



UNDERGROUND STORAGE TANK GENERAL PLAN REVIEW

It is the responsibility of the UST owner or duly authorized representative, to notify other governmental agencies that may have applicable permit requirements. This includes, but is not limited to, the following: Local Fire Agency; Local Building Department; and Air Quality Management District (AQMD).

Please contact one of the offices listed below to obtain information regarding any questions you may have:

County of Riverside
Department of Environmental Health
Hazardous Materials Management Branch

Riverside Office
4065 County Circle Dr. #104
Riverside, CA 92503
PHONE (951) 358-5055
FAX (951) 520-8319

Corona Office
2275 S. Main St. #204
Corona, CA 92882
PHONE (951) 273-9143
FAX (951) 520-8319

Hemet Office
800 S. Sanderson Ave. #102
Hemet, CA 92545
PHONE (951) 766-6524
FAX (951) 791-1778

Indio Office
47950 Arabia St. #A
Indio, CA 92201
PHONE (760) 863-8976
FAX (760) 863-8303

The plan review of new installations, upgrades, repairs, or modifications includes, but is not limited to the following items:

A. STATE AND LOCAL AGENCY REQUIREMENTS

Underground Storage Tank requirements can be found in the California Code of Regulations, Title 23, Division 3, Chapter 16, in the California Health and Safety Code, Chapter 6.7 and in the Riverside County Code, Title 8, Chapter 8.140.

B. PLAN SUBMITTAL REQUIREMENTS

- ___ 1. Submit **four (4)** complete sets of plans, **drawn to scale**.
- ___ 2. Provide documentation that all equipment is approved by an independent testing organization (e.g. UL Listing) for its particular use. UST system equipment must bear appropriate markings.
- ___ 3. Provide certification that the UST system equipment and materials are compatible with the hazardous substances stored. (fuels, solvents, alcohols, acids, etc.)
- ___ 4. Ensure proper fees have been submitted for each tank.
- ___ 5. Copy of plan check application attached to plans.
- ___ 6. Copy of the contractor's license, ICC certifications and manufacturer's training documents.

C. GENERAL PLAN INFORMATION

- ___ 1. Provide a plot plan and vicinity map, drawn to scale with the name and address of the facility clearly indicated.
- ___ 2. Show the location and details of all USTs, piping, monitoring system, sensors, fill pipes, overfill prevention, spill containment, turbines, pumps, sumps, anchoring, set backs, etc.
- ___ 3. Provide a drawing indicating the location of building/structures on site, including the location of existing and proposed underground tank(s).
- ___ 4. Provide a drawing indicating the location of all underground utility lines (e.g. water, electrical, gas and sewage) within 200 feet of the tank installation site. You may wish to contact Dig Alert (Underground Service Alert of Southern California) at (800) 227-2600 or the alternate number at (800) 422-4133 or www.digalert.org. A new national number has been established. It is 8-1-1. For more information about *Call811* visit www.call811.com.
- ___ 5. Indicate the highest anticipated level of groundwater and the source of this information (contact the local water purveyor for information or Riverside County Flood Control at (951) 955-1200).
- ___ 6. Provide the appropriate statements, as applicable for your project, from the list of statements shown on pages five through eleven of this document.
- ___ 7. Provide an equipment list showing all components to be used.

D. TANK INFORMATION

- ___ 1. Provide the name of the tank manufacturer(s) and the size of the tank(s). All new tanks must be double wall.
- ___ 2. Specify the materials used in the construction of the tank
 - a. Steel
 - b. Plasteel
 - c. Fiberglass
 - d. Glasteel
 - e. Other
- ___ 3. State what tests (if applicable) are to be completed prior to placing tank into the excavation.
 - a. Holiday
 - b. Pneumatic
 - c. Hydrostatic
- ___ 4. Provide a detailed drawing of the tank(s); side view, end view, and top view. Show the manufacturer's UST separation distances between tanks and native soils. Ensure that the placement of the USTs and dispensers will allow enough room for the fuel delivery truck to drop fuel. (Fuel is normally dropped from the passenger side of the tanker. Tanker trucks normally require a 50 foot turning radius.)
- ___ 5. Provide details for the UST uplift protection if required by the manufacturer. Show the location of deadmen and tank pads and provide registered engineer buoyancy calculations for tanks completely submerged in water.
- ___ 6. Indicate the location of required strike plates under all accessible primary containment openings.
- ___ 7. Provide the name(s) of the manufacturer(s) for the overfill protection device(s) to be used and provide a detailed drawing; side view. Indicate the highest level of overfill protection (90-95%). Electronic alarms shall be set at 90% and overfill valves shall be set at 95%. Ball float shall be set higher than the alarm or overfill valve setting. For electronic overfill protection, indicate location of the audible/visual alarm for the delivery driver.
- ___ 8. Indicate the approved tank test method to be completed prior to operation of the tank(s). UST tanks installed after July 1, 2004 require Enhanced leak Detection (ELD) testing.
- ___ 9. Indicate the type of backfill material to be used (Note: material should not mask, absorb, or react with the hazardous materials upon an unauthorized release).
- ___ 10. Describe the corrosion protection method, if applicable, for underground tank system(s).

