

# Natural Gas Fields

## Duchesne County

### Emissions Worksheet

#### Well Completions

Flaring / Flashing / Venting etc.

Total Number of Wells Completed	Total Gas and Liquids Flared or Combusted During Completion					Emissions		
	Gas Flared (mmcf)	Gas Vented (mmcf)	Condensate Flared (bbl)	Condensate Vented (bbl)	Diesel Flared (bbl)	VOC (tons/yr)	NO <sub>x</sub> (tons/yr)	CO (tons/yr)
	8	0	11.32	0	0	0	20.59	0.00

#### RICE / Turbines

Total Number of Units	Total FUEL Combusted	AP-42 Emissions					
		PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
7	31	0.17	0.17	0.02	3.77	0.07	6.36

  

Total Number of Units	Total FUEL Combusted	Total Engine Power (bhp)	Manufacturer or Stack Test Emissions					
			PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
3	53	775	0.56	0.56	0.00	7.72	2.31	3.86

**Separators/Line Heaters/Heater-Treaters**

Total Number of Units	Total Fuel Combusted	Units	Emissions					
			PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
17	15.71	mmcf/yr	0.07	0.07	0.00	0.78	0.05	0.66

**Dehydrators Etc.**

**Gas Fired Glycol Reboilers**

Total Number of Units	Total Fuel Combusted	Units	Emissions					
			PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
17	3.03	mmcf/yr	0.02	0.02	0.00	0.15	0.00	0.12

**Still Column Reboiler Vent Lines**

Total Number of Units	Total Hours	Emissions
		VOC (tons/yr)
17	148920	255.26

**Condensate Tanks**

**Condensate Vent Lines**

Total Number of Units	Emissions*
	VOC (tons/yr)
24	650.3

**Truck Loading**

Amount Loaded Annually (bbl/yr)	Emissions*
	VOC (tons/yr)
28,543	28.926

**Wellsite Fugitives**

Total Number of Facilities	Total Hours	Emissions
		VOC (tons/yr)
17	148920	53.9

**Pneumatic Devices**

Number of Devices	Hours	Total Emissions	
		Methane (tons/yr)	VOC (tons/yr)
		92	805920

**Fugitive Dust From Roads**

**Main Data Entry**

Vehicle Category*	Total Number of Round Trips	Total Number of Wells
Construction Activities	5636	15
Drilling Activities	5925	15
Completion Activities	7276	14
Production Operations	8699	17

**Optional Data Entry / Calculations**

Vehicle Miles Traveled (vmt/yr)	Emissions	
	PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)
38,864	20.89	3.21

## Natural Gas Fields

### Uintah County

#### Emissions Worksheet

#### Well Completions

Flaring / Flashing / Venting etc.

Total Number of Wells Completed	Total Gas and Liquids Flared or Combusted During Completion					Emissions		
	Gas Flared (mmcf)	Gas Vented (mmcf)	Condensate Flared (bbl)	Condensate Vented (bbl)	Diesel Flared (bbl)	VOC (tons/yr)	NO <sub>x</sub> (tons/yr)	CO (tons/yr)
337	0	981.1524	0	276	0	1786.10	0.00	0.00

#### RICE / Turbines

Total Number of Units	Total FUEL Combusted	AP-42 Emissions					
		PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
1	11	0.06	0.06	0.00	1.34	0.03	2.25

  

Total Number of Units	Total FUEL Combusted	Total Engine Power (bhp)	Manufacturer or Stack Test Emissions					
			PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
76	1,706	87,936	17.85	17.85	0.09	1348.68	317.27	1295.18

### Separators/Line Heaters/Heater-Treaters

Total Number of Units	Total Fuel Combusted	Units	Emissions					
			PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
2789	2831.68	mmcf/yr	10.62	10.62	0.84	139.68	7.68	117.33

### Dehydrators Etc.

#### Gas Fired Glycol Reboilers

Total Number of Units	Total Fuel Combusted	Units	Emissions					
			PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
1420	1418.47	mmcf/yr	5.34	5.34	0.42	70.29	3.87	59.04

#### Still Column Reboiler Vent Lines

Total Number of Units	Total Hours	Emissions
		VOC (tons/yr)
1420	10005535.44	7166.52

### Condensate Tanks

#### Condensate Vent Lines

Total Number of Units	Emissions*
	VOC (tons/yr)
2771	8617.2

### Truck Loading

Amount Loaded Annually (bbl/yr)	Emissions*
	VOC (tons/yr)
1,164,553	284.60

**Wellsite Fugitives**

Total Number of Facilities	Total Hours	Emissions
		VOC (tons/yr)
2817	24298488	3473.7

**Pneumatic Devices**

Number of Devices	Hours	Total Emissions	
		Methane (tons/yr)	VOC (tons/yr)
		12213	106985880

**Fugitive Dust From Roads**

**Main Data Entry**

Vehicle Category*	Total Number of Round Trips	Total Number of Wells
Construction Activities	37077	381
Drilling Activities	42912	381
Completion Activities	26312	348
Production Operations	184310	2422

**Optional Data Entry / Calculations**

Vehicle Miles Traveled (vmt/yr)	Emissions	
	PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)
	5,911,514	3199.54

## Summary

### Totals for Natural Gas Fields

County	PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
Duchesne	21.71	4.03	0.02	12.42	1016.81	11.00
Uintah	3233.41	524.47	1.35	1559.99	24185.07	1473.80
<b>Totals</b>	<b>3255.12</b>	<b>528.50</b>	<b>1.37</b>	<b>1572.41</b>	<b>25201.88</b>	<b>1484.80</b>

### Totals for Oil Fields

County	PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
Duchesne	307.11	70.96	1.79	2479.61	2857.71	916.12
Uintah	216.32	47.37	2.11	1078.09	735.07	598.61
<b>Totals</b>	<b>523.43</b>	<b>118.33</b>	<b>3.90</b>	<b>3557.70</b>	<b>3592.78</b>	<b>1514.73</b>

### Totals by County

County	PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
Duchesne	328.82	74.99	1.81	2492.03	3874.52	927.12
Uintah	3449.73	571.84	3.46	2638.08	24920.14	2072.41
<b>Totals</b>	<b>3778.55</b>	<b>646.83</b>	<b>5.27</b>	<b>5130.11</b>	<b>28794.66</b>	<b>2999.53</b>

## Oil Fields

### Duchesne County

#### Emissions Worksheet

#### RICE / Turbines

Total Number of Units	Total FUEL Combusted	AP-42 Emissions					
		PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
331	897	16.75	16.75	0.28	1553.73	57.29	181.64

  

Total Number of Units	Total FUEL Combusted	Total Engine Power (bhp)	Manufacturer or Stack Test Emissions					
			PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
541	807	26,930	24.07	4.73	0.70	791.40	227.11	621.51



**Separators/Line Heaters/Heater-Treaters**

Total Number of Units	Total Fuel Combusted	Units	Emissions					
			PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
1848	2654.92	mmcf/yr	10.09	10.09	0.80	132.75	7.30	111.51

**Dehydrators Etc.**

**Gas Fired Glycol Reboilers**

Total Number of Units	Total Fuel Combusted	Units	Emissions					
			PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
7	34.68	mmcf/yr	0.13	0.13	0.01	1.73	0.10	1.46

**Still Column Reboiler Vent Lines**

Total Number of Units	Total Hours	Emissions
		VOC (tons/yr)
7	61320	390.61

**Oil Tanks**

Total Number of Units	Emissions*
	VOC (tons/yr)
1661	1450.2

**Truck Loading**

Amount Loaded Annually (bbl/yr)	Emissions*
	VOC (tons/yr)
6,341,431	651.20

**Wellsite Fugitives**

Total Number of Facilities	Total Hours	Emissions
		VOC (tons/yr)
1108	9698400	29.4

**Pneumatic Devices**

Total		Total	
Number of Devices	Hours	Emissions	Emissions
		Methane (tons/yr)	VOC (tons/yr)
305	2671800	400.08	44.5

**Fugitive Dust From Roads**

**Main Data Entry**

Vehicle Category*	Total Number of Round Trips	Total Number of Wells
Construction Activities	240	299
Drilling Activities	448	272
Completion Activities	400	286
Production Operations	5495	979

**Optional Data Entry / Calculations**

Vehicle Miles Traveled (vmt/yr)	Emissions	
	PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)
521,586	256.07	39.26

# Oil Fields

## Uintah County

### Emissions Worksheet

#### RICE / Turbines

Total Number of Units	Total FUEL Combusted	AP-42 Emissions					
		PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
122	786	5.86	5.86	1.03	395.66	12.02	75.88

  

Total Number of Units	Total FUEL Combusted	Total Engine Power (bhp)	Manufacturer or Stack Test Emissions					
			PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
429	445	16,495	19.36	3.80	0.30	551.78	164.31	412.99

**Separators/Line Heaters/Heater-Treaters**

Total Number of Units	Total Fuel Combusted	Units	Emissions					
			PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
1268	2237.82	mmcf/yr	8.78	8.78	0.69	115.55	6.36	97.06

**Dehydrators Etc.**

**Gas Fired Glycol Reboilers**

Total Number of Units	Total Fuel Combusted	Units	Emissions					
			PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)	SO <sub>x</sub> (tons/yr)	NO <sub>x</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)
3	302	mmcf/yr	1.15	1.15	0.09	15.10	0.83	12.68

**Still Column Reboiler Vent Lines**

Total Number of Units	Total Hours	Emissions
		VOC (tons/yr)
3	26455	1.26

**Oil Tanks**

Total Number of Units	Emissions*
	VOC (tons/yr)
856	162.3

**Truck Loading**

Amount Loaded Annually (bbl/yr)	Emissions*
	VOC (tons/yr)
2,785,281	321.793

### Wellsite Fugitives

Total Number of Facilities	Total Hours	Emissions
		VOC (tons/yr)
584	5103332	15.6

### Pneumatic Devices

Total		Total	
Number of Devices	Hours	Emissions	Emissions
		Methane (tons/yr)	VOC (tons/yr)
211	1851864	455.69	50.6

### Fugitive Dust From Roads

#### Main Data Entry

Vehicle Category*	Total Number of Round Trips	Total Number of Wells
Construction Activities	76	62
Drilling Activities	76	2
Completion Activities	76	39
Production Operations	3186	190

#### Optional Data Entry / Calculations

Vehicle Miles Traveled (vmt/yr)	Emissions	
	PM <sub>10</sub> (tons/yr)	PM <sub>2.5</sub> (tons/yr)
469,989	181.17	27.78