbox"/> Other – Specify:			
Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal	
	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Shoe Mounted Secondary Seal	<input type="checkbox"/> Primary Seal Only <input checked="" type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	

SECTION C – TANK CONTENTS

Gasoline, (RVP 13-15 psi)

SECTION D – VAPOR DISPOSAL

Atmosphere Vapor Recovery Unit Flare Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure -	Maximum Reid Vapor Pressure 13-15

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) TBD	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15) N/A
Average Throughput (gallons per day) 361,200	Tank Turnovers per Year 55.73

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:	
Name of Solvent N/A	Name of Material Dissolved N/A
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal) N/A	

SECTION H – AIR CONTAMINANTS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
2-Methyl naphthalene	3.8E-04	1.7E-03	<p>VOC from TANKS 4.0.9d software modeled runs.</p> <p>HAPs from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries</p> <p>See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"</p>
Anthracene	2.6E-05	1.1E-04	
Benzene	7.6E-03	3.3E-02	
Biphenyl	1.8E-05	8.0E-05	
Chrysene	2.3E-05	9.9E-05	
Cresol	1.4E-03	6.2E-03	
Cumene	1.6E-03	7.1E-03	
Ethylbenzene	3.3E-03	1.5E-02	
Fluorene	3.9E-05	1.7E-04	
Hexane	4.5E-02	2.0E-01	
Methanol	4.1E-04	1.8E-03	
Methyl isobutyl ketone	3.5E-02	1.5E-01	
Methyl tertiary-butyl ether	3.3E-02	1.5E-01	
Naphthalene	8.2E-04	3.6E-03	
Phenanthrene	1.6E-04	7.1E-04	
Phenol	9.7E-05	4.3E-04	
Pyrene	4.2E-05	1.8E-04	
Styrene	7.1E-03	3.1E-02	
Toluene	1.9E-02	8.5E-02	
Xylene	1.5E-02	6.6E-02	
VOC	1.15E-01	5.02E-01	

* Include an estimate of greenhouse gas emissions (CO₂e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to:	<input type="checkbox"/> 40 CFR 60, Subpart K	<input type="checkbox"/> 40 CFR 60, Subpart Ka	<input checked="" type="checkbox"/> 40 CFR 60, Subpart Kb
Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb being adhered to, where applicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No – Explain:			

Signature of Applicant		Date	04/03/17
------------------------	---	------	----------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
VOLATILE ORGANIC COMPOUNDS STORAGE TANK**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8535 (10-13)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – TANK DATA

Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W				
County Billings		Source ID Number 203-T-0311		
Capacity	Barrels 33,312	Gallons 1,399,104		
Dimensions	Diameter 63'	Height 60'	Length	Width
Shape	<input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Spherical <input type="checkbox"/> Other – Specify:			
Materials of Construction	Carbon Steel			
Construction	<input type="checkbox"/> Riveted <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Other – Specify:			
Color	Beige			
Condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
Status	<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing (Give Date Constructed):			
Type of Tank	<input type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating <input type="checkbox"/> Variable Vapor Space <input checked="" type="checkbox"/> Internal Floating <input type="checkbox"/> Pressure (low or high) <input type="checkbox"/> Other – Specify:			
Type of Roof	<input type="checkbox"/> Pan <input checked="" type="checkbox"/> Double Deck <input type="checkbox"/> Pontoon <input type="checkbox"/> Other – Specify:			
Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal	
	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Shoe Mounted Secondary Seal	<input type="checkbox"/> Primary Seal Only <input checked="" type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	

SECTION C – TANK CONTENTS

Jet Fuel, (TVP 0.04 psia)

SECTION D – VAPOR DISPOSAL

Atmosphere Vapor Recovery Unit Flare Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure 0.04	Maximum Reid Vapor Pressure -

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) TBD	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15) N/A
Average Throughput (gallons per day) 88,883	Tank Turnovers per Year 23.28

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:	
Name of Solvent N/A	Name of Material Dissolved N/A
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal) N/A	

SECTION H – AIR CONTAMINANTS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
2-Methyl naphthalene	3.6E-04	1.6E-03	<p>VOC from TANKS 4.0.9d software modeled runs.</p> <p>HAPs from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries</p> <p>See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"</p>
Anthracene	2.4E-05	1.1E-04	
Benzene	5.5E-03	2.4E-02	
Biphenyl	0.0E+00	0.0E+00	
Chrysene	2.1E-05	9.4E-05	
Cresol	1.9E-05	8.5E-05	
Cumene	1.0E-03	4.5E-03	
Ethylbenzene	1.8E-03	8.0E-03	
Fluorene	3.7E-05	1.6E-04	
Hexane	4.9E-02	2.1E-01	
Methanol	3.9E-04	1.7E-03	
Methyl isobutyl ketone	3.3E-02	1.4E-01	
Methyl tertiary-butyl ether	0.0E+00	0.0E+00	
Naphthalene	4.1E-04	1.8E-03	
Phenanthrene	1.5E-04	6.7E-04	
Phenol	6.8E-05	3.0E-04	
Pyrene	4.0E-05	1.7E-04	
Styrene	0.0E+00	0.0E+00	
Toluene	1.0E-02	4.5E-02	
Xylene	7.1E-03	3.1E-02	
VOC	1.40E-02	6.12E-02	

* Include an estimate of greenhouse gas emissions (CO₂e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to:	<input type="checkbox"/> 40 CFR 60, Subpart K	<input type="checkbox"/> 40 CFR 60, Subpart Ka	<input checked="" type="checkbox"/> 40 CFR 60, Subpart Kb
Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb being adhered to, where applicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No – Explain:			

Signature of Applicant		Date	04/03/17
------------------------	---	------	----------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
VOLATILE ORGANIC COMPOUNDS STORAGE TANK**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8535 (10-13)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – TANK DATA

Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W				
County Billings		Source ID Number 203-T-0312		
Capacity	Barrels 33,312	Gallons 1,399,104		
Dimensions	Diameter 63'	Height 60'	Length	Width
Shape	<input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Spherical <input type="checkbox"/> Other – Specify:			
Materials of Construction	Carbon Steel			
Construction	<input type="checkbox"/> Riveted <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Other – Specify:			
Color	Beige			
Condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
Status	<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing (Give Date Constructed):			
Type of Tank	<input type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating <input type="checkbox"/> Variable Vapor Space <input checked="" type="checkbox"/> Internal Floating <input type="checkbox"/> Pressure (low or high) <input type="checkbox"/> Other – Specify:			
Type of Roof	<input type="checkbox"/> Pan <input checked="" type="checkbox"/> Double Deck <input type="checkbox"/> Pontoon <input type="checkbox"/> Other – Specify:			
Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal	
	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Shoe Mounted Secondary Seal	<input type="checkbox"/> Primary Seal Only <input checked="" type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	

SECTION C – TANK CONTENTS

Jet Fuel, (TVP 0.04 psia)

SECTION D – VAPOR DISPOSAL

Atmosphere Vapor Recovery Unit Flare Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure 0.04	Maximum Reid Vapor Pressure -

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) TBD	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15) N/A
Average Throughput (gallons per day) 88,883	Tank Turnovers per Year 23.28

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:	
Name of Solvent N/A	Name of Material Dissolved N/A
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal) N/A	

SECTION H – AIR CONTAMINANTS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
2-Methyl naphthalene	3.6E-04	1.6E-03	<p>VOC from TANKS 4.0.9d software modeled runs.</p> <p>HAPs from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries</p> <p>See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"</p>
Anthracene	2.4E-05	1.1E-04	
Benzene	5.5E-03	2.4E-02	
Biphenyl	0.0E+00	0.0E+00	
Chrysene	2.1E-05	9.4E-05	
Cresol	1.9E-05	8.5E-05	
Cumene	1.0E-03	4.5E-03	
Ethylbenzene	1.8E-03	8.0E-03	
Fluorene	3.7E-05	1.6E-04	
Hexane	4.9E-02	2.1E-01	
Methanol	3.9E-04	1.7E-03	
Methyl isobutyl ketone	3.3E-02	1.4E-01	
Methyl tertiary-butyl ether	0.0E+00	0.0E+00	
Naphthalene	4.1E-04	1.8E-03	
Phenanthrene	1.5E-04	6.7E-04	
Phenol	6.8E-05	3.0E-04	
Pyrene	4.0E-05	1.7E-04	
Styrene	0.0E+00	0.0E+00	
Toluene	1.0E-02	4.5E-02	
Xylene	7.1E-03	3.1E-02	
VOC	1.40E-02	6.12E-02	

* Include an estimate of greenhouse gas emissions (CO₂e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to:	<input type="checkbox"/> 40 CFR 60, Subpart K	<input type="checkbox"/> 40 CFR 60, Subpart Ka	<input checked="" type="checkbox"/> 40 CFR 60, Subpart Kb
Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb being adhered to, where applicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No – Explain:			