E. PIPING INFORMATION

- ___ 1. Provide the name of the piping manufacturer and materials used in the construction of the piping. New VPH systems (USTs installed after July 1, 2004) require **all** piping to have secondary containment. All UST system piping conveying flammable or combustible liquids must meet the UL 971 standard and be marked with "UL971". Above ground piping for flammable or combustible liquids shall be metal, including the vent piping.
- ___ 2. Indicate the type of piping system; remote fill, gravity, pressure or suction.

- ___ 3. Provide the name of the manufacturer for the spill container and provide a detailed drawing; side view. The spill container must meet the following requirements:
 - a. A minimum capacity of five (5) gallons.
 - b. A drain valve that allows drainage of the collected spill into the primary container or provide a means to keep spill container empty.
 - c. Protected from galvanic corrosion, if made of metal.

- ___ 4. Provide a detailed piping diagram including proposed secondary containment – e.g. product line(s), vent line(s), shear valves, flex lines, extractor housings, risers, fittings, etc.

- ___ 5. Product, fill, vent and vapor recovery piping shall be sloped towards the tanks a minimum of 1/8 inch per one foot of run.

F. SECONDARY CONTAINMENT INFORMATION

- ___ 1. Provide the name of the manufacturers and materials used in the construction of all secondary containment components of the UST systems.

- ___ 2. Provide detailed drawings of fill sumps, turbine sumps, piping sumps, transition sumps, under dispenser containment sumps, etc. Show piping and conduit, penetrations, sensor locations, sensor mounting details, etc.

- ___ 3. Any new tank system installed after July 1, 2004 must comply with California Health and Safety Code Section 25290.1 requirements for all sumps and piping to be double walled and monitored by vacuum, pressure or hydrostatic means.

G. CONTINUOUS MONITORING DEVICE SYSTEM

- ___ 1. Provide the name of the manufacturer and the model numbers for the continuous monitoring device system and its components. The monitoring panel must have audible and visual alarms and a printer. The monitoring panel must be located in an area where facility personnel can immediately detect the alarms at all times. An automatic dialer or remote alarm may be necessary for unmanned facilities.

- ___ 2. Show the location of each sump sensor, how all sensors will be properly mounted at the low point in the sumps and secured to prevent tampering using mounting kits or sleeves

- ___ 3. Only leak detection equipment listed on the SWRCB LG-113 may be used.

- ___ 4. List all functions the continuous monitoring device system will be programmed to perform:
 - a. Monitoring of annular space.

 - b. Monitoring of product piping sump (specify if positive shut down of turbine will occur upon detection of liquid/release).

 - c. Monitoring of fill sump.

 - d. Automatic tank gauge (ATG).

 - e. Electronic overflow protection.

 - f. Monitoring of under dispenser containment sumps.

- g. For new VPH Systems (tanks installed after July 1, 2004) list the type of monitoring (vacuum, pressure, or hydrostatic) that will be used for the secondary containment portions of the tank systems.

___ 5. All pressurized piping must have automatic line leak detectors. Indicate the type of automatic line leak detection device(s) to be installed for the pressurized piping system(s), include the manufacturer name and the model number:

- a. mechanical line leak detector
- b. electronic in-line leak detector
- c. sump sensor

H. ADDITIONAL INFORMATION

State on the plans, as applicable, the following conditions found on pages five through eleven:

1. SELECT FROM THE FOLLOWING GENERAL STATEMENTS ANY OR ALL STATEMENTS AS THEY APPLY TO YOUR PROJECT:

The Hazardous Materials Management Branch (HMMB) will be contacted a minimum of 5 working days prior to repairs to the UST system and all site inspections shall be scheduled a minimum of 5 working days in advance of requested date.

New tank construction and upgrades must begin within six (6) months of stamped approval date and be completed within one (1) year of stamped approval date on plans to remain valid. Repairs and modