

**ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
AIR DIVISION**

**INSTRUCTIONS FOR COMPLETION OF FORM ADEM-108
LOADING AND STORAGE OF ORGANIC COMPOUNDS**

Item Nos. 1-6 Self-explanatory. Please ensure that each item is completed and the form is signed.

Table 108.1

In this table, please provide the facility's identification number for each tank, each tank's storage capacity, the tank type (horizontal fixed roof, vertical fixed roof, external floating roof, or internal floating roof), the fill method, the manufactured and installation/construction dates for each tank, the reconstruction/modification dates for each tank, if applicable, whether the tank has a vapor recovery system installed, and applicable regulations (cite applicable State and/or federal regulation).

Please provide the facility's rack identification number for each unloading/loading rack, the rack type, the proposed products to be loaded using the product codes from Table 108.2, the type of loading, whether the loading rack has a vapor recovery system installed, and applicable regulations (cite applicable State and/or federal regulation.).

Table 108.2

In this table, please provide the products (e.g. crude oil, gasoline, methanol, etc.) that the facility intends to store and load; the molecular weight, the maximum true vapor pressure, product density, and the storage temperature of each product; the total product throughput for the entire facility, the loading method, and the maximum VOC emissions from loading and storing each product. The VOC emissions should be calculated based on the worst case scenario.

Note: If the facility stores a variety of volatile organic liquids, as opposed to petroleum distillates and/or crude oils, "VOL" can be listed on a single line using the worst case product information for those products.

Table 108.3

If the facility operates horizontal fixed roof tanks, please provide technical data for each tank. Include which products each tank may store at the facility. In order to save space, use the product code in substitution for the actual product name. If a tank can store all the products listed, list "ALL" in the "Proposed Products to be Stored" block. Please make sure that the tank identification numbers correspond with the tanks that are described in Table 108.1.

Table 108.4

If the facility operates vertical fixed roof tanks, please provide technical data for each tank. Include which products each tank may store at the facility. In order to save space, use the product code in substitution for the actual product name. If a tank can store all the products listed, list "ALL" in the "Proposed Products to be Stored" block. Please make sure that the tank identification numbers correspond with the tanks that are described in Table 108.1.

Table 108.5

If the facility operates external floating roof tanks, please provide technical data for each tank. If "detail roof fitting" is selected, include a complete Table 108.7 for deck characteristics for each tank. This table

should include which products each tank may store at the facility. In order to save space, use the product code in substitution for the actual product name. If a tank can store all the products listed, list “ALL” in the “Proposed Products to be Stored” block. Please make sure that the tank identification numbers correspond with the tanks that are described in Table 108.1.

Table 108.6

If the facility operates internal floating roof tanks, please provide technical data for each tank. If “detail roof fitting” is selected, include a complete Table 108.7 for deck characteristics for each tank. This table should include which products each tank may store at the facility. In order to save space, use the product code in substitution for the actual product name. If a tank can store all the products listed, list “ALL” in the “Proposed Products to be Stored” block. Please make sure that the tank identification numbers correspond with the tanks that are described in Table 108.1.

Table 108.7

If the facility operates either external or internal floating roof tanks and “*Detail Roof Fitting*” is selected in either Table 108.5 and/or Table 108.6, Table 108.7 should be filled out for **each** tank in order to provide deck construction characteristics.

Table 108.8

If a product being unloaded, stored, or loaded is not in the chemical database of the current version of EPA’s TANKS Program, please provide the chemical data information for each product on a separate sheet.

Attach additional sheets, as necessary. Please identify the additional sheets (i.e. pg 2a of 8 or 2.1 of 8)

VOC/HAP Emissions should be calculated using the current version of the EPA TANKS Program at <http://www.epa.gov/ttnchie1/software/tanks/index.html> or AP-42, Chapter 5 and Chapter 7 and attached to ADEM Form 108.

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
AIR DIVISION

PERMIT APPLICATION FOR
LOADING AND STORAGE
OF
ORGANIC COMPOUNDS

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Do not write in this space

1. Name of Facility or Organization: _____

2. Plant Location: _____

3. *Permit Application is made for:*

Existing Equipment

New Equipment

Modification

Change in Location

Other _____

4. *Normal Schedule of Operation*

Hours per day: _____

Weeks per Year: _____

Days per Week: _____

Peak Season: _____

5. For each regulated pollutant, describe any limitations on source operation which affects emissions or any work practice standard (attach additional page if necessary):

6. On a separate sheet sketch a map indicating the location of each storage tank and/or loading rack for which this application is made.

Name of Person Preparing this Application: _____

Title: _____ Date: _____

Telephone: _____ Signature: _____

If additional entries are needed, make additional copies of this form and attach to the application. Make sure to identify the additional sheets such as 2a of 8 or 2.1 of 8.

