


WASHINGTON STATE
DEPARTMENT OF
E C O L O G Y

UST Site Inspection

Guidance Document

September 2004
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Guidance Document

Prepared by:
Washington State Department of Ecology
Toxics Cleanup Program

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**State of Washington
Department of Ecology**

**Guidance Document for
UST Site Inspection**

Significant Operational Compliance – This guidance document is intended to provide information needed by underground storage tank (UST) owners, tank service providers, and government agencies involved in preventing releases from USTs. This document explains each item on the *attached* “UST Site Inspection” checklist, which is used by inspectors, while conducting UST site inspections. The following information identifies and highlights the “Significant Operational Compliance” items, which must be followed by tank owners to meet their UST responsibilities. For the complete Underground Storage Tank Regulations Chapter 173-360 WAC, go to <http://www.ecy.wa.gov/biblio/wac173360.html>, or call 1-800-826-7716.

I. Recordkeeping Requirements

Owners and operators shall submit the following information to the Department of Ecology (Ecology): (a) certification of new UST installation, (b) suspected releases, (c) release corrective actions, (d) notification of permanent closure, and (e) Ecology checklists required for each regulated activity performed. The regulated activities include: tightness testing, cathodic protection testing, retrofit/repair, change in tank status (temporary or permanent tank closure), and site assessments. In addition, owners and operators shall submit proof of financial responsibility to the Washington State Department of Licensing.

WAC 173-360-210(1)

A. General Documents

1. The UST TAG, or a copy, must be visible to the distributor. The TAG is the metallic license issued once per site by Ecology, showing the tanks meet the 1998 upgrade or new tank requirements. The TAG ID number needs to match the one issued by Ecology. WAC 173-360-130(4)
2. The annual tank fees and a copy of the tank pollution liability insurance must be sent to the Department of Licensing (DOL) for issuance of the Master Business License (MBL). The MBL must have each regulated tank listed on the license. If the tanks are not listed on the MBL, you are out of compliance (call DOL at 360-664-1400 to resolve). The expiration date listed on the MBL must not have expired. New tank site owners must submit an “Underground Storage Tank Addendum” to DOL indicating a change of ownership. The site address listed on the MBL must be the property where the tanks are located. WAC 173-360-130(2)(d)
3. Financial responsibility for most owners is fulfilled by having Tank Pollution Liability from an insurance company. The tank pollution liability policy must show the tank site address, the correct number of tanks, and the expiration date. Marketers using over 10,000 gallons per month, must have \$1,000,000 coverage, others need \$500,000 coverage. Owners using self-insurance or other mechanisms must show proof from their Chief Financial Officer (these documents will be reviewed by the Pollution Liability Insurance Agency). State and Federal agencies do not need financial responsibility. WAC 173-360 Part IV

B. Tank and Line Corrosion Protection Records

4. Interior lined tanks (no cathodic protection added) must be “internally inspected” 10 years from the lining installation and every 5 years thereafter. WAC 173-360-310(2)(a)(ii)
 5. The interior lining “internal inspection” must have Passing or equivalent results. If not, requirements of WAC 173-360-325 (applicable codes and standards API 1631, NLPAS 631, etc.) must be met to determine if the tank(s) can be re-lined. WAC 173-360-310(2)(a)(ii)
 6. Cathodic Protection systems (galvanic and impressed current) must be tested 6 months after install/repair and every 3 years thereafter. If there is steel piping, the Cathodic Protection test must include the piping. WAC 173-360-320(2)(a)
 7. The Cathodic Protection test must have **passing** or equivalent results. WAC 173-360-320(1)
 8. The tank installation or upgrade records from a certified tank service provider must demonstrate tanks and piping are corrosion protected. WAC 173-360-305/310
-

Tank Release Detection: Most tanks can only use Inventory Control (tank sticking) and Tank Tightness Testing for 10 years (see below); after that, a form of “Monthly Monitoring” must be used for release detection. Release detection records must be kept for 5 years. WAC 173-360-355

