

**From:** [efilingmail@tylerhost.net](mailto:efilingmail@tylerhost.net)  
**To:** [Hamre, John G.](#)  
**Subject:** Filing Accepted for Case: 08-2018-CV-02937; Environmental Law and Policy Center, et al. vs. North Dakota Public Service Commission, et al.; Envelope Number: 3293135  
**Date:** Friday, February 01, 2019 8:32:50 AM

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## Filing Accepted

Envelope Number: 3293135

Case Number: 08-2018-CV-02937

Case Style: Environmental Law and  
Policy Center, et al. vs. North Dakota  
Public Service Commission, et al.



The filing below was reviewed and has been accepted by the clerk's office. You may access the file stamped copy of the document filed by clicking on the below link.

Filing Details	
<b>Court</b>	Burleigh County - South Central District
<b>Case Number</b>	08-2018-CV-02937
<b>Case Style</b>	Environmental Law and Policy Center, et al. vs. North Dakota Public Service Commission, et al.
<b>Date/Time Submitted</b>	1/31/2019 5:02 PM CST
<b>Date/Time Accepted</b>	2/1/2019 8:32 AM CST
<b>Accepted Comments</b>	
<b>Filing Type</b>	Exhibit
<b>Filing Description</b>	CR Exhibit 1 Supporting Exhibit C, part 2 of 6
<b>Activity Requested</b>	EFileAndServe
<b>Filed By</b>	John Hamre
<b>Filing Attorney</b>	Illona Jeffcoat-Sacco

Document Details	
<b>Lead Document</b>	CR Exhibit 1 Supporting Exhibit C, part 2 of 6.pdf
<b>Lead Document Page Count</b>	150
<b>File Stamped Copy</b>	<a href="#">View Stamped Document</a>

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**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>none</b>		
Quantity Per Year <b>22,869,732</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>27,578.81</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>6.3</b>		Height Above Grade (ft) <b>127.6</b>	
Gas Temperature at Exit (Avg. °F) <b>787.7</b>		Gas Velocity at Exit (Avg. ft/sec) <b>20.1</b>	
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) <b>37,427.14</b>		Average (DSCFM) <b>TBD</b>	
Maximum (ACFM) <b>TBD</b>		Maximum (DSCFM) <b>TBD</b>	
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. <b>Plant layout drawings attached to this permit application.</b>
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**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>2,88E-01</b>	<b>1,26E+00</b>
PM <sub>10</sub> Filterable	<b>7,20E-02</b>	<b>3,15E-01</b>
PM <sub>2.5</sub> Total	<b>2,88E-01</b>	<b>1,26E+00</b>
PM <sub>2.5</sub> Filterable	<b>7,20E-02</b>	<b>3,15E-01</b>
PM <sub>2.5</sub> Condensable	<b>2,16E-01</b>	<b>9,46E-01</b>
Sulfur Dioxide	<b>4,24E-02</b>	<b>1,86E-01</b>
Nitrogen Oxides	<b>4,54E-01</b>	<b>1,99E+00</b>
Carbon Monoxide	<b>2,02E+00</b>	<b>8,83E+00</b>
Greenhouse Gases (CO <sub>2</sub> e)	<b>N/A</b>	
Other – Specify		
Lead	<b>3,53E-05</b>	<b>1,55E-04</b>
Metal HAP (Total)	<b>5,26E-04</b>	<b>2,31E-03</b>
Organic HAPs (Total)	<b>3,52E-02</b>	<b>1,54E-01</b>
VOC	<b>3,88E-01</b>	<b>1,70E+00</b>
Basis and Calculations for Quantities: <b>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"</b>		

Signature of Applicant	Date
	9/26/2016

**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 <b>Meridian Energy Group – Davis Refinery</b>		
Contact Person for Air Pollution Matters <b>Tom Johnson</b>		
Title <b>Vice President of Operations</b>	Telephone Number <b>(409)795-0792</b>	E-mail Address <b>tjohnson@meridianenergygroup.inc</b>
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>
Facility Address (Street & No.) <b>37<sup>th</sup> Street</b>		
City <b>Belfield</b>	State <b>ND</b>	ZIP Code <b>58622</b>
County <b>Billings</b>	Latitude (Nearest Second) <b>46°52'45"N</b>	Longitude (Nearest Second) <b>103°14'55" W</b>
Legal Description of Facility Site <b>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</b>	Land Area at Facility Site <b>261 Acres</b>	MSL Elevation at Facility <b>2,685 feet</b>

**SECTION B – EQUIPMENT**

Source ID No. (From form SFN 8516) <b>102-H-0201</b>	Name of Manufacturer <b>TBD</b>
Rated Capacity/Maximum Input <b>TBD</b>	Model Number <b>TBD</b>
Purpose Space Heat _____ % Process Heat <b>100</b> %	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: <b>TBD</b>

**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>none</b>		
Quantity Per Year <b>22,869,732</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>27,578.81</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>6.3</b>		Height Above Grade (ft) <b>127.6</b>	
Gas Temperature at Exit (Avg. °F) <b>787.7</b>		Gas Velocity at Exit (Avg. ft/sec) <b>20.1</b>	
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) <b>37,427.14</b>		Average (DSCFM) <b>TBD</b>	
Maximum (ACFM) <b>TBD</b>		Maximum (DSCFM) <b>TBD</b>	
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. <b>Plant layout drawings attached to this permit application.</b>
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**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>2,88E-01</b>	<b>1,26E+00</b>
PM <sub>10</sub> Filterable	<b>7,20E-02</b>	<b>3,15E-01</b>
PM <sub>2.5</sub> Total	<b>2,88E-01</b>	<b>1,26E+00</b>
PM <sub>2.5</sub> Filterable	<b>7,20E-02</b>	<b>3,15E-01</b>
PM <sub>2.5</sub> Condensable	<b>2,16E-01</b>	<b>9,46E-01</b>
Sulfur Dioxide	<b>4,24E-02</b>	<b>1,86E-01</b>
Nitrogen Oxides	<b>4,54E-01</b>	<b>1,99E+00</b>
Carbon Monoxide	<b>2,02E+00</b>	<b>8,83E+00</b>
Greenhouse Gases (CO2e)	<b>N/A</b>	
Other – Specify		
Lead	<b>3,53E-05</b>	<b>1,55E-04</b>
Metal HAP (Total)	<b>5,26E-04</b>	<b>2,31E-03</b>
Organic HAPs (Total)	<b>3,52E-02</b>	<b>1,54E-01</b>
VOC	<b>3,88E-01</b>	<b>1,70E+00</b>
Basis and Calculations for Quantities: <b>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"</b>		

Signature of Applicant	
	Date 9/26/2016

**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 <b>Meridian Energy Group – Davis Refinery</b>		
Contact Person for Air Pollution Matters <b>Tom Johnson</b>		
Title <b>Vice President of Operations</b>	Telephone Number <b>(409)795-0792</b>	E-mail Address <b>tjohnson@meridianenergygroup.inc</b>
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>
Facility Address (Street & No.) <b>37<sup>th</sup> Street</b>		
City <b>Belfield</b>	State <b>ND</b>	ZIP Code <b>58622</b>
County <b>Billings</b>	Latitude (Nearest Second) <b>46°52'45"N</b>	Longitude (Nearest Second) <b>103°14'55" W</b>
Legal Description of Facility Site <b>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</b>	Land Area at Facility Site <b>261 Acres</b>	MSL Elevation at Facility <b>2,685 feet</b>

**SECTION B – EQUIPMENT**

Source ID No. (From form SFN 8516) <b>103-H-0301</b>	Name of Manufacturer <b>TBD</b>
Rated Capacity/Maximum Input <b>TBD</b>	Model Number <b>TBD</b>
Purpose Space Heat _____ % Process Heat <b>100</b> %	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: <b>TBD</b>

**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>None</b>		
Quantity Per Year <b>24,295,860</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>27,571.66</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>6.5</b>	Height Above Grade (ft) <b>125</b>
Gas Temperature at Exit (Avg. °F) <b>600.4</b>	Gas Velocity at Exit (Avg. ft/sec) <b>16.9</b>
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) <b>33,610.60</b>	Average (DSCFM) <b>TBD</b>
Maximum (ACFM) <b>TBD</b>	Maximum (DSCFM) <b>TBD</b>
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. <b>Plant layout drawings attached to this permit application.</b>
---

**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>3,06E-01</b>	<b>1,34E+00</b>
PM <sub>10</sub> Filterable	<b>7,65E-02</b>	<b>3,35E-01</b>
PM <sub>2.5</sub> Total	<b>3,06E-01</b>	<b>1,34E+00</b>
PM <sub>2.5</sub> Filterable	<b>7,65E-02</b>	<b>3,35E-01</b>
PM <sub>2.5</sub> Condensable	<b>2,29E-01</b>	<b>1,00E+00</b>
Sulfur Dioxide	<b>4,50E-02</b>	<b>1,97E-01</b>
Nitrogen Oxides	<b>4,82E-01</b>	<b>2,11E+00</b>
Carbon Monoxide	<b>2,14E+00</b>	<b>9,38E+00</b>
Greenhouse Gases (CO2e)	<b>N/A</b>	
Other – Specify		
Lead	<b>3,75E-05</b>	<b>1,64E-04</b>
Metal HAP (Total)	<b>5,59E-04</b>	<b>2,45E-03</b>
Organic HAPs (Total)	<b>3,74E-02</b>	<b>1,64E-01</b>
VOC	<b>4,12E-01</b>	<b>1,81E+00</b>
Basis and Calculations for Quantities: <b>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"</b>		

Signature of Applicant		Date
		09/26/2016

**SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:**

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 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 <b>Meridian Energy Group – Davis Refinery</b>		
Contact Person for Air Pollution Matters <b>Tom Johnson</b>		
Title <b>Vice President of Operations</b>	Telephone Number <b>(409)795-0792</b>	E-mail Address <b>tjohnson@meridianenergygroup.inc</b>
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>
Facility Address (Street & No.) <b>37<sup>th</sup> Street</b>		
City <b>Belfield</b>	State <b>ND</b>	ZIP Code <b>58622</b>
County <b>Billings</b>	Latitude (Nearest Second) <b>46°52'45"N</b>	Longitude (Nearest Second) <b>103°14'55" W</b>
Legal Description of Facility Site <b>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</b>	Land Area at Facility Site <b>261 Acres</b>	MSL Elevation at Facility <b>2,685 feet</b>

**SECTION B – EQUIPMENT**

Source ID No. (From form SFN 8516) <b>103-H-0302</b>	Name of Manufacturer <b>TBD</b>
Rated Capacity/Maximum Input <b>TBD</b>	Model Number <b>TBD</b>
Purpose Space Heat _____ % Process Heat <b>100</b> %	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: <b>TBD</b>

**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>None</b>		
Quantity Per Year <b>18,313,656</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>27,575.82</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>5.1</b>		Height Above Grade (ft) <b>120</b>	
Gas Temperature at Exit (Avg. °F) <b>600.1</b>		Gas Velocity at Exit (Avg. ft/sec) <b>20.8</b>	
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) <b>25,334.29</b>		Average (DSCFM) <b>TBD</b>	
Maximum (ACFM) <b>TBD</b>		Maximum (DSCFM) <b>TBD</b>	
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. <b>Plant layout drawings attached to this permit application.</b>
---

**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>2,31E-01</b>	<b>1,01E+00</b>
PM <sub>10</sub> Filterable	<b>5,77E-02</b>	<b>2,53E-01</b>
PM <sub>2.5</sub> Total	<b>2,31E-01</b>	<b>1,01E+00</b>
PM <sub>2.5</sub> Filterable	<b>5,77E-02</b>	<b>2,53E-01</b>
PM <sub>2.5</sub> Condensable	<b>1,73E-01</b>	<b>7,58E-01</b>
Sulfur Dioxide	<b>3,39E-02</b>	<b>1,49E-01</b>
Nitrogen Oxides	<b>3,63E-01</b>	<b>1,59E+00</b>
Carbon Monoxide	<b>1,61E+00</b>	<b>7,07E+00</b>
Greenhouse Gases (CO <sub>2</sub> e)	<b>N/A</b>	
Other – Specify		
Lead	<b>2,82E-05</b>	<b>1,24E-04</b>
Metal HAP (Total)	<b>4,22E-04</b>	<b>1,85E-03</b>
Organic HAPs (Total)	<b>2,82E-02</b>	<b>1,23E-01</b>
VOC	<b>3,11E-01</b>	<b>1,36E+00</b>
Basis and Calculations for Quantities: <b>Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "BACT Analysis"</b>		

Signature of Applicant		Date
		09/26/2016

**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 <b>Meridian Energy Group – Davis Refinery</b>		
Contact Person for Air Pollution Matters <b>Tom Johnson</b>		
Title <b>Vice President of Operations</b>	Telephone Number <b>(409)795-0792</b>	E-mail Address <b>tjohnson@meridianenergygroup.inc</b>
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>
Facility Address (Street & No.) <b>37<sup>th</sup> Street</b>		
City <b>Belfield</b>	State <b>ND</b>	ZIP Code <b>58622</b>
County <b>Billings</b>	Latitude (Nearest Second) <b>46°52'45"N</b>	Longitude (Nearest Second) <b>103°14'55" W</b>
Legal Description of Facility Site <b>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</b>	Land Area at Facility Site <b>261 Acres</b>	MSL Elevation at Facility <b>2,685 feet</b>

**SECTION B – EQUIPMENT**

Source ID No. (From form SFN 8516) <b>105-H-0501</b>	Name of Manufacturer <b>TBD</b>
Rated Capacity/Maximum Input <b>TBD</b>	Model Number <b>TBD</b>
Purpose Space Heat _____ % Process Heat <b>100</b> %	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: <b>TBD</b>

**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>None</b>		
Quantity Per Year <b>4,366,860</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>27,582.75</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>3</b>	Height Above Grade (ft) <b>91</b>
Gas Temperature at Exit (Avg. °F) <b>787.7</b>	Gas Velocity at Exit (Avg. ft/sec) <b>16.2</b>
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) <b>6,866.55</b>	Average (DSCFM) <b>TBD</b>
Maximum (ACFM) <b>TBD</b>	Maximum (DSCFM) <b>TBD</b>
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. <b>Plant layout drawings attached to this permit application.</b>
---

**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>5,50E-02</b>	<b>2,41E-01</b>
PM <sub>10</sub> Filterable	<b>1,38E-02</b>	<b>6,02E-02</b>
PM <sub>2.5</sub> Total	<b>5,50E-02</b>	<b>2,41E-01</b>
PM <sub>2.5</sub> Filterable	<b>1,38E-02</b>	<b>6,02E-02</b>
PM <sub>2.5</sub> Condensable	<b>4,13E-02</b>	<b>1,81E-01</b>
Sulfur Dioxide	<b>8,09E-03</b>	<b>3,54E-02</b>
Nitrogen Oxides	<b>4,13E-01</b>	<b>1,81E+00</b>
Carbon Monoxide	<b>3,85E-01</b>	<b>1,69E+00</b>
Greenhouse Gases (CO2e)	<b>N/A</b>	
Other – Specify		
Lead	<b>6,74E-06</b>	<b>2,95E-05</b>
Metal HAP (Total)	<b>1,01E-04</b>	<b>4,40E-04</b>
Organic HAPs (Total)	<b>6,72E-03</b>	<b>2,94E-02</b>
VOC	<b>7,41E-02</b>	<b>3,25E-01</b>
Basis and Calculations for Quantities: <b>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"</b>		

Signature of Applicant	Date
	09/26/2016

**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 <b>Meridian Energy Group – Davis Refinery</b>		
Contact Person for Air Pollution Matters <b>Tom Johnson</b>		
Title <b>Vice President of Operations</b>	Telephone Number <b>(409)795-0792</b>	E-mail Address <b>tjohnson@meridianenergygroup.inc</b>
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>
Facility Address (Street & No.) <b>37<sup>th</sup> Street</b>		
City <b>Belfield</b>	State <b>ND</b>	ZIP Code <b>58622</b>
County <b>Billings</b>	Latitude (Nearest Second) <b>46°52'45"N</b>	Longitude (Nearest Second) <b>103°14'55" W</b>
Legal Description of Facility Site <b>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</b>	Land Area at Facility Site <b>261 Acres</b>	MSL Elevation at Facility <b>2,685 feet</b>

**SECTION B – EQUIPMENT**

Source ID No. (From form SFN 8516) <b>105-H-0502</b>	Name of Manufacturer <b>TBD</b>
Rated Capacity/Maximum Input <b>TBD</b>	Model Number <b>TBD</b>
Purpose Space Heat _____ % Process Heat <b>100</b> %	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: <b>TBD</b>

**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>None</b>		
Quantity Per Year <b>5,161,392</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>27,579.77</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>3</b>	Height Above Grade (ft) <b>91</b>
Gas Temperature at Exit (Avg. °F) <b>787.7</b>	Gas Velocity at Exit (Avg. ft/sec) <b>19.1</b>
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) <b>8,115.32</b>	Average (DSCFM) <b>TBD</b>
Maximum (ACFM) <b>TBD</b>	Maximum (DSCFM) <b>TBD</b>
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. <b>Plant layout drawings attached to this permit application.</b>
---

**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>6,50E-02</b>	<b>2,85E-01</b>
PM <sub>10</sub> Filterable	<b>1,63E-02</b>	<b>7,12E-02</b>
PM <sub>2.5</sub> Total	<b>6,50E-02</b>	<b>2,85E-01</b>
PM <sub>2.5</sub> Filterable	<b>1,63E-02</b>	<b>7,12E-02</b>
PM <sub>2.5</sub> Condensable	<b>4,88E-02</b>	<b>2,14E-01</b>
Sulfur Dioxide	<b>9,56E-03</b>	<b>4,19E-02</b>
Nitrogen Oxides	<b>4,88E-01</b>	<b>2,14E+00</b>
Carbon Monoxide	<b>4,55E-01</b>	<b>1,99E+00</b>
Greenhouse Gases (CO <sub>2</sub> e)	<b>N/A</b>	
Other – Specify		
Lead	<b>7,96E-06</b>	<b>3,49E-05</b>
Metal HAP (Total)	<b>1,19E-04</b>	<b>5,20E-04</b>
Organic HAPs (Total)	<b>7,94E-03</b>	<b>3,48E-02</b>
VOC	<b>8,76E-02</b>	<b>3,84E-01</b>
Basis and Calculations for Quantities: <b>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"</b>		

Signature of Applicant 	Date 09/26/2016
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**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 <b>Meridian Energy Group – Davis Refinery</b>		
Contact Person for Air Pollution Matters <b>Tom Johnson</b>		
Title <b>Vice President of Operations</b>	Telephone Number <b>(409)795-0792</b>	E-mail Address <b>tjohnson@meridianenergygroup.inc</b>
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>
Facility Address (Street & No.) <b>37<sup>th</sup> Street</b>		
City <b>Belfield</b>	State <b>ND</b>	ZIP Code <b>58622</b>
County <b>Billings</b>	Latitude (Nearest Second) <b>46°52'45"N</b>	Longitude (Nearest Second) <b>103°14'55" W</b>
Legal Description of Facility Site <b>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</b>	Land Area at Facility Site <b>261 Acres</b>	MSL Elevation at Facility <b>2,685 feet</b>

**SECTION B – EQUIPMENT**

Source ID No. (From form SFN 8516) <b>106-H-0601</b>	Name of Manufacturer <b>TBD</b>
Rated Capacity/Maximum Input <b>TBD</b>	Model Number <b>TBD</b>
Purpose Space Heat _____ % Process Heat <b>100</b> %	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: <b>TBD</b>

**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>none</b>		
Quantity Per Year <b>13,253,880</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>27,580.96</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>4</b>		Height Above Grade (ft) <b>42</b>	
Gas Temperature at Exit (Avg. °F) <b>786.2</b>		Gas Velocity at Exit (Avg. ft/sec) <b>27.5</b>	
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) <b>20,769.92</b>		Average (DSCFM) <b>TBD</b>	
Maximum (ACFM) <b>TBD</b>		Maximum (DSCFM) <b>TBD</b>	
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. <b>Plant layout drawings attached to this permit application.</b>
---

**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>1,67E-01</b>	<b>7,31E-01</b>
PM <sub>10</sub> Filterable	<b>4,17E-02</b>	<b>1,83E-01</b>
PM <sub>2.5</sub> Total	<b>1,67E-01</b>	<b>7,31E-01</b>
PM <sub>2.5</sub> Filterable	<b>4,17E-02</b>	<b>1,83E-01</b>
PM <sub>2.5</sub> Condensable	<b>1,25E-01</b>	<b>5,48E-01</b>
Sulfur Dioxide	<b>2,45E-02</b>	<b>1,08E-01</b>
Nitrogen Oxides	<b>2,63E-01</b>	<b>1,15E+00</b>
Carbon Monoxide	<b>1,17E+00</b>	<b>5,12E+00</b>
Greenhouse Gases (CO <sub>2</sub> e)	<b>N/A</b>	
Other – Specify		
Lead	<b>2,04E-05</b>	<b>8,96E-05</b>
Metal HAP (Total)	<b>3,05E-04</b>	<b>1,34E-03</b>
Organic HAPs (Total)	<b>2,04E-02</b>	<b>8,94E-02</b>
VOC	<b>2,25E-01</b>	<b>9,86E-01</b>
Basis and Calculations for Quantities: <b>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"</b>		

