

EMISSIONS ACTIVITY CATEGORY FORM STORAGE TANK

This form is to be completed for each storage tank for which a permit is required. State/Federal regulations which may apply to storage tanks are listed in the instructions. Note that there may be other regulations which apply to this emissions unit which are not included in this list.

1. Reason this form is being submitted (Check one)

New Permit Renewal or Modification of Air Permit Number(s) (e.g. T001) _____

2. Type of tank: Fixed roof tank Variable vapor space tank Pressure tank
 External floating roof tank Internal floating roof tank

3. Location of tank: Indoors Outdoors Underground

4. a) Tank capacity: _____ gallons or _____ barrels

If capacity is provided in barrels, enter the number of gallons per barrel: _____

b) Working volume, if different from tank capacity: _____ gallons or _____ barrels

5. Shape and dimensions:

Cylindrical Spherical Other, specify _____

Horizontal tanks:

Tank shell length: _____ ft.

Tank shell diameter or width _____ ft.

Vertical tanks:

Tank shell height: _____ ft.

Tank shell diameter or width: _____ ft.

6. Tank shell material: Steel Aluminum Other, specify _____

7. If this tank is located outdoors and above ground, provide the paint color of the tank's shell and roof and indicate the condition of the paint.

Shell:

Aluminum (specular) Gray (dark) White Red (primer)

Aluminum (diffuse) Gray (light) Other, specify _____

Roof:

Aluminum (specular) Gray (dark) White Red (primer)

Aluminum (diffuse) Gray (light) Other, specify _____

Condition of paint: Good Poor

8. If this tank is a variable vapor space tank or is interconnected to a variable vapor space tank, complete the following:

a) Capacity of vapor expansion system: _____ gallons or _____ barrels

b) Identify all tanks and other vapor sources interconnected to the vapor expansion system:

9. If this tank is subject to the following federal rules, complete the following:

New Source Performance Standards under 40 CFR 60, Subpart Ka, "Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984"

a) Date of initial fill with petroleum liquid _____

b) Was tank out of service for a period of a year or more? Yes No
If yes, identify the date of subsequent refilling with petroleum liquid after the most recent out-of-service period of a year or more. _____

Maximum Achievable Control Technology (MACT) Standards under 40 CFR 63, Subpart G (HON Tanks)

a) This tank is defined as a: Group 1 storage vessel Group 2 storage vessel

b) At the storage temperature, maximum true vapor pressure of total HAPs: _____

10. Supplemental data, check all that apply:

Tank was converted from an external floating roof tank or a fixed roof tank to an internal floating roof tank; provide type and date of conversion: _____

Tank is used to store produced crude oil or condensate prior to custody transfer.

Tank is insulated; describe: _____

Tank is heated and indicate temperature (in degrees Fahrenheit): _____

11. Material stored _____ Trade Name _____

Density: _____ lbs/gal or _____ °API Producer _____

12. Temperature of stored material: Average _____ °F and Maximum _____ °F

13. Vapor pressure of stored material:

a) Actual vapor pressure: _____ psia at average storage temperature
_____ psia at maximum storage temperature

b) Reid vapor pressure, in psia:
Average _____
Minimum _____
Maximum _____

c) If material stored is a gas or liquified gas, provide the pressure at which it is stored:
_____ psi gauge at _____ °F

14. The vapor molecular weight: _____ lbs/lb-mole

15. If the material is a liquid other than gasoline, fuel oil, kerosene, crude oil, lubricant or other petroleum liquid, answer the questions below:

Is it a photochemically reactive material? Yes No

16. Is the material a hazardous waste? Yes No
If yes, identify type (EPA hazardous waste number) _____

17. Type of filling: Splash Submerged Other, specify _____

18. Indicate the year (or 12-month period) for which throughput is provided in items 19 and 20: _____

19. The maximum daily throughput of material stored: _____ gallons or _____ barrels.

20. Maximum annual throughput of material stored: _____ gallons or _____ barrels.

21. Identify the control equipment associated with this tank.

a) Type of vapor control system _____

b) Date tank was equipped with or vented to vapor control system (month/year) _____

22. Complete the table below for any pressure or vacuum relief vent valve.

Type of Vent Valve	Pressure Setting	Vacuum Setting	If pressure relief is discharged to a vapor control system, identify the vapor control system