Signature of Applicant		Date	04/03/17
------------------------	---	------	----------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
VOLATILE ORGANIC COMPOUNDS STORAGE TANK**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8535 (10-13)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – TANK DATA

Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W				
County Billings		Source ID Number 203-T-0313		
Capacity	Barrels 33,312	Gallons 1,399,104		
Dimensions	Diameter 63'	Height 60'	Length	Width
Shape	<input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Spherical <input type="checkbox"/> Other – Specify:			
Materials of Construction	Carbon Steel			
Construction	<input type="checkbox"/> Riveted <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Other – Specify:			
Color	Beige			
Condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
Status	<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing (Give Date Constructed):			
Type of Tank	<input checked="" type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating <input type="checkbox"/> Variable Vapor Space <input type="checkbox"/> Internal Floating <input type="checkbox"/> Pressure (low or high) <input type="checkbox"/> Other – Specify:			
Type of Roof	<input type="checkbox"/> Pan <input type="checkbox"/> Double Deck <input type="checkbox"/> Pontoon <input checked="" type="checkbox"/> Other – Specify: Cone Roof			
Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal	
	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Shoe Mounted Secondary Seal	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	

SECTION C – TANK CONTENTS

Straight Run Diesel, (TVP 0.004 psia)

SECTION D – VAPOR DISPOSAL

Atmosphere Vapor Recovery Unit Flare Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure 0.004	Maximum Reid Vapor Pressure -

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) TBD	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15) 41.67
Average Throughput (gallons per day) 88,208.4	Tank Turnovers per Year 27.61

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:	
Name of Solvent N/A	Name of Material Dissolved N/A
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal) N/A	

SECTION H – AIR CONTAMINANTS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
2-Methyl naphthalene	3.6E-04	1.6E-03	<p>VOC from TANKS 4.0.9d software modeled runs.</p> <p>HAPs from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries</p> <p>See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"</p>
Anthracene	2.4E-05	1.1E-04	
Benzene	5.5E-03	2.4E-02	
Biphenyl	0.0E+00	0.0E+00	
Chrysene	2.1E-05	9.4E-05	
Cresol	1.9E-05	8.5E-05	
Cumene	1.0E-03	4.5E-03	
Ethylbenzene	1.8E-03	8.0E-03	
Fluorene	3.7E-05	1.6E-04	
Hexane	4.9E-02	2.1E-01	
Methanol	3.9E-04	1.7E-03	
Methyl isobutyl ketone	3.3E-02	1.4E-01	
Methyl tertiary-butyl ether	0.0E+00	0.0E+00	
Naphthalene	4.1E-04	1.8E-03	
Phenanthrene	1.5E-04	6.7E-04	
Phenol	6.8E-05	3.0E-04	
Pyrene	4.0E-05	1.7E-04	
Styrene	0.0E+00	0.0E+00	
Toluene	1.0E-02	4.5E-02	
Xylene	7.1E-03	3.1E-02	
VOC	0.00E+00	0.00E+00	

* Include an estimate of greenhouse gas emissions (CO₂e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to:	<input type="checkbox"/> 40 CFR 60, Subpart K	<input type="checkbox"/> 40 CFR 60, Subpart Ka	<input checked="" type="checkbox"/> 40 CFR 60, Subpart Kb
Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb being adhered to, where applicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No – Explain:			

Signature of Applicant		Date	04/03/17
------------------------	---	------	----------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
VOLATILE ORGANIC COMPOUNDS STORAGE TANK**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8535 (10-13)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – TANK DATA

Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W				
County Billings		Source ID Number 203-T-0315		
Capacity	Barrels 64,996	Gallons 2,729,832		
Dimensions	Diameter 88'	Height 60'	Length	Width
Shape	<input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Spherical <input type="checkbox"/> Other – Specify:			
Materials of Construction	Carbon Steel			
Construction	<input type="checkbox"/> Riveted <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Other – Specify:			
Color	Beige			
Condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
Status	<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing (Give Date Constructed):			
Type of Tank	<input checked="" type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating <input type="checkbox"/> Variable Vapor Space <input type="checkbox"/> Internal Floating <input type="checkbox"/> Pressure (low or high) <input type="checkbox"/> Other – Specify:			
Type of Roof	<input type="checkbox"/> Pan <input type="checkbox"/> Double Deck <input type="checkbox"/> Pontoon <input checked="" type="checkbox"/> Other – Specify: Cone Roof			
Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal	
	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Shoe Mounted Secondary Seal	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	

SECTION C – TANK CONTENTS

Ultra Low Sulfur Diesel, (TVP 0.004 psia)

SECTION D – VAPOR DISPOSAL

Atmosphere Vapor Recovery Unit Flare Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure 0.004	Maximum Reid Vapor Pressure -

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) TBD	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15) 12.00
Average Throughput (gallons per day) 465,360	Tank Turnovers per Year 56.44

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:	
Name of Solvent N/A	Name of Material Dissolved N/A
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal) N/A	

SECTION H – AIR CONTAMINANTS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
2-Methyl naphthalene	7.0E-04	3.1E-03	<p>VOC from TANKS 4.0.9d software modeled runs.</p> <p>HAPs from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries</p> <p>See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"</p>
Anthracene	4.8E-05	2.1E-04	
Benzene	1.1E-02	4.7E-02	
Biphenyl	0.0E+00	0.0E+00	
Chrysene	4.2E-05	1.8E-04	
Cresol	3.8E-05	1.7E-04	
Cumene	2.0E-03	8.7E-03	
Ethylbenzene	3.6E-03	1.6E-02	
Fluorene	7.2E-05	3.1E-04	
Hexane	9.6E-02	4.2E-01	
Methanol	7.6E-04	3.3E-03	
Methyl isobutyl ketone	6.4E-02	2.8E-01	
Methyl tertiary-butyl ether	0.0E+00	0.0E+00	
Naphthalene	8.0E-04	3.5E-03	
Phenanthrene	3.0E-04	1.3E-03	
Phenol	1.3E-04	5.8E-04	
Pyrene	7.8E-05	3.4E-04	
Styrene	0.0E+00	0.0E+00	
Toluene	2.0E-02	8.7E-02	
Xylene	1.4E-02	6.1E-02	
VOC	0.00E+00	0.00E+00	

* Include an estimate of greenhouse gas emissions (CO₂e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to:	<input type="checkbox"/> 40 CFR 60, Subpart K	<input type="checkbox"/> 40 CFR 60, Subpart Ka	<input checked="" type="checkbox"/> 40 CFR 60, Subpart Kb
Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb being adhered to, where applicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No – Explain:			

Signature of Applicant		Date	04/03/17
------------------------	---	------	----------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
VOLATILE ORGANIC COMPOUNDS STORAGE TANK**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8535 (10-13)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – TANK DATA

Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W				
County Billings		Source ID Number 203-T-0316		
Capacity	Barrels 64,996	Gallons 2,729,832		
Dimensions	Diameter 88'	Height 60'	Length	Width
Shape	<input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Spherical <input type="checkbox"/> Other – Specify:			
Materials of Construction	Carbon Steel			
Construction	<input type="checkbox"/> Riveted <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Other – Specify:			
Color	Beige			
Condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
Status	<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing (Give Date Constructed):			
Type of Tank	<input checked="" type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating <input type="checkbox"/> Variable Vapor Space <input type="checkbox"/> Internal Floating <input type="checkbox"/> Pressure (low or high) <input type="checkbox"/> Other – Specify:			
Type of Roof	<input type="checkbox"/> Pan <input type="checkbox"/> Double Deck <input type="checkbox"/> Pontoon <input checked="" type="checkbox"/> Other – Specify: Cone Roof			
Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal	
	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Shoe Mounted Secondary Seal	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	

SECTION C – TANK CONTENTS

Ultra Low Sulfur Diesel, (TVP 0.004 psia)

SECTION D – VAPOR DISPOSAL

Atmosphere Vapor Recovery Unit Flare Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure 0.004	Maximum Reid Vapor Pressure -

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) TBD	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15) 12.00
Average Throughput (gallons per day) 465,360	Tank Turnovers per Year 56.44

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:	
Name of Solvent N/A	Name of Material Dissolved N/A
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal) N/A	