Signature of Applicant	Date
	09/26/2016

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NORTH DAKOTA DEPARTMENT OF HEALTH  
DIVISION OF AIR QUALITY  
SFN 8518 (09-12)

**SECTION A – FACILITY INFORMATION**

Name of Firm or Organization <b>Meridian Energy Group – Davis Refinery</b>		
Contact Person for Air Pollution Matters <b>Tom Johnson</b>		
Title <b>Vice President of Operations</b>	Telephone Number <b>(409)795-0792</b>	E-mail Address <b>tjohnson@meridianenergygroup.inc</b>
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>
Facility Address (Street & No.) <b>37<sup>th</sup> Street</b>		
City <b>Belfield</b>	State <b>ND</b>	ZIP Code <b>58622</b>
County <b>Billings</b>	Latitude (Nearest Second) <b>46°52'45"N</b>	Longitude (Nearest Second) <b>103°14'55" W</b>
Legal Description of Facility Site <b>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</b>	Land Area at Facility Site <b>261 Acres</b>	MSL Elevation at Facility <b>2,685 feet</b>

**SECTION B – EQUIPMENT**

Source ID No. (From form SFN 8516) <b>107-H-0701</b>	Name of Manufacturer <b>TBD</b>
Rated Capacity/Maximum Input <b>TBD</b>	Model Number <b>TBD</b>
Purpose Space Heat _____% Process Heat <b>100</b> %	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: <b>TBD</b>

**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>None</b>		
Quantity Per Year <b>29,381,040</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>27,579.01</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>6</b>	Height Above Grade (ft) <b>120</b>
Gas Temperature at Exit (Avg. °F) <b>787.7</b>	Gas Velocity at Exit (Avg. ft/sec) <b>27.2</b>
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) <b>46,194.82</b>	Average (DSCFM) <b>TBD</b>
Maximum (ACFM) <b>TBD</b>	Maximum (DSCFM) <b>TBD</b>
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. <b>Plant layout drawings attached to this permit application.</b>
---

**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>3,70E-01</b>	<b>1,62E+00</b>
PM <sub>10</sub> Filterable	<b>9,25E-02</b>	<b>4,05E-01</b>
PM <sub>2.5</sub> Total	<b>3,70E-01</b>	<b>1,62E+00</b>
PM <sub>2.5</sub> Filterable	<b>9,25E-02</b>	<b>4,05E-01</b>
PM <sub>2.5</sub> Condensable	<b>2,78E-01</b>	<b>1,22E+00</b>
Sulfur Dioxide	<b>5,44E-02</b>	<b>2,38E-01</b>
Nitrogen Oxides	<b>5,83E-01</b>	<b>2,55E+00</b>
Carbon Monoxide	<b>2,59E+00</b>	<b>1,13E+01</b>
Greenhouse Gases (CO2e)	<b>N/A</b>	
Other – Specify		
Lead	<b>4,53E-05</b>	<b>1,99E-04</b>
Metal HAP (Total)	<b>6,76E-04</b>	<b>2,96E-03</b>
Organic HAPs (Total)	<b>4,52E-02</b>	<b>1,98E-01</b>
VOC	<b>4,99E-01</b>	<b>2,18E+00</b>
Basis and Calculations for Quantities: <b>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"</b>		

Signature of Applicant	Date
	09/26/2016

**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 <b>Meridian Energy Group – Davis Refinery</b>		
Contact Person for Air Pollution Matters <b>Tom Johnson</b>		
Title <b>Vice President of Operations</b>	Telephone Number <b>(409)795-0792</b>	E-mail Address <b>tjohnson@meridianenergygroup.inc</b>
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>
Facility Address (Street & No.) <b>37<sup>th</sup> Street</b>		
City <b>Belfield</b>	State <b>ND</b>	ZIP Code <b>58622</b>
County <b>Billings</b>	Latitude (Nearest Second) <b>46°52'45"N</b>	Longitude (Nearest Second) <b>103°14'55" W</b>
Legal Description of Facility Site <b>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</b>	Land Area at Facility Site <b>261 Acres</b>	MSL Elevation at Facility <b>2,685 feet</b>

**SECTION B – EQUIPMENT**

Source ID No. (From form SFN 8516) <b>110-H-1001</b>	Name of Manufacturer <b>TBD</b>
Rated Capacity/Maximum Input <b>TBD</b>	Model Number <b>TBD</b>
Purpose Space Heat _____ % Process Heat <b>100</b> %	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: <b>TBD</b>

**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>none</b>		
Quantity Per Year <b>6,902,880</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>20,621.83</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>2.5</b>	Height Above Grade (ft) <b>96</b>
Gas Temperature at Exit (Avg. °F) <b>764.3</b>	Gas Velocity at Exit (Avg. ft/sec) <b>28.4</b>
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) <b>8,091.77</b>	Average (DSCFM) <b>TBD</b>
Maximum (ACFM) <b>TBD</b>	Maximum (DSCFM) <b>TBD</b>
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. <b>Plant layout drawings attached to this permit application.</b>
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**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>6,50E-02</b>	<b>2,85E-01</b>
PM <sub>10</sub> Filterable	<b>1,63E-02</b>	<b>7,12E-02</b>
PM <sub>2.5</sub> Total	<b>6,50E-02</b>	<b>2,85E-01</b>
PM <sub>2.5</sub> Filterable	<b>1,63E-02</b>	<b>7,12E-02</b>
PM <sub>2.5</sub> Condensable	<b>4,88E-02</b>	<b>2,14E-01</b>
Sulfur Dioxide	<b>9,56E-03</b>	<b>4,19E-02</b>
Nitrogen Oxides	<b>4,88E-01</b>	<b>2,14E+00</b>
Carbon Monoxide	<b>4,55E-01</b>	<b>1,99E+00</b>
Greenhouse Gases (CO2e)	<b>N/A</b>	
Other – Specify		
Lead	<b>7,96E-06</b>	<b>3,49E-05</b>
Metal HAP (Total)	<b>1,19E-04</b>	<b>5,20E-04</b>
Organic HAPs (Total)	<b>7,94E-03</b>	<b>3,48E-02</b>
VOC	<b>8,76E-02</b>	<b>3,84E-01</b>
Basis and Calculations for Quantities: <b>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"</b>		

Signature of Applicant		Date
		09/26/2016

**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 <b>Meridian Energy Group – Davis Refinery</b>		
Contact Person for Air Pollution Matters <b>Tom Johnson</b>		
Title <b>Vice President of Operations</b>	Telephone Number <b>(409)795-0792</b>	E-mail Address <b>tjohnson@meridianenergygroup.inc</b>
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>
Facility Address (Street & No.) <b>37<sup>th</sup> Street</b>		
City <b>Belfield</b>	State <b>ND</b>	ZIP Code <b>58622</b>
County <b>Billings</b>	Latitude (Nearest Second) <b>46°52'45"N</b>	Longitude (Nearest Second) <b>103°14'55" W</b>
Legal Description of Facility Site <b>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</b>	Land Area at Facility Site <b>261 Acres</b>	MSL Elevation at Facility <b>2,685 feet</b>

**SECTION B – EQUIPMENT**

Source ID No. (From form SFN 8516) <b>111-H-1101</b>	Name of Manufacturer <b>TBD</b>
Rated Capacity/Maximum Input <b>TBD</b>	Model Number <b>TBD</b>
Purpose Space Heat _____ % Process Heat <b>100</b> %	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: <b>TBD</b>

**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>None</b>		
Quantity Per Year <b>4,415,040</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>27,579.37</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>3.5</b>		Height Above Grade (ft) <b>170</b>	
Gas Temperature at Exit (Avg. °F) <b>793.1</b>		Gas Velocity at Exit (Avg. ft/sec) <b>12.1</b>	
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) <b>6,964.97</b>		Average (DSCFM) <b>TBD</b>	
Maximum (ACFM) <b>TBD</b>		Maximum (DSCFM) <b>TBD</b>	
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. <b>Plant layout drawings attached to this permit application.</b>
---

**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>5,56E-02</b>	<b>2,44E-01</b>
PM <sub>10</sub> Filterable	<b>1,39E-02</b>	<b>6,09E-02</b>
PM <sub>2.5</sub> Total	<b>5,56E-02</b>	<b>2,44E-01</b>
PM <sub>2.5</sub> Filterable	<b>1,39E-02</b>	<b>6,09E-02</b>
PM <sub>2.5</sub> Condensable	<b>4,17E-02</b>	<b>1,83E-01</b>
Sulfur Dioxide	<b>8,18E-03</b>	<b>3,58E-02</b>
Nitrogen Oxides	<b>4,17E-01</b>	<b>1,83E+00</b>
Carbon Monoxide	<b>3,89E-01</b>	<b>1,70E+00</b>
Greenhouse Gases (CO <sub>2</sub> e)	<b>N/A</b>	
Other – Specify		
Lead	<b>6,81E-06</b>	<b>2,98E-05</b>
Metal HAP (Total)	<b>1,02E-04</b>	<b>4,45E-04</b>
Organic HAPs (Total)	<b>6,80E-03</b>	<b>2,98E-02</b>
VOC	<b>7,50E-02</b>	<b>3,28E-01</b>
Basis and Calculations for Quantities: <b>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"</b>		

Signature of Applicant		Date
		09/26/2016

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 918 E Divide Ave., 2nd Floor  
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**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 <b>Meridian Energy Group – Davis Refinery</b>		
Contact Person for Air Pollution Matters <b>Tom Johnson</b>		
Title <b>Vice President of Operations</b>	Telephone Number <b>(409)795-0792</b>	E-mail Address <b>tjohnson@meridianenergygroup.inc</b>
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>
Facility Address (Street & No.) <b>37<sup>th</sup> Street</b>		
City <b>Belfield</b>	State <b>ND</b>	ZIP Code <b>58622</b>
County <b>Billings</b>	Latitude (Nearest Second) <b>46°52'45"N</b>	Longitude (Nearest Second) <b>103°14'55" W</b>
Legal Description of Facility Site <b>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</b>	Land Area at Facility Site <b>261 Acres</b>	MSL Elevation at Facility <b>2,685 feet</b>

**SECTION B – EQUIPMENT**

Source ID No. (From form SFN 8516) <b>112-H-1201</b>	Name of Manufacturer <b>TBD</b>
Rated Capacity/Maximum Input <b>TBD</b>	Model Number <b>TBD</b>
Purpose Space Heat _____ % Process Heat <b>100</b> %	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: <b>TBD</b>

**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>none</b>		
Quantity Per Year <b>9,005,280</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>27,577.82</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>5.5</b>		Height Above Grade (ft) <b>72</b>	
Gas Temperature at Exit (Avg. °F) <b>785</b>		Gas Velocity at Exit (Avg. ft/sec) <b>9.9</b>	
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) <b>14,110.55</b>		Average (DSCFM) <b>TBD</b>	
Maximum (ACFM) <b>TBD</b>		Maximum (DSCFM) <b>TBD</b>	
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. <b>Plant layout drawings attached to this permit application.</b>
---

**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>1,13E-01</b>	<b>4,97E-01</b>
PM <sub>10</sub> Filterable	<b>2,84E-02</b>	<b>1,24E-01</b>
PM <sub>2.5</sub> Total	<b>1,13E-01</b>	<b>4,97E-01</b>
PM <sub>2.5</sub> Filterable	<b>2,84E-02</b>	<b>1,24E-01</b>
PM <sub>2.5</sub> Condensable	<b>8,51E-02</b>	<b>3,73E-01</b>
Sulfur Dioxide	<b>1,67E-02</b>	<b>7,30E-02</b>
Nitrogen Oxides	<b>8,51E-01</b>	<b>3,73E+00</b>
Carbon Monoxide	<b>7,94E-01</b>	<b>3,48E+00</b>
Greenhouse Gases (CO <sub>2</sub> e)	<b>N/A</b>	
Other – Specify		
Lead	<b>1,39E-05</b>	<b>6,08E-05</b>
Metal HAP (Total)	<b>2,07E-04</b>	<b>9,08E-04</b>
Organic HAPs (Total)	<b>1,39E-02</b>	<b>6,07E-02</b>
VOC	<b>1,53E-01</b>	<b>6,70E-01</b>
Basis and Calculations for Quantities: <b>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"</b>		

Signature of Applicant	Date
	09/26/2016

**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 <b>Meridian Energy Group – Davis Refinery</b>		
Contact Person for Air Pollution Matters <b>Tom Johnson</b>		
Title <b>Vice President of Operations</b>	Telephone Number <b>(409)795-0792</b>	E-mail Address <b>tjohnson@meridianenergygroup.inc</b>
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>
Facility Address (Street & No.) <b>37<sup>th</sup> Street</b>		
City <b>Belfield</b>	State <b>ND</b>	ZIP Code <b>58622</b>
County <b>Billings</b>	Latitude (Nearest Second) <b>46°52'45"N</b>	Longitude (Nearest Second) <b>103°14'55" W</b>
Legal Description of Facility Site <b>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</b>	Land Area at Facility Site <b>261 Acres</b>	MSL Elevation at Facility <b>2,685 feet</b>

**SECTION B – EQUIPMENT**

Source ID No. (From form SFN 8516) <b>114-H-1401</b>	Name of Manufacturer <b>TBD</b>
Rated Capacity/Maximum Input <b>TBD</b>	Model Number <b>TBD</b>
Purpose Space Heat _____ % Process Heat <b>100</b> %	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: <b>TBD</b>

**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>None</b>		
Quantity Per Year <b>5,545,080</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>27,614.53</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>3</b>		Height Above Grade (ft) <b>91</b>	
Gas Temperature at Exit (Avg. °F) <b>784.3</b>		Gas Velocity at Exit (Avg. ft/sec) <b>20.5</b>	
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) <b>8,699.78</b>		Average (DSCFM) <b>TBD</b>	
Maximum (ACFM) <b>TBD</b>		Maximum (DSCFM) <b>TBD</b>	
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. <b>Plant layout drawings attached to this permit application.</b>
---

**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>6,99E-02</b>	<b>3,06E-01</b>
PM <sub>10</sub> Filterable	<b>1,75E-02</b>	<b>7,66E-02</b>
PM <sub>2.5</sub> Total	<b>6,99E-02</b>	<b>3,06E-01</b>
PM <sub>2.5</sub> Filterable	<b>1,75E-02</b>	<b>7,66E-02</b>
PM <sub>2.5</sub> Condensable	<b>5,24E-02</b>	<b>2,30E-01</b>
Sulfur Dioxide	<b>1,03E-02</b>	<b>4,50E-02</b>
Nitrogen Oxides	<b>5,24E-01</b>	<b>2,30E+00</b>
Carbon Monoxide	<b>4,89E-01</b>	<b>2,14E+00</b>
Greenhouse Gases (CO <sub>2</sub> e)	<b>N/A</b>	
Other – Specify		
Lead	<b>8,57E-06</b>	<b>3,75E-05</b>
Metal HAP (Total)	<b>1,28E-04</b>	<b>5,60E-04</b>
Organic HAPs (Total)	<b>8,55E-03</b>	<b>3,74E-02</b>
VOC	<b>9,43E-02</b>	<b>4,13E-01</b>
Basis and Calculations for Quantities: <b>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"</b>		

Signature of Applicant		Date
		09/26/2016

**SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:**

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 Division of Air Quality  
 918 E Divide Ave., 2nd Floor  
 Bismarck, ND 58501-1947  
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**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 <b>Meridian Energy Group – Davis Refinery</b>		
Contact Person for Air Pollution Matters <b>Tom Johnson</b>		
Title <b>Vice President of Operations</b>	Telephone Number <b>(409)795-0792</b>	E-mail Address <b>tjohnson@meridianenergygroup.inc</b>
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>
Facility Address (Street & No.) <b>37<sup>th</sup> Street</b>		
City <b>Belfield</b>	State <b>ND</b>	ZIP Code <b>58622</b>
Country <b>USA</b>	Latitude (Nearest Second) <b>46°52'45"N</b>	Longitude (Nearest Second) <b>103°14'55" W</b>
Legal Description of Facility Site <b>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</b>	Land Area at Facility Site <b>261 Acres</b>	MSL Elevation at Facility <b>2,685 feet</b>

**SECTION B – EQUIPMENT**

Source ID No. (From form SFN 8516) <b>117-H-1701</b>	Name of Manufacturer <b>TBD</b>
Rated Capacity/Maximum Input <b>TBD</b>	Model Number <b>TBD</b>
Purpose Space Heat _____ % Process Heat <b>100</b> %	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: <b>TBD</b>

**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>none</b>		
Quantity Per Year <b>523,848</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>27,591.97</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>2.7</b>		Height Above Grade (ft) <b>36</b>	
Gas Temperature at Exit (Avg. °F) <b>823.8</b>		Gas Velocity at Exit (Avg. ft/sec) <b>2.5</b>	
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) <b>852.56</b>		Average (DSCFM) <b>TBD</b>	
Maximum (ACFM) <b>TBD</b>		Maximum (DSCFM) <b>TBD</b>	
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. <b>Plant layout drawings attached to this permit application.</b>
---

**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>6,60E-03</b>	<b>2,89E-02</b>
PM <sub>10</sub> Filterable	<b>1,65E-03</b>	<b>7,23E-03</b>
PM <sub>2.5</sub> Total	<b>6,60E-03</b>	<b>2,89E-02</b>
PM <sub>2.5</sub> Filterable	<b>1,65E-03</b>	<b>7,23E-03</b>
PM <sub>2.5</sub> Condensable	<b>4,95E-03</b>	<b>2,17E-02</b>
Sulfur Dioxide	<b>9,71E-04</b>	<b>4,25E-03</b>
Nitrogen Oxides	<b>4,95E-02</b>	<b>2,17E-01</b>
Carbon Monoxide	<b>4,62E-02</b>	<b>2,02E-01</b>
Greenhouse Gases (CO <sub>2</sub> e)	<b>N/A</b>	
Other – Specify		
Lead	<b>8,09E-07</b>	<b>3,54E-06</b>
Metal HAP (Total)	<b>1,21E-05</b>	<b>5,28E-05</b>
Organic HAPs (Total)	<b>8,07E-04</b>	<b>3,53E-03</b>
VOC	<b>8,90E-03</b>	<b>3,90E-02</b>
Basis and Calculations for Quantities: <b>Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "BACT Analysis"</b>		

Signature of Applicant 	Date 09/26/2016
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918 E Divide Ave., 2nd Floor  
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**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 <b>Meridian Energy Group – Davis Refinery</b>		
Contact Person for Air Pollution Matters <b>Tom Johnson</b>		
Title <b>Vice President of Operations</b>	Telephone Number <b>(409)795-0792</b>	E-mail Address <b>tjohnson@meridianenergygroup.inc</b>
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>
Facility Address (Street & No.) <b>37<sup>th</sup> Street</b>		
City <b>Belfield</b>	State <b>ND</b>	ZIP Code <b>58622</b>
County <b>Billings</b>	Latitude (Nearest Second) <b>46°52'45"N</b>	Longitude (Nearest Second) <b>103°14'55" W</b>
Legal Description of Facility Site <b>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</b>	Land Area at Facility Site <b>261 Acres</b>	MSL Elevation at Facility <b>2,685 feet</b>

**SECTION B – EQUIPMENT**

Source ID No. (From form SFN 8516) <b>117-H-1702</b>	Name of Manufacturer <b>TBD</b>
Rated Capacity/Maximum Input <b>TBD</b>	Model Number <b>TBD</b>
Purpose Space Heat _____ % Process Heat <b>100</b> %	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: <b>TBD</b>

**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>None</b>		
Quantity Per Year <b>1,191,360</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>27,573.53</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>4.6</b>	Height Above Grade (ft) <b>46</b>
Gas Temperature at Exit (Avg. °F) <b>787.7</b>	Gas Velocity at Exit (Avg. ft/sec) <b>1.9</b>
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) <b>1,872.75</b>	Average (DSCFM) <b>TBD</b>
Maximum (ACFM) <b>TBD</b>	Maximum (DSCFM) <b>TBD</b>
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. <b>Plant layout drawings attached to this permit application.</b>
---