C. Tank Inventory Control Records

9. See Daily, Weekly, or Monthly inventory control sections below to determine if the inventory control is being performed correctly. WAC 173-360-345(6)(a)/(b)/(c)
10. See Daily, Weekly, or Monthly inventory control sections below to determine if the tanks need to go to a “**monthly monitoring**” method. Most tanks need to go to a “**monthly monitoring**” method 10 years after they first meet corrosion protection requirements (install or upgrade). WAC 173-360-345(2)
11. See Daily, Weekly, or Monthly inventory control sections below to determine **tank tightness test** frequency. Tanks 1000 gallons or less are not required to conduct a tightness test, if they are using weekly or monthly monitoring. WAC 173-360-345(5)/(6)(a)/(b)/(c)

Daily inventory control must show: 1) end of month calculation (1% flow-thru +130 gallons), 2) daily sticking and meter readings, 3) stick readings to 1/8”, 4) correct tank conversion chart (inches to gallons), 5) drop tube within one foot (or less) of tank bottom, 6) meter has been calibrated (Department of Agriculture sticker or equivalent), and 7) tanks are checked for water monthly. WAC 173-360-345(6)(a)

- All tank sizes require a tank tightness test every 5 years. Ten years after the tanks meet corrosion protection requirements, tanks must switch to a “**monthly monitoring**” release detection method. WAC 173-360-335(2)(a)

C. Tank Inventory Control Records (continued)

Weekly tank gauging can be used for tanks **2000 gal or less*** and must show: 1) weekly stick readings with begin and end readings at proper hourly interval (no product added or removed), 2) average of two consecutive stick readings for begin and end readings, 3) stick readings to 1/8", and 4) weekly and monthly standards are met for tank size. Waste oil tanks commonly use this method.

WAC 173-360-345(6)(b)

- 1000 gal or less – **no** tank tightness test required and **no** "monthly monitoring" release detection method required. WAC 173-360-345(6)(b)
- 1001 gal to 2000 gal – tank tightness test required every 5 years. Ten years after the tanks meet corrosion protection requirements, tanks must switch to a "**monthly monitoring**" release detection method. WAC 173-360-345(6)(b)
- *2001 gal or greater (only emergency power generators) – tank tightness test required every 5 years. Ten years after the tanks meet corrosion protection requirements, tanks must switch to a "**monthly monitoring**" release detection method. WAC 173-360-345(5)(c)

Monthly tank gauging can only be used by **emergency power generator tanks 2000 gal or less** and must show: 1) inputs and withdrawals recorded, 2) monthly stick readings with begin and end readings at least 21 days apart, 3) average of two consecutive stick readings for begin and end readings, 4) stick readings to 1/8", 5) tank is checked for water monthly, and 6) monthly standards are met for tank size. WAC 173-360-345(6)(c)

- 1000 gal or less – **no** tank tightness test required and **no** "monthly monitoring" release detection method required. WAC 173-360-345(5)(a)
 - 1001 gal to 2000 gal – tank tightness test required **annually** and **no** "monthly monitoring" release detection method required. WAC 173-360-345(5)(b)
-

**D. Tank Monthly Monitoring Methods
(ATG, Vapor, GW, Interstitial, SIR, or Other)**

12. See Monthly Monitoring sections below to determine if the appropriate checks are conducted and documented by the tank operator at least every 30 days. WAC 173-360-335(2)(a)
13. Most manufacturers require their equipment to be checked periodically. Most third party certifications require the equipment be tested **annually**. WAC 173-360-335(1)(b)
14. If the site is using Statistical Inventory Reconciliation (SIR), the vendor must use a method that is third party certified (see SIR method). The owner must submit daily inventory records on a monthly basis to the SIR vendor. The SIR vendor must report the results (pass, inconclusive, or fail) to the tank owner or operator within 15 days. WAC 173-360-345(6)(i)