SECTION H – AIR CONTAMINANTS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
2-Methyl naphthalene	7.0E-04	3.1E-03	<p>VOC from TANKS 4.0.9d software modeled runs.</p> <p>HAPs from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries</p> <p>See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"</p>
Anthracene	4.8E-05	2.1E-04	
Benzene	1.1E-02	4.7E-02	
Biphenyl	0.0E+00	0.0E+00	
Chrysene	4.2E-05	1.8E-04	
Cresol	3.8E-05	1.7E-04	
Cumene	2.0E-03	8.7E-03	
Ethylbenzene	3.6E-03	1.6E-02	
Fluorene	7.2E-05	3.1E-04	
Hexane	9.6E-02	4.2E-01	
Methanol	7.6E-04	3.3E-03	
Methyl isobutyl ketone	6.4E-02	2.8E-01	
Methyl tertiary-butyl ether	0.0E+00	0.0E+00	
Naphthalene	8.0E-04	3.5E-03	
Phenanthrene	3.0E-04	1.3E-03	
Phenol	1.3E-04	5.8E-04	
Pyrene	7.8E-05	3.4E-04	
Styrene	0.0E+00	0.0E+00	
Toluene	2.0E-02	8.7E-02	
Xylene	1.4E-02	6.1E-02	
VOC	0.00E+00	0.00E+00	

* Include an estimate of greenhouse gas emissions (CO₂e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to:	<input type="checkbox"/> 40 CFR 60, Subpart K	<input type="checkbox"/> 40 CFR 60, Subpart Ka	<input checked="" type="checkbox"/> 40 CFR 60, Subpart Kb
Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb being adhered to, where applicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No – Explain:			

Signature of Applicant		Date	04/03/17
------------------------	---	------	----------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
VOLATILE ORGANIC COMPOUNDS STORAGE TANK**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8535 (10-13)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – TANK DATA

Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W				
County Billings		Source ID Number 203-T-0324		
Capacity	Barrels 33,312	Gallons 2,729,832		
Dimensions	Diameter 63'	Height 60'	Length	Width
Shape	<input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Spherical <input type="checkbox"/> Other – Specify:			
Materials of Construction	Carbon Steel			
Construction	<input type="checkbox"/> Riveted <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Other – Specify:			
Color	Beige			
Condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
Status	<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing (Give Date Constructed):			
Type of Tank	<input checked="" type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating <input type="checkbox"/> Variable Vapor Space <input type="checkbox"/> Internal Floating <input type="checkbox"/> Pressure (low or high) <input type="checkbox"/> Other – Specify:			
Type of Roof	<input type="checkbox"/> Pan <input type="checkbox"/> Double Deck <input type="checkbox"/> Pontoon <input checked="" type="checkbox"/> Other – Specify: Cone Roof			
Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal	
	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Shoe Mounted Secondary Seal	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	

SECTION C – TANK CONTENTS

Fuel Oil, (TVP 0.000028 psia)

SECTION D – VAPOR DISPOSAL

Atmosphere Vapor Recovery Unit Flare Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure 0.000028	Maximum Reid Vapor Pressure -

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) TBD	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15) 11,7 ft
Average Throughput (gallons per day) 141,053	Tank Turnovers per Year 21.16

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:	
Name of Solvent N/A	Name of Material Dissolved N/A
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal) N/A	

SECTION H – AIR CONTAMINANTS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
2-Methyl naphthalene	3.6E-04	1.6E-03	<p>VOC from TANKS 4.0.9d software modeled runs.</p> <p>HAPs from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries</p> <p>See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"</p>
Anthracene	2.4E-05	1.1E-04	
Benzene	5.5E-03	2.4E-02	
Biphenyl	0.0E+00	0.0E+00	
Chrysene	2.1E-05	9.4E-05	
Cresol	1.9E-05	8.5E-05	
Cumene	1.0E-03	4.5E-03	
Ethylbenzene	1.8E-03	8.0E-03	
Fluorene	3.7E-05	1.6E-04	
Hexane	4.9E-02	2.1E-01	
Methanol	3.9E-04	1.7E-03	
Methyl isobutyl ketone	3.3E-02	1.4E-01	
Methyl tertiary-butyl ether	0.0E+00	0.0E+00	
Naphthalene	4.1E-04	1.8E-03	
Phenanthrene	1.5E-04	6.7E-04	
Phenol	6.8E-05	3.0E-04	
Pyrene	4.0E-05	1.7E-04	
Styrene	0.0E+00	0.0E+00	
Toluene	1.0E-02	4.5E-02	
Xylene	7.1E-03	3.1E-02	
VOC	9.13E-04	4.00E-03	

* Include an estimate of greenhouse gas emissions (CO₂e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to:	<input type="checkbox"/> 40 CFR 60, Subpart K	<input type="checkbox"/> 40 CFR 60, Subpart Ka	<input checked="" type="checkbox"/> 40 CFR 60, Subpart Kb
Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb being adhered to, where applicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No – Explain:			

Signature of Applicant		Date	04/03/17
------------------------	---	------	----------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
VOLATILE ORGANIC COMPOUNDS STORAGE TANK**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8535 (10-13)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – TANK DATA

Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W				
County Billings		Source ID Number 203-T-0323		
Capacity	Barrels 33,312	Gallons 1,399,104		
Dimensions	Diameter 63'	Height 60'	Length	Width
Shape	<input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Spherical <input type="checkbox"/> Other – Specify:			
Materials of Construction	Carbon Steel			
Construction	<input type="checkbox"/> Riveted <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Other – Specify:			
Color	Beige			
Condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
Status	<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing (Give Date Constructed):			
Type of Tank	<input checked="" type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating <input type="checkbox"/> Variable Vapor Space <input type="checkbox"/> Internal Floating <input type="checkbox"/> Pressure (low or high) <input type="checkbox"/> Other – Specify:			
Type of Roof	<input type="checkbox"/> Pan <input type="checkbox"/> Double Deck <input type="checkbox"/> Pontoon <input checked="" type="checkbox"/> Other – Specify: Cone Roof			
Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal	
	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Shoe Mounted Secondary Seal	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	

SECTION C – TANK CONTENTS

Vacuum Gasoil, (TVP 0,00002 – 0,00003)

SECTION D – VAPOR DISPOSAL

Atmosphere Vapor Recovery Unit Flare Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure 0,00002 – 0,00003	Maximum Reid Vapor Pressure -

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) TBD	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15) 11.7 ft
Average Throughput (gallons per day) 141,053	Tank Turnovers per Year 39.05

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:	
Name of Solvent N/A	Name of Material Dissolved N/A
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal) N/A	

SECTION H – AIR CONTAMINANTS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
2-Methyl naphthalene	3.6E-04	1.6E-03	<p>VOC from TANKS 4.0.9d software modeled runs.</p> <p>HAPs from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries</p> <p>See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"</p>
Anthracene	2.4E-05	1.1E-04	
Benzene	5.5E-03	2.4E-02	
Biphenyl	0.0E+00	0.0E+00	
Chrysene	2.1E-05	9.4E-05	
Cresol	1.9E-05	8.5E-05	
Cumene	1.0E-03	4.5E-03	
Ethylbenzene	1.8E-03	8.0E-03	
Fluorene	3.7E-05	1.6E-04	
Hexane	4.9E-02	2.1E-01	
Methanol	3.9E-04	1.7E-03	
Methyl isobutyl ketone	3.3E-02	1.4E-01	
Methyl tertiary-butyl ether	0.0E+00	0.0E+00	
Naphthalene	4.1E-04	1.8E-03	
Phenanthrene	1.5E-04	6.7E-04	
Phenol	6.8E-05	3.0E-04	
Pyrene	4.0E-05	1.7E-04	
Styrene	0.0E+00	0.0E+00	
Toluene	1.0E-02	4.5E-02	
Xylene	7.1E-03	3.1E-02	
VOC	9.13E-04	4.00E-03	

* Include an estimate of greenhouse gas emissions (CO₂e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to:	<input type="checkbox"/> 40 CFR 60, Subpart K	<input type="checkbox"/> 40 CFR 60, Subpart Ka	<input checked="" type="checkbox"/> 40 CFR 60, Subpart Kb
Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb being adhered to, where applicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No – Explain:			

Signature of Applicant		Date	04/03/17
------------------------	---	------	----------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
VOLATILE ORGANIC COMPOUNDS STORAGE TANK**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8535 (10-13)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – TANK DATA

Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W				
County Billings		Source ID Number 203-T-0328		
Capacity	Barrels 2,620	Gallons 110,040		
Dimensions	Diameter 25'	Height 30'	Length	Width
Shape	<input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Spherical <input type="checkbox"/> Other – Specify:			
Materials of Construction	Carbon Steel			
Construction	<input type="checkbox"/> Riveted <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Other – Specify:			
Color	Beige			
Condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
Status	<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing (Give Date Constructed):			
Type of Tank	<input checked="" type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating <input type="checkbox"/> Variable Vapor Space <input type="checkbox"/> Internal Floating <input type="checkbox"/> Pressure (low or high) <input type="checkbox"/> Other – Specify:			
Type of Roof	<input type="checkbox"/> Pan <input type="checkbox"/> Double Deck <input type="checkbox"/> Pontoon <input checked="" type="checkbox"/> Other – Specify: Cone Roof			
Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal	
	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Shoe Mounted Secondary Seal	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	