**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>1,50E-02</b>	<b>6,57E-02</b>
PM <sub>10</sub> Filterable	<b>3,75E-03</b>	<b>1,64E-02</b>
PM <sub>2.5</sub> Total	<b>1,50E-02</b>	<b>6,57E-02</b>
PM <sub>2.5</sub> Filterable	<b>3,75E-03</b>	<b>1,64E-02</b>
PM <sub>2.5</sub> Condensable	<b>1,13E-02</b>	<b>4,93E-02</b>
Sulfur Dioxide	<b>2,21E-03</b>	<b>9,66E-03</b>
Nitrogen Oxides	<b>1,13E-01</b>	<b>4,93E-01</b>
Carbon Monoxide	<b>1,05E-01</b>	<b>4,60E-01</b>
Greenhouse Gases (CO2e)	<b>N/A</b>	
Other – Specify		
Lead	<b>1,84E-06</b>	<b>8,05E-06</b>
Metal HAP (Total)	<b>2,74E-05</b>	<b>1,20E-04</b>
Organic HAPs (Total)	<b>1,83E-03</b>	<b>8,03E-03</b>
VOC	<b>2,02E-02</b>	<b>8,86E-02</b>
Basis and Calculations for Quantities: <b>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"</b>		

Signature of Applicant 	Date 09/26/2016
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Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>
Facility Address (Street & No.) <b>37<sup>th</sup> Street</b>		
City <b>Belfield</b>	State <b>ND</b>	ZIP Code <b>58622</b>
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**SECTION B – EQUIPMENT**

Source ID No. (From form SFN 8516) <b>118-H-1801</b>	Name of Manufacturer <b>TBD</b>
Rated Capacity/Maximum Input <b>TBD</b>	Model Number <b>TBD</b>
Purpose Space Heat _____ % Process Heat <b>100</b> %	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: <b>TBD</b>

**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>None</b>		
Quantity Per Year <b>10,322,784</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>71,444.33</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>4</b>		Height Above Grade (ft) <b>95</b>	
Gas Temperature at Exit (Avg. °F) <b>785.5</b>		Gas Velocity at Exit (Avg. ft/sec) <b>22.4</b>	
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) <b>16,894.20</b>		Average (DSCFM) <b>TBD</b>	
Maximum (ACFM) <b>TBD</b>		Maximum (DSCFM) <b>TBD</b>	
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. <b>Plant layout drawings attached to this permit application.</b>
---

**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>3,37E-01</b>	<b>1,48E+00</b>
PM <sub>10</sub> Filterable	<b>8,42E-02</b>	<b>3,69E-01</b>
PM <sub>2.5</sub> Total	<b>3,37E-01</b>	<b>1,48E+00</b>
PM <sub>2.5</sub> Filterable	<b>8,42E-02</b>	<b>3,69E-01</b>
PM <sub>2.5</sub> Condensable	<b>2,53E-01</b>	<b>1,11E+00</b>
Sulfur Dioxide	<b>4,95E-02</b>	<b>2,17E-01</b>
Nitrogen Oxides	<b>5,30E-01</b>	<b>2,32E+00</b>
Carbon Monoxide	<b>2,36E+00</b>	<b>1,03E+01</b>
Greenhouse Gases (CO <sub>2</sub> e)	<b>N/A</b>	
Other – Specify		
Lead	<b>4,13E-05</b>	<b>1,81E-04</b>
Metal HAP (Total)	<b>6,16E-04</b>	<b>2,70E-03</b>
Organic HAPs (Total)	<b>4,12E-02</b>	<b>1,80E-01</b>
VOC	<b>4,54E-01</b>	<b>1,99E+00</b>
Basis and Calculations for Quantities: <b>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"</b>		

Signature of Applicant	Date
	09/26/2016

**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 <b>Meridian Energy Group – Davis Refinery</b>		
Contact Person for Air Pollution Matters <b>Tom Johnson</b>		
Title <b>Vice President of Operations</b>	Telephone Number <b>(409)795-0792</b>	E-mail Address <b>tjohnson@meridianenergygroup.inc</b>
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>
Facility Address (Street & No.) <b>37<sup>th</sup> Street</b>		
City <b>Belfield</b>	State <b>ND</b>	ZIP Code <b>58622</b>
County <b>Billings</b>	Latitude (Nearest Second) <b>46°52'45"N</b>	Longitude (Nearest Second) <b>103°14'55" W</b>
Legal Description of Facility Site <b>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</b>	Land Area at Facility Site <b>261 Acres</b>	MSL Elevation at Facility <b>2,685 feet</b>

**SECTION B – EQUIPMENT**

Source ID No. (From form SFN 8516) <b>125-H-2501</b>	Name of Manufacturer <b>TBD</b>
Rated Capacity/Maximum Input <b>TBD</b>	Model Number <b>TBD</b>
Purpose Space Heat _____ % Process Heat <b>100</b> %	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: <b>TBD</b>

**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>None</b>		
Quantity Per Year <b>5,317,320</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>20,593.08</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>2.5</b>		Height Above Grade (ft) <b>96</b>	
Gas Temperature at Exit (Avg. °F) <b>764.3</b>		Gas Velocity at Exit (Avg. ft/sec) <b>21.9</b>	
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) <b>6,224.68</b>		Average (DSCFM) <b>TBD</b>	
Maximum (ACFM) <b>TBD</b>		Maximum (DSCFM) <b>TBD</b>	
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. <b>Plant layout drawings attached to this permit application.</b>
---

**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>5,00E-02</b>	<b>2,19E-01</b>
PM <sub>10</sub> Filterable	<b>1,25E-02</b>	<b>5,48E-02</b>
PM <sub>2.5</sub> Total	<b>5,00E-02</b>	<b>2,19E-01</b>
PM <sub>2.5</sub> Filterable	<b>1,25E-02</b>	<b>5,48E-02</b>
PM <sub>2.5</sub> Condensable	<b>3,75E-02</b>	<b>1,64E-01</b>
Sulfur Dioxide	<b>7,35E-03</b>	<b>3,22E-02</b>
Nitrogen Oxides	<b>3,75E-01</b>	<b>1,64E+00</b>
Carbon Monoxide	<b>3,50E-01</b>	<b>1,53E+00</b>
Greenhouse Gases (CO <sub>2</sub> e)	<b>N/A</b>	
Other – Specify		
Lead	<b>6,13E-06</b>	<b>2,68E-05</b>
Metal HAP (Total)	<b>9,14E-05</b>	<b>4,00E-04</b>
Organic HAPs (Total)	<b>6,11E-03</b>	<b>2,68E-02</b>
VOC	<b>6,74E-02</b>	<b>2,95E-01</b>
Basis and Calculations for Quantities: <b>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"</b>		

Signature of Applicant		Date
		09/26/2016

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 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 <b>Meridian Energy Group – Davis Refinery</b>		
Contact Person for Air Pollution Matters <b>Tom Johnson</b>		
Title <b>Vice President of Operations</b>	Telephone Number <b>(409)795-0792</b>	E-mail Address <b>tjohnson@meridianenergygroup.inc</b>
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>
Facility Address (Street & No.) <b>37<sup>th</sup> Street</b>		
City <b>Belfield</b>	State <b>ND</b>	ZIP Code <b>58622</b>
County <b>Billings</b>	Latitude (Nearest Second) <b>46°52'45"N</b>	Longitude (Nearest Second) <b>103°14'55" W</b>
Legal Description of Facility Site <b>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</b>	Land Area at Facility Site <b>261 Acres</b>	MSL Elevation at Facility <b>2,685 feet</b>

**SECTION B – EQUIPMENT**

Source ID No. (From form SFN 8516) <b>202-PK-0201A</b>	Name of Manufacturer <b>TBD</b>
Rated Capacity/Maximum Input <b>TBD</b>	Model Number <b>TBD</b>
Purpose Space Heat _____ % Process Heat <b>100</b> %	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: <b>TBD</b>

**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>None</b>		
Quantity Per Year <b>20,144,496</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>26,091.49</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>3</b>	Height Above Grade (ft) <b>100</b>
Gas Temperature at Exit (Avg. °F) <b>294.2</b>	Gas Velocity at Exit (Avg. ft/sec) <b>93.9</b>
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) <b>19,914.80</b>	Average (DSCFM) <b>TBD</b>
Maximum (ACFM) <b>TBD</b>	Maximum (DSCFM) <b>TBD</b>
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. <b>Plant layout drawings attached to this permit application.</b>
---

**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>2,40E-01</b>	<b>1,05E+00</b>
PM <sub>10</sub> Filterable	<b>6,00E-02</b>	<b>2,63E-01</b>
PM <sub>2.5</sub> Total	<b>2,40E-01</b>	<b>1,05E+00</b>
PM <sub>2.5</sub> Filterable	<b>6,00E-02</b>	<b>2,63E-01</b>
PM <sub>2.5</sub> Condensable	<b>1,80E-01</b>	<b>7,88E-01</b>
Sulfur Dioxide	<b>3,53E-02</b>	<b>1,55E-01</b>
Nitrogen Oxides	<b>1,80E+00</b>	<b>7,88E+00</b>
Carbon Monoxide	<b>1,68E+00</b>	<b>7,36E+00</b>
Greenhouse Gases (CO <sub>2</sub> e)	<b>N/A</b>	
Other – Specify		
Lead	<b>2,94E-05</b>	<b>1,29E-04</b>
Metal HAP (Total)	<b>4,39E-04</b>	<b>1,92E-03</b>
Organic HAPs (Total)	<b>2,93E-02</b>	<b>1,28E-01</b>
VOC	<b>3,24E-01</b>	<b>1,42E+00</b>
Basis and Calculations for Quantities: <b>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"</b>		

Signature of Applicant	Date
	09/26/2016

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 Division of Air Quality  
 918 E Divide Ave., 2nd Floor  
 Bismarck, ND 58501-1947  
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**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 <b>Meridian Energy Group – Davis Refinery</b>		
Contact Person for Air Pollution Matters <b>Tom Johnson</b>		
Title <b>Vice President of Operations</b>	Telephone Number <b>(409)795-0792</b>	E-mail Address <b>tjohnson@meridianenergygroup.inc</b>
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>
Facility Address (Street & No.) <b>37<sup>th</sup> Street</b>		
City <b>Belfield</b>	State <b>ND</b>	ZIP Code <b>58622</b>
County <b>Billings</b>	Latitude (Nearest Second) <b>46°52'45"N</b>	Longitude (Nearest Second) <b>103°14'55" W</b>
Legal Description of Facility Site <b>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</b>	Land Area at Facility Site <b>261 Acres</b>	MSL Elevation at Facility <b>2,685 feet</b>

**SECTION B – EQUIPMENT**

Source ID No. (From form SFN 8516) <b>202-PK-0201B</b>	Name of Manufacturer <b>TBD</b>
Rated Capacity/Maximum Input <b>TBD</b>	Model Number <b>TBD</b>
Purpose Space Heat _____ % Process Heat <b>100</b> %	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: <b>TBD</b>

**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>None</b>		
Quantity Per Year <b>20,144,496</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>26,091.49</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>3</b>	Height Above Grade (ft) <b>100</b>
Gas Temperature at Exit (Avg. °F) <b>294.2</b>	Gas Velocity at Exit (Avg. ft/sec) <b>93.9</b>
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) <b>19,914.80</b>	Average (DSCFM) <b>TBD</b>
Maximum (ACFM) <b>TBD</b>	Maximum (DSCFM) <b>TBD</b>
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. <b>Plant layout drawings attached to this permit application.</b>
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**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>2,40E-01</b>	<b>1,05E+00</b>
PM <sub>10</sub> Filterable	<b>6,00E-02</b>	<b>2,63E-01</b>
PM <sub>2.5</sub> Total	<b>2,40E-01</b>	<b>1,05E+00</b>
PM <sub>2.5</sub> Filterable	<b>6,00E-02</b>	<b>2,63E-01</b>
PM <sub>2.5</sub> Condensable	<b>1,80E-01</b>	<b>7,88E-01</b>
Sulfur Dioxide	<b>3,53E-02</b>	<b>1,55E-01</b>
Nitrogen Oxides	<b>1,80E+00</b>	<b>7,88E+00</b>
Carbon Monoxide	<b>1,68E+00</b>	<b>7,36E+00</b>
Greenhouse Gases (CO <sub>2</sub> e)	<b>N/A</b>	
Other – Specify		
Lead	<b>2,94E-05</b>	<b>1,29E-04</b>
Metal HAP (Total)	<b>4,39E-04</b>	<b>1,92E-03</b>
Organic HAPs (Total)	<b>2,93E-02</b>	<b>1,28E-01</b>
VOC	<b>3,24E-01</b>	<b>1,42E+00</b>
Basis and Calculations for Quantities: <b>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"</b>		

Signature of Applicant	Date
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Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>
Facility Address (Street & No.) <b>37<sup>th</sup> Street</b>		
City <b>Belfield</b>	State <b>ND</b>	ZIP Code <b>58622</b>
County <b>Billings</b>	Latitude (Nearest Second) <b>46°52'45"N</b>	Longitude (Nearest Second) <b>103°14'55" W</b>
Legal Description of Facility Site <b>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</b>	Land Area at Facility Site <b>261 Acres</b>	MSL Elevation at Facility <b>2,685 feet</b>

**SECTION B – EQUIPMENT**

Source ID No. (From form SFN 8516) <b>202-PK-0201C</b>	Name of Manufacturer <b>TBD</b>
Rated Capacity/Maximum Input <b>TBD</b>	Model Number <b>TBD</b>
Purpose Space Heat _____ % Process Heat <b>100</b> %	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: <b>TBD</b>

**SECTION D – NORMAL SCHEDULE OF OPERATION**

Hours Per Day <b>24</b>	Days Per Week <b>7</b>	Weeks Per Year <b>52</b>	Hours Per Year Total <b>8760</b>	Peak Season (Specify Months) <b>N/A</b>
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**SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR**

Year <b>2017-2018</b>					
Primary Fuels			Standby Fuels		
Type <b>Fuel Gas</b>			Type <b>None</b>		
Quantity Per Year <b>20,144,496</b>		Units of Measure <b>lb/yr</b>	Quantity Per Year		Units of Measure
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum <b>0</b>	Maximum <b>0</b>	Average <b>0</b>	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum <b>TBD</b>	Maximum <b>TBD</b>	Average <b>26,091.49</b>	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: <b>N/A, fuel gas to be generated within the refinery</b>					

**SECTION F – COMBUSTION AIR**

<input type="checkbox"/> Natural Draft	<input type="checkbox"/> Induced	<input type="checkbox"/> Forced	<input type="checkbox"/> Other – Specify: <b>TBD</b>
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**SECTION G – STACK DATA**

Inside Diameter (ft) <b>3</b>	Height Above Grade (ft) <b>100</b>
Gas Temperature at Exit (Avg. °F) <b>294.2</b>	Gas Velocity at Exit (Avg. ft/sec) <b>93.9</b>
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) <b>19,914.80</b>	Average (DSCFM) <b>TBD</b>
Maximum (ACFM) <b>TBD</b>	Maximum (DSCFM) <b>TBD</b>
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. <b>Plant layout drawings attached to this permit application.</b>
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**SECTION I – AIR CONTAMINANTS EMITTED**

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM <sub>10</sub> Total	<b>2,40E-01</b>	<b>1,05E+00</b>
PM <sub>10</sub> Filterable	<b>6,00E-02</b>	<b>2,63E-01</b>
PM <sub>2.5</sub> Total	<b>2,40E-01</b>	<b>1,05E+00</b>
PM <sub>2.5</sub> Filterable	<b>6,00E-02</b>	<b>2,63E-01</b>
PM <sub>2.5</sub> Condensable	<b>1,80E-01</b>	<b>7,88E-01</b>
Sulfur Dioxide	<b>3,53E-02</b>	<b>1,55E-01</b>
Nitrogen Oxides	<b>1,80E+00</b>	<b>7,88E+00</b>
Carbon Monoxide	<b>1,68E+00</b>	<b>7,36E+00</b>
Greenhouse Gases (CO2e)	<b>N/A</b>	
Other – Specify		
Lead	<b>2,94E-05</b>	<b>1,29E-04</b>
Metal HAP (Total)	<b>4,39E-04</b>	<b>1,92E-03</b>
Organic HAPs (Total)	<b>2,93E-02</b>	<b>1,28E-01</b>
VOC	<b>3,24E-01</b>	<b>1,42E+00</b>
Basis and Calculations for Quantities: <b>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"</b>		

Signature of Applicant		Date
		09/26/2016

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

**SECTION A2 - FACILITY INFORMATION**

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

Describe Nature of Business/Process  <b>Petroleum Refining / Atmospheric Distillation Unit 1 / Crude Oil Heater</b>
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**SECTION B – STACK DATA**

Inside Diameter (ft) <b>6.3</b>	Height Above Grade (ft) <b>127.6</b>	
Gas Temperature at Exit (°F) <b>787.7</b>	Gas Velocity at Exit (ft/sec) <b>20.1</b>	Gas Volume (scfm) <b>37,427.14</b>
Basis of any Estimates (attach separate sheet if necessary) <b>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"</b>		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 <span style="float: right;">Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></span>		
Nearest Residences or Building <b>Utility building</b>	Distance (ft) <b>330.1 ft</b>	Direction <b>South</b>
Nearest Property Line <b>Fenceline</b>	Distance (ft) <b>589 ft</b>	Direction <b>Southeast</b>

**SECTION C – EMISSION STREAM DATA**

Source ID No. From SFN 8516 <b>101-H-0101</b>	Mean Particle Diameter (µm) <b>TBD</b>
Flow Rate (scfm) <b>37,427.14</b>	Drift Velocity (ft/sec) <b>20.1</b>
Stream Temperature (°F) <b>787.7</b>	Particulate Concentration (gr/dscf) <b>TBD</b>
Moisture Content (%) <b>TBD</b>	Halogens or Metals Present? <b>Metals</b>
Pressure (in. Hg) <b>TBD</b>	Organic Content (ppmv) <b>1.79x10<sup>-1</sup></b>
Heat Content (Btu/scfm) <b>TBD</b>	O <sub>2</sub> Content (%) <b>N/A</b>

**SECTION D – POLLUTANT SPECIFIC DATA**

**(Complete One Box for Each Pollutant in Emission Stream)**

Pollutant Emitted <b>Acetaldehyde</b>	Chemical Abstract Services (CAS) Number <b>75-07-0</b>
Proposed Emission Rate (lb/hr) <b>2.16x10<sup>-4</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic Vapor</b>
Concentration in Emission Stream (ppmv) <b>1.99x10<sup>-3</sup></b>	Vapor Pressure (in. Hg @ °F) <b>35.51 in Hg @ 68°C</b>
Solubility <b>1x10<sup>+6</sup> mg/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>44.05</b>
Absorptive Properties -	

Pollutant Emitted <b>Benzene</b>	Chemical Abstract Services (CAS) Number <b>71-43-2</b>
Proposed Emission Rate (lb/hr) <b>3.78x10<sup>-5</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>1.96x10<sup>-4</sup></b>	Vapor Pressure (in. Hg @ °F) <b>3.73 in Hg @ 77 °F</b>
Solubility <b>In water 1.79x10<sup>3</sup> mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>78.11</b>
Absorptive Properties -	

Pollutant Emitted <b>Dichlorobenzene</b>	Chemical Abstract Services (CAS) Number <b>Varies</b>
Proposed Emission Rate (lb/hr) <b>2.16x10<sup>-5</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>5.97x10<sup>-5</sup></b>	Vapor Pressure (in. Hg @ °F) <b>Varies</b>
Solubility <b>Varies</b>	Molecular Weight (lb/lb-mole) <b>147.00</b>
Absorptive Properties -	

Pollutant Emitted <b>Ethylbenzene</b>	Chemical Abstract Services (CAS) Number <b>100-41-4</b>
Proposed Emission Rate (lb/hr) <b><math>2.88 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.10 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.37 in Hg @ 77°F</b>
Solubility <b>In water 0.014 g/100mL @ 59 °F</b>	Molecular Weight (lb/lb-mole) <b>106.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Formaldehyde</b>	Chemical Abstract Services (CAS) Number <b>50-00-0</b>
Proposed Emission Rate (lb/hr) <b><math>1.33 \times 10^{-3}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.80 \times 10^{-2}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.15 in Hg @ 77 °F</b>
Solubility <b>In water <math>4.00 \times 10^5</math> mg/L @ 68°F</b>	Molecular Weight (lb/lb-mole) <b>30.03</b>
Absorptive Properties -	

Pollutant Emitted <b>Hexane</b>	Chemical Abstract Services (CAS) Number <b>110-54-5</b>
Proposed Emission Rate (lb/hr) <b><math>3.24 \times 10^{-2}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.53 \times 10^{-1}</math></b>	Vapor Pressure (in. Hg @ °F) <b>5.90 in Hg @ 68 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>86.1</b>
Absorptive Properties -	

Pollutant Emitted <b>Naphthalene</b>	Chemical Abstract Services (CAS) Number <b>91-20-3</b>
Proposed Emission Rate (lb/hr) <b><math>1.08 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.42 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.003 in Hg @ 77 °F</b>
Solubility <b>In water 31 mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>128.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Toluene</b>	Chemical Abstract Services (CAS) Number <b>108-88-3</b>
Proposed Emission Rate (lb/hr) <b><math>5.94 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>2.62 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>1.12 in Hg @ 77°F</b>
Solubility <b>In water 526 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>92.14</b>
Absorptive Properties -	