If this is a Fixed Roof, Variable Vapor Space or Pressure Tank, complete items 23 through 27:

23. If the tank is vertical, what type of roof does it have?

Cone roof Height: _____ ft Dome roof Height: _____ ft

24. The average height of the liquid material stored within the tank during the year: _____ ft.

25. The maximum height of the liquid material stored within the tank during the year: _____ft.
26. The average liquid surface temperature: _____ °F
27. Is this tank bolted or riveted construction? Yes No

If this tank is an External Floating Roof Tank, complete items 28 through 34:

28. Is the external floating roof domed? Yes No
29. Type of floating roof: Double Deck Pontoon Other, specify _____
30. Type of shell construction: Welded Riveted or bolted
31. Are all openings in the external floating roof, except automatic bleeder vents, rim space vents, leg sleeves, main roof drain, emergency roof drains and slotted gauging/sampling wells, equipped with both a cover, seal or lid without visible gaps and a projection into the tank below the liquid surface?
- Yes No

If no, explain: _____

32. Is there a slotted gauging/sampling well?

Yes No

If yes, is it equipped with an object which floats on the liquid surface within the well and which covers at least 90 percent of the area of the well opening?

Yes No

33. On the blank lines to the left of the various types of roof fittings shown below, indicate the number, if any, of each fitting.

Access hatch (24-inch diameter well)

_____ Bolted cover, gasketed

_____ Unbolted cover, ungasketed

_____ Unbolted cover, gasketed

Vacuum breaker (10-inch diameter well)

_____ Weighted mechanical actuation, gasketed

_____ Weighted mechanical actuation, ungasketed

Unslotted guide-pole/sample well (8-inch diameter unslotted pole, 21-inch diameter well)

_____ Ungasketed sliding cover With sleeve

_____ Gasketed sliding cover With sleeve With wiper

Slotted guide-pole/sample well (8-inch diameter unslotted pole, 21-inch diameter well)

_____ Ungasketed sliding cover, without float _____ Gasketed sliding cover, without float

_____ Gasketed sliding cover, with float

Gauge-float well (20-inch diameter)

_____ Unbolted cover, ungasketed

_____ Unbolted cover, gasketed

_____ Bolted cover, gasketed

Gauge-hatch/sample well (8-inch diameter)

_____ Weighted mechanical actuation, gasketed

_____ Weighted mechanical actuation, ungasketed

Roof leg (3-inch diameter)

- _____ Adjustable, pontoon area Gasketed Ungasketed Sock
- _____ Adjustable, center area Gasketed Ungasketed Sock
- _____ Adjustable, double-deck roofs
- _____ Fixed

Roof drain (3-inch diameter)

- _____ Open
- _____ 90% closed

Roof leg (2-1/2-inch diameter)

- _____ Adjustable, pontoon area
- _____ Adjustable, center area
- _____ Adjustable, double-deck roofs
- _____ Fixed

Rim vent (6-inch diameter)

- _____ Weighted mechanical actuation, gasketed
- _____ Weighted mechanical actuation, ungasketed

34. The average wind speed at the tank site: _____ mph.

If this tank is an Internal Floating Roof Tank, complete items 35 through 41:

35. Type of floating decks:

- Contact deck Noncontact deck

36. Type of roof above floating decks: Column-supported Self-supporting

37. If roof is column-supported, identify the type of column construction:

- 9-inch by 7-inch built-up columns Other, specify _____
- 8-inch diameter pipe columns

38. Floating deck seam construction:

- Welded Bolted Other, specify _____

39. If deck seams are bolted, complete a) or b):

- a) Continuous sheet construction; specify width of sheets (e.g., 5 ft, 6 ft, or 7 ft): _____
- Panel construction; specify size of panels (e.g., 5 ft x 7.5 ft, or 5 ft x 12 ft): _____

b) Total length of bolted deck seams: _____ ft

 Total area of floating deck: _____ sq ft

40. On the blank lines to the left of the various types of floating deck fittings shown below, indicate the number, if any, of each fitting.