SECTION C – TANK CONTENTS

Heavy Slops, (TVP 0.000028 – 0.004 psia)

SECTION D – VAPOR DISPOSAL

Atmosphere Vapor Recovery Unit Flare Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure 0.000028 – 0.004 psia	Maximum Reid Vapor Pressure -

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) TBD	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15) 3,7 ft
Average Throughput (gallons per day) 5,775	Tank Turnovers per Year 22.96

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:	
Name of Solvent N/A	Name of Material Dissolved N/A
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal) N/A	

SECTION H – AIR CONTAMINANTS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
2-Methyl naphthalene	2.81E-05	1.2E-04	<p>VOC from TANKS 4.0.9d software modeled runs.</p> <p>HAPs from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries</p> <p>See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"</p>
Anthracene	1.93E-06	8.4E-06	
Benzene	4.33E-04	1.9E-03	
Biphenyl	0.00E+00	0.0E+00	
Chrysene	1.69E-06	7.4E-06	
Cresol	1.53E-06	6.7E-06	
Cumene	8.03E-05	3.5E-04	
Ethylbenzene	1.44E-04	6.3E-04	
Fluorene	2.89E-06	1.3E-05	
Hexane	3.85E-03	1.7E-02	
Methanol	3.05E-05	1.3E-04	
Methyl isobutyl ketone	2.57E-03	1.1E-02	
Methyl tertiary-butyl ether	0.00E+00	0.0E+00	
Naphthalene	3.21E-05	1.4E-04	
Phenanthrene	1.20E-05	5.3E-05	
Phenol	5.38E-06	2.4E-05	
Pyrene	3.13E-06	1.4E-05	
Styrene	0.00E+00	0.0E+00	
Toluene	8.03E-04	3.5E-03	
Xylene	5.62E-04	2.5E-03	
VOC	4.73E-03	2.07E-02	

* Include an estimate of greenhouse gas emissions (CO₂e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to:	<input type="checkbox"/> 40 CFR 60, Subpart K	<input type="checkbox"/> 40 CFR 60, Subpart Ka	<input checked="" type="checkbox"/> 40 CFR 60, Subpart Kb
Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb being adhered to, where applicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No – Explain:			

Signature of Applicant		Date	04/03/17
------------------------	---	------	----------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
VOLATILE ORGANIC COMPOUNDS STORAGE TANK**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8535 (10-13)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – TANK DATA

Legal Description of Facility Site Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W				
County Billings		Source ID Number 203-T-0327		
Capacity	Barrels 2,620	Gallons 110,040		
Dimensions	Diameter 25'	Height 30'	Length	Width
Shape	<input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Spherical <input type="checkbox"/> Other – Specify:			
Materials of Construction	Carbon Steel			
Construction	<input type="checkbox"/> Riveted <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Other – Specify:			
Color	Beige			
Condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
Status	<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing (Give Date Constructed):			
Type of Tank	<input type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating <input type="checkbox"/> Variable Vapor Space <input checked="" type="checkbox"/> Internal Floating <input type="checkbox"/> Pressure (low or high) <input type="checkbox"/> Other – Specify:			
Type of Roof	<input type="checkbox"/> Pan <input checked="" type="checkbox"/> Double Deck <input type="checkbox"/> Pontoon <input type="checkbox"/> Other – Specify:			
Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal	
	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input checked="" type="checkbox"/> With Shoe Mounted Secondary Seal	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	<input type="checkbox"/> Primary Seal Only <input type="checkbox"/> With Rim Mounted Seal <input type="checkbox"/> With Weather Shield	

SECTION C – TANK CONTENTS

Light Slops, (RVP 10 psia)

SECTION D – VAPOR DISPOSAL

Atmosphere Vapor Recovery Unit Flare Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure -	Maximum Reid Vapor Pressure 10 psia

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) TBD	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15) N/A
Average Throughput (gallons per day) 5,775	Tank Turnovers per Year 22.96

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:	
Name of Solvent N/A	Name of Material Dissolved N/A
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal) N/A	

SECTION H – AIR CONTAMINANTS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
2-Methyl naphthalene	1.52E-05	6.7E-05	<p>VOC from TANKS 4.0.9d software modeled runs.</p> <p>HAPs from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries</p> <p>See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"</p>
Anthracene	1.05E-06	4.6E-06	
Benzene	3.05E-04	1.3E-03	
Biphenyl	7.40E-07	3.2E-06	
Chrysene	9.15E-07	4.0E-06	
Cresol	5.66E-05	2.5E-04	
Cumene	6.53E-05	2.9E-04	
Ethylbenzene	1.35E-04	5.9E-04	
Fluorene	1.57E-06	6.9E-06	
Hexane	1.83E-03	8.0E-03	
Methanol	1.66E-05	7.2E-05	
Methyl isobutyl ketone	1.39E-03	6.1E-03	
Methyl tertiary-butyl ether	1.35E-03	5.9E-03	
Naphthalene	3.31E-05	1.4E-04	
Phenanthrene	6.53E-06	2.9E-05	
Phenol	3.92E-06	1.7E-05	
Pyrene	1.70E-06	7.4E-06	
Styrene	2.87E-04	1.3E-03	
Toluene	7.84E-04	3.4E-03	
Xylene	6.10E-04	2.7E-03	
VOC	7.19E-02	3.15E-01	

* Include an estimate of greenhouse gas emissions (CO₂e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to:	<input type="checkbox"/> 40 CFR 60, Subpart K	<input type="checkbox"/> 40 CFR 60, Subpart Ka	<input checked="" type="checkbox"/> 40 CFR 60, Subpart Kb
Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb being adhered to, where applicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No – Explain:			

Signature of Applicant		Date	04/03/17
------------------------	---	------	----------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
HAZARDOUS AIR POLLUTANT (HAP) SOURCES**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization Meridian Energy Group - Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc
Facility Address (Street & No. or Lat/Long to Nearest Second) 37th Street / 46°52'45"N/103°14'55" W		
City Belfield	State ND	ZIP Code 58622
County Billings	Number of Employees at Location TBD	
Land Area at Plant Site 261 Acres (or)	Sq. Ft.	MSL Elevation at Plant 2,685 feet

Describe Nature of Business/Process Petroleum Refining / Storage Tanks (Tank farm)
--

SECTION B – STACK DATA

Inside Diameter (ft) N/A	Height Above Grade (ft) N/A	
Gas Temperature at Exit (°F) N/A	Gas Velocity at Exit (ft/sec) N/A	Gas Volume (scfm) N/A
Basis of any Estimates (attach separate sheet if necessary) Emission factors from Table 3-3 of the Emissions Estimation Protocol for Petroleum Refineries. See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Nearest Residences or Building Administrative building	Distance (ft) 1,230 ft	Direction East
Nearest Property Line Fenceline	Distance (ft) 310 ft	Direction South

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 Storage Tanks	Mean Particle Diameter (µm) TBD
Flow Rate (scfm) N/A	Drift Velocity (ft/sec) TBD
Stream Temperature (°F) N/A	Particulate Concentration (gr/dscf) TBD
Moisture Content (%) TBD	Halogens or Metals Present? Halogens
Pressure (in. Hg) TBD	Organic Content (ppmv) TBD
Heat Content (Btu/scfm) TBD	O ₂ Content (%) TBD

SECTION D – POLLUTANT SPECIFIC DATA

(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted 2-Methyl naphthalene	Chemical Abstract Services (CAS) Number 91-57-6
Proposed Emission Rate (lb/hr) 8.89x10⁻⁴	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic/Vapor
Concentration in Emission Stream (ppmv) N/A	Vapor Pressure (in. Hg @ °F) 2.17x10⁻³ in Hg @ 77 °F
Solubility In water mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 142.08
Absorptive Properties -	

Pollutant Emitted Anthracene	Chemical Abstract Services (CAS) Number 120-12-7
Proposed Emission Rate (lb/hr) 6.09x10⁻⁵	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Process Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic/Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 2.17x10⁻⁵ in Hg @ 77 °F
Solubility In water 1.29 mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 178.23
Absorptive Properties -	

Pollutant Emitted Benzene	Chemical Abstract Services (CAS) Number 71-43-2
Proposed Emission Rate (lb/hr) 1.73x10⁻²	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic/Vapor
Concentration in Emission Stream (ppmv) N/A	Vapor Pressure (in. Hg @ °F) 3.73 in Hg @ 77 °F
Solubility In water 1.79x10³ mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 78.11
Absorptive Properties -	

Pollutant Emitted Biphenyl	Chemical Abstract Services (CAS) Number 95-52-4
Proposed Emission Rate (lb/hr) 3.79×10^{-5}	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) N/A	Vapor Pressure (in. Hg @ °F) 3.51×10^{-4} in Hg @ 77 °F
Solubility In water 0.0004 g/100mL @ 68 °F	Molecular Weight (lb/lb-mole) 154.21
Absorptive Properties -	