TABLE 108.1-PROPOSED STORAGE TANK(S)/LOADING RACK(S) AT FACILITY

TANK ID	TANK CAPACITY (gallons)	TANK TYPE (a) (HFRT, VFRT, EFLRT, DEFLRT, or IFLRT)	FILL METHOD (d)	DATE MANUFACTURED	DATE INSTALLED OR CONSTRUCTION COMMENCED	DATE RECONSTRUCTED, AS APPLICABLE	DATE MODIFIED, AS APPLICABLE	EQUIPPED WITH VAPOR RECOVERY SYSTEM (b) (Y or N)	APPLICABLE REGULATIONS
RACK ID	RACK TYPE (Marine, Truck, Rail, etc.)	PROPOSED PRODUCTS TO BE LOADED (c)	TYPE OF LOADING (d)	IF SUBMERGED, WHAT % IS FILL PIPE SUBMERGED?	EQUIPPED WITH VAPOR RECOVERY SYSTEM (b) (Y or N)	PROVIDE EFFICIENCY OF VAPOR COLLECTION SYSTEM	APPLICABLE REGULATIONS		

(a) HFRT-horizontal fixed roof tank; VFRT-vertical fixed roof tank; EFLRT-external floating roof tank; DEFLRT-domed external floating roof tank; IFLRT-internal floating roof tank
 (b) Please attach ADEM Form 110 for the vapor recovery system.
 (c) Use Product ID from Table 108.2 or list "ALL" if rack may transfer all of the products listed in Table 108.2.
 (d) Type of Filling/Loading-submerged fill, splash filling, top filling, bottom filling, etc

TABLE 108.2-PROPOSED PRODUCT(S) STORED AND LOADED OUT AT FACILITY

PRODUCT CODE	PRODUCT NAME & CAS NO., IF APPLICABLE	LIQUID MOLECULAR WEIGHT (lb/lb-mole)	VAPOR MOLECULAR WEIGHT (lb/lb-mole)	MAXIMUM TRUE VAPOR PRESSURE (psia)	LIQUID DENSITY ^(a) (lb/gal)	TEMP. STORED AT (°F)	TOTAL PRODUCT THROUGHPUT (gal/year)	Loadout ^(b) Mark all that apply					Worst case VOC emissions from <u>storing</u> this product (TPY)	Worst case VOC emissions from <u>loading</u> this product (TPY)
								Marine Vessel	Truck	Rail Car	Pipeline			
A														
B														
C														
D														
E														
F														
G														
H														
I														
J														
K														
L														
M														
N														
O														
P														
Q														
R														
S														
T														
U														
V														
W														
X														
Y														

(a) Applicable for products stored in tanks with floating roofs.

(b) Loadout is product transferred from tank through rack to marine vessel, truck or rail car, or container.

If applying for the construction/modification/reconstruction of more than six tanks, make additional copies of this form as needed and attach to the application. Make sure to identify the additional sheets such as 4a of 8 or 4.1 of 8.

TABLE 108.3- FIXED ROOF STORAGE TANK (HORIZONTAL)

TANK ID →						
SHELL LENGTH (ft-in)						
SHELL DIAMETER (ft-in)						
HEATED? (Y or N)						
PRESSURIZED? (Y or N)						
UNDERGROUND? (Y or N)						
SHELL COLOR/SHADE (a)						
SHELL CONDITION (b)						
PROPOSED PRODUCTS TO BE STORED (c)						
PRODUCT TRANSFER FROM TANK TO:						
gallons per day (GPD) (d)	GPD	GPD	GPD	GPD	GPD	GPD

TABLE 108.4-FIXED ROOF STORAGE TANK (VERTICAL)

TANK ID →						
SHELL HEIGHT (ft-in)						
SHELL DIAMETER (ft-in)						
MAX LIQUID HEIGHT (ft-in)						
AVG LIQUID HEIGHT (ft-in)						
HEATED? (Y or N)						
PRESSURIZED? (Y or N)						
SHELL CHARACTERISTICS	SHELL COLOR/SHADE (a)					
	SHELL CONDITION (b)					
ROOF CHARACTERISTICS	ROOF COLOR/SHADE (a)					
	ROOF CONDITION (b)					
	CONE/DOME HEIGHT (ft-in)					
PROPOSED PRODUCTS TO BE STORED (c)						
PRODUCT TRANSFER FROM TANK TO:						
gallons per day (GPD) (d)	GPD	GPD	GPD	GPD	GPD	GPD

(a) Select from: White/White (W/W); Aluminum/Specular (A/S); Aluminum/Diffuse (A/D); Gray/Light (G/L); Gray/Medium (G/M); Red/Primer (R/P)
If tank color unknown, list "default"

(b) Select from: Good or Poor. If tank condition unknown, list "default"

(c) Use Product ID from Table 108.2 or list "ALL" if tank may store all of the products listed in Table 108.2.

(d) Should be completed if product in tank is being transferred to a specific piece of equipment or process which is not a loading rack (e.g. boiler).

If applying for the construction/modification/reconstruction of more than six tanks, make additional copies of this form as needed and attach to the application. Make sure to identify the additional sheets such as 5a of 8 or 5.1 of 8.

TABLE 108.5-EXTERNAL FLOATING ROOF STORAGE TANK

TANK ID →							
SHELL DIAMETER (ft-in)							
DOMED? (Y or N)							
INTERNAL SHELL CONDITION ^(a)							
PAINT COLOR/SHADE ^(b)							
PAINT CONDITION ^(c)							
ROOF CHARACTERISTICS	LIST ONE PONTOON OR DOUBLE DECK						
	ROOF FITTING CATEGORY ^(d)						
TANK CONSTRUCTION	LIST ONE WELDED OR RIVETED						
SEAL TYPE	PRIMARY ^(e)						
	SECONDARY ^(f)						
PROPOSED PRODUCTS TO BE STORED ^(g)							
PRODUCT TRANSFER FROM TANK TO:							
gallons per day (GPD) ^(h)		GPD	GPD	GPD	GPD	GPD	GPD

- (a) Select from: Light Rust; Dense Rust; Gunite™ Lining. If internal shell condition unknown, list “default”
- (b) Select from: White/White (W/W); Aluminum/Specular (A/S); Aluminum/Diffuse (A/D); Gray/Light (G/L); Gray/Medium (G/M); Red/Primer (R/P)
If paint color unknown, list “default”
- (c) Select From: Good or Poor. If tank condition unknown, list “default”
- (d) Typical or Detail. If detail, list fittings and quantities for each tank on Table 108.7
- (e) Select from: Mechanical Shoe (MS); Liquid Mounted (LM); or Vapor Mounted (VM)
- (f) Select from: None, Shoe Mounted (SM), Rim Mounted (RM) or Weather Shield (WS)
- (g) Use Product ID from Table 108.2 or list “ALL” if tank may store all of the products listed in Table 108.2.
- (h) Should be completed if product in tank is being transferred to a specific piece of equipment or process which is not a loading rack (e.g. boiler).

If applying for the construction/modification/reconstruction of more than six tanks, make additional copies of this form as needed and attach to the application. Make sure to identify the additional sheets such as 6a of 8 or 6.1 of 8.

TABLE 108.6-INTERNAL FLOATING ROOF STORAGE TANK

TANK ID →							
SHELL DIAMETER (ft-in)							
SELF SUPPORT. ROOF? (Y or N)							
NUMBER OF COLUMNS							
EFFECTIVE COLUMN DIAMETER ^(a)							
INTERNAL SHELL CONDITION ^(b)							
EXTERNAL SHELL	PAIN COLOR/SHADE ^(c)						
	PAIN CONDITION ^(d)						
ROOF CHARACTERISTICS	PAIN COLOR/SHADE ^(c)						
	PAIN CONDITION ^(d)						
DECK CHARAC.	LIST ONE BOLTED OR WELDED ^(e)						
SEAL TYPE	PRIMARY ^(f)						
	SECONDARY ^(g)						
PROPOSED PRODUCTS TO BE STORED ^(h)							
PRODUCT TRANSFER FROM TANK TO:							
gallons per day (GPD) ⁽ⁱ⁾		GPD	GPD	GPD	GPD	GPD	GPD

- (a) Select from: 9” by 7” Built-Up Column, 8” Diameter Pipe, or Unknown
- (b) Select from: Light Rust; Dense Rust; Gunite™ Lining. If internal shell condition unknown, list “default”
- (c) Select from: White/White (W/W); Aluminum/Specular (A/S); Aluminum/Diffuse (A/D); Gray/Light (G/L); Gray/Medium (G/M); Red/Primer (R/P)
If paint color unknown, list “default”
- (d) Select From: Good or Poor. If tank condition unknown, list “default”
- (e) Typical or Detail. If detail, list fittings and quantities for each tank on Table 108.7
- (f) Select from: Mechanical Shoe (MS); Liquid Mounted (LM); or Vapor Mounted (VM)
- (g) Select from: None, Shoe Mounted (SM), or Rim Mounted (RM)
- (h) Use Product ID from Table 108.2 or list “ALL” if tank may store all of the products listed in Table 108.2.
- (i) Should be completed if product in tank is being transferred to a specific piece of equipment or process which is not a loading rack (e.g. boiler).