Monthly Monitoring Methods

Automatic Tank Gauge (ATG) – Check the ATG printout daily (some are programmed only weekly) for the 0.2 gph leak test result (pass or fail). If the ATG printout shows a **fail** result or there is an alarm, you may call your tank service provider to trouble shoot and fix the problem. **All failed leak test results and alarms must be resolved quickly to ensure you do not have a release to the environment.** For recordkeeping requirements keep at least one Passing leak test printout per month for each tank at the fullest fuel level (18 hours after a delivery). Since some ATG models give a failing leak test if the product level in the tank is too low, we recommend the leak test be programmed daily. This ensures you have proof of a passing test at least once per month at the highest fuel level. ATG models with a modem and no printer must monthly mail the site a computer printout showing 0.2 gal/hr. leak test result (or have it readily available for inspection). Check the ATG manual to ensure manufacturers operation and maintenance checks are conducted as required. Most third party certifications require the equipment be checked **annually** WAC 173-360-345(1). ATG systems are third party certified under 40 CFR 280.43(h) or WA equivalent of WAC 173-360-345(6)(j)(i), thus EPA determined inventory reconciliation is not required. WAC 173-360-345(6)(j)(i)

Vapor monitoring – The tank operator must log the vapor monitor check each month and maintain these records. *The Vapor Monitoring Report must show the site was evaluated for its appropriateness for installation of vapor monitors.* Check equipment manual to ensure manufacturer's operation and maintenance checks are conducted as required. The model must have third party certification. Most third party certifications require a tank service provider check the equipment annually. WAC 173-360-345(6)(f)

Groundwater monitoring – The tank operator must log the groundwater monitor check each month and maintain these records. *The Ground water report must show the site was evaluated for its appropriateness for installation of ground water monitors.* Manual monitoring or electronic monitoring may be used. Check equipment manual to ensure manufacturer's operation and maintenance checks are conducted as required. The model must have third party certification. Most third party certifications require a tank service provider check the equipment annually. WAC 173-360-345(6)(g)

Interstitial monitoring – The tank operator must log the interstitial monitor check each month and maintain these records. Check equipment manual to ensure manufacturer's operation and maintenance checks are conducted as required. The model must have third party certification. Most third party certifications require a tank service provider check the equipment annually. WAC 173-360-345(6)(h)

Statistical inventory reconciliation – Appropriate daily inventory records must be mailed to the SIR vendor monthly. The SIR vendor must mail results to the site within 15 days. Tanks that have two consecutive non-Passing results must have a tightness test conducted within 15 days. (All suspected releases must be investigated within 7 days). The SIR method must have third party certification. WAC 173-360-345(6)(i)

E. Piping Pumping System Records

If piping is "Suction (pump)," with the valve under the dispenser (European style), no testing is required. Most retail marketers have pressurized piping and must use **two** modes of release detection (see both #15 and 16 below).

15. **Pressurized Lines** are required to have an automatic line leak detector (ALLD). Both mechanical and electronic ALLDs need a certified tester to conduct a function test (3gph) **annually**. Electronic ALLDs must shut down turbine, since they can't restrict flow. WAC 173-360-350(3)(a)
16. **Pressurized Lines** must also use **one** of the following methods: Annual line tightness test (0.1 gph); electronic ALLD test (0.2gph monthly); Vapor monitoring; Groundwater monitoring; Interstitial monitoring (sump sensor); **or** SIR certified for piping. Numbers 17, 18, 19, and 20 describe these choices. WAC 173-360-350(2)(a)(ii)
17. If using choice of annual line tightness test by certified tester (0.1 gph at 1.5 times the operating pressure), the date must be within last 12 months. WAC 173-360-350(3)(b)
18. If using choice of a line test using Electronic ALLD (0.2 gph monthly), the date on the printout must be within 30 days. WAC 173-360-350(3)(b)
19. If using choice of Vapor or groundwater monitoring, it must include lines and be documented monthly. Interstitial monitoring must have double wall piping sloped down to sump with a leak sensor that will alarm. SIR monthly monitoring must be certified for lines. WAC 173-360-350(3)(c)
20. If using choice of an Interstitial Sump Sensor, it must have manufacturer's operation and maintenance checks conducted as required. Tank service providers can conduct the monitor certification. WAC 173-360-335(1)(b)
21. **Suction Lines** with a check valve at the tank need line tightness tests every 3 years, **or** use one of the monthly monitoring methods (see question 22). WAC 173-360-350(2)(b)
22. **Suction Lines** with a check valve at the tank can use Vapor/Groundwater monitoring, Interstitial monitoring, or SIR, in lieu of the tightness test. WAC 173-360-350(2)(b)

