## ****** LIQUID SPILLS - VOLUME CALCULATIONS ******

**Location of spill:** Showstoper 19 Federal Com 4&5H **Date of Spill:** 2-Oct-2019

**If the leak/spill is associated with production equipment**, i.e. - wellhead, stuffing box, flowline, tank battery, production vessel, transfer pump, or storage tank **place an "X" here:** X

### Input Data:

| | OIL: | WATER: |
|---|---|---|
| If spill volumes from measurement, i.e. metering, tank volumes, etc. are known enter the volumes here: | 0.0 BBL | 0.0 BBL |

**If "known" spill volumes are given, input data for the following "Area Calculations" is optional. The above will override the calculated volumes.**

### Total Area Calculations

| Total Surface Area | width | | length | | wet soil depth | oil (%) |
|---|---|---|---|---|---|---|
| Rectangle Area #1 | 75 ft | X | 20 ft | X | 1.00 in | 4% |
| Rectangle Area #2 | 0 ft | X | 0 ft | X | 0.00 in | 0% |
| Rectangle Area #3 | 0 ft | X | 0 ft | X | 0.0 in | 0% |
| Rectangle Area #4 | 0 ft | X | 0 ft | X | 0.0 in | 0% |
| Rectangle Area #5 | 0 ft | X | 0 ft | X | 0.0 in | 0% |
| Rectangle Area #6 | 0 ft | X | 0 ft | X | 0 in | 0% |
| Rectangle Area #7 | 0 ft | X | 0 ft | X | 0 in | 0% |
| Rectangle Area #8 | 0 ft | X | 0 ft | X | 0 in | 0% |

### Standing Liquid Calculations

| Standing Liquid Area | width | | length | | liquid depth | oil (%) |
|---|---|---|---|---|---|---|
| Rectangle Area #1 | 0 ft | X | 0 ft | X | 0.00 in | 0% |
| Rectangle Area #2 | 0 ft | X | 0 ft | X | 0 in | 0% |
| Rectangle Area #3 | 0 ft | X | 0 ft | X | 0 in | 0% |
| Rectangle Area #4 | 0 ft | X | 0 ft | X | 0 in | 0% |
| Rectangle Area #5 | 0 ft | X | 0 ft | X | 0 in | 0% |
| Rectangle Area #6 | 0 ft | X | 0 ft | X | 0 in | 0% |
| Rectangle Area #7 | 0 ft | X | 0 ft | X | 0 in | 0% |
| Rectangle Area #8 | 0 ft | X | 0 ft | X | 0 in | 0% |

0.1

**production system leak - DAILY PRODUCTION DATA REQUIRED**

Average Daily Production: Oil 0 BBL Water 0 BBL 0 Gas (MCFD)

Total Hydrocarbon Content in gas: 0% (percentage)

Did leak occur before the separator?: YES N/A *(place an "X")*

H2S Content in Produced Gas: 0 PPM

H2S Content in Tank Vapors: 0 PPM

Amount of Free Liquid Recovered: 0 BBL okay

Percentage of Oil in Free Liquid Recovered: 0% (percentage)

Liquid holding factor *: 0.14 gal per gal

Use the following when the spill wets the grains of the soil.
* Sand = **0.08** gallon (gal.) liquid per gal. volume of soil.
* Gravelly (caliche) loam = **0.14** gal. liquid per gal. volume of soil.
* Sandy clay loam soil = **0.14** gal liquid per gal. volume of soil.
* Clay loam = **0.16** gal. liquid per gal. volume of soil.

Use the following when the liquid completely fills the pore space of the soil:
Occurs when the spill soaked soil is contained by barriers, natural (or not).
* Clay loam = **0.20** gal. liquid per gal. volume of soil.
* Gravelly (caliche) loam = **0.25** gal. liquid per gal. volume of soil.
* Sandy loam = **0.5** gal. liquid per gal. volume of soil.

Total Solid/Liquid Volume: **1,500 sq. ft.** **120 cu. ft.** **5 cu. ft.**

Total Free Liquid Volume: **sq. ft.** **cu. ft.** **cu. ft.**

**Estimated Volumes Spilled**

| | H2O | OIL |
|---|---|---|
| Liquid in Soil: | 3.0 BBL | 0.1 BBL |
| Free Liquid: | 0.0 BBL | 0.0 BBL |
| Totals: | **3.0 BBL** | **0.1 BBL** |
| Total Liquid Spill Liquid: | **3.0 BBL** | **0.12 BBL** |

**Estimated Production Volumes Lost**

| | H2O | OIL |
|---|---|---|
| Estimated Production Spilled: | **0.0** BBL | **0.0** BBL |

**Estimated Surface Damage**

Surface Area: 1,500 sq. ft.

Surface Area: .0344 acre

**Recovered Volumes**

Estimated oil recovered: **BBL** check - okay

Estimated water recovered: **BBL** check - okay

**Estimated Weights, and Volumes**

| | | | |
|---|---|---|---|
| Saturated Soil = | 14,000 lbs | 125 cu. ft. | 5 cu. yds. |
| Total Liquid = | 3 BBL | 131 gallon | 1,089 lbs |

**Air Emission from flowline leaks:**

| | | |
|---|---|---|
| Volume of oil spill: | - | BBL |
| Separator gas calculated: | - | MCF |
| Separator gas released: | - | MCF |
| Gas released from oil: | - | lb |
| H2S released: | - | lb |
| Total HC gas released: | - | lb |
| Total HC gas released: | - | MCF |

**Air Emission of Reporting Requirements:**

| | New Mexico | Texas |
|---|---|---|
| HC gas release reportable? | **NO** | **NO** |
| H2S release reportable? | **NO** | **NO** |

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