Pollutant Emitted <b>Xylene</b>	Chemical Abstract Services (CAS) Number <b>95-47-6</b>
Proposed Emission Rate (lb/hr) <b><math>4.50 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.72 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.26 in Hg @ 77°F</b>
Solubility <b>In water 178 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>106.16</b>
Absorptive Properties -	

Pollutant Emitted <b>PAH</b>	Chemical Abstract Services (CAS) Number <b>N/A</b>
Proposed Emission Rate (lb/hr) <b><math>7.67 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.19 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>N/A</b>
Solubility <b>N/A</b>	Molecular Weight (lb/lb-mole) <b>TBD</b>
Absorptive Properties -	

Pollutant Emitted <b>Antimony</b>	Chemical Abstract Services (CAS) Number <b>7740-36-0</b>
Proposed Emission Rate (lb/hr) <b><math>3.74 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.25 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>121.76</b>
Absorptive Properties -	

Pollutant Emitted <b>Arsenic</b>	Chemical Abstract Services (CAS) Number <b>7440-38-2</b>
Proposed Emission Rate (lb/hr) <b><math>1.44 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>7.80 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Beryllium</b>	Chemical Abstract Services (CAS) Number <b>7440-41-7</b>
Proposed Emission Rate (lb/hr) <b><math>9.36 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.22 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>9.01</b>
Absorptive Properties -	

Pollutant Emitted <b>Cadmium</b>	Chemical Abstract Services (CAS) Number <b>7440-43-9</b>
Proposed Emission Rate (lb/hr) <b><math>7.92 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.86 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Chromium (hexavalent)</b>	Chemical Abstract Services (CAS) Number <b>1333-82-0</b>
Proposed Emission Rate (lb/hr) <b><math>2.02 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.57 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>1,660 g/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Chromium</b>	Chemical Abstract Services (CAS) Number <b>7440-47-3</b>
Proposed Emission Rate (lb/hr) <b><math>1.01 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>7.87 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Cobalt</b>	Chemical Abstract Services (CAS) Number <b>7440-48-4</b>
Proposed Emission Rate (lb/hr) <b><math>5.90 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.07 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.93</b>
Absorptive Properties -	

Pollutant Emitted <b>Manganese</b>	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) <b><math>2.66 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.97 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>54.94</b>
Absorptive Properties -	

Pollutant Emitted <b>Mercury</b>	Chemical Abstract Services (CAS) Number <b>7439-97-6</b>
Proposed Emission Rate (lb/hr) <b><math>1.80 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.64 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b><math>7.85 \times 10^{-5}</math> in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>200.59</b>
Absorptive Properties -	

Pollutant Emitted <b>Nickel</b>	Chemical Abstract Services (CAS) Number <b>7044-02-0</b>
Proposed Emission Rate (lb/hr) <b><math>1.51 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.05 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.69</b>
Absorptive Properties -	

Pollutant Emitted <b>Selenium</b>	Chemical Abstract Services (CAS) Number <b>7782-49-2</b>
Proposed Emission Rate (lb/hr) <b><math>6.34 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.26 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.29 in Hg @ 807</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>78.96</b>
Absorptive Properties -	

Signature of Applicant 	Date 9/26/2016
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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 <b>Meridian Energy Group - Davis Refinery</b>		
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>

**SECTION A2 - FACILITY INFORMATION**

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

Describe Nature of Business/Process  <b>Petroleum Refining / Atmospheric Distillation Unit 2 / Crude Oil Heater</b>
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**SECTION B – STACK DATA**

Inside Diameter (ft) <b>6.3</b>	Height Above Grade (ft) <b>127.6</b>	
Gas Temperature at Exit (°F) <b>787.7</b>	Gas Velocity at Exit (ft/sec) <b>20.1</b>	Gas Volume (scfm) <b>37,427.14</b>
Basis of any Estimates (attach separate sheet if necessary) <b>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"</b>		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 <span style="float: right;">Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></span>		
Nearest Residences or Building <b>Utility building</b>	Distance (ft) <b>402 ft</b>	Direction <b>South</b>
Nearest Property Line <b>Fenceline</b>	Distance (ft) <b>500 ft</b>	Direction <b>Southeast</b>

**SECTION C – EMISSION STREAM DATA**

Source ID No. From SFN 8516 <b>102-H-0201</b>	Mean Particle Diameter (µm) <b>TBD</b>
Flow Rate (scfm) <b>37,427.14</b>	Drift Velocity (ft/sec) <b>20.1</b>
Stream Temperature (°F) <b>787.7</b>	Particulate Concentration (gr/dscf) <b>TBD</b>
Moisture Content (%) <b>TBD</b>	Halogens or Metals Present? <b>Metals</b>
Pressure (in. Hg) <b>TBD</b>	Organic Content (ppmv) <b>1.79x10<sup>-1</sup></b>
Heat Content (Btu/scfm) <b>TBD</b>	O <sub>2</sub> Content (%) <b>N/A</b>

**SECTION D – POLLUTANT SPECIFIC DATA**

**(Complete One Box for Each Pollutant in Emission Stream)**

Pollutant Emitted <b>Acetaldehyde</b>	Chemical Abstract Services (CAS) Number <b>75-07-0</b>
Proposed Emission Rate (lb/hr) <b>2.16x10<sup>-4</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic Vapor</b>
Concentration in Emission Stream (ppmv) <b>1.99x10<sup>-3</sup></b>	Vapor Pressure (in. Hg @ °F) <b>35.51 in Hg @ 68°C</b>
Solubility <b>1x10<sup>+6</sup> mg/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>44.05</b>
Absorptive Properties -	

Pollutant Emitted <b>Benzene</b>	Chemical Abstract Services (CAS) Number <b>71-43-2</b>
Proposed Emission Rate (lb/hr) <b>3.78x10<sup>-5</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>1.96x10<sup>-4</sup></b>	Vapor Pressure (in. Hg @ °F) <b>3.73 in Hg @ 77 °F</b>
Solubility <b>In water 1.79x10<sup>3</sup> mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>78.11</b>
Absorptive Properties -	

Pollutant Emitted <b>Dichlorobenzene</b>	Chemical Abstract Services (CAS) Number <b>Varies</b>
Proposed Emission Rate (lb/hr) <b>2.16x10<sup>-5</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>5.97x10<sup>-5</sup></b>	Vapor Pressure (in. Hg @ °F) <b>Varies</b>
Solubility <b>Varies</b>	Molecular Weight (lb/lb-mole) <b>147.00</b>
Absorptive Properties -	

Pollutant Emitted <b>Ethylbenzene</b>	Chemical Abstract Services (CAS) Number <b>100-41-4</b>
Proposed Emission Rate (lb/hr) <b><math>2.88 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.10 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.37 in Hg @ 77°F</b>
Solubility <b>In water 0.014 g/100mL @ 59 °F</b>	Molecular Weight (lb/lb-mole) <b>106.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Formaldehyde</b>	Chemical Abstract Services (CAS) Number <b>50-00-0</b>
Proposed Emission Rate (lb/hr) <b><math>1.33 \times 10^{-3}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.8 \times 10^{-2}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.15 in Hg @ 77 °F</b>
Solubility <b>In water <math>4.00 \times 10^5</math> mg/L @ 68°F</b>	Molecular Weight (lb/lb-mole) <b>30.03</b>
Absorptive Properties -	

Pollutant Emitted <b>Hexane</b>	Chemical Abstract Services (CAS) Number <b>110-54-5</b>
Proposed Emission Rate (lb/hr) <b><math>3.24 \times 10^{-2}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.53 \times 10^{-1}</math></b>	Vapor Pressure (in. Hg @ °F) <b>5.90 in Hg @ 68 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>86.1</b>
Absorptive Properties -	

Pollutant Emitted <b>Naphthalene</b>	Chemical Abstract Services (CAS) Number <b>91-20-3</b>
Proposed Emission Rate (lb/hr) <b><math>1.08 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.42 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.003 in Hg @ 77 °F</b>
Solubility <b>In water 31 mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>128.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Toluene</b>	Chemical Abstract Services (CAS) Number <b>108-88-3</b>
Proposed Emission Rate (lb/hr) <b><math>5.94 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>2.62 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>1.12 in Hg @ 77°F</b>
Solubility <b>In water 526 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>92.14</b>
Absorptive Properties -	

Pollutant Emitted <b>Xylene</b>	Chemical Abstract Services (CAS) Number <b>95-47-6</b>
Proposed Emission Rate (lb/hr) <b><math>4.50 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.72 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.26 in Hg @ 77°F</b>
Solubility <b>In water 178 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>106.16</b>
Absorptive Properties -	

Pollutant Emitted <b>PAH</b>	Chemical Abstract Services (CAS) Number <b>N/A</b>
Proposed Emission Rate (lb/hr) <b><math>7.67 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.19 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>N/A</b>
Solubility <b>N/A</b>	Molecular Weight (lb/lb-mole) <b>TBD</b>
Absorptive Properties -	

Pollutant Emitted <b>Antimony</b>	Chemical Abstract Services (CAS) Number <b>7740-36-0</b>
Proposed Emission Rate (lb/hr) <b><math>3.74 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.25 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>121.76</b>
Absorptive Properties -	

Pollutant Emitted <b>Arsenic</b>	Chemical Abstract Services (CAS) Number <b>7440-38-2</b>
Proposed Emission Rate (lb/hr) <b><math>1.44 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>7.80 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Beryllium</b>	Chemical Abstract Services (CAS) Number <b>7440-41-7</b>
Proposed Emission Rate (lb/hr) <b><math>9.36 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.22 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>9.01</b>
Absorptive Properties -	

Pollutant Emitted <b>Cadmium</b>	Chemical Abstract Services (CAS) Number <b>7440-43-9</b>
Proposed Emission Rate (lb/hr) <b><math>7.92 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.86 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Chromium (hexavalent)</b>	Chemical Abstract Services (CAS) Number <b>1333-82-0</b>
Proposed Emission Rate (lb/hr) <b><math>2.02 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.57 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>1,660 g/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Chromium</b>	Chemical Abstract Services (CAS) Number <b>7440-47-3</b>
Proposed Emission Rate (lb/hr) <b><math>1.01 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>7.87 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Cobalt</b>	Chemical Abstract Services (CAS) Number <b>7440-48-4</b>
Proposed Emission Rate (lb/hr) <b><math>5.90 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.07 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.93</b>
Absorptive Properties -	

Pollutant Emitted <b>Manganese</b>	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) <b><math>2.66 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.97 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>54.94</b>
Absorptive Properties -	

Pollutant Emitted <b>Mercury</b>	Chemical Abstract Services (CAS) Number <b>7439-97-6</b>
Proposed Emission Rate (lb/hr) <b><math>1.80 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.64 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b><math>7.85 \times 10^{-5}</math> in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>200.59</b>
Absorptive Properties -	

Pollutant Emitted <b>Nickel</b>	Chemical Abstract Services (CAS) Number <b>7044-02-0</b>
Proposed Emission Rate (lb/hr) <b><math>1.51 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.05 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg Q 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.69</b>
Absorptive Properties -	

Pollutant Emitted <b>Selenium</b>	Chemical Abstract Services (CAS) Number <b>7782-49-2</b>
Proposed Emission Rate (lb/hr) <b><math>6.34 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.26 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.29 in Hg @ 807</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>78.96</b>
Absorptive Properties -	

Signature of Applicant 	Date 9/26/2016
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**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 <b>Meridian Energy Group - Davis Refinery</b>		
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>

**SECTION A2 - FACILITY INFORMATION**

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

Describe Nature of Business/Process  <b>Petroleum Refining / Vacuum Distillation Unit / Vacuum Heater 1</b>
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**SECTION B – STACK DATA**

Inside Diameter (ft) <b>6.5</b>	Height Above Grade (ft) <b>125</b>	
Gas Temperature at Exit (°F) <b>600.4</b>	Gas Velocity at Exit (ft/sec) <b>16.9</b>	Gas Volume (scfm) <b>33,610.60</b>
Basis of any Estimates (attach separate sheet if necessary) <b>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"</b>		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 <span style="float: right;">Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></span>		
Nearest Residences or Building <b>Utility building</b>	Distance (ft) <b>815ft</b>	Direction <b>South</b>
Nearest Property Line <b>Fenceline</b>	Distance (ft) <b>905 ft</b>	Direction <b>East</b>

**SECTION C – EMISSION STREAM DATA**

Source ID No. From SFN 8516 <b>103-H-0301</b>	Mean Particle Diameter (µm) <b>TBD</b>
Flow Rate (scfm) <b>33,610.60</b>	Drift Velocity (ft/sec) <b>16.9</b>
Stream Temperature (°F) <b>600.4</b>	Particulate Concentration (gr/dscf) <b>TBD</b>
Moisture Content (%) <b>TBD</b>	Halogens or Metals Present? <b>Metals</b>
Pressure (in. Hg) <b>TBD</b>	Organic Content (ppmv) <b>1.79x10<sup>-1</sup></b>
Heat Content (Btu/scfm) <b>TBD</b>	O <sub>2</sub> Content (%) <b>N/A</b>

**SECTION D – POLLUTANT SPECIFIC DATA**

**(Complete One Box for Each Pollutant in Emission Stream)**

Pollutant Emitted <b>Acetaldehyde</b>	Chemical Abstract Services (CAS) Number <b>75-07-0</b>
Proposed Emission Rate (lb/hr) <b>2.29x10<sup>-4</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic Vapor</b>
Concentration in Emission Stream (ppmv) <b>2.0x10<sup>-3</sup></b>	Vapor Pressure (in. Hg @ °F) <b>35.51 in Hg @ 68°C</b>
Solubility <b>1x10<sup>+6</sup> mg/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>44.05</b>
Absorptive Properties -	

Pollutant Emitted <b>Benzene</b>	Chemical Abstract Services (CAS) Number <b>71-43-2</b>
Proposed Emission Rate (lb/hr) <b>4.01x10<sup>-5</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>1.97x10<sup>-4</sup></b>	Vapor Pressure (in. Hg @ °F) <b>3.73 in Hg @ 77 °F</b>
Solubility <b>In water 1.79x10<sup>3</sup> mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>78.11</b>
Absorptive Properties -	

Pollutant Emitted <b>Dichlorobenzene</b>	Chemical Abstract Services (CAS) Number <b>Varies</b>
Proposed Emission Rate (lb/hr) <b>2.29x10<sup>-5</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>6.00x10<sup>-5</sup></b>	Vapor Pressure (in. Hg @ °F) <b>Varies</b>
Solubility <b>Varies</b>	Molecular Weight (lb/lb-mole) <b>147.00</b>
Absorptive Properties -	

Pollutant Emitted <b>Ethylbenzene</b>	Chemical Abstract Services (CAS) Number <b>100-41-4</b>
Proposed Emission Rate (lb/hr) <b><math>3.06 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.11 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.37 in Hg @ 77°F</b>
Solubility <b>In water 0.014 g/100mL @ 59 °F</b>	Molecular Weight (lb/lb-mole) <b>106.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Formaldehyde</b>	Chemical Abstract Services (CAS) Number <b>50-00-0</b>
Proposed Emission Rate (lb/hr) <b><math>1.41 \times 10^{-3}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.81 \times 10^{-2}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.15 in Hg @ 77 °F</b>
Solubility <b>In water <math>4.00 \times 10^5</math> mg/L @ 68°F</b>	Molecular Weight (lb/lb-mole) <b>30.03</b>
Absorptive Properties -	

Pollutant Emitted <b>Hexane</b>	Chemical Abstract Services (CAS) Number <b>110-54-5</b>
Proposed Emission Rate (lb/hr) <b><math>3.44 \times 10^{-2}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.53 \times 10^{-1}</math></b>	Vapor Pressure (in. Hg @ °F) <b>5.90 in Hg @ 68 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>86.1</b>
Absorptive Properties -	

Pollutant Emitted <b>Naphthalene</b>	Chemical Abstract Services (CAS) Number <b>91-20-3</b>
Proposed Emission Rate (lb/hr) <b><math>1.15 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.44 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.003 in Hg @ 77 °F</b>
Solubility <b>In water 31 mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>128.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Toluene</b>	Chemical Abstract Services (CAS) Number <b>108-88-3</b>
Proposed Emission Rate (lb/hr) <b><math>6.31 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>2.63 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>1.12 in Hg @ 77°F</b>
Solubility <b>In water 526 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>92.14</b>
Absorptive Properties -	

Pollutant Emitted <b>Xylene</b>	Chemical Abstract Services (CAS) Number <b>95-47-6</b>
Proposed Emission Rate (lb/hr) <b><math>4.78 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.73 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.26 in Hg @ 77°F</b>
Solubility <b>In water 178 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>106.16</b>
Absorptive Properties -	

Pollutant Emitted <b>PAH</b>	Chemical Abstract Services (CAS) Number <b>N/A</b>
Proposed Emission Rate (lb/hr) <b><math>8.14 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.21 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>N/A</b>
Solubility <b>N/A</b>	Molecular Weight (lb/lb-mole) <b>TBD</b>
Absorptive Properties -	

Pollutant Emitted <b>Antimony</b>	Chemical Abstract Services (CAS) Number <b>7740-36-0</b>
Proposed Emission Rate (lb/hr) <b><math>3.98 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.25 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>121.76</b>
Absorptive Properties -	

Pollutant Emitted <b>Arsenic</b>	Chemical Abstract Services (CAS) Number <b>7440-38-2</b>
Proposed Emission Rate (lb/hr) <b><math>1.53 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>7.84 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Beryllium</b>	Chemical Abstract Services (CAS) Number <b>7440-41-7</b>
Proposed Emission Rate (lb/hr) <b><math>9.94 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.24 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>9.01</b>
Absorptive Properties -	

Pollutant Emitted <b>Cadmium</b>	Chemical Abstract Services (CAS) Number <b>7440-43-9</b>
Proposed Emission Rate (lb/hr) <b><math>8.41 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.87 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Chromium (hexavalent)</b>	Chemical Abstract Services (CAS) Number <b>1333-82-0</b>
Proposed Emission Rate (lb/hr) <b><math>2.14 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.58 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>1,660 g/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Chromium</b>	Chemical Abstract Services (CAS) Number <b>7440-47-3</b>
Proposed Emission Rate (lb/hr) <b><math>1.07 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>7.91 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Cobalt</b>	Chemical Abstract Services (CAS) Number <b>7440-48-4</b>
Proposed Emission Rate (lb/hr) <b><math>6.27 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.09 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.93</b>
Absorptive Properties -	

Pollutant Emitted <b>Manganese</b>	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) <b><math>2.83 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.98 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>54.94</b>
Absorptive Properties -	

Pollutant Emitted <b>Mercury</b>	Chemical Abstract Services (CAS) Number <b>7439-97-6</b>
Proposed Emission Rate (lb/hr) <b><math>1.91 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.66 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b><math>7.85 \times 10^{-5}</math> in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>200.59</b>
Absorptive Properties -	

Pollutant Emitted <b>Nickel</b>	Chemical Abstract Services (CAS) Number <b>7044-02-0</b>
Proposed Emission Rate (lb/hr) <b><math>1.61 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.05 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.69</b>
Absorptive Properties -	

Pollutant Emitted <b>Selenium</b>	Chemical Abstract Services (CAS) Number <b>7782-49-2</b>
Proposed Emission Rate (lb/hr) <b><math>6.73 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.27 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.29 in Hg @ 807</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>78.96</b>
Absorptive Properties -	

Signature of Applicant 	Date 09/26/2016
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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 <b>Meridian Energy Group - Davis Refinery</b>		
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>

**SECTION A2 - FACILITY INFORMATION**

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

Describe Nature of Business/Process  <b>Petroleum Refining / Vacuum Distillation Unit / Vacuum Heater 2</b>
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**SECTION B – STACK DATA**

Inside Diameter (ft) <b>5.1</b>	Height Above Grade (ft) <b>120</b>	
Gas Temperature at Exit (°F) <b>600.1</b>	Gas Velocity at Exit (ft/sec) <b>20.8</b>	Gas Volume (scfm) <b>25,334.29</b>
Basis of any Estimates (attach separate sheet if necessary) <b>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"</b>		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 <span style="float: right;">Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></span>		
Nearest Residences or Building <b>Utility building</b>	Distance (ft) <b>402 ft</b>	Direction <b>South</b>
Nearest Property Line <b>Fenceline</b>	Distance (ft) <b>509 ft</b>	Direction <b>Southeast</b>

**SECTION C – EMISSION STREAM DATA**

Source ID No. From SFN 8516 <b>103-H-0302</b>	Mean Particle Diameter (µm) <b>TBD</b>
Flow Rate (scfm) <b>25,334.29</b>	Drift Velocity (ft/sec) <b>20.8</b>
Stream Temperature (°F) <b>600.1</b>	Particulate Concentration (gr/dscf) <b>TBD</b>
Moisture Content (%) <b>TBD</b>	Halogens or Metals Present? <b>Metals</b>
Pressure (in. Hg) <b>TBD</b>	Organic Content (ppmv) <b>1.79x10<sup>-1</sup></b>
Heat Content (Btu/scfm) <b>TBD</b>	O <sub>2</sub> Content (%) <b>N/A</b>

**SECTION D – POLLUTANT SPECIFIC DATA**

**(Complete One Box for Each Pollutant in Emission Stream)**

Pollutant Emitted <b>Acetaldehyde</b>	Chemical Abstract Services (CAS) Number <b>75-07-0</b>
Proposed Emission Rate (lb/hr) <b>1.73x10<sup>-4</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic Vapor</b>
Concentration in Emission Stream (ppmv) <b>2.00x10<sup>-3</sup></b>	Vapor Pressure (in. Hg @ °F) <b>35.51 in Hg @ 68°C</b>
Solubility <b>1x10<sup>+6</sup> mg/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>44.05</b>
Absorptive Properties -	

Pollutant Emitted <b>Benzene</b>	Chemical Abstract Services (CAS) Number <b>71-43-2</b>
Proposed Emission Rate (lb/hr) <b>3.03x10<sup>-5</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>1.97x10<sup>-4</sup></b>	Vapor Pressure (in. Hg @ °F) <b>3.73 in Hg @ 77 °F</b>
Solubility <b>In water 1.79x10<sup>3</sup> mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>78.11</b>
Absorptive Properties -	

Pollutant Emitted <b>Dichlorobenzene</b>	Chemical Abstract Services (CAS) Number <b>Varies</b>
Proposed Emission Rate (lb/hr) <b>1.73x10<sup>-5</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>5.99x10<sup>-5</sup></b>	Vapor Pressure (in. Hg @ °F) <b>Varies</b>
Solubility <b>Varies</b>	Molecular Weight (lb/lb-mole) <b>147.00</b>
Absorptive Properties -	

Pollutant Emitted <b>Ethylbenzene</b>	Chemical Abstract Services (CAS) Number <b>100-41-4</b>
Proposed Emission Rate (lb/hr) <b><math>2.31 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.11 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.37 in Hg @ 77°F</b>
Solubility <b>In water 0.014 g/100mL @ 59 °F</b>	Molecular Weight (lb/lb-mole) <b>106.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Formaldehyde</b>	Chemical Abstract Services (CAS) Number <b>50-00-0</b>
Proposed Emission Rate (lb/hr) <b><math>1.07 \times 10^{-3}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.81 \times 10^{-2}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.15 in Hg @ 77 °F</b>
Solubility <b>In water <math>4.00 \times 10^5</math> mg/L @ 68°F</b>	Molecular Weight (lb/lb-mole) <b>30.03</b>
Absorptive Properties -	

Pollutant Emitted <b>Hexane</b>	Chemical Abstract Services (CAS) Number <b>110-54-5</b>
Proposed Emission Rate (lb/hr) <b><math>2.59 \times 10^{-2}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.53 \times 10^{-1}</math></b>	Vapor Pressure (in. Hg @ °F) <b>5.90 in Hg @ 68 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>86.1</b>
Absorptive Properties -	

Pollutant Emitted <b>Naphthalene</b>	Chemical Abstract Services (CAS) Number <b>91-20-3</b>
Proposed Emission Rate (lb/hr) <b><math>8.65 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.44 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.003 in Hg @ 77 °F</b>
Solubility <b>In water 31 mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>128.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Toluene</b>	Chemical Abstract Services (CAS) Number <b>108-88-3</b>
Proposed Emission Rate (lb/hr) <b><math>4.76 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>2.63 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>1.12 in Hg @ 77°F</b>
Solubility <b>In water 526 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>92.14</b>
Absorptive Properties -	

Pollutant Emitted <b>Xylene</b>	Chemical Abstract Services (CAS) Number <b>95-47-6</b>
Proposed Emission Rate (lb/hr) <b><math>3.60 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.73 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.26 in Hg @ 77°F</b>
Solubility <b>In water 178 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>106.16</b>
Absorptive Properties -	

Pollutant Emitted <b>PAH</b>	Chemical Abstract Services (CAS) Number <b>N/A</b>
Proposed Emission Rate (lb/hr) <b><math>6.14 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.21 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>N/A</b>
Solubility <b>N/A</b>	Molecular Weight (lb/lb-mole) <b>TBD</b>
Absorptive Properties -	

Pollutant Emitted <b>Antimony</b>	Chemical Abstract Services (CAS) Number <b>7740-36-0</b>
Proposed Emission Rate (lb/hr) <b><math>3.00 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.25 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>121.76</b>
Absorptive Properties -	

Pollutant Emitted <b>Arsenic</b>	Chemical Abstract Services (CAS) Number <b>7440-38-2</b>
Proposed Emission Rate (lb/hr) <b><math>1.15 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>7.84 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Beryllium</b>	Chemical Abstract Services (CAS) Number <b>7440-41-7</b>
Proposed Emission Rate (lb/hr) <b><math>7.49 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.24 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>9.01</b>
Absorptive Properties -	

Pollutant Emitted <b>Cadmium</b>	Chemical Abstract Services (CAS) Number <b>7440-43-9</b>
Proposed Emission Rate (lb/hr) <b><math>6.34 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.87 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Chromium (hexavalent)</b>	Chemical Abstract Services (CAS) Number <b>1333-82-0</b>
Proposed Emission Rate (lb/hr) <b><math>1.61 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.58 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>1,660 g/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Chromium</b>	Chemical Abstract Services (CAS) Number <b>7440-47-3</b>
Proposed Emission Rate (lb/hr) <b><math>8.07 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>7.91 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Cobalt</b>	Chemical Abstract Services (CAS) Number <b>7440-48-4</b>
Proposed Emission Rate (lb/hr) <b><math>4.73 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.09 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.93</b>
Absorptive Properties -	

Pollutant Emitted <b>Manganese</b>	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) <b><math>2.13 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.98 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>54.94</b>
Absorptive Properties -	

Pollutant Emitted <b>Mercury</b>	Chemical Abstract Services (CAS) Number <b>7439-97-6</b>
Proposed Emission Rate (lb/hr) <b><math>1.44 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.66 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b><math>7.85 \times 10^{-5}</math> in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>200.59</b>
Absorptive Properties -	

Pollutant Emitted <b>Nickel</b>	Chemical Abstract Services (CAS) Number <b>7044-02-0</b>
Proposed Emission Rate (lb/hr) <b><math>1.21 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.05 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.69</b>
Absorptive Properties -	

Pollutant Emitted <b>Selenium</b>	Chemical Abstract Services (CAS) Number <b>7782-49-2</b>
Proposed Emission Rate (lb/hr) <b><math>5.07 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.27 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.29 in Hg @ 807</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>78.96</b>
Absorptive Properties -	

Signature of Applicant 	Date 09/26/2016
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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 <b>Meridian Energy Group - Davis Refinery</b>		
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>

**SECTION A2 - FACILITY INFORMATION**

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

Describe Nature of Business/Process  <b>Petroleum Refining / Heavy Naphtha Hydrotreater / Feed Heater</b>
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**SECTION B – STACK DATA**

Inside Diameter (ft) <b>3.0</b>	Height Above Grade (ft) <b>91.0</b>	
Gas Temperature at Exit (°F) <b>787.7</b>	Gas Velocity at Exit (ft/sec) <b>16.2</b>	Gas Volume (scfm) <b>6,866.55</b>
Basis of any Estimates (attach separate sheet if necessary) <b>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"</b>		
Are Emission Control Devices in Place? If YES – Complete SFN 8532		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Nearest Residences or Building <b>Utility building</b>	Distance (ft) <b>580 ft</b>	Direction <b>South</b>
Nearest Property Line <b>Fenceline</b>	Distance (ft) <b>904 ft</b>	Direction <b>Southwest</b>

**SECTION C – EMISSION STREAM DATA**

Source ID No. From SFN 8516 <b>105-H-0501</b>	Mean Particle Diameter (µm) <b>TBD</b>
Flow Rate (scfm) <b>6,866.55</b>	Drift Velocity (ft/sec) <b>16.2</b>
Stream Temperature (°F) <b>787.7</b>	Particulate Concentration (gr/dscf) <b>TBD</b>
Moisture Content (%) <b>TBD</b>	Halogens or Metals Present? <b>Metals</b>
Pressure (in. Hg) <b>TBD</b>	Organic Content (ppmv) <b>1.24x10<sup>-2</sup></b>
Heat Content (Btu/scfm) <b>TBD</b>	O <sub>2</sub> Content (%) <b>N/A</b>

**SECTION D – POLLUTANT SPECIFIC DATA**

**(Complete One Box for Each Pollutant in Emission Stream)**

Pollutant Emitted <b>Acetaldehyde</b>	Chemical Abstract Services (CAS) Number <b>75-07-0</b>
Proposed Emission Rate (lb/hr) <b>4.13x10<sup>-5</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic Vapor</b>
Concentration in Emission Stream (ppmv) <b>2.07x10<sup>-3</sup></b>	Vapor Pressure (in. Hg @ °F) <b>35.51 in Hg @ 68°C</b>
Solubility <b>1x10<sup>+6</sup> mg/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>44.05</b>
Absorptive Properties -	

Pollutant Emitted <b>Benzene</b>	Chemical Abstract Services (CAS) Number <b>71-43-2</b>
Proposed Emission Rate (lb/hr) <b>7.22x10<sup>-6</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>2.04x10<sup>-4</sup></b>	Vapor Pressure (in. Hg @ °F) <b>3.73 in Hg @ 77 °F</b>
Solubility <b>In water 1.79x10<sup>3</sup> mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>78.11</b>
Absorptive Properties -	

Pollutant Emitted <b>Dichlorobenzene</b>	Chemical Abstract Services (CAS) Number <b>Varies</b>
Proposed Emission Rate (lb/hr) <b>4.13x10<sup>-6</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>6.21x10<sup>-5</sup></b>	Vapor Pressure (in. Hg @ °F) <b>Varies</b>
Solubility <b>Varies</b>	Molecular Weight (lb/lb-mole) <b>147.00</b>
Absorptive Properties -	

Pollutant Emitted <b>Ethylbenzene</b>	Chemical Abstract Services (CAS) Number <b>100-41-4</b>
Proposed Emission Rate (lb/hr) <b><math>5.50 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.15 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.37 in Hg @ 77°F</b>
Solubility <b>In water 0.014 g/100mL @ 59 °F</b>	Molecular Weight (lb/lb-mole) <b>106.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Formaldehyde</b>	Chemical Abstract Services (CAS) Number <b>50-00-0</b>
Proposed Emission Rate (lb/hr) <b><math>2.54 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.87 \times 10^{-2}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.15 in Hg @ 77 °F</b>
Solubility <b>In water <math>4.00 \times 10^5</math> mg/L @ 68°F</b>	Molecular Weight (lb/lb-mole) <b>30.03</b>
Absorptive Properties -	

Pollutant Emitted <b>Hexane</b>	Chemical Abstract Services (CAS) Number <b>110-54-5</b>
Proposed Emission Rate (lb/hr) <b><math>6.19 \times 10^{-3}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.59 \times 10^{-1}</math></b>	Vapor Pressure (in. Hg @ °F) <b>5.90 in Hg @ 68 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>86.1</b>
Absorptive Properties -	

Pollutant Emitted <b>Naphthalene</b>	Chemical Abstract Services (CAS) Number <b>91-20-3</b>
Proposed Emission Rate (lb/hr) <b><math>2.06 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.56 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.003 in Hg @ 77 °F</b>
Solubility <b>In water 31 mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>128.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Toluene</b>	Chemical Abstract Services (CAS) Number <b>108-88-3</b>
Proposed Emission Rate (lb/hr) <b><math>1.13 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>2.72 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>1.12 in Hg @ 77°F</b>
Solubility <b>In water 526 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>92.14</b>
Absorptive Properties -	

Pollutant Emitted <b>Xylene</b>	Chemical Abstract Services (CAS) Number <b>95-47-6</b>
Proposed Emission Rate (lb/hr) <b><math>8.59 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.79 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.26 in Hg @ 77°F</b>
Solubility <b>In water 178 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>106.16</b>
Absorptive Properties -	

Pollutant Emitted <b>PAH</b>	Chemical Abstract Services (CAS) Number <b>N/A</b>
Proposed Emission Rate (lb/hr) <b><math>1.46 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.32 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>N/A</b>
Solubility <b>N/A</b>	Molecular Weight (lb/lb-mole) <b>TBD</b>
Absorptive Properties -	

Pollutant Emitted <b>Antimony</b>	Chemical Abstract Services (CAS) Number <b>7740-36-0</b>
Proposed Emission Rate (lb/hr) <b><math>7.15 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.30 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>121.76</b>
Absorptive Properties -	

Pollutant Emitted <b>Arsenic</b>	Chemical Abstract Services (CAS) Number <b>7440-38-2</b>
Proposed Emission Rate (lb/hr) <b><math>2.75 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>8.12 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Beryllium</b>	Chemical Abstract Services (CAS) Number <b>7440-41-7</b>
Proposed Emission Rate (lb/hr) <b><math>1.79 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.39 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>9.01</b>
Absorptive Properties -	

Pollutant Emitted <b>Cadmium</b>	Chemical Abstract Services (CAS) Number <b>7440-43-9</b>
Proposed Emission Rate (lb/hr) <b><math>1.51 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.98 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Chromium (hexavalent)</b>	Chemical Abstract Services (CAS) Number <b>1333-82-0</b>
Proposed Emission Rate (lb/hr) <b><math>3.85 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.64 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>1,660 g/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Chromium</b>	Chemical Abstract Services (CAS) Number <b>7440-47-3</b>
Proposed Emission Rate (lb/hr) <b><math>1.93 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>8.19 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Cobalt</b>	Chemical Abstract Services (CAS) Number <b>7440-48-4</b>
Proposed Emission Rate (lb/hr) <b><math>1.13 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.23 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.93</b>
Absorptive Properties -	

Pollutant Emitted <b>Manganese</b>	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) <b><math>5.09 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.05 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>54.94</b>
Absorptive Properties -	

Pollutant Emitted <b>Mercury</b>	Chemical Abstract Services (CAS) Number <b>7439-97-6</b>
Proposed Emission Rate (lb/hr) <b><math>3.44 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.79 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b><math>7.85 \times 10^{-5}</math> in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>200.59</b>
Absorptive Properties -	

Pollutant Emitted <b>Nickel</b>	Chemical Abstract Services (CAS) Number <b>7044-02-0</b>
Proposed Emission Rate (lb/hr) <b><math>2.89 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.09 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.69</b>
Absorptive Properties -	

Pollutant Emitted <b>Selenium</b>	Chemical Abstract Services (CAS) Number <b>7782-49-2</b>
Proposed Emission Rate (lb/hr) <b><math>1.21 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.39 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.29 in Hg @ 807</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>78.96</b>
Absorptive Properties -	

Signature of Applicant 	Date 09/26/2016
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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 <b>Meridian Energy Group - Davis Refinery</b>		
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>

**SECTION A2 - FACILITY INFORMATION**

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

Describe Nature of Business/Process  <b>Petroleum Refining / Heavy Naphtha Hydrotreater / Heater</b>
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**SECTION B – STACK DATA**

Inside Diameter (ft) <b>3.0</b>	Height Above Grade (ft) <b>91.0</b>	
Gas Temperature at Exit (°F) <b>787.7</b>	Gas Velocity at Exit (ft/sec) <b>19.1</b>	Gas Volume (scfm) <b>8,115.32</b>
Basis of any Estimates (attach separate sheet if necessary) <b>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"</b>		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 <span style="float: right;">Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></span>		
Nearest Residences or Building <b>Utility building</b>	Distance (ft) <b>580 ft</b>	Direction <b>South</b>
Nearest Property Line <b>Fenceline</b>	Distance (ft) <b>843 ft</b>	Direction <b>Southeast</b>

**SECTION C – EMISSION STREAM DATA**

Source ID No. From SFN 8516 <b>105-H-0502</b>	Mean Particle Diameter (µm) <b>TBD</b>
Flow Rate (scfm) <b>8,115.32</b>	Drift Velocity (ft/sec) <b>19.1</b>
Stream Temperature (°F) <b>787.7</b>	Particulate Concentration (gr/dscf) <b>TBD</b>
Moisture Content (%) <b>TBD</b>	Halogens or Metals Present? <b>Metals</b>
Pressure (in. Hg) <b>TBD</b>	Organic Content (ppmv) <b><math>3.71 \times 10^{-1}</math></b>
Heat Content (Btu/scfm) <b>TBD</b>	O <sub>2</sub> Content (%) <b>N/A</b>

**SECTION D – POLLUTANT SPECIFIC DATA**

**(Complete One Box for Each Pollutant in Emission Stream)**

Pollutant Emitted <b>Acetaldehyde</b>	Chemical Abstract Services (CAS) Number <b>75-07-0</b>
Proposed Emission Rate (lb/hr) <b><math>4.88 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>2.07 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>35.51 in Hg @ 68°C</b>
Solubility <b><math>1 \times 10^{+6}</math> mg/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>44.05</b>
Absorptive Properties -	

Pollutant Emitted <b>Benzene</b>	Chemical Abstract Services (CAS) Number <b>71-43-2</b>
Proposed Emission Rate (lb/hr) <b><math>8.53 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>2.04 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>3.73 in Hg @ 77 °F</b>
Solubility <b>In water <math>1.79 \times 10^3</math> mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>78.11</b>
Absorptive Properties -	

Pollutant Emitted <b>Dichlorobenzene</b>	Chemical Abstract Services (CAS) Number <b>Varies</b>
Proposed Emission Rate (lb/hr) <b><math>4.88 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>6.21 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>Varies</b>
Solubility <b>Varies</b>	Molecular Weight (lb/lb-mole) <b>147.00</b>
Absorptive Properties -	

Pollutant Emitted <b>Ethylbenzene</b>	Chemical Abstract Services (CAS) Number <b>100-41-4</b>
Proposed Emission Rate (lb/hr) <b><math>6.50 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.15 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.37 in Hg @ 77°F</b>
Solubility <b>In water 0.014 g/100mL @ 59 °F</b>	Molecular Weight (lb/lb-mole) <b>106.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Formaldehyde</b>	Chemical Abstract Services (CAS) Number <b>50-00-0</b>
Proposed Emission Rate (lb/hr) <b><math>3.01 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.87 \times 10^{-2}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.15 in Hg @ 77 °F</b>
Solubility <b>In water <math>4.00 \times 10^5</math> mg/L @ 68°F</b>	Molecular Weight (lb/lb-mole) <b>30.03</b>
Absorptive Properties -	

Pollutant Emitted <b>Hexane</b>	Chemical Abstract Services (CAS) Number <b>110-54-5</b>
Proposed Emission Rate (lb/hr) <b><math>7.31 \times 10^{-3}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.59 \times 10^{-1}</math></b>	Vapor Pressure (in. Hg @ °F) <b>5.90 in Hg @ 68 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>86.1</b>
Absorptive Properties -	

Pollutant Emitted <b>Naphthalene</b>	Chemical Abstract Services (CAS) Number <b>91-20-3</b>
Proposed Emission Rate (lb/hr) <b><math>2.44 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.56 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.003 in Hg @ 77 °F</b>
Solubility <b>In water 31 mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>128.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Toluene</b>	Chemical Abstract Services (CAS) Number <b>108-88-3</b>
Proposed Emission Rate (lb/hr) <b><math>1.34 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>2.72 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>1.12 in Hg @ 77°F</b>
Solubility <b>In water 526 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>92.14</b>
Absorptive Properties -	

Pollutant Emitted <b>Xylene</b>	Chemical Abstract Services (CAS) Number <b>95-47-6</b>
Proposed Emission Rate (lb/hr) <b><math>1.02 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.79 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.26 in Hg @ 77°F</b>
Solubility <b>In water 178 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>106.16</b>
Absorptive Properties -	

Pollutant Emitted <b>PAH</b>	Chemical Abstract Services (CAS) Number <b>N/A</b>
Proposed Emission Rate (lb/hr) <b><math>1.73 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.32 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>N/A</b>
Solubility <b>N/A</b>	Molecular Weight (lb/lb-mole) <b>TBD</b>
Absorptive Properties -	

Pollutant Emitted <b>Antimony</b>	Chemical Abstract Services (CAS) Number <b>7740-36-0</b>
Proposed Emission Rate (lb/hr) <b><math>8.45 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.30 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>121.76</b>
Absorptive Properties -	

Pollutant Emitted <b>Arsenic</b>	Chemical Abstract Services (CAS) Number <b>7440-38-2</b>
Proposed Emission Rate (lb/hr) <b><math>3.25 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>8.12 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Beryllium</b>	Chemical Abstract Services (CAS) Number <b>7440-41-7</b>
Proposed Emission Rate (lb/hr) <b><math>2.11 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.39 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>9.01</b>
Absorptive Properties -	