Pollutant Emitted Chrysene	Chemical Abstract Services (CAS) Number 218-01-9
Proposed Emission Rate (lb/hr) 1.76×10^{-4}	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic/Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 2.45×10^{-10} in Hg @ 77 °F
Solubility In water 0.002 mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 228.29
Absorptive Properties -	

Pollutant Emitted Cresols	Chemical Abstract Services (CAS) Number 106-44-5
Proposed Emission Rate (lb/hr) 3.03×10^{-3}	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) N/A	Vapor Pressure (in. Hg @ °F) 0.004 in Hg @ 77°F
Solubility In water 2.15×10^{-4} @ 77°F	Molecular Weight (lb/lb-mole) 108.14
Absorptive Properties -	

Pollutant Emitted Cumene	Chemical Abstract Services (CAS) Number 98-82-8
Proposed Emission Rate (lb/hr) 9.50×10^{-3}	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) N/A	Vapor Pressure (in. Hg @ °F) 0.17 in Hg @ 77°F
Solubility 61.3 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 120.19
Absorptive Properties -	

Pollutant Emitted Ethylbenzene	Chemical Abstract Services (CAS) Number 100-41-4
Proposed Emission Rate (lb/hr) 1.80×10^{-2}	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) N/A	Vapor Pressure (in. Hg @ °F) 0.37 in Hg @ 77°F
Solubility In water 0.014 g/100mL @ 59 °F	Molecular Weight (lb/lb-mole) 106.17
Absorptive Properties -	

Pollutant Emitted Fluorene	Chemical Abstract Services (CAS) Number 86-73-7
Proposed Emission Rate (lb/hr) 3.02×10^{-4}	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic/Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 1.26×10^{-5} in Hg @ 77 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 166.22
Absorptive Properties -	

Pollutant Emitted Hexane	Chemical Abstract Services (CAS) Number 110-54-5
Proposed Emission Rate (lb/hr) 3.89×10^{-1}	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) N/A	Vapor Pressure (in. Hg @ °F) 5.90 in Hg @ 68 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 86.1
Absorptive Properties -	

Pollutant Emitted Methanol	Chemical Abstract Services (CAS) Number 67-56-1
Proposed Emission Rate (lb/hr) 3.19×10^{-3}	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic/Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 5.0 in Hg @ 77 °F
Solubility Miscible in water	Molecular Weight (lb/lb-mole) 32.04
Absorptive Properties -	

Pollutant Emitted Methyl isobutyl Ketone	Chemical Abstract Services (CAS) Number 108-10-1
Proposed Emission Rate (lb/hr) 2.68×10^{-1}	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic/Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 0.78 in Hg @ 77 °F
Solubility In water 19,000 mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 100.16
Absorptive Properties -	

Pollutant Emitted Methyl tertiary-butyl ether	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) 6.92×10^{-2}	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) N/A	Vapor Pressure (in. Hg @ °F) 2.95 in Hg @ 154 °F
Solubility In water 4.2 g/100mL @ 68°F	Molecular Weight (lb/lb-mole) 88.15
Absorptive Properties -	

Pollutant Emitted Naphthalene	Chemical Abstract Services (CAS) Number 91-20-3
Proposed Emission Rate (lb/hr) 4.16×10^{-3}	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic/Vapor
Concentration in Emission Stream (ppmv) N/A	Vapor Pressure (in. Hg @ °F) 0.003 in Hg @ 77 °F
Solubility In water 31 mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 128.17
Absorptive Properties -	

Pollutant Emitted Phenanthrene	Chemical Abstract Services (CAS) Number 85-01-8
Proposed Emission Rate (lb/hr) 1.26×10^{-3}	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic/Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 4.76×10^{-6} in Hg @ 77 °F
Solubility In water 1.15 mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 178.23
Absorptive Properties -	

Pollutant Emitted Phenol	Chemical Abstract Services (CAS) Number 108-95-2
Proposed Emission Rate (lb/hr) 6.03×10^{-4}	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic/Vapor
Concentration in Emission Stream (ppmv) N/A	Vapor Pressure (in. Hg @ °F) 0.013 in Hg @ 77°F
Solubility In water 1 g/15mL	Molecular Weight (lb/lb-mole) 94.11
Absorptive Properties -	

Pollutant Emitted Pyrene	Chemical Abstract Services (CAS) Number 129-00-0
Proposed Emission Rate (lb/hr) 3.27×10^{-4}	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic/Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 1.77×10^{-7} in Hg @ 77 °F
Solubility In water 0.135 mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 202.25
Absorptive Properties -	

Pollutant Emitted Styrene	Chemical Abstract Services (CAS) Number 100-42-5
Proposed Emission Rate (lb/hr) 1.47×10^{-2}	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic/Vapor
Concentration in Emission Stream (ppmv) N/A	Vapor Pressure (in. Hg @ °F) 0.25 in Hg @ 77 °F
Solubility In water 300 mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 104.15
Absorptive Properties -	

Pollutant Emitted Toluene	Chemical Abstract Services (CAS) Number 108-88-3
Proposed Emission Rate (lb/hr) 1.02×10^{-1}	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic/Vapor
Concentration in Emission Stream (ppmv) N/A	Vapor Pressure (in. Hg @ °F) 1.11 in Hg @ 77 °F
Solubility In water 526 mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 92.14
Absorptive Properties -	

Pollutant Emitted Xylene	Chemical Abstract Services (CAS) Number 95-47-6
Proposed Emission Rate (lb/hr) 7.43x10⁻²	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic/Vapor
Concentration in Emission Stream (ppmv) N/A	Vapor Pressure (in. Hg @ °F) 0.26 in Hg @ 77 °F
Solubility Insoluble in water	Molecular Weight (lb/lb-mole) 106.17
Absorptive Properties -	

Pollutant Emitted Volatile Organic Compounds (VOC)	Chemical Abstract Services (CAS) Number N/A
Proposed Emission Rate (lb/hr) 1.22	Emission Source (describe) Tank Farm
Source Classification (process point, process fugitive, area fugitive) Area Fugitive	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic/Vapor
Concentration in Emission Stream (ppmv) N/A	Vapor Pressure (in. Hg @ °F) N/A
Solubility -	Molecular Weight (lb/lb-mole) 0.11
Absorptive Properties -	

Signature of Applicant 	Date 04/03/17
--	------------------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
INTERNAL COMBUSTION ENGINES AND TURBINES**
NORTH DAKOTA DEPARTMENT OF
HEALTH DIVISION OF AIR QUALITY
SFN 8891 (09-12)

SECTION A – GENERAL INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – FACILITY AND UNIT INFORMATION

Facility Location 37th Street, Belfield, ND. ZIP: 58622		
County Billings		Source ID Number (From SFN 8516) 212-P-1201 A/B/C
Type of Unit (check all that apply)	<input type="checkbox"/> Stationary Natural Gas-Fired Engine	<input checked="" type="checkbox"/> Emergency Use
	<input checked="" type="checkbox"/> Stationary Diesel and Dual Fuel	<input type="checkbox"/> Only Non- Emergency
	<input type="checkbox"/> Engine Stationary Gasoline Engine	<input type="checkbox"/> Use Peaking
	<input type="checkbox"/> Stationary Natural Gas-Fired Turbine	<input type="checkbox"/> Demand Response
Other – Specify: Firewater Diesel Pump		

SECTION C – MANUFACTURER DATA

Make TBD	Model TBD	Date of Manufacture TBD	
Reciprocating Internal Combustion Engine			
<input checked="" type="checkbox"/> Spark Ignition		<input type="checkbox"/> Compression Ignition	
<input type="checkbox"/> 4 Stroke	<input type="checkbox"/> 2 Stroke	<input type="checkbox"/> Rich Burn	<input type="checkbox"/> Lean Burn
Maximum Rating (BHP @ rpm) TBD		Operating Capacity (BHP @ rpm) 600 HP each	
Engine Subject to:			
<input checked="" type="checkbox"/> 40 CFR 60, Subpart IIII		<input checked="" type="checkbox"/> 40 CFR 60, Subpart JJJJ	
<input checked="" type="checkbox"/> 40 CFR 63, Subpart ZZZZ			
Turbine		Dry Low Emissions? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Heat Input (MMBtu/hr)	Maximum Rating (HP)	75% Rating (HP)	Efficiency
Turbine Subject to: <input type="checkbox"/> 40 CFR 60, Subpart GG <input type="checkbox"/> 40 CFR 60, Subpart KKKK			

SECTION D – FUELS USED

Natural Gas (10 ⁶ cu ft/year)	Percent Sulfur	Percent H ₂ S
Oil (gal/year)	Percent Sulfur	Grade No.
LP Gas (gal/year)	Other – Specify: Diesel <0.05% sulfur. 3,334 gal/year	