II. Equipment Checks

A. Rectifier for Impressed Current System

23. Impressed Current systems must be operated and maintained continuously with the power on. Some rectifiers have Hobbes Meters or clocks, so calculations can determine if the power has been off for a period of time since the rectifier was installed (8,544 hrs/yr). WAC 173-360-320(1)
24. The tank operator must inspect the Impressed Current system every 60 days (or monthly) and document the Amp and Volt readings. WAC 173-360-320(3)
25. The operator must compare the recorded impressed current Amp/Volt readings to the Amp/Volt ranges specified by the "corrosion expert". If the readings are outside the range, the tank operator must have a corrosion expert test and/or repair the system. WAC 173-360-320(3)

B. Monthly Monitoring Equipment (ATG, Vapor, GW, Interstitial, Other)

26. If the release detection equipment is in alarm, the appropriate actions must be taken. If you are unsure why your equipment is in alarm, call your tank service provider immediately to troubleshoot. A suspected release must be dealt with immediately to ensure public safety and prevent contamination of the environment. WAC 173-360-335(1)(b)
27. The tank operator must be knowledgeable about the release detection equipment. Read the manual to determine how to conduct the monthly check for proper operation. If you don't have a manual, contact the manufacturer (web, phone, mail) to get a copy. WAC 173-360-335(1)(b)
28. For equipment with a printer, ensure it is operable. For equipment with a modem ensure the phone line is connected. WAC 173-360-335(1)(b)
29. Vapor or Groundwater monitoring wells must be placed around both the tanks and piping. If not, ensure additional appropriate release detection is used. WAC 173-360-335(1)(a)

ATG panel must be checked to see if it is operational or in alarm. Some models are easy to get leak test printouts, alarm histories, or set-up reports. Write down the model information and check third party certification. WAC 173-360-335(1)(b)

Vapor monitoring panel must be checked to see if it is operational or in alarm. The tank operator must have a monthly log demonstrating the leak detection "check" was conducted to comply with monthly monitoring (push test button, etc.). If possible, check inside the MW to ensure the groundwater is **low** enough, so vapors could be detected. Write down model information and check third party certification. WAC 173-360-345(6)(f)

Groundwater monitoring can be done manually or electronically. The tank operator must have a monthly log demonstrating the leak detection "check" was conducted to comply with monthly monitoring. If conducted manually, the tank operator should demonstrate during the inspection how they conduct the monthly checks (bail the wells, etc.). If conducted electronically, the tank operator should demonstrate how they conduct the monthly leak check to comply with monthly monitoring (push test button, etc.). Check the panel to ensure it is operational, and check for alarms. Write down model information and check third party certification. If possible, check inside the MW to ensure the groundwater is **high** enough, so fuel could be detected. WAC 173-360-345(6)(g)

Interstitial monitoring panel must be checked to see if it is operational or in alarm. The tank operator must have a monthly log demonstrating the leak detection "check" was conducted to comply with monthly monitoring (push test button, etc.). Have operator show what check is done to comply with monthly monitoring (push test buttons, etc.). Above the tank will be a small access port. Fiberglass tanks will have a belted sensor around the tank. Steel tanks usually have a vertical sensor at one end of the tank. Note what type of interstitial monitoring is used (wet or dry) and the model type. WAC 173-360-345(6)(h)