Pollutant Emitted <b>Cadmium</b>	Chemical Abstract Services (CAS) Number <b>7440-43-9</b>
Proposed Emission Rate (lb/hr) <b><math>1.79 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.98 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Chromium (hexavalent)</b>	Chemical Abstract Services (CAS) Number <b>1333-82-0</b>
Proposed Emission Rate (lb/hr) <b><math>4.55 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.64 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>1,660 g/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Chromium</b>	Chemical Abstract Services (CAS) Number <b>7440-47-3</b>
Proposed Emission Rate (lb/hr) <b><math>2.28 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>8.19 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Cobalt</b>	Chemical Abstract Services (CAS) Number <b>7440-48-4</b>
Proposed Emission Rate (lb/hr) <b><math>1.33 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.23 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.93</b>
Absorptive Properties -	

Pollutant Emitted <b>Manganese</b>	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) <b><math>6.01 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.05 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>54.94</b>
Absorptive Properties -	

Pollutant Emitted <b>Mercury</b>	Chemical Abstract Services (CAS) Number <b>7439-97-6</b>
Proposed Emission Rate (lb/hr) <b><math>4.06 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.79 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b><math>7.85 \times 10^{-5}</math> in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>200.59</b>
Absorptive Properties -	

Pollutant Emitted <b>Nickel</b>	Chemical Abstract Services (CAS) Number <b>7044-02-0</b>
Proposed Emission Rate (lb/hr) <b><math>3.41 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.09 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.69</b>
Absorptive Properties -	

Pollutant Emitted <b>Selenium</b>	Chemical Abstract Services (CAS) Number <b>7782-49-2</b>
Proposed Emission Rate (lb/hr) <b><math>1.43 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.39 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.29 in Hg @ 807</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>78.96</b>
Absorptive Properties -	

Signature of Applicant 	Date 09/26/2016
--	--------------------

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

**SECTION A2 - FACILITY INFORMATION**

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

Describe Nature of Business/Process  <b>Petroleum Refining / Catalytic Reformer Unit #2 heater</b>
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**SECTION B – STACK DATA**

Inside Diameter (ft) <b>4.0</b>	Height Above Grade (ft) <b>42.0</b>	
Gas Temperature at Exit (°F) <b>786.2</b>	Gas Velocity at Exit (ft/sec) <b>27.5</b>	Gas Volume (scfm) <b>20,769.92</b>
Basis of any Estimates (attach separate sheet if necessary) <b>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"</b>		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 <span style="float: right;">Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></span>		
Nearest Residences or Building <b>Utility building</b>	Distance (ft) <b>228 ft</b>	Direction <b>South</b>
Nearest Property Line <b>Fenceline</b>	Distance (ft) <b>657 ft</b>	Direction <b>Southeast</b>

**SECTION C – EMISSION STREAM DATA**

Source ID No. From SFN 8516 <b>106-H-0601</b>	Mean Particle Diameter (µm) <b>TBD</b>
Flow Rate (scfm) <b>20,769.92</b>	Drift Velocity (ft/sec) <b>27.5</b>
Stream Temperature (°F) <b>786.2</b>	Particulate Concentration (gr/dscf) <b>TBD</b>
Moisture Content (%) <b>TBD</b>	Halogens or Metals Present? <b>Metals</b>
Pressure (in. Hg) <b>TBD</b>	Organic Content (ppmv) <b>1.86x10<sup>-1</sup></b>
Heat Content (Btu/scfm) <b>TBD</b>	O <sub>2</sub> Content (%) <b>N/A</b>

**SECTION D – POLLUTANT SPECIFIC DATA**

**(Complete One Box for Each Pollutant in Emission Stream)**

Pollutant Emitted <b>Acetaldehyde</b>	Chemical Abstract Services (CAS) Number <b>75-07-0</b>
Proposed Emission Rate (lb/hr) <b>1.25x10<sup>-4</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic Vapor</b>
Concentration in Emission Stream (ppmv) <b>2.08x10<sup>-3</sup></b>	Vapor Pressure (in. Hg @ °F) <b>35.51 in Hg @ 68°C</b>
Solubility <b>1x10<sup>+6</sup> mg/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>44.05</b>
Absorptive Properties -	

Pollutant Emitted <b>Benzene</b>	Chemical Abstract Services (CAS) Number <b>71-43-2</b>
Proposed Emission Rate (lb/hr) <b>2.19x10<sup>-5</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>2.05x10<sup>-4</sup></b>	Vapor Pressure (in. Hg @ °F) <b>3.73 in Hg @ 77 °F</b>
Solubility <b>In water 1.79x10<sup>3</sup> mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>78.11</b>
Absorptive Properties -	

Pollutant Emitted <b>Dichlorobenzene</b>	Chemical Abstract Services (CAS) Number <b>Varies</b>
Proposed Emission Rate (lb/hr) <b>1.25x10<sup>-5</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>6.22x10<sup>-5</sup></b>	Vapor Pressure (in. Hg @ °F) <b>Varies</b>
Solubility <b>Varies</b>	Molecular Weight (lb/lb-mole) <b>147.00</b>
Absorptive Properties -	

Pollutant Emitted <b>Ethylbenzene</b>	Chemical Abstract Services (CAS) Number <b>100-41-4</b>
Proposed Emission Rate (lb/hr) <b><math>1.67 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.15 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.37 in Hg @ 77°F</b>
Solubility <b>In water 0.014 g/100mL @ 59 °F</b>	Molecular Weight (lb/lb-mole) <b>106.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Formaldehyde</b>	Chemical Abstract Services (CAS) Number <b>50-00-0</b>
Proposed Emission Rate (lb/hr) <b><math>7.72 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.88 \times 10^{-2}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.15 in Hg @ 77 °F</b>
Solubility <b>In water <math>4.00 \times 10^5</math> mg/L @ 68°F</b>	Molecular Weight (lb/lb-mole) <b>30.03</b>
Absorptive Properties -	

Pollutant Emitted <b>Hexane</b>	Chemical Abstract Services (CAS) Number <b>110-54-5</b>
Proposed Emission Rate (lb/hr) <b><math>1.88 \times 10^{-2}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.59 \times 10^{-1}</math></b>	Vapor Pressure (in. Hg @ °F) <b>5.90 in Hg @ 68 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>86.1</b>
Absorptive Properties -	

Pollutant Emitted <b>Naphthalene</b>	Chemical Abstract Services (CAS) Number <b>91-20-3</b>
Proposed Emission Rate (lb/hr) <b><math>6.26 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.57 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.003 in Hg @ 77 °F</b>
Solubility <b>In water 31 mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>128.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Toluene</b>	Chemical Abstract Services (CAS) Number <b>108-88-3</b>
Proposed Emission Rate (lb/hr) <b><math>3.44 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>2.73 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>1.12 in Hg @ 77°F</b>
Solubility <b>In water 526 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>92.14</b>
Absorptive Properties -	

Pollutant Emitted <b>Xylene</b>	Chemical Abstract Services (CAS) Number <b>95-47-6</b>
Proposed Emission Rate (lb/hr) <b><math>2.61 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.80 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.26 in Hg @ 77°F</b>
Solubility <b>In water 178 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>106.16</b>
Absorptive Properties -	

Pollutant Emitted <b>PAH</b>	Chemical Abstract Services (CAS) Number <b>N/A</b>
Proposed Emission Rate (lb/hr) <b><math>4.44 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.33 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>N/A</b>
Solubility <b>N/A</b>	Molecular Weight (lb/lb-mole) <b>TBD</b>
Absorptive Properties -	

Pollutant Emitted <b>Antimony</b>	Chemical Abstract Services (CAS) Number <b>7740-36-0</b>
Proposed Emission Rate (lb/hr) <b><math>2.17 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.30 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>121.76</b>
Absorptive Properties -	

Pollutant Emitted <b>Arsenic</b>	Chemical Abstract Services (CAS) Number <b>7440-38-2</b>
Proposed Emission Rate (lb/hr) <b><math>8.35 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>8.14 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Beryllium</b>	Chemical Abstract Services (CAS) Number <b>7440-41-7</b>
Proposed Emission Rate (lb/hr) <b><math>5.42 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.40 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>9.01</b>
Absorptive Properties -	

Pollutant Emitted <b>Cadmium</b>	Chemical Abstract Services (CAS) Number <b>7440-43-9</b>
Proposed Emission Rate (lb/hr) <b><math>4.59 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.98 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Chromium (hexavalent)</b>	Chemical Abstract Services (CAS) Number <b>1333-82-0</b>
Proposed Emission Rate (lb/hr) <b><math>1.17 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.64 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>1,660 g/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Chromium</b>	Chemical Abstract Services (CAS) Number <b>7440-47-3</b>
Proposed Emission Rate (lb/hr) <b><math>5.84 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>8.21 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Cobalt</b>	Chemical Abstract Services (CAS) Number <b>7440-48-4</b>
Proposed Emission Rate (lb/hr) <b><math>3.42 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.24 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.93</b>
Absorptive Properties -	

Pollutant Emitted <b>Manganese</b>	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) <b><math>1.54 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.05 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>54.94</b>
Absorptive Properties -	

Pollutant Emitted <b>Mercury</b>	Chemical Abstract Services (CAS) Number <b>7439-97-6</b>
Proposed Emission Rate (lb/hr) <b><math>1.04 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.80 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b><math>7.85 \times 10^{-5}</math> in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>200.59</b>
Absorptive Properties -	

Pollutant Emitted <b>Nickel</b>	Chemical Abstract Services (CAS) Number <b>7044-02-0</b>
Proposed Emission Rate (lb/hr) <b><math>8.76 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.09 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.69</b>
Absorptive Properties -	

Pollutant Emitted <b>Selenium</b>	Chemical Abstract Services (CAS) Number <b>7782-49-2</b>
Proposed Emission Rate (lb/hr) <b><math>3.67 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.40 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.29 in Hg @ 807</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>78.96</b>
Absorptive Properties -	

Signature of Applicant 	Date 09/26/2016
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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 <b>Meridian Energy Group - Davis Refinery</b>		
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>

**SECTION A2 - FACILITY INFORMATION**

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

Describe Nature of Business/Process  <b>Petroleum Refining / Catalytic Reformer Unit #1 heater</b>
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**SECTION B – STACK DATA**

Inside Diameter (ft) <b>6.0</b>	Height Above Grade (ft) <b>120.0</b>	
Gas Temperature at Exit (°F) <b>787.7</b>	Gas Velocity at Exit (ft/sec) <b>27.2</b>	Gas Volume (scfm) <b>46,194.82</b>
Basis of any Estimates (attach separate sheet if necessary) <b>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"</b>		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 <span style="float: right;">Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></span>		
Nearest Residences or Building <b>Utility building</b>	Distance (ft) <b>268.4 ft</b>	Direction <b>South</b>
Nearest Property Line <b>Fenceline</b>	Distance (ft) <b>810 ft</b>	Direction <b>Southeast</b>

**SECTION C – EMISSION STREAM DATA**

Source ID No. From SFN 8516 <b>107-H-0701</b>	Mean Particle Diameter (µm) <b>TBD</b>
Flow Rate (scfm) <b>46,194.82</b>	Drift Velocity (ft/sec) <b>27.2</b>
Stream Temperature (°F) <b>787.7</b>	Particulate Concentration (gr/dscf) <b>TBD</b>
Moisture Content (%) <b>TBD</b>	Halogens or Metals Present? <b>Metals</b>
Pressure (in. Hg) <b>TBD</b>	Organic Content (ppmv) <b>1.86x10<sup>-1</sup></b>
Heat Content (Btu/scfm) <b>TBD</b>	O <sub>2</sub> Content (%) <b>N/A</b>

**SECTION D – POLLUTANT SPECIFIC DATA**

**(Complete One Box for Each Pollutant in Emission Stream)**

Pollutant Emitted <b>Acetaldehyde</b>	Chemical Abstract Services (CAS) Number <b>75-07-0</b>
Proposed Emission Rate (lb/hr) <b>2.78x10<sup>-4</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic Vapor</b>
Concentration in Emission Stream (ppmv) <b>2.07x10<sup>-3</sup></b>	Vapor Pressure (in. Hg @ °F) <b>35.51 in Hg @ 68°C</b>
Solubility <b>1x10<sup>+6</sup> mg/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>44.05</b>
Absorptive Properties -	

Pollutant Emitted <b>Benzene</b>	Chemical Abstract Services (CAS) Number <b>71-43-2</b>
Proposed Emission Rate (lb/hr) <b>4.86x10<sup>-5</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>2.04x10<sup>-4</sup></b>	Vapor Pressure (in. Hg @ °F) <b>3.73 in Hg @ 77 °F</b>
Solubility <b>In water 1.79x10<sup>3</sup> mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>78.11</b>
Absorptive Properties -	

Pollutant Emitted <b>Dichlorobenzene</b>	Chemical Abstract Services (CAS) Number <b>Varies</b>
Proposed Emission Rate (lb/hr) <b>2.78x10<sup>-5</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>6.21x10<sup>-5</sup></b>	Vapor Pressure (in. Hg @ °F) <b>Varies</b>
Solubility <b>Varies</b>	Molecular Weight (lb/lb-mole) <b>147.00</b>
Absorptive Properties -	

Pollutant Emitted <b>Ethylbenzene</b>	Chemical Abstract Services (CAS) Number <b>100-41-4</b>
Proposed Emission Rate (lb/hr) <b><math>3.70 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.15 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.37 in Hg @ 77°F</b>
Solubility <b>In water 0.014 g/100mL @ 59 °F</b>	Molecular Weight (lb/lb-mole) <b>106.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Formaldehyde</b>	Chemical Abstract Services (CAS) Number <b>50-00-0</b>
Proposed Emission Rate (lb/hr) <b><math>1.71 \times 10^{-3}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.87 \times 10^{-2}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.15 in Hg @ 77 °F</b>
Solubility <b>In water <math>4.00 \times 10^5</math> mg/L @ 68°F</b>	Molecular Weight (lb/lb-mole) <b>30.03</b>
Absorptive Properties -	

Pollutant Emitted <b>Hexane</b>	Chemical Abstract Services (CAS) Number <b>110-54-5</b>
Proposed Emission Rate (lb/hr) <b><math>4.16 \times 10^{-2}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.59 \times 10^{-1}</math></b>	Vapor Pressure (in. Hg @ °F) <b>5.90 in Hg @ 68 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>86.1</b>
Absorptive Properties -	

Pollutant Emitted <b>Naphthalene</b>	Chemical Abstract Services (CAS) Number <b>91-20-3</b>
Proposed Emission Rate (lb/hr) <b><math>1.39 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.56 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.003 in Hg @ 77 °F</b>
Solubility <b>In water 31 mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>128.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Toluene</b>	Chemical Abstract Services (CAS) Number <b>108-88-3</b>
Proposed Emission Rate (lb/hr) <b><math>7.63 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>2.72 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>1.12 in Hg @ 77°F</b>
Solubility <b>In water 526 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>92.14</b>
Absorptive Properties -	

Pollutant Emitted <b>Xylene</b>	Chemical Abstract Services (CAS) Number <b>95-47-6</b>
Proposed Emission Rate (lb/hr) <b><math>5.78 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.79 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.26 in Hg @ 77°F</b>
Solubility <b>In water 178 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>106.16</b>
Absorptive Properties -	

Pollutant Emitted <b>PAH</b>	Chemical Abstract Services (CAS) Number <b>N/A</b>
Proposed Emission Rate (lb/hr) <b><math>9.85 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.32 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>N/A</b>
Solubility <b>N/A</b>	Molecular Weight (lb/lb-mole) <b>TBD</b>
Absorptive Properties -	

Pollutant Emitted <b>Antimony</b>	Chemical Abstract Services (CAS) Number <b>7740-36-0</b>
Proposed Emission Rate (lb/hr) <b><math>4.81 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.30 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>121.76</b>
Absorptive Properties -	

Pollutant Emitted <b>Arsenic</b>	Chemical Abstract Services (CAS) Number <b>7440-38-2</b>
Proposed Emission Rate (lb/hr) <b><math>1.85 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>8.12 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Beryllium</b>	Chemical Abstract Services (CAS) Number <b>7440-41-7</b>
Proposed Emission Rate (lb/hr) <b><math>1.20 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.39 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>9.01</b>
Absorptive Properties -	

Pollutant Emitted <b>Cadmium</b>	Chemical Abstract Services (CAS) Number <b>7440-43-9</b>
Proposed Emission Rate (lb/hr) <b><math>1.02 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.98 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Chromium (hexavalent)</b>	Chemical Abstract Services (CAS) Number <b>1333-82-0</b>
Proposed Emission Rate (lb/hr) <b><math>2.59 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.64 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>1,660 g/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Chromium</b>	Chemical Abstract Services (CAS) Number <b>7440-47-3</b>
Proposed Emission Rate (lb/hr) <b><math>1.30 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>8.19 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Cobalt</b>	Chemical Abstract Services (CAS) Number <b>7440-48-4</b>
Proposed Emission Rate (lb/hr) <b><math>7.59 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.23 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.93</b>
Absorptive Properties -	

Pollutant Emitted <b>Manganese</b>	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) <b><math>3.42 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.05 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>54.94</b>
Absorptive Properties -	

Pollutant Emitted <b>Mercury</b>	Chemical Abstract Services (CAS) Number <b>7439-97-6</b>
Proposed Emission Rate (lb/hr) <b><math>2.31 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.79 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b><math>7.85 \times 10^{-5}</math> in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>200.59</b>
Absorptive Properties -	

Pollutant Emitted <b>Nickel</b>	Chemical Abstract Services (CAS) Number <b>7044-02-0</b>
Proposed Emission Rate (lb/hr) <b><math>1.94 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.09 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.69</b>
Absorptive Properties -	

Pollutant Emitted <b>Selenium</b>	Chemical Abstract Services (CAS) Number <b>7782-49-2</b>
Proposed Emission Rate (lb/hr) <b><math>8.14 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.39 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.29 in Hg @ 807</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>78.96</b>
Absorptive Properties -	

Signature of Applicant 	Date 09/26/2016
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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 <b>Meridian Energy Group - Davis Refinery</b>		
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>

**SECTION A2 - FACILITY INFORMATION**

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

Describe Nature of Business/Process  <b>Petroleum Refining / Diesel Hydrotreater / Reactor Charge Heater</b>
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**SECTION B – STACK DATA**

Inside Diameter (ft) <b>2.5</b>	Height Above Grade (ft) <b>96</b>	
Gas Temperature at Exit (°F) <b>764.3</b>	Gas Velocity at Exit (ft/sec) <b>28.4</b>	Gas Volume (scfm) <b>8,091.77</b>
Basis of any Estimates (attach separate sheet if necessary) <b>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"</b>		
Are Emission Control Devices in Place? If YES – Complete SFN 8532		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Nearest Residences or Building <b>Utility building</b>	Distance (ft) <b>768 ft</b>	Direction <b>South</b>
Nearest Property Line <b>Fenceline</b>	Distance (ft) <b>1048 ft</b>	Direction <b>East</b>

**SECTION C – EMISSION STREAM DATA**

Source ID No. From SFN 8516 <b>110-H-1001</b>	Mean Particle Diameter (µm) <b>TBD</b>
Flow Rate (scfm) <b>8,091.77</b>	Drift Velocity (ft/sec) <b>28.4</b>
Stream Temperature (°F) <b>764.3</b>	Particulate Concentration (gr/dscf) <b>TBD</b>
Moisture Content (%) <b>TBD</b>	Halogens or Metals Present? <b>Metals</b>
Pressure (in. Hg) <b>TBD</b>	Organic Content (ppmv) <b>1.83x10<sup>-1</sup></b>
Heat Content (Btu/scfm) <b>TBD</b>	O <sub>2</sub> Content (%) <b>N/A</b>

**SECTION D – POLLUTANT SPECIFIC DATA**

**(Complete One Box for Each Pollutant in Emission Stream)**

Pollutant Emitted <b>Acetaldehyde</b>	Chemical Abstract Services (CAS) Number <b>75-07-0</b>
Proposed Emission Rate (lb/hr) <b>4.88x10<sup>-5</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic Vapor</b>
Concentration in Emission Stream (ppmv) <b>2.04x10<sup>-3</sup></b>	Vapor Pressure (in. Hg @ °F) <b>35.51 in Hg @ 68°C</b>
Solubility <b>1x10<sup>+6</sup> mg/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>44.05</b>
Absorptive Properties -	

Pollutant Emitted <b>Benzene</b>	Chemical Abstract Services (CAS) Number <b>71-43-2</b>
Proposed Emission Rate (lb/hr) <b>8.53x10<sup>-6</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>2.01x10<sup>-4</sup></b>	Vapor Pressure (in. Hg @ °F) <b>3.73 in Hg @ 77 °F</b>
Solubility <b>In water 1.79x10<sup>3</sup> mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>78.11</b>
Absorptive Properties -	

Pollutant Emitted <b>Dichlorobenzene</b>	Chemical Abstract Services (CAS) Number <b>Varies</b>
Proposed Emission Rate (lb/hr) <b>4.88x10<sup>-6</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>6.11x10<sup>-5</sup></b>	Vapor Pressure (in. Hg @ °F) <b>Varies</b>
Solubility <b>Varies</b>	Molecular Weight (lb/lb-mole) <b>147.00</b>
Absorptive Properties -	

Pollutant Emitted <b>Ethylbenzene</b>	Chemical Abstract Services (CAS) Number <b>100-41-4</b>
Proposed Emission Rate (lb/hr) <b><math>6.50 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.13 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.37 in Hg @ 77°F</b>
Solubility <b>In water 0.014 g/100mL @ 59 °F</b>	Molecular Weight (lb/lb-mole) <b>106.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Formaldehyde</b>	Chemical Abstract Services (CAS) Number <b>50-00-0</b>
Proposed Emission Rate (lb/hr) <b><math>3.01 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.84 \times 10^{-2}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.15 in Hg @ 77 °F</b>
Solubility <b>In water <math>4.00 \times 10^5</math> mg/L @ 68°F</b>	Molecular Weight (lb/lb-mole) <b>30.03</b>
Absorptive Properties -	

Pollutant Emitted <b>Hexane</b>	Chemical Abstract Services (CAS) Number <b>110-54-5</b>
Proposed Emission Rate (lb/hr) <b><math>7.31 \times 10^{-3}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.56 \times 10^{-1}</math></b>	Vapor Pressure (in. Hg @ °F) <b>5.90 in Hg @ 68 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>86.1</b>
Absorptive Properties -	

Pollutant Emitted <b>Naphthalene</b>	Chemical Abstract Services (CAS) Number <b>91-20-3</b>
Proposed Emission Rate (lb/hr) <b><math>2.44 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.50 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.003 in Hg @ 77 °F</b>
Solubility <b>In water 31 mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>128.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Toluene</b>	Chemical Abstract Services (CAS) Number <b>108-88-3</b>
Proposed Emission Rate (lb/hr) <b><math>1.34 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>2.68 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>1.12 in Hg @ 77°F</b>
Solubility <b>In water 526 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>92.14</b>
Absorptive Properties -	

Pollutant Emitted <b>Xylene</b>	Chemical Abstract Services (CAS) Number <b>95-47-6</b>
Proposed Emission Rate (lb/hr) <b><math>1.02 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.76 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.26 in Hg @ 77°F</b>
Solubility <b>In water 178 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>106.16</b>
Absorptive Properties -	

Pollutant Emitted <b>PAH</b>	Chemical Abstract Services (CAS) Number <b>N/A</b>
Proposed Emission Rate (lb/hr) <b><math>1.73 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.27 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>N/A</b>
Solubility <b>N/A</b>	Molecular Weight (lb/lb-mole) <b>TBD</b>
Absorptive Properties -	

Pollutant Emitted <b>Antimony</b>	Chemical Abstract Services (CAS) Number <b>7740-36-0</b>
Proposed Emission Rate (lb/hr) <b><math>8.45 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.28 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>121.76</b>
Absorptive Properties -	

Pollutant Emitted <b>Arsenic</b>	Chemical Abstract Services (CAS) Number <b>7440-38-2</b>
Proposed Emission Rate (lb/hr) <b><math>3.25 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>7.99 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Beryllium</b>	Chemical Abstract Services (CAS) Number <b>7440-41-7</b>
Proposed Emission Rate (lb/hr) <b><math>2.11 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.32 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>9.01</b>
Absorptive Properties -	

Pollutant Emitted <b>Cadmium</b>	Chemical Abstract Services (CAS) Number <b>7440-43-9</b>
Proposed Emission Rate (lb/hr) <b><math>1.79 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.93 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Chromium (hexavalent)</b>	Chemical Abstract Services (CAS) Number <b>1333-82-0</b>
Proposed Emission Rate (lb/hr) <b><math>4.55 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.61 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>1,660 g/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Chromium</b>	Chemical Abstract Services (CAS) Number <b>7440-47-3</b>
Proposed Emission Rate (lb/hr) <b><math>2.28 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>8.06 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Cobalt</b>	Chemical Abstract Services (CAS) Number <b>7440-48-4</b>
Proposed Emission Rate (lb/hr) <b><math>1.33 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.17 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.93</b>
Absorptive Properties -	

Pollutant Emitted <b>Manganese</b>	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) <b><math>6.01 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.02 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>54.94</b>
Absorptive Properties -	

Pollutant Emitted <b>Mercury</b>	Chemical Abstract Services (CAS) Number <b>7439-97-6</b>
Proposed Emission Rate (lb/hr) <b><math>4.06 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.73 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b><math>7.85 \times 10^{-5}</math> in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>200.59</b>
Absorptive Properties -	

Pollutant Emitted <b>Nickel</b>	Chemical Abstract Services (CAS) Number <b>7044-02-0</b>
Proposed Emission Rate (lb/hr) <b><math>3.41 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.07 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg Q 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.69</b>
Absorptive Properties -	

Pollutant Emitted <b>Selenium</b>	Chemical Abstract Services (CAS) Number <b>7782-49-2</b>
Proposed Emission Rate (lb/hr) <b><math>1.43 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.34 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.29 in Hg @ 807</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>78.96</b>
Absorptive Properties -	

Signature of Applicant 	Date 09/26/2016
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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 <b>Meridian Energy Group - Davis Refinery</b>		
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>

**SECTION A2 - FACILITY INFORMATION**

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

Describe Nature of Business/Process  <b>Petroleum Refining / Light Naphtha Hydrotreater / Charge Heater</b>
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**SECTION B – STACK DATA**

Inside Diameter (ft) <b>3.5</b>	Height Above Grade (ft) <b>170</b>	
Gas Temperature at Exit (°F) <b>793.1</b>	Gas Velocity at Exit (ft/sec) <b>12.1</b>	Gas Volume (scfm) <b>6,964.97</b>
Basis of any Estimates (attach separate sheet if necessary) <b>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"</b>		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 <span style="float: right;">Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></span>		
Nearest Residences or Building <b>Utility building</b>	Distance (ft) <b>591 ft</b>	Direction <b>South</b>
Nearest Property Line <b>Fenceline</b>	Distance (ft) <b>765 ft</b>	Direction <b>Southwest</b>

**SECTION C – EMISSION STREAM DATA**

Source ID No. From SFN 8516 <b>111-H-1101</b>	Mean Particle Diameter (µm) <b>TBD</b>
Flow Rate (scfm) <b>6,964.97</b>	Drift Velocity (ft/sec) <b>12.1</b>
Stream Temperature (°F) <b>787.7</b>	Particulate Concentration (gr/dscf) <b>TBD</b>
Moisture Content (%) <b>TBD</b>	Halogens or Metals Present? <b>Metals</b>
Pressure (in. Hg) <b>TBD</b>	Organic Content (ppmv) <b>1.86x10<sup>-1</sup></b>
Heat Content (Btu/scfm) <b>TBD</b>	O <sub>2</sub> Content (%) <b>N/A</b>

**SECTION D – POLLUTANT SPECIFIC DATA**

**(Complete One Box for Each Pollutant in Emission Stream)**

Pollutant Emitted <b>Acetaldehyde</b>	Chemical Abstract Services (CAS) Number <b>75-07-0</b>
Proposed Emission Rate (lb/hr) <b>4.17x10<sup>-5</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic Vapor</b>
Concentration in Emission Stream (ppmv) <b>2.07x10<sup>-3</sup></b>	Vapor Pressure (in. Hg @ °F) <b>35.51 in Hg @ 68°C</b>
Solubility <b>1x10<sup>+6</sup> mg/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>44.05</b>
Absorptive Properties -	

Pollutant Emitted <b>Benzene</b>	Chemical Abstract Services (CAS) Number <b>71-43-2</b>
Proposed Emission Rate (lb/hr) <b>7.30x10<sup>-6</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>2.05x10<sup>-4</sup></b>	Vapor Pressure (in. Hg @ °F) <b>3.73 in Hg @ 77 °F</b>
Solubility <b>In water 1.79x10<sup>3</sup> mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>78.11</b>
Absorptive Properties -	

Pollutant Emitted <b>Dichlorobenzene</b>	Chemical Abstract Services (CAS) Number <b>Varies</b>
Proposed Emission Rate (lb/hr) <b>4.17x10<sup>-6</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>6.21x10<sup>-5</sup></b>	Vapor Pressure (in. Hg @ °F) <b>Varies</b>
Solubility <b>Varies</b>	Molecular Weight (lb/lb-mole) <b>147.00</b>
Absorptive Properties -	

Pollutant Emitted <b>Ethylbenzene</b>	Chemical Abstract Services (CAS) Number <b>100-41-4</b>
Proposed Emission Rate (lb/hr) <b><math>5.56 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.15 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.37 in Hg @ 77°F</b>
Solubility <b>In water 0.014 g/100mL @ 59 °F</b>	Molecular Weight (lb/lb-mole) <b>106.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Formaldehyde</b>	Chemical Abstract Services (CAS) Number <b>50-00-0</b>
Proposed Emission Rate (lb/hr) <b><math>2.57 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.88 \times 10^{-2}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.15 in Hg @ 77 °F</b>
Solubility <b>In water <math>4.00 \times 10^5</math> mg/L @ 68°F</b>	Molecular Weight (lb/lb-mole) <b>30.03</b>
Absorptive Properties -	

Pollutant Emitted <b>Hexane</b>	Chemical Abstract Services (CAS) Number <b>110-54-5</b>
Proposed Emission Rate (lb/hr) <b><math>6.26 \times 10^{-3}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.59 \times 10^{-1}</math></b>	Vapor Pressure (in. Hg @ °F) <b>5.90 in Hg @ 68 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>86.1</b>
Absorptive Properties -	

Pollutant Emitted <b>Naphthalene</b>	Chemical Abstract Services (CAS) Number <b>91-20-3</b>
Proposed Emission Rate (lb/hr) <b><math>2.09 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.56 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.003 in Hg @ 77 °F</b>
Solubility <b>In water 31 mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>128.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Toluene</b>	Chemical Abstract Services (CAS) Number <b>108-88-3</b>
Proposed Emission Rate (lb/hr) <b><math>1.15 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>2.73 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>1.12 in Hg @ 77°F</b>
Solubility <b>In water 526 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>92.14</b>
Absorptive Properties -	

Pollutant Emitted <b>Xylene</b>	Chemical Abstract Services (CAS) Number <b>95-47-6</b>
Proposed Emission Rate (lb/hr) <b><math>8.69 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.79 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.26 in Hg @ 77°F</b>
Solubility <b>In water 178 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>106.16</b>
Absorptive Properties -	

Pollutant Emitted <b>PAH</b>	Chemical Abstract Services (CAS) Number <b>N/A</b>
Proposed Emission Rate (lb/hr) <b><math>1.48 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.32 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>N/A</b>
Solubility <b>N/A</b>	Molecular Weight (lb/lb-mole) <b>TBD</b>
Absorptive Properties -	

Pollutant Emitted <b>Antimony</b>	Chemical Abstract Services (CAS) Number <b>7740-36-0</b>
Proposed Emission Rate (lb/hr) <b><math>7.23 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.30 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>121.76</b>
Absorptive Properties -	

Pollutant Emitted <b>Arsenic</b>	Chemical Abstract Services (CAS) Number <b>7440-38-2</b>
Proposed Emission Rate (lb/hr) <b><math>2.78 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>8.13 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Beryllium</b>	Chemical Abstract Services (CAS) Number <b>7440-41-7</b>
Proposed Emission Rate (lb/hr) <b><math>1.81 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.39 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>9.01</b>
Absorptive Properties -	

Pollutant Emitted <b>Cadmium</b>	Chemical Abstract Services (CAS) Number <b>7440-43-9</b>
Proposed Emission Rate (lb/hr) <b><math>1.53 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.98 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Chromium (hexavalent)</b>	Chemical Abstract Services (CAS) Number <b>1333-82-0</b>
Proposed Emission Rate (lb/hr) <b><math>3.89 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.64 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>1,660 g/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Chromium</b>	Chemical Abstract Services (CAS) Number <b>7440-47-3</b>
Proposed Emission Rate (lb/hr) <b><math>1.95 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>8.20 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Cobalt</b>	Chemical Abstract Services (CAS) Number <b>7440-48-4</b>
Proposed Emission Rate (lb/hr) <b><math>1.14 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.24 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.93</b>
Absorptive Properties -	

Pollutant Emitted <b>Manganese</b>	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) <b><math>5.14 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.05 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>54.94</b>
Absorptive Properties -	

Pollutant Emitted <b>Mercury</b>	Chemical Abstract Services (CAS) Number <b>7439-97-6</b>
Proposed Emission Rate (lb/hr) <b><math>3.48 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.80 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b><math>7.85 \times 10^{-5}</math> in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>200.59</b>
Absorptive Properties -	

Pollutant Emitted <b>Nickel</b>	Chemical Abstract Services (CAS) Number <b>7044-02-0</b>
Proposed Emission Rate (lb/hr) <b><math>2.92 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.09 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg Q 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.69</b>
Absorptive Properties -	

Pollutant Emitted <b>Selenium</b>	Chemical Abstract Services (CAS) Number <b>7782-49-2</b>
Proposed Emission Rate (lb/hr) <b><math>1.22 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.39 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.29 in Hg @ 807</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>78.96</b>
Absorptive Properties -	

Signature of Applicant 	Date 09/26/2016
--	--------------------

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

**SECTION A2 - FACILITY INFORMATION**

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

Describe Nature of Business/Process  <b>Petroleum Refining / Fluid Catalytic Cracking / Raw Charger Heater</b>
--

**SECTION B – STACK DATA**

Inside Diameter (ft) <b>5.5</b>	Height Above Grade (ft) <b>72.0</b>	
Gas Temperature at Exit (°F) <b>785.0</b>	Gas Velocity at Exit (ft/sec) <b>9.9</b>	Gas Volume (scfm) <b>14,110.55</b>
Basis of any Estimates (attach separate sheet if necessary) <b>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"</b>		
Are Emission Control Devices in Place? If YES – Complete SFN 8532		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Nearest Residences or Building <b>Utility building</b>	Distance (ft) <b>718 ft</b>	Direction <b>South</b>
Nearest Property Line <b>Fenceline</b>	Distance (ft) <b>460 ft</b>	Direction <b>South</b>

**SECTION C – EMISSION STREAM DATA**

Source ID No. From SFN 8516 <b>112-H-1201</b>	Mean Particle Diameter (µm) <b>TBD</b>
Flow Rate (scfm) <b>14,110.5</b>	Drift Velocity (ft/sec) <b>9.9</b>
Stream Temperature (°F) <b>785.0</b>	Particulate Concentration (gr/dscf) <b>TBD</b>
Moisture Content (%) <b>TBD</b>	Halogens or Metals Present? <b>Metals</b>
Pressure (in. Hg) <b>TBD</b>	Organic Content (ppmv) <b>1.86x10<sup>-1</sup></b>
Heat Content (Btu/scfm) <b>TBD</b>	O <sub>2</sub> Content (%) <b>N/A</b>

**SECTION D – POLLUTANT SPECIFIC DATA**

**(Complete One Box for Each Pollutant in Emission Stream)**

Pollutant Emitted <b>Acetaldehyde</b>	Chemical Abstract Services (CAS) Number <b>75-07-0</b>
Proposed Emission Rate (lb/hr) <b>8.51x10<sup>-5</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic Vapor</b>
Concentration in Emission Stream (ppmv) <b>2.07x10<sup>-3</sup></b>	Vapor Pressure (in. Hg @ °F) <b>35.51 in Hg @ 68°C</b>
Solubility <b>1x10<sup>+6</sup> mg/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>44.05</b>
Absorptive Properties -	

Pollutant Emitted <b>Benzene</b>	Chemical Abstract Services (CAS) Number <b>71-43-2</b>
Proposed Emission Rate (lb/hr) <b>1.49x10<sup>-5</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>2.05x10<sup>-4</sup></b>	Vapor Pressure (in. Hg @ °F) <b>3.73 in Hg @ 77 °F</b>
Solubility <b>In water 1.79x10<sup>3</sup> mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>78.11</b>
Absorptive Properties -	

Pollutant Emitted <b>Dichlorobenzene</b>	Chemical Abstract Services (CAS) Number <b>Varies</b>
Proposed Emission Rate (lb/hr) <b>8.51x10<sup>-6</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>6.22x10<sup>-5</sup></b>	Vapor Pressure (in. Hg @ °F) <b>Varies</b>
Solubility <b>Varies</b>	Molecular Weight (lb/lb-mole) <b>147.00</b>
Absorptive Properties -	

Pollutant Emitted <b>Ethylbenzene</b>	Chemical Abstract Services (CAS) Number <b>100-41-4</b>
Proposed Emission Rate (lb/hr) <b><math>1.13 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.15 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.37 in Hg @ 77°F</b>
Solubility <b>In water 0.014 g/100mL @ 59 °F</b>	Molecular Weight (lb/lb-mole) <b>106.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Formaldehyde</b>	Chemical Abstract Services (CAS) Number <b>50-00-0</b>
Proposed Emission Rate (lb/hr) <b><math>5.24 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.88 \times 10^{-2}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.15 in Hg @ 77 °F</b>
Solubility <b>In water <math>4.00 \times 10^5</math> mg/L @ 68°F</b>	Molecular Weight (lb/lb-mole) <b>30.03</b>
Absorptive Properties -	

Pollutant Emitted <b>Hexane</b>	Chemical Abstract Services (CAS) Number <b>110-54-5</b>
Proposed Emission Rate (lb/hr) <b><math>1.28 \times 10^{-2}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.59 \times 10^{-1}</math></b>	Vapor Pressure (in. Hg @ °F) <b>5.90 in Hg @ 68 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>86.1</b>
Absorptive Properties -	

Pollutant Emitted <b>Naphthalene</b>	Chemical Abstract Services (CAS) Number <b>91-20-3</b>
Proposed Emission Rate (lb/hr) <b><math>4.25 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.56 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.003 in Hg @ 77 °F</b>
Solubility <b>In water 31 mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>128.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Toluene</b>	Chemical Abstract Services (CAS) Number <b>108-88-3</b>
Proposed Emission Rate (lb/hr) <b><math>2.34 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>2.73 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>1.12 in Hg @ 77°F</b>
Solubility <b>In water 526 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>92.14</b>
Absorptive Properties -	

Pollutant Emitted <b>Xylene</b>	Chemical Abstract Services (CAS) Number <b>95-47-6</b>
Proposed Emission Rate (lb/hr) <b><math>1.77 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.79 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.26 in Hg @ 77°F</b>
Solubility <b>In water 178 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>106.16</b>
Absorptive Properties -	

Pollutant Emitted <b>PAH</b>	Chemical Abstract Services (CAS) Number <b>N/A</b>
Proposed Emission Rate (lb/hr) <b><math>3.02 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.32 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>N/A</b>
Solubility <b>N/A</b>	Molecular Weight (lb/lb-mole) <b>TBD</b>
Absorptive Properties -	

Pollutant Emitted <b>Antimony</b>	Chemical Abstract Services (CAS) Number <b>7740-36-0</b>
Proposed Emission Rate (lb/hr) <b><math>1.47 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.30 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>121.76</b>
Absorptive Properties -	

Pollutant Emitted <b>Arsenic</b>	Chemical Abstract Services (CAS) Number <b>7440-38-2</b>
Proposed Emission Rate (lb/hr) <b><math>5.67 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>8.13 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Beryllium</b>	Chemical Abstract Services (CAS) Number <b>7440-41-7</b>
Proposed Emission Rate (lb/hr) <b><math>3.69 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.39 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>9.01</b>
Absorptive Properties -	

Pollutant Emitted <b>Cadmium</b>	Chemical Abstract Services (CAS) Number <b>7440-43-9</b>
Proposed Emission Rate (lb/hr) <b><math>3.12 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.98 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Chromium (hexavalent)</b>	Chemical Abstract Services (CAS) Number <b>1333-82-0</b>
Proposed Emission Rate (lb/hr) <b><math>7.94 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.64 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>1,660 g/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Chromium</b>	Chemical Abstract Services (CAS) Number <b>7440-47-3</b>
Proposed Emission Rate (lb/hr) <b><math>3.97 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>8.20 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Cobalt</b>	Chemical Abstract Services (CAS) Number <b>7440-48-4</b>
Proposed Emission Rate (lb/hr) <b><math>2.32 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.24 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.93</b>
Absorptive Properties -	

Pollutant Emitted <b>Manganese</b>	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) <b><math>1.05 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.05 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>54.94</b>
Absorptive Properties -	

Pollutant Emitted <b>Mercury</b>	Chemical Abstract Services (CAS) Number <b>7439-97-6</b>
Proposed Emission Rate (lb/hr) <b><math>7.09 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.80 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b><math>7.85 \times 10^{-5}</math> in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>200.59</b>
Absorptive Properties -	

Pollutant Emitted <b>Nickel</b>	Chemical Abstract Services (CAS) Number <b>7044-02-0</b>
Proposed Emission Rate (lb/hr) <b><math>5.95 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.09 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.69</b>
Absorptive Properties -	