SECTION E – NORMAL OPERATING SCHEDULE

Hours Per Day N/A	Days Per Week N/A	Weeks Per Year N/A	Hours Per Year 100 (emergency)	Peak Production Season (if any) N/A
-----------------------------	-----------------------------	------------------------------	--	--

SECTION F – STACK PARAMETERS

Emission Point 212-P-1201 A/B/C		Stack Height Above Ground Level (feet) TBD		
Stack Diameter (feet at top) TBD	Gas Discharged (SCFM) TBD	Exit Temp (°F) TBD	Gas Velocity (FPS) TBD	

SECTION G – EMISSION CONTROL EQUIPMENT

Is any emission control equipment installed on this unit?
 No Yes – Complete and attach form SFN 8532

SECTION H – MAXIMUM AIR CONTAMINANTS EMITTED


Emission Point	Pollutant	Maximum Pounds Per Hour	Amount (Tons Per Year)	Basis of Estimate *
	NO _x	23.40	1.17	<p><i>Emission factors From AP-42 Chapter 3 Section 3.4. Large Stationary Diesel And All Stationary Dual-fuel Engines. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"</i></p>
	CO	9.90	0.50	
	PM	1.26	0.06	
	PM 10 (Total)	7.85E-01	3.93E-02	
	PM 10 (Filterable)	6.80E-01	3.40E-02	
	PM 2.5 (Total)	6.56E-01	3.28E-02	
	PM 2.5(Filterable)	6.56E-01	3.28E-02	
	PM (Condensable)	1.06E-01	5.28E-03	
	SO ₂	7.28E-03	3.64E-04	
	VOC	1.27	6.35E-02	
	GHG (as CO ₂ e)	N/A	N/A	
	Formaldehyde	1.08E-03	5.41E-05	
	Total HAPS **	5.98E-02	2.99E-03	

If performance test results are available for the unit, submit a copy of test with this application

** Total HAPS includes formaldehyde

IS THIS UNIT IN COMPLIANCE WITH ALL APPLICABLE AIR POLLUTION RULES AND REGULATIONS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
--

If "NO" a Compliance Schedule must be completed and attached.

Signature of Applicant 	Date 04/03/17
---	------------------

Attach and label separate sheet(s) if you need more space to explain any system or answers or to provide complete listings of Emissions, Contaminants, or other items.

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



PERMIT APPLICATION FOR HAZARDOUS AIR POLLUTANT (HAP) SOURCES

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization Meridian Energy Group - Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409) 795-0792	E-mail Address tjohnson@meridianenergygroup.inc
Facility Address (Street & No. or Lat/Long to Nearest Second) 37th Street / 46°52'45"N/103°14'55" W		
City Belfield	State ND	ZIP Code 58622
County Billings	Number of Employees at Location TBD	
Land Area at Plant Site 261 Acres (or)	Sq. Ft.	MSL Elevation at Plant 2,685 feet

Describe Nature of Business/Process Petroleum Refining / Firewater Diesel Pump
--

SECTION B – STACK DATA

Inside Diameter (ft) TBD	Height Above Grade (ft) TBD	
Gas Temperature at Exit (°F) TBD	Gas Velocity at Exit (ft/sec) TBD	Gas Volume (scfm) TBD
Basis of any Estimates (attach separate sheet if necessary) Emission factors From AP-42 Chapter 3 Section 3.4. Large Stationary Diesel And All Stationary Dual-fuel Engines. See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Nearest Residences or Building Utility	Distance (ft) 7.21 ft	Direction East
Nearest Property Line Fenceline	Distance (ft) 656.0 ft	Direction Sowtheast

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 212-P-1201 A/B/C	Mean Particle Diameter (µm) TBD
Flow Rate (scfm) TBD	Drift Velocity (ft/sec) TBD
Stream Temperature (°F) TBD	Particulate Concentration (gr/dscf) TBD
Moisture Content (%) TBD	Halogens or Metals Present? N/A
Pressure (in. Hg) TBD	Organic Content (ppmv) TBD
Heat Content (Btu/scfm) TBD	O ₂ Content (%) N/A

SECTION D – POLLUTANT SPECIFIC DATA

(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted Acetaldehyde	Chemical Abstract Services (CAS) Number 75-07-0
Proposed Emission Rate (lb/hr) 3.45x10⁻⁴	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 35.51 in Hg @ 68°C
Solubility 1x10⁻⁶ mg/L in water @ 77°F	Molecular Weight (lb/lb-mole) 44.05
Absorptive Properties -	

Pollutant Emitted Acrolein	Chemical Abstract Services (CAS) Number 107-02-8
Proposed Emission Rate (lb/hr) 1.08x10⁻⁴	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 10.79 in Hg @ 77 °F
Solubility In water 2.12 x 10⁵ mg/L @ 77°F	Molecular Weight (lb/lb-mole) 56.06
Absorptive Properties -	

Pollutant Emitted Benzene	Chemical Abstract Services (CAS) Number 71-43-2
Proposed Emission Rate (lb/hr) 1.06x10⁻²	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 3.73 in Hg @ 77 °F
Solubility In water 1.79x10³ mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 78.11
Absorptive Properties -	

Pollutant Emitted Formaldehyde	Chemical Abstract Services (CAS) Number 50-00-0
Proposed Emission Rate (lb/hr) 1.08×10^{-3}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 0.15 in Hg @ 77 °F
Solubility In water 4.00×10^5 mg/L @ 68°F	Molecular Weight (lb/lb-mole) 30.03
Absorptive Properties -	


Pollutant Emitted Naphthalene	Chemical Abstract Services (CAS) Number 91-20-3
Proposed Emission Rate (lb/hr) 1.78×10^{-3}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 0.003 in Hg @ 77 °F
Solubility In water 31 mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 128.17
Absorptive Properties -	

Pollutant Emitted Propylene	Chemical Abstract Services (CAS) Number 115-07-1
Proposed Emission Rate (lb/hr) 3.82×10^{-2}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 342.12 in Hg @ 77 °F
Solubility In water 200 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 42.08
Absorptive Properties -	

Pollutant Emitted Toluene	Chemical Abstract Services (CAS) Number 108-88-3
Proposed Emission Rate (lb/hr) 3.85×10^{-3}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 1.12 in Hg @ 77°F
Solubility In water 526 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 92.14
Absorptive Properties -	

Pollutant Emitted Xylene	Chemical Abstract Services (CAS) Number 95-47-6
Proposed Emission Rate (lb/hr) 2.64×10^{-3}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 0.26 in Hg @ 77°F
Solubility In water 178 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 106.16
Absorptive Properties -	

Pollutant Emitted PAH	Chemical Abstract Services (CAS) Number N/A
Proposed Emission Rate (lb/hr) 1.12×10^{-3}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) N/A
Solubility N/A	Molecular Weight (lb/lb-mole) TBD
Absorptive Properties -	

Signature of Applicant 	Date 04/03/17
---	------------------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



**PERMIT APPLICATION FOR
INTERNAL COMBUSTION ENGINES AND TURBINES**
NORTH DAKOTA DEPARTMENT OF
HEALTH DIVISION OF AIR QUALITY
SFN 8891 (09-12)

SECTION A – GENERAL INFORMATION

Name of Firm or Organization Meridian Energy Group – Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612
Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409)795-0792	E-mail Address tjohnson@meridianenergygroup.inc

SECTION B – FACILITY AND UNIT INFORMATION

Facility Location 37th Street, Belfield, ND. ZIP: 58622		
County Billings		Source ID Number (From SFN 8516) 216-EG-1601 A/B/C
Type of Unit (check all that apply)	<input checked="" type="checkbox"/> Stationary Natural Gas-Fired Engine	<input checked="" type="checkbox"/> Emergency Use
	<input checked="" type="checkbox"/> Stationary Diesel and Dual Fuel	<input type="checkbox"/> Only Non- Emergency
	<input type="checkbox"/> Engine Stationary Gasoline Engine	<input type="checkbox"/> Use Peaking
	<input type="checkbox"/> Stationary Natural Gas-Fired Turbine	<input type="checkbox"/> Demand Response
Other – Specify: Diesel/Natural gas-fired emergency generator set		