**TABLE 108.7-FLOATING ROOF FITTINGS-DETAIL
(DECK OR ROOF CHARACTERISTICS)**

TANK ID. _____ TANK CONSTRUCTION: IFRT or EFRT _____
(fill out separate page for each IFRT or EFRT)

Specify deck fitting type(s) by underlining and indicate quantity of each fitting from the following:

- | | |
|---|---|
| <p>A. Access Hatch Qty: _____
 1) Bolted cover, gasketed
 2) Unbolted cover, gasketed
 3) Unbolted cover, ungasketed</p> <p>B. Automatic, Gauge Float Well Qty: _____
 1) Bolted cover, gasketed
 2) Unbolted cover, gasketed
 3) Unbolted cover, ungasketed</p> <p>C. Column Well Qty: _____
 1) Built-up column-sliding cover, gasketed
 2) Built-up column-sliding cover, ungasketed
 3) Pipe column-flexible fabric sleeve seal
 4) Pipe column-sliding cover, gasketed
 5) Pipe column-sliding cover, ungasketed</p> <p>D. Gauge-Hatch/Sample Well, 8 inch diameter Qty: _____
 1) Weighted mechanical actuation, gasketed
 2) Weighted mechanical actuation, ungasketed</p> <p>E. Ladder Well Qty: _____
 1) Sliding cover, gasketed
 2) Sliding cover, ungasketed</p> <p>F. Rim Vent, 6 inch diameter Qty: _____
 1) Weighted mechanical actuation, gasketed
 2) Weighted mechanical actuation, ungasketed</p> <p>G. Roof Drain, 3 inch diameter Qty: _____
 1) Open
 2) 90% Closed</p> <p>H. Roof Leg, 3 inch diameter Qty: _____
 1) Adjustable, Pontoon Area, ungasketed
 2) Adjustable, Center Area, ungasketed
 3) Adjustable, Double Deck Roofs
 4) Fixed
 5) Adjustable, Pontoon Area, gasketed
 6) Adjustable, Pontoon Area, socks
 7) Adjustable, Center Area, gasketed
 8) Adjustable, Center Area, socks</p> <p>I. Roof Leg or Hanger Well Qty: _____</p> | <p>1) Adjustable
 2) Fixed</p> <p>J. Sample pipe or well Qty: _____
 1) Slotted pipe sliding cover, gasketed
 2) Slotted pipe sliding cover, ungasketed
 3) Slit fabric seal, 10% open area</p> <p>K. Slotted Guide-Pole/Sample Well Qty: _____
 1) Ungasketed sliding cover without float
 2) Ungasketed sliding cover with float
 3) Gasketed sliding cover without float
 4) Gasketed sliding cover with float
 5) Gasketed sliding cover with pole wiper
 6) Gasketed sliding cover with pole sleeve
 7) Gasketed sliding cover with float, wiper
 8) Gasketed sliding cover with float, sleeve, wiper
 9) Gasketed sliding cover with pole sleeve, wiper</p> <p>L. Stub drain, 1 inch diameter [Yes or No]</p> <p>M. Unslotted Guide-Pole Well Qty: _____
 1) Ungasketed sliding cover
 2) Gasketed sliding cover
 3) Ungasketed sliding cover with sleeve
 4) Gasketed sliding cover with sleeve
 5) Gasketed sliding cover with wiper</p> <p>N. Vacuum breaker Qty: _____
 1) Weighted mechanical actuation, gasketed
 2) Weighted mechanical actuation, ungasketed</p> |
|---|---|

For an IFRT, if bolted, give deck construction method for the following:
A. Continuous Sheet _____ **OR** _____
 [5 ft, 6 ft, or 7 ft wide]

B. Panel Construction _____
 [5x7.5 ft or 5x12 ft]

TABLE 108.8-CHEMICAL DATA INFORMATION

Use a separate form for each chemical not in the current version of EPA's TANKS Program's chemical database.

Section I:

Chemical Name: _____

CAS Number: _____

Category: Crude Oil Petroleum Distillates Organic Liquids

Liquid Molecular Weight: _____

Vapor Molecular Weight: _____

Liquid Density (lb/gal @ 60°F): _____

Section II: Vapor Pressure Information (fill in one or more of the following options completely)

Option 1 Enter Vapor Pressure (psia) for each temperature:

40F: _____ 80F: _____

50F: _____ 90F: _____

60F: _____ 100F: _____

70F: _____

Option 2 Constants for Antoine's Equation (using Celsius):

A: _____ B: _____ C: _____

Option 3 Constants for Antoine's Equation (using Kelvin):

A: _____ B: _____ C: _____

Option 4 Reid Vapor Pressure (psia): (Distillates and Crude Oils only) _____

ASTM Slope: (Distillates Only) _____