Access hatch (usually one)

- _____ Bolted cover, gasketed
- _____ Unbolted cover, ungasketed
- _____ Unbolted cover, gasketed

Automatic gauge float well (usually one)

- _____ Bolted cover, gasketed
- _____ Unbolted cover, ungasketed
- _____ Unbolted cover, gasketed

Deck supports (roof legs or hanger well)

_____ Adjustable

_____ Fixed

_____ Stub drains (1-inch diameter; not used on welded contact deck)

Ladder well (usually one)

_____ Sliding cover, gasketed

_____ Sliding cover, ungasketed

Column wells

_____ Pipe column, flexible fabric sleeve seal

_____ Pipe column, gasketed sliding cover

_____ Pipe column, ungasketed sliding cover

_____ Built-up column, gasketed sliding cover

_____ Built-up column, ungasketed sliding cover

Sample pipe or well (usually one)

_____ Slotted pipe, gasketed sliding cover

_____ Slotted pipe, ungasketed sliding cover

_____ Sample well, slit fabric seal (10% open area)

Vacuum breaker (10-inch diameter)

_____ Weighted mechanical actuation, gasketed

_____ Weighted mechanical actuation, ungasketed

41. Are all openings on the floating deck, except stub drains, equipped with a cover, seal or lid which is to be in a closed position at all times except when in actual use for tank gauging or sampling?

Yes No

If no, explain: _____

If this tank is an Internal or External Floating Roof Tank, complete items 42 through 47:

42. Type of seal between floating roof and tank well:

Single seal (primary seal only)

Single seal with weather shield

(primary seal with weather shield)

Dual seals (primary seal with secondary shield mounted above it)

43. Primary seal information:

Manufacturer _____

Make or model _____

Date installed _____

(month/year)

Type: Liquid-mounted, liquid-filled

Liquid-mounted, resilient foam-filled

Vapor-mounted, resilient foam-filled

Mechanical shoe (complete item below)

Flexible wiper

Other, specify _____

If the primary seal is a mechanical shoe, complete the following:

Vertical length of shoe _____ inches

Vertical length of shoe above stored liquid surface _____ inches

44. Secondary seal information:

Manufacturer _____ Type: Rim-mounted, flexible wiper
Make or model _____ Rim-mounted, resilient foam-filled
Date installed _____ Shoe-mounted
(month/year) _____ Weather shield
 Other, specify _____

45. Most recent seal inspection for visible holes, tears or other openings in the seal or fabric:

Seal(s) inspected _____
Date of inspection _____
Inspected by (person and company) _____
Condition of seal(s) Good condition
 Needed repair or replacement, specify type and date of corrective action

46. Most recent seal gap measurements:

	_____ Primary Seal	_____ Secondary Seal
Date of measurement	_____	_____
By: (person)	_____	_____
(company)	_____	_____
Width of maximum gap	_____ inch	_____ inch
Total area of gaps	_____ sq in	_____ sq in
	_____ sq in/ft tank diameter	_____ sq in/ft tank diameter

47. Condition of the interior side of the tank shell:

Little or no rust Dense rust Gunite-lining

INSTRUCTIONS FOR COMPLETION OF THE EMISSIONS ACTIVITY CATEGORY FORM FOR A STORAGE TANK

GENERAL INSTRUCTIONS:

This form applies to all storage tanks not exempted by OAC rule 3745-31-03(A)(1)(I) which exempts:

- (I) Storage tanks for:
 - (i) Inorganic liquids including water (at standard temperature and pressure) except as described in paragraph (v) of this section;
 - (ii) Pressurized storage for inorganic compounds or propane, butane, isobutane, and liquid petroleum gases;
 - (iii) Liquids with a capacity of less than seven hundred gallons;
 - (iv) Liquids with a capacity of less than or equal to ten thousand gallons equipped with submerged fill and which store organic liquids or mixtures containing organic liquids (excluding pesticides) with each organic liquid component's vapor pressure of less than or equal to 1.5 pounds per square inch absolute at seventy degrees Fahrenheit;
 - (v) Acids (as defined in the most recent edition of the Chemical Rubber Company (CRC) Handbook of Chemistry and Physics) stored in tanks less than or equal to seven thousand five hundred gallons capacity.

Provide complete responses to all applicable questions. If an item does not apply to the emissions unit, write in "Not Applicable" or "NA." If the answer is not known, write in "Not Known" or "NK." If you need assistance in understanding a question after reading the instructions below, contact your Ohio EPA District Office or Local Air Agency for assistance. Submittal of an incomplete application will delay application review and processing. In addition, the application may be returned as incomplete if all applicable questions are not answered appropriately.