Pollutant Emitted <b>Selenium</b>	Chemical Abstract Services (CAS) Number <b>7782-49-2</b>
Proposed Emission Rate (lb/hr) <b><math>2.49 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.39 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.29 in Hg @ 807</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>78.96</b>
Absorptive Properties -	

Signature of Applicant 	Date 09/26/2016
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**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 <b>Meridian Energy Group - Davis Refinery</b>		
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>

**SECTION A2 - FACILITY INFORMATION**

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

Describe Nature of Business/Process  <b>Petroleum Refining / FCC Naphtha Hydrotreater / Heater</b>
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**SECTION B – STACK DATA**

Inside Diameter (ft) <b>3.0</b>	Height Above Grade (ft) <b>91.0</b>	
Gas Temperature at Exit (°F) <b>784.3</b>	Gas Velocity at Exit (ft/sec) <b>20.5</b>	Gas Volume (scfm) <b>8,699.78</b>
Basis of any Estimates (attach separate sheet if necessary) <b>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"</b>		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 <span style="float: right;">Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></span>		
Nearest Residences or Building <b>Utility building</b>	Distance (ft) <b>696 ft</b>	Direction <b>South</b>
Nearest Property Line <b>Fenceline</b>	Distance (ft) <b>744 ft</b>	Direction <b>South</b>

**SECTION C – EMISSION STREAM DATA**

Source ID No. From SFN 8516 <b>114-H-1401</b>	Mean Particle Diameter (µm) <b>TBD</b>
Flow Rate (scfm) <b>8,699.78</b>	Drift Velocity (ft/sec) <b>20.5</b>
Stream Temperature (°F) <b>784.3</b>	Particulate Concentration (gr/dscf) <b>TBD</b>
Moisture Content (%) <b>TBD</b>	Halogens or Metals Present? <b>Metals</b>
Pressure (in. Hg) <b>TBD</b>	Organic Content (ppmv) <b><math>3.72 \times 10^{-1}</math></b>
Heat Content (Btu/scfm) <b>TBD</b>	O <sub>2</sub> Content (%) <b>N/A</b>

**SECTION D – POLLUTANT SPECIFIC DATA**

**(Complete One Box for Each Pollutant in Emission Stream)**

Pollutant Emitted <b>Acetaldehyde</b>	Chemical Abstract Services (CAS) Number <b>75-07-0</b>
Proposed Emission Rate (lb/hr) <b><math>5.24 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>2.07 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>35.51 in Hg @ 68°C</b>
Solubility <b><math>1 \times 10^{+6}</math> mg/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>44.05</b>
Absorptive Properties -	

Pollutant Emitted <b>Benzene</b>	Chemical Abstract Services (CAS) Number <b>71-43-2</b>
Proposed Emission Rate (lb/hr) <b><math>9.18 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>2.05 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>3.73 in Hg @ 77 °F</b>
Solubility <b>In water <math>1.79 \times 10^3</math> mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>78.11</b>
Absorptive Properties -	

Pollutant Emitted <b>Dichlorobenzene</b>	Chemical Abstract Services (CAS) Number <b>Varies</b>
Proposed Emission Rate (lb/hr) <b><math>5.24 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>6.21 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>Varies</b>
Solubility <b>Varies</b>	Molecular Weight (lb/lb-mole) <b>147.00</b>
Absorptive Properties -	

Pollutant Emitted <b>Ethylbenzene</b>	Chemical Abstract Services (CAS) Number <b>100-41-4</b>
Proposed Emission Rate (lb/hr) <b><math>6.99 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.15 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.37 in Hg @ 77°F</b>
Solubility <b>In water 0.014 g/100mL @ 59 °F</b>	Molecular Weight (lb/lb-mole) <b>106.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Formaldehyde</b>	Chemical Abstract Services (CAS) Number <b>50-00-0</b>
Proposed Emission Rate (lb/hr) <b><math>3.23 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.88 \times 10^{-2}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.15 in Hg @ 77 °F</b>
Solubility <b>In water <math>4.00 \times 10^5</math> mg/L @ 68°F</b>	Molecular Weight (lb/lb-mole) <b>30.03</b>
Absorptive Properties -	

Pollutant Emitted <b>Hexane</b>	Chemical Abstract Services (CAS) Number <b>110-54-5</b>
Proposed Emission Rate (lb/hr) <b><math>7.87 \times 10^{-3}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.59 \times 10^{-1}</math></b>	Vapor Pressure (in. Hg @ °F) <b>5.90 in Hg @ 68 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>86.1</b>
Absorptive Properties -	

Pollutant Emitted <b>Naphthalene</b>	Chemical Abstract Services (CAS) Number <b>91-20-3</b>
Proposed Emission Rate (lb/hr) <b><math>2.62 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.56 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.003 in Hg @ 77 °F</b>
Solubility <b>In water 31 mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>128.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Toluene</b>	Chemical Abstract Services (CAS) Number <b>108-88-3</b>
Proposed Emission Rate (lb/hr) <b><math>1.44 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>2.73 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>1.12 in Hg @ 77°F</b>
Solubility <b>In water 526 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>92.14</b>
Absorptive Properties -	

Pollutant Emitted <b>Xylene</b>	Chemical Abstract Services (CAS) Number <b>95-47-6</b>
Proposed Emission Rate (lb/hr) <b><math>1.09 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.79 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.26 in Hg @ 77°F</b>
Solubility <b>In water 178 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>106.16</b>
Absorptive Properties -	

Pollutant Emitted <b>PAH</b>	Chemical Abstract Services (CAS) Number <b>N/A</b>
Proposed Emission Rate (lb/hr) <b><math>1.86 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.32 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>N/A</b>
Solubility <b>N/A</b>	Molecular Weight (lb/lb-mole) <b>TBD</b>
Absorptive Properties -	

Pollutant Emitted <b>Antimony</b>	Chemical Abstract Services (CAS) Number <b>7740-36-0</b>
Proposed Emission Rate (lb/hr) <b><math>9.09 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.30 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>121.76</b>
Absorptive Properties -	

Pollutant Emitted <b>Arsenic</b>	Chemical Abstract Services (CAS) Number <b>7440-38-2</b>
Proposed Emission Rate (lb/hr) <b><math>3.50 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>8.13 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Beryllium</b>	Chemical Abstract Services (CAS) Number <b>7440-41-7</b>
Proposed Emission Rate (lb/hr) <b><math>2.27 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.39 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>9.01</b>
Absorptive Properties -	

Pollutant Emitted <b>Cadmium</b>	Chemical Abstract Services (CAS) Number <b>7440-43-9</b>
Proposed Emission Rate (lb/hr) <b><math>1.92 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.98 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Chromium (hexavalent)</b>	Chemical Abstract Services (CAS) Number <b>1333-82-0</b>
Proposed Emission Rate (lb/hr) <b><math>4.89 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.64 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>1,660 g/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Chromium</b>	Chemical Abstract Services (CAS) Number <b>7440-47-3</b>
Proposed Emission Rate (lb/hr) <b><math>2.45 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>8.20 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Cobalt</b>	Chemical Abstract Services (CAS) Number <b>7440-48-4</b>
Proposed Emission Rate (lb/hr) <b><math>1.43 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.24 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.93</b>
Absorptive Properties -	

Pollutant Emitted <b>Manganese</b>	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) <b><math>6.47 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.05 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>54.94</b>
Absorptive Properties -	

Pollutant Emitted <b>Mercury</b>	Chemical Abstract Services (CAS) Number <b>7439-97-6</b>
Proposed Emission Rate (lb/hr) <b><math>4.37 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.79 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b><math>7.85 \times 10^{-5}</math> in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>200.59</b>
Absorptive Properties -	

Pollutant Emitted <b>Nickel</b>	Chemical Abstract Services (CAS) Number <b>7044-02-0</b>
Proposed Emission Rate (lb/hr) <b><math>3.67 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.09 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.69</b>
Absorptive Properties -	

Pollutant Emitted <b>Selenium</b>	Chemical Abstract Services (CAS) Number <b>7782-49-2</b>
Proposed Emission Rate (lb/hr) <b><math>1.54 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.39 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.29 in Hg @ 807</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>78.96</b>
Absorptive Properties -	

Signature of Applicant 	Date 09/26/2016
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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 <b>Meridian Energy Group - Davis Refinery</b>		
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>

**SECTION A2 - FACILITY INFORMATION**

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

Describe Nature of Business/Process  <b>Petroleum Refining / Isomerization heater #1</b>
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**SECTION B – STACK DATA**

Inside Diameter (ft) <b>2.7</b>	Height Above Grade (ft) <b>36.0</b>	
Gas Temperature at Exit (°F) <b>823.8</b>	Gas Velocity at Exit (ft/sec) <b>2.5</b>	Gas Volume (scfm) <b>852.56</b>
Basis of any Estimates (attach separate sheet if necessary) <b>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"</b>		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 <span style="float: right;">Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></span>		
Nearest Residences or Building <b>Utility building</b>	Distance (ft) <b>959 ft</b>	Direction <b>Southwest</b>
Nearest Property Line <b>Fenceline</b>	Distance (ft) <b>708 ft</b>	Direction <b>East</b>

### SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 <b>117-H-1701</b>	Mean Particle Diameter (µm) <b>TBD</b>
Flow Rate (scfm) <b>852.56</b>	Drift Velocity (ft/sec) <b>2.5</b>
Stream Temperature (°F) <b>823.8</b>	Particulate Concentration (gr/dscf) <b>TBD</b>
Moisture Content (%) <b>TBD</b>	Halogens or Metals Present? <b>Metals</b>
Pressure (in. Hg) <b>TBD</b>	Organic Content (ppmv) <b>1.85x10<sup>-1</sup></b>
Heat Content (Btu/scfm) <b>TBD</b>	O <sub>2</sub> Content (%) <b>N/A</b>

### SECTION D – POLLUTANT SPECIFIC DATA

(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted <b>Acetaldehyde</b>	Chemical Abstract Services (CAS) Number <b>75-07-0</b>
Proposed Emission Rate (lb/hr) <b>4.95x10<sup>-6</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic Vapor</b>
Concentration in Emission Stream (ppmv) <b>2.06x10<sup>-3</sup></b>	Vapor Pressure (in. Hg @ °F) <b>35.51 in Hg @ 68°C</b>
Solubility <b>1x10<sup>+6</sup> mg/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>44.05</b>
Absorptive Properties -	

Pollutant Emitted <b>Benzene</b>	Chemical Abstract Services (CAS) Number <b>71-43-2</b>
Proposed Emission Rate (lb/hr) <b>8.66x10<sup>-7</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>2.03x10<sup>-4</sup></b>	Vapor Pressure (in. Hg @ °F) <b>3.73 in Hg @ 77 °F</b>
Solubility <b>In water 1.79x10<sup>3</sup> mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>78.11</b>
Absorptive Properties -	

Pollutant Emitted <b>Dichlorobenzene</b>	Chemical Abstract Services (CAS) Number <b>Varies</b>
Proposed Emission Rate (lb/hr) <b>4.95x10<sup>-7</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>6.17x10<sup>-5</sup></b>	Vapor Pressure (in. Hg @ °F) <b>Varies</b>
Solubility <b>Varies</b>	Molecular Weight (lb/lb-mole) <b>147.00</b>
Absorptive Properties -	

Pollutant Emitted <b>Ethylbenzene</b>	Chemical Abstract Services (CAS) Number <b>100-41-4</b>
Proposed Emission Rate (lb/hr) <b><math>6.60 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.14 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.37 in Hg @ 77°F</b>
Solubility <b>In water 0.014 g/100mL @ 59 °F</b>	Molecular Weight (lb/lb-mole) <b>106.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Formaldehyde</b>	Chemical Abstract Services (CAS) Number <b>50-00-0</b>
Proposed Emission Rate (lb/hr) <b><math>3.05 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.86 \times 10^{-2}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.15 in Hg @ 77 °F</b>
Solubility <b>In water <math>4.00 \times 10^5</math> mg/L @ 68°F</b>	Molecular Weight (lb/lb-mole) <b>30.03</b>
Absorptive Properties -	

Pollutant Emitted <b>Hexane</b>	Chemical Abstract Services (CAS) Number <b>110-54-5</b>
Proposed Emission Rate (lb/hr) <b><math>7.43 \times 10^{-4}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.58 \times 10^{-1}</math></b>	Vapor Pressure (in. Hg @ °F) <b>5.90 in Hg @ 68 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>86.1</b>
Absorptive Properties -	

Pollutant Emitted <b>Naphthalene</b>	Chemical Abstract Services (CAS) Number <b>91-20-3</b>
Proposed Emission Rate (lb/hr) <b><math>2.48 \times 10^{-7}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.54 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.003 in Hg @ 77 °F</b>
Solubility <b>In water 31 mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>128.17</b>
Absorptive Properties -	

Pollutant Emitted <b>Toluene</b>	Chemical Abstract Services (CAS) Number <b>108-88-3</b>
Proposed Emission Rate (lb/hr) <b><math>1.36 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>2.71 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>1.12 in Hg @ 77°F</b>
Solubility <b>In water 526 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>92.14</b>
Absorptive Properties -	

Pollutant Emitted <b>Xylene</b>	Chemical Abstract Services (CAS) Number <b>95-47-6</b>
Proposed Emission Rate (lb/hr) <b><math>1.03 \times 10^{-5}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>1.78 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.26 in Hg @ 77°F</b>
Solubility <b>In water 178 mg/L @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>106.16</b>
Absorptive Properties -	

Pollutant Emitted <b>PAH</b>	Chemical Abstract Services (CAS) Number <b>N/A</b>
Proposed Emission Rate (lb/hr) <b><math>1.76 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b><math>3.30 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>N/A</b>
Solubility <b>N/A</b>	Molecular Weight (lb/lb-mole) <b>TBD</b>
Absorptive Properties -	

Pollutant Emitted <b>Antimony</b>	Chemical Abstract Services (CAS) Number <b>7740-36-0</b>
Proposed Emission Rate (lb/hr) <b><math>8.58 \times 10^{-7}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.29 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>121.76</b>
Absorptive Properties -	

Pollutant Emitted <b>Arsenic</b>	Chemical Abstract Services (CAS) Number <b>7440-38-2</b>
Proposed Emission Rate (lb/hr) <b><math>3.30 \times 10^{-7}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>8.08 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Beryllium</b>	Chemical Abstract Services (CAS) Number <b>7440-41-7</b>
Proposed Emission Rate (lb/hr) <b><math>2.15 \times 10^{-7}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.37 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>9.01</b>
Absorptive Properties -	

Pollutant Emitted <b>Cadmium</b>	Chemical Abstract Services (CAS) Number <b>7440-43-9</b>
Proposed Emission Rate (lb/hr) <b><math>1.82 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.96 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted <b>Chromium (hexavalent)</b>	Chemical Abstract Services (CAS) Number <b>1333-82-0</b>
Proposed Emission Rate (lb/hr) <b><math>4.62 \times 10^{-7}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.63 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>1,660 g/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Chromium</b>	Chemical Abstract Services (CAS) Number <b>7440-47-3</b>
Proposed Emission Rate (lb/hr) <b><math>2.31 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>8.15 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>51.99</b>
Absorptive Properties -	

Pollutant Emitted <b>Cobalt</b>	Chemical Abstract Services (CAS) Number <b>7440-48-4</b>
Proposed Emission Rate (lb/hr) <b><math>1.35 \times 10^{-7}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>4.21 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.93</b>
Absorptive Properties -	

Pollutant Emitted <b>Manganese</b>	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) <b><math>6.11 \times 10^{-7}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>2.04 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>54.94</b>
Absorptive Properties -	

Pollutant Emitted <b>Mercury</b>	Chemical Abstract Services (CAS) Number <b>7439-97-6</b>
Proposed Emission Rate (lb/hr) <b><math>4.13 \times 10^{-7}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.77 \times 10^{-5}</math></b>	Vapor Pressure (in. Hg @ °F) <b><math>7.85 \times 10^{-5}</math> in Hg @ 77 °F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>200.59</b>
Absorptive Properties -	

Pollutant Emitted <b>Nickel</b>	Chemical Abstract Services (CAS) Number <b>7044-02-0</b>
Proposed Emission Rate (lb/hr) <b><math>3.47 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>1.08 \times 10^{-3}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0 in Hg Q 77°F</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>58.69</b>
Absorptive Properties -	

Pollutant Emitted <b>Selenium</b>	Chemical Abstract Services (CAS) Number <b>7782-49-2</b>
Proposed Emission Rate (lb/hr) <b><math>1.45 \times 10^{-6}</math></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Inorganic/Particulate</b>
Concentration in Emission Stream (ppmv) <b><math>3.37 \times 10^{-4}</math></b>	Vapor Pressure (in. Hg @ °F) <b>0.29 in Hg @ 807</b>
Solubility <b>Insoluble in water</b>	Molecular Weight (lb/lb-mole) <b>78.96</b>
Absorptive Properties -	

Signature of Applicant 	Date 09/26/2016
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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 <b>Meridian Energy Group - Davis Refinery</b>		
Applicant's Name <b>Tom Williams</b>		
Title <b>VP of Planning &amp; Permitting</b>	Telephone Number <b>(707) 299-0182</b>	E-mail Address <b>twilliams@meridianenergygroup.inc</b>
Mailing Address (Street & No.) <b>2062 Business Center Drive, Suite 115</b>		
City <b>Irvine</b>	State <b>CA</b>	ZIP Code <b>92612</b>

**SECTION A2 - FACILITY INFORMATION**

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

Describe Nature of Business/Process  <b>Petroleum Refining / Isomerization heater #2</b>
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**SECTION B – STACK DATA**

Inside Diameter (ft) <b>4.6</b>	Height Above Grade (ft) <b>46.0</b>	
Gas Temperature at Exit (°F) <b>787.7</b>	Gas Velocity at Exit (ft/sec) <b>1.9</b>	Gas Volume (scfm) <b>1,872.75</b>
Basis of any Estimates (attach separate sheet if necessary) <b>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"</b>		
Are Emission Control Devices in Place? If YES – Complete SFN 8532		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Nearest Residences or Building <b>Utility building</b>	Distance (ft) <b>947 ft</b>	Direction <b>Southwest</b>
Nearest Property Line <b>Fenceline</b>	Distance (ft) <b>708 ft</b>	Direction <b>East</b>

**SECTION C – EMISSION STREAM DATA**

Source ID No. From SFN 8516 <b>117-H-1702</b>	Mean Particle Diameter (µm) <b>TBD</b>
Flow Rate (scfm) <b>1,872.75</b>	Drift Velocity (ft/sec) <b>1.9</b>
Stream Temperature (°F) <b>787.7</b>	Particulate Concentration (gr/dscf) <b>TBD</b>
Moisture Content (%) <b>TBD</b>	Halogens or Metals Present? <b>Metals</b>
Pressure (in. Hg) <b>TBD</b>	Organic Content (ppmv) <b>1.86x10<sup>-1</sup></b>
Heat Content (Btu/scfm) <b>TBD</b>	O <sub>2</sub> Content (%) <b>N/A</b>

**SECTION D – POLLUTANT SPECIFIC DATA**

**(Complete One Box for Each Pollutant in Emission Stream)**

Pollutant Emitted <b>Acetaldehyde</b>	Chemical Abstract Services (CAS) Number <b>75-07-0</b>
Proposed Emission Rate (lb/hr) <b>1.13x10<sup>-5</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic Vapor</b>
Concentration in Emission Stream (ppmv) <b>2.07x10<sup>-3</sup></b>	Vapor Pressure (in. Hg @ °F) <b>35.51 in Hg @ 68°C</b>
Solubility <b>1x10<sup>+6</sup> mg/L in water @ 77°F</b>	Molecular Weight (lb/lb-mole) <b>44.05</b>
Absorptive Properties -	

Pollutant Emitted <b>Benzene</b>	Chemical Abstract Services (CAS) Number <b>71-43-2</b>
Proposed Emission Rate (lb/hr) <b>1.97x10<sup>-6</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>2.04x10<sup>-4</sup></b>	Vapor Pressure (in. Hg @ °F) <b>3.73 in Hg @ 77 °F</b>
Solubility <b>In water 1.79x10<sup>3</sup> mg/L @ 77 °F</b>	Molecular Weight (lb/lb-mole) <b>78.11</b>
Absorptive Properties -	

Pollutant Emitted <b>Dichlorobenzene</b>	Chemical Abstract Services (CAS) Number <b>Varies</b>
Proposed Emission Rate (lb/hr) <b>1.13x10<sup>-6</sup></b>	Emission Source (describe) <b>Process Point</b>
Source Classification (process point, process fugitive, area fugitive) <b>Process Point</b>	Pollutant Class and Form (organic/inorganic - particulate/vapor) <b>Organic /Vapor</b>
Concentration in Emission Stream (ppmv) <b>6.21x10<sup>-5</sup></b>	Vapor Pressure (in. Hg @ °F) <b>Varies</b>
Solubility <b>Varies</b>	Molecular Weight (lb/lb-mole) <b>147.00</b>
Absorptive Properties -	