SECTION C – MANUFACTURER DATA

Make TBD	Model TBD	Date of Manufacture TBD	
Reciprocating Internal Combustion Engine			
<input checked="" type="checkbox"/> Spark Ignition		<input type="checkbox"/> Compression Ignition	
<input type="checkbox"/> 4 Stroke	<input type="checkbox"/> 2 Stroke	<input type="checkbox"/> Rich Burn	<input type="checkbox"/> Lean Burn
Maximum Rating (BHP @ rpm) TBD		Operating Capacity (BHP @ rpm) 3.5 MW each (4,700 HP each)	
Engine Subject to: <input checked="" type="checkbox"/> 40 CFR 60, Subpart IIII <input checked="" type="checkbox"/> 40 CFR 60, Subpart JJJJ <input checked="" type="checkbox"/> 40 CFR 63, Subpart ZZZZ			
Turbine		Dry Low Emissions? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Heat Input (MMBtu/hr)	Maximum Rating (HP)	75% Rating (HP)	Efficiency
Turbine Subject to: <input type="checkbox"/> 40 CFR 60, Subpart GG <input type="checkbox"/> 40 CFR 60, Subpart KKKK			

SECTION D – FUELS USED

Natural Gas (10 ⁶ cu ft/year) TBD	Percent Sulfur	Percent H ₂ S
Oil (gal/year)	Percent Sulfur	Grade No.
LP Gas (gal/year)	Other – Specify: Diesel <0.05% sulfur. 4,230 gal/year	

SECTION E – NORMAL OPERATING SCHEDULE

Hours Per Day N/A	Days Per Week N/A	Weeks Per Year N/A	Hours Per Year 100 (emergency)	Peak Production Season (if any) N/A
-----------------------------	-----------------------------	------------------------------	--	--

SECTION F – STACK PARAMETERS

Emission Point 216-EG-1601 A/B/C		Stack Height Above Ground Level (feet) TBD		
Stack Diameter (feet at top) TBD	Gas Discharged (SCFM) TBD	Exit Temp (°F) TBD	Gas Velocity (FPS) TBD	

SECTION G – EMISSION CONTROL EQUIPMENT

Is any emission control equipment installed on this unit?
 No Yes – Complete and attach form SFN 8532

SECTION H – MAXIMUM AIR CONTAMINANTS EMITTED


Emission Point	Pollutant	Maximum Pounds Per Hour	Amount (Tons Per Year)	Basis of Estimate *
	NO _x	183.05	9.15	<p><i>Emission factors From AP-42 Chapter 3 Section 3.4. Large Stationary Diesel And All Stationary Dual-fuel Engines. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"</i></p>
	CO	77.44	3.87	
	PM	9.86	0.49	
	PM 10 (Total)	9.96	4.98E-01	
	PM 10 (Filterable)	8.62	4.31E-01	
	PM 2.5 (Total)	8.33	4.16E-01	
	PM 2.5(Filterable)	8.33	4.16E-01	
	PM (Condensable)	1.34	6.69E-02	
	SO ₂	5.70E-02	2.85E-03	
	VOC	9.93	4.96E-01	
	GHG (as CO ₂ e)	N/A	N/A	
	Formaldehyde	1.37E-02	6.86E-04	
	Total HAPS **	7.59E-01	3.79E-02	

If performance test results are available for the unit, submit a copy of test with this application

** Total HAPS includes formaldehyde

IS THIS UNIT IN COMPLIANCE WITH ALL APPLICABLE AIR POLLUTION RULES AND REGULATIONS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
--

If "NO" a Compliance Schedule must be completed and attached.

Signature of Applicant 	Date 04/03/17
---	------------------

Attach and label separate sheet(s) if you need more space to explain any system or answers or to provide complete listings of Emissions, Contaminants, or other items.

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188



PERMIT APPLICATION FOR HAZARDOUS AIR POLLUTANT (HAP) SOURCES

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization Meridian Energy Group - Davis Refinery		
Applicant's Name Tom Williams		
Title VP of Planning & Permitting	Telephone Number (707) 299-0182	E-mail Address twilliams@meridianenergygroup.inc
Mailing Address (Street & No.) 2062 Business Center Drive, Suite 115		
City Irvine	State CA	ZIP Code 92612

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters Tom Johnson		
Title Vice President of Operations	Telephone Number (409) 795-0792	E-mail Address tjohnson@meridianenergygroup.inc
Facility Address (Street & No. or Lat/Long to Nearest Second) 37th Street / 46°52'45"N/103°14'55" W		
City Belfield	State ND	ZIP Code 58622
County Billings	Number of Employees at Location TBD	
Land Area at Plant Site 261 Acres (or)	Sq. Ft.	MSL Elevation at Plant 2,685 feet

Describe Nature of Business/Process Petroleum Refining / Diesel/Natural gas-fired emergency generator set

SECTION B – STACK DATA

Inside Diameter (ft) TBD	Height Above Grade (ft) TBD	
Gas Temperature at Exit (°F) TBD	Gas Velocity at Exit (ft/sec) TBD	Gas Volume (scfm) TBD
Basis of any Estimates (attach separate sheet if necessary) Emission factors From AP-42 Chapter 3 Section 3.4. Large Stationary Diesel And All Stationary Dual-fuel Engines. See Document P-5715043-01-001-18042-1001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-1001 "Control Technology Review"		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Nearest Residences or Building Main Control Room	Distance (ft) 17.9 ft	Direction East
Nearest Property Line Fenceline	Distance (ft) 456.4 ft	Direction East

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 216-EG-1601 A/B/C	Mean Particle Diameter (µm) TBD
Flow Rate (scfm) TBD	Drift Velocity (ft/sec) TBD
Stream Temperature (°F) TBD	Particulate Concentration (gr/dscf) TBD
Moisture Content (%) TBD	Halogens or Metals Present? N/A
Pressure (in. Hg) TBD	Organic Content (ppmv) TBD
Heat Content (Btu/scfm) TBD	O ₂ Content (%) N/A

SECTION D – POLLUTANT SPECIFIC DATA

(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted Acetaldehyde	Chemical Abstract Services (CAS) Number 75-07-0
Proposed Emission Rate (lb/hr) 4.38x10⁻³	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 35.51 in Hg @ 68°C
Solubility 1x10⁻⁶ mg/L in water @ 77°F	Molecular Weight (lb/lb-mole) 44.05
Absorptive Properties -	

Pollutant Emitted Acrolein	Chemical Abstract Services (CAS) Number 107-02-8
Proposed Emission Rate (lb/hr) 1.37x10⁻³	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 10.79 in Hg @ 77 °F
Solubility In water 2.12 x 10⁵ mg/L @ 77°F	Molecular Weight (lb/lb-mole) 56.06
Absorptive Properties -	

Pollutant Emitted Benzene	Chemical Abstract Services (CAS) Number 71-43-2
Proposed Emission Rate (lb/hr) 1.35x10⁻¹	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 3.73 in Hg @ 77 °F
Solubility In water 1.79x10³ mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 78.11
Absorptive Properties -	

Pollutant Emitted Formaldehyde	Chemical Abstract Services (CAS) Number 50-00-0
Proposed Emission Rate (lb/hr) 1.37×10^{-2}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 0.15 in Hg @ 77 °F
Solubility In water 4.00×10^5 mg/L @ 68°F	Molecular Weight (lb/lb-mole) 30.03
Absorptive Properties -	

Pollutant Emitted Naphthalene	Chemical Abstract Services (CAS) Number 91-20-3
Proposed Emission Rate (lb/hr) 2.26×10^{-2}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 0.003 in Hg @ 77 °F
Solubility In water 31 mg/L @ 77 °F	Molecular Weight (lb/lb-mole) 128.17
Absorptive Properties -	

Pollutant Emitted Propylene	Chemical Abstract Services (CAS) Number 115-07-1
Proposed Emission Rate (lb/hr) 4.85×10^{-1}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 342.12 in Hg @ 77 °F
Solubility In water 200 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 42.08
Absorptive Properties -	

Pollutant Emitted Toluene	Chemical Abstract Services (CAS) Number 108-88-3
Proposed Emission Rate (lb/hr) 4.89×10^{-2}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 1.12 in Hg @ 77°F
Solubility In water 526 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 92.14
Absorptive Properties -	

Pollutant Emitted Xylene	Chemical Abstract Services (CAS) Number 95-47-6
Proposed Emission Rate (lb/hr) 3.36×10^{-2}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) 0.26 in Hg @ 77°F
Solubility In water 178 mg/L @ 77°F	Molecular Weight (lb/lb-mole) 106.16
Absorptive Properties -	



Pollutant Emitted PAH	Chemical Abstract Services (CAS) Number N/A
Proposed Emission Rate (lb/hr) 1.42×10^{-2}	Emission Source (describe) Process Point
Source Classification (process point, process fugitive, area fugitive) Process Point	Pollutant Class and Form (organic/inorganic - particulate/vapor) Organic /Vapor
Concentration in Emission Stream (ppmv) TBD	Vapor Pressure (in. Hg @ °F) N/A
Solubility N/A	Molecular Weight (lb/lb-mole) TBD
Absorptive Properties -	

Signature of Applicant 	Date 04/03/17
---	------------------

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

Exhibit B: Emissions Inventory

	EMISSIONS INVENTORY	VEPICA CODE: P-5715043-01-001-18042-I001	
		COMPANY CODE: TBD	
		ISSUE: 1 DATE: 03/23/17	
		SHEET: 1 OF 35	

VEPICA CODE : P-5715043-01-001-18042-I001	SHEET 1 OF 35
 COMPANY CODE: TBD	
 TITLE: EMISSIONS INVENTORY	

PROJECT N° : P-5715043

NAME : PERMITTING SUPPORT – DAVIS REFINERY

CLIENT : MERIDIAN ENERGY GROUP INC.