C. Lines (and/or Turbine Sump Equipment)

30. Pressurized Lines need an Automatic Line Leak Detector present. This can be documented by opening the turbine manway. WAC 173-360-350(3)(a)
31. Corrosion Resistant lines can be verified in the turbine sump and/or under the dispenser. If the lines are not visible, the owner must provide the certified installation paperwork. WAC 173-360-305(2)
32. Interstitial Line sump sensors must be placed low enough in the sump to detect a release. The outer pipe wall must be able to direct a release to the sump. WAC 173-360-335(1)(a)
33. Turbine sumps must be free of liquid. If there is petroleum in the sump, all weeps and drips must be repaired. WAC 173-360-335(1)(b)

D. Spill/Overfill Equipment

34. Spill Bucket must be present and be clean (no dirt or liquid). If there are holes or cracks in the spill bucket that would cause a release to the environment, this needs immediate correction. WAC 173-360-305(3)(a)(i)
35. Overfill device must be present, note which type is used. (Must use one of the next three choices 36, 37, or 38.) WAC 173-360-305(3)(a)(ii)
36. Automatic shut-off device is visible in drop-tube. Check for obvious signs of tampering. WAC 173-360-305(3)(a)(ii)(A)
37. Alarm must be set at 90% (check ATG) and audible to delivery driver (usually exterior alarm). WAC 173-360-305(3)(a)(ii)(B)
38. Ball-float valve can be verified from certified installation paperwork. WAC 173-360-305(3)(a)(ii)(B)

Note: Overfill devices can be tested; to ensure they are functioning properly by a tank service provider. There is no testing frequency requirement; however, the equipment must be functioning properly. It is recommended that owners have overfill equipment function tested periodically and have this documented by a tank service provider.

New Underground Storage Tank Resource: “Overview of an Underground Storage Tank Inspection” is a web-based presentation with helpful information for tank owners, tank service providers, and others responsible for preventing leaks from USTs. View this presentation on the web at http://www.ecy.wa.gov/programs/tcp/ust-lust/UST_overview.pdf.



State of Washington
Department of Ecology

UST Site Inspection

Inspection Date: Time: Inspector(s):

Inspection Type: (check) UST Compliance Technical Assistance Follow-up Other

Table with 2 columns: Site Name, Address, City and UST No., Site Contact, Phone

Table with 5 columns: Tank No., Gallons, Fuel Type, Tank Model, Compartment/Manifold

Table with 2 columns: Fuel Distributor, Distr. Phone

I. RECORDKEEPING REQUIREMENTS

A. General Documents

COMPLIANT?

Table with 4 columns: Question, WAC Reference, Y, N, N/A

B. Tank and Line Corrosion Protection (check)

- Tank Material: Steel, Coated Steel, FRP, Steel Clad w/ Corr Resist
Tank Corr. Prot.: Galvanic, Impr Curr, Int. Lining, Corr Resist
Piping Material: Steel, FRP, Flex, Single-Wall, Double-Wall
Piping Corr. Prot.: Galvanic, Imp. Curr., Corr. Resist.

Table with 4 columns: Question, WAC Reference, Y, N, N/A

C. Tank Inventory Control is conducted (check) Daily Weekly Monthly

Table with 4 columns: Question, WAC Reference, Y, N, N/A

D. Tank Monthly monitoring (check) ATG Vapor GW Interstitial SIR Other

Table with 4 columns: Question, WAC Reference, Y, N, N/A

COMMENTS:

I. RECORDKEEPING REQUIREMENTS (continued)

E. Piping Pumping System (check) Pressure Suction (Tank)
 Suction(Pump) Other _____ COMPLIANT?

15. Pressure Lines have annual ALLD test: (date _____) WAC 173-360-350(3)(a)	Y	N	N/A
ALLD Type: (check) <input type="checkbox"/> Manual <input type="checkbox"/> Electronic			
16. Pressurized Lines use (check) <input type="checkbox"/> Annual Line TT <input type="checkbox"/> Elec. ALLD Line TT <input type="checkbox"/> Vapor <input type="checkbox"/> GW <input type="checkbox"/> Interstitial <input type="checkbox"/> SIR <input type="checkbox"/> Other			
17. Press. Lines annual line tight. test compliant: (date _____) WAC 173-360-350(3)(b)	Y	N	N/A
18. Press. Lines Elec. ALLD tight. test compliant: (date _____) WAC 173-360-350(3)(b)	Y	N	N/A
19. Pressure Lines VM, GWM, Interstitial, or SIR compliant: WAC 173-360-350(3)(c)	Y	N	N/A
20. Int. sump sensor service check per mnfr's instruct: (date _____) WAC 173-360-335(1)(b)	Y	N	N/A
21. Suction Line (tank valve) 3 yr. Tight. Test: (date _____) WAC 173-360-350(2)(b)	Y	N	N/A
22. Suction Line (tank valve) VM, GW, Intst. or SIR compliant: WAC 173-360-350(2)(b)	Y	N	N/A

II. EQUIPMENT CHECKS

A. Rectifier for Impressed Current System

23. Imp. Curr. system operated and maintained continuously: WAC 173-360-320(1)	Y	N	N/A
24 Imp. Curr. system inspected every 60 days: WAC 173-360-320(3)	Y	N	N/A
25. Imp. Curr. Amp/Volt readings within specified range: WAC 173-360-320(3)	Y	N	N/A
Readings: Amp _____ Volt _____ Meter/Clock _____ Rectifier Model _____ Install Date _____			

B. Monthly monitoring (check) ATG Vapor GW Interstitial SIR Other _____

Release Detection Model _____			
26. Rel. Det. Equip. is NOT in alarm: WAC 173-360-335(1)(b)	Y	N	N/A
If no, why is it in alarm _____			
27. Rel. Det. equipment and/or alarms operational: WAC 173-360-335(1)(b)	Y	N	N/A
28 Rel. Det. equipment printer or modem operational: WAC 173-360-335(1)(b)	Y	N	N/A
29. Vapor or GW MWs placed around tanks and piping runs: WAC 173-360-335(1)(a)	Y	N	N/A

C. Lines

30. Pressurized Lines ALLD is present: WAC 173-360-350(3)(a)	Y	N	N/A
31. Corr. Res. lines verified:(check) <input type="checkbox"/> at sump <input type="checkbox"/> at dispenser <input type="checkbox"/> records WAC 173-360-305(2)	Y	N	N/A
32. Interstitial Line sump sensors are placed correctly: WAC 173-360-335(1)(a)	Y	N	N/A
33. Turbine Sumps are free of liquid: WAC 173-360-335(1)(b)	Y	N	N/A

D. Spill/Overfill

34. Spill Bucket does NOT have obvious cracks, holes. WAC 173-360-305(3)(a)(i)	Y	N	N/A
35. Overfill device used: (check) <input type="checkbox"/> Auto-Shut. <input type="checkbox"/> Alarm <input type="checkbox"/> Ball-float WAC 173-360-305(3)(a)(ii)	Y	N	N/A
36. Overfill auto. shut-off device is NOT tampered with: WAC 173-360-305(3)(a)(ii)(A)	Y	N	N/A
37. Overfill alarm set at 90% and audible to delivery driver: WAC 173-360-305(3)(a)(ii)(B)	Y	N	N/A
38. Overfill ball-float valve present (check) <input type="checkbox"/> visual <input type="checkbox"/> records WAC 173-360-305(3)(a)(ii)(B)	Y	N	N/A

COMMENTS: _____

Significant Operational Compliance with Overspill/Overfill/Corr. Prot. Y N N/A

Significant Operational Compliance with Release Detection Y N N/A

____ Photos Taken _____ Tech. Assist. Materials Provided (_____)

____ Action Taken: (check) Notice of Noncompliance Field Citation No. _____

Inspector Signature _____ **Date** _____