APPLICABLE REGULATIONS:

The following State and Federal Regulations may be applicable to a storage tank. Note that there may be other regulations which apply to this emissions unit which are not included in this list.

- Federal:
- 40 CFR Part 60 (NSPS), Subpart A (General Provisions)
 - 40 CFR Part 60, Subpart K (Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.)
 - 40 CFR Part 60, Subpart Ka (Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.)
 - 40 CFR Part 60, Subpart Kb (Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.)

State: OAC rule 3745-31-02 (Permit to Install)
OAC rule 3745-35-02 (Permit to Operate)
OAC rule 3745-21-07 (D) (Storage of Volatile Photochemically Reactive Materials)
OAC rule 3745-21-09 (L) (Storage of Petroleum Liquids in Fixed Roof Tanks)
OAC rule 3745-21-09 (Z) (Storage of Petroleum Liquids in External Floating Roof Tanks)

If you would like a copy of these regulations, contact your Ohio EPA District Office or Local Air Agency. State regulations may also be viewed and downloaded from the Ohio EPA website at <http://www.epa.state.oh.us/dapc/regs/regs.html>. Federal regulations may be viewed and downloaded at <http://www.epa.gov/docs/epacfr40/chapt-I.info/subch-C.htm>.

CALCULATING EMISSIONS:

Emissions may be calculated using the estimation software for storage tanks (TANKS), available from the following USEPA website: <http://www.epa.gov/ttn/chief/software/tanks/index.html>.

SPECIFIC INSTRUCTIONS:

1. Indicate whether this is an application for a new permit or an application for permit renewal. If applying for a permit renewal, provide the 4-character OEPA emissions unit identification number.
4. Tank capacity represents the maximum amount of material which can be stored.
9. The cited NSPS rule may be found on the web by clicking the links to 60.110a-60.115a at: http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr60_00.html
The cited MACT rule may be found on the web at: <http://www.epa.gov/ttn/atw/hon/honpg.html>
10. "Custody transfer" means the transfer of produced crude oil and/or condensate, after processing and/or treating in the production operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation. "Condensate" means hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature or pressures, or both, and remains liquid at standard conditions.
15. "Photochemically reactive material" means any liquid organic material with an aggregate of more than 20 percent of its total volume composed of the chemical compounds classified below or which exceeds any of the following individual percentage composition limitations, referred to the total volume of liquid:
 - (1) A combination of hydrocarbons, alcohols, aldehydes, esters, ethers or ketones having an olefinic or cyclo-olefinic type of unsaturation: 5 percent;
 - (2) A combination of aromatic hydrocarbons with eight or more carbon atoms to the molecule except ethylbenzene: 8 percent;
 - (3) A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene or toluene: 20 percent.

16. If the material stored or to be stored is a waste material, complete the question on whether or not it is a hazardous waste. If additional information is needed regarding hazardous waste, please contact the office below:

Ohio EPA - Division of Hazardous Waste Management
P.O. Box 1049
Columbus, Ohio 43216-1049
(614) 644-2917

17. Submerged filling means the storage tank is equipped with a submerged fill pipe as defined below:

"Submerged fill pipe" means any fill pipe the discharge opening of which is entirely submerged when the liquid level is six inches above the bottom of the tank; or when applied to a tank which is loaded from the side, shall mean any fill pipe the discharge opening of which is entirely submerged when the liquid level is eighteen inches above the bottom of the tank.

22. For type of vent valve, enter "pressure" for a valve designed to allow high pressure inside the tank to be relieved, "vacuum" for a valve designed to allow low pressure inside the tank to be relieved, or "combined" for a valve designed to do both.
34. Enter the average wind speed for the last calendar year, in miles per hour, at the tank site. If actual data is not available, data may be available from a nearby airport or the National Weather Service. If that data is not available, data can be used from the following table:

<u>City</u>	<u>Mean Wind Speed (miles per hour)</u>
Akron	9.9
Cincinnati	9.1
Cleveland	10.8
Columbus	8.7
Dayton	10.2
Mansfield	11.0
Toledo	9.5
Youngstown	10.0

46. The width of a seal gap is the distance between the seal and the tank wall. The total area of gaps is the accumulated area of all gaps which are greater than 0.125 inch in width.