LOCATION : BILLINGS COUNTY, NORTH DAKOTA

1	03/23/17	ISSUED FOR PTC AMMENDMENT	G. AVALOS J. SOLANO	A. PEÑA	C. GARCÍA	T. JOHNSON
0	09/23/16	ISSUED FOR PTC	J. GOMEZ J. SOLANO	A. PEÑA	C. GARCÍA	T. JOHNSON
ISSUE	DATE	DESCRIPTION	PREPARED	REVIEWED	APPROVED VEPICA	APPROVED CLIENT





	EMISSIONS INVENTORY	VEPICA CODE: P-5715043-01-001-18042-I001	
		COMPANY CODE: TBD	
		ISSUE: 1 DATE: 03/23/17	
		SHEET: 2 OF 35	

TABLE OF CONTENTS

<u>DESCRIPTION</u>	<u>SHEET</u>
1. INTRODUCTION	3
2. PTC AMENDMENT	3
3. DOCUMENT SCOPE	7
4. LOCATION	8
5. EMISSION INVENTORY METHODOLOGY	10
5.1. Sources Identification	10
5.2. Emission Estimation – Basis and Assumptions	19
6. CALCULATION BASIS	22
6.1. Equipment Leaks	22
6.2. Storage Tanks Emissions	23
6.3. Stationary Combustion Sources	24
6.4. Process Vents	24
6.5. Flares	26
6.6. Wastewater Treatment Systems	27
6.7. Cooling Towers	27
6.8. Product Loading	28
6.9. Fugitive Dust	28
7. BASE CASE EMISSIONS INVENTORY	29
8. PROPOSED DAVIS REFINERY POTENTIAL TO EMIT	29
9. REFERENCES	35
10. APPENDIXES	35

	EMISSIONS INVENTORY	VEPICA CODE: P-5715043-01-001-18042-I001	
		COMPANY CODE: TBD	
		ISSUE: 1 DATE: 03/23/17	
		SHEET: 3 OF 35	

1. INTRODUCTION

Meridian Energy Group (MEG) has engaged VEPICA to develop an air permit application for construction of the 55,000 BPD (barrels per day) Davis Refinery in Billings County, North Dakota. The present document comprises the Emissions Inventory for the proposed Davis Refinery, based on guidelines established in EPA *Emissions Estimation Protocol for Petroleum Refineries, Version 3* (RTI International, April 2015) and the engineering, licensor, vendor data available to date.



The initial Permit to Construct (PTC) application was submitted to NDDoH on October 17th, 2016, based on Rev.0 of this document which reflected a cracking refinery configuration with a Fluid Catalytic Cracking (FCC) and downstream units for conversion of atmospheric bottoms into higher value products. After submittal of the initial PTC application, and upon further evaluation by Meridian of the market conditions and off taker agreements for the Davis Refinery products, in which production of jet and diesel fuel will be important, the hydrocracking (HYK) refining process was chosen as an attractive alternative to FCC.

The replacement of the initially proposed FCC unit and downstream units (alkylation, hydrotreating, sweetening and isomerization) by the HYK process, and changes to the catalytic reforming technology to improve hydrogen yields has both economic and environmental advantages for the Davis Refinery. With the revised process scheme Meridian can ensure better conversion of low-quality vacuum gas oil into high-quality, clean burning middle distillates and reformer feed full range naphtha, while also improving the Refinery's environmental footprint. This revision of the Emissions Inventory reflects the emission units and equipment configuration for the HYK process scheme, and its implications in the Potential To Emit (PTE) of the proposed Davis Refinery.

2. REVISIONS TO THE PROCESS SCHEME

The Bakken crude is a very light and sweet feedstock that will allow the Davis Refinery to produce about two thirds of the incoming feed as gasoline and middle distillates (jet fuel and diesel) that will meet the current stringent fuel environmental standards with minimal hydrotreatment. During the initial phase of the Davis Refinery atmospheric distillation unit residue will be produced as fuel oil. To allow for conversion of heavy distillates into more valuable lighter products Meridian will install vacuum distillation and conversion units during the second phase of the Davis Refinery.

This revision of the Emissions Inventory for the Davis Refinery replaces emissions associated to the FCC and downstream units included in Rev. 0 of this document, with emissions associated with a HYK Unit, catalytic reforming technology changes and adjustments to hydrotreatment and sulfur recovery capacities, tankage and loading facilities. The proposed changes to the refinery processes will provide the facility with the



	EMISSIONS INVENTORY	VEPICA CODE: P-5715043-01-001-18042-I001	
		COMPANY CODE: TBD	
		ISSUE: 1 DATE: 03/23/17	
		SHEET: 4 OF 35	

flexibility to adjust the ratio of intermediate distillates to naphtha produced to meet changing market demands, while ensuring the quality of the products. Naphtha produced will be desulphurized reformer feed quality that will undergo further processing prior to being added to the gasoline pool, while Diesel produced will meet ULSD specifications.

The main changes from the Rev. 0 process scheme to the current Rev. 1 process scheme are summarized in Table 1 below. Further, changes in heaters/boilers and tankage, are summarized in Tables 2 and 3, respectively.

Table 1: Summary of main changes from original process scheme to actual scheme

Unit Number	Original Unit	Current Unit	Main change
101	Atmospheric Distillation Unit #1	Atmospheric Distillation Unit #1	Increased heater duty
102	Atmospheric Distillation Unit #2	Atmospheric Distillation Unit #2	Increased heater duty
103	Vacuum Distillation Unit	Vacuum Distillation Unit	Decreased capacity from 26,000 BPD to 16,800 BPD. Decreased heater duty.
105	Naphtha Hydrotreater Unit	Naphtha Hydrotreater	Increased capacity from 12,108 BPD to 16,128 BPD. Increased heater duty.
106	Catalytic Reformer #1	SR/CCR Catalytic Reformer	Substituted for transformable SR to CCR unit. New capacity of 16,128 BPD. Increased heater duty.
107	Catalytic Reformer #2	N/A	Eliminated.
110	Diesel Hydrotreater	Distillates Hydrotreater	Increased capacity from 11,539 BPD to 19,850 BPD to process both kerosene and diesel cuts. Increased heater duty.
111	Light Naphtha Hydrotreater	N/A	Eliminated.
112	Fluid Catalytic Cracker (FCC)	Hydrocracker	Substituted by a Hydrocracker Unit with a processing capacity of 14,380 BPD and increased heater duty.
114	FCC Naphtha Hydrotreater	N/A	Eliminated.
117	Isomerization Unit	N/A	Eliminated.

	EMISSIONS INVENTORY	VEPICA CODE: P-5715043-01-001-18042-I001	
		COMPANY CODE: TBD	
		ISSUE: 1 DATE: 03/23/17	
		SHEET: 5 OF 35	

Unit Number	Original Unit	Current Unit	Main change
118	Alkylation Unit	N/A	Eliminated.
120 & 122	SRU & Thermal Oxidizer	SRU & Thermal Oxidizer	Increased SRU capacity from 10.2 to 11.2 LTPD. No changes to thermal oxidizer.
125	Kerosene Hydrotreater	N/A	Eliminated.
202	Boilers	Boilers	Decreased overall total steam generation capacity from 180 MMBTU of medium pressure steam to 114 MMBTU of combined medium/high pressure steam.
203	Tank Farm	Tank Farm	Reduction of on-site storage capacity which resulted in elimination of 7 feedstock, intermediates and finished product storage tanks.
206	Wastewater Treatment Plant	Wastewater Treatment Plant	Increased design capacity from 140 gpm to 180 gpm.
207	Flare System	Flare System	No changes.
208	Truck Loading-Unloading System	Truck Loading-Unloading System	Increased capacity to handle about half of the full refinery's production. Balance via future pipelines.
	Rail Loading-Unloading System	Rail Loading-Unloading System	Eliminated.
212	Firewater Pumps	Firewater Pumps	No changes
215	Cooling Towers	Cooling Towers	Increased capacity from 3-1,500 gpm cooling tower cells to 5-2,500 gpm cooling tower cells.
216	Emergency Power Generator (EPS) System	Emergency Power Generator (EPS) System	No changes
FUGITIVES	Process equipment leaks in VOC and Natural Gas service	Process equipment leaks in VOC and Natural Gas service	Adjusted to units in current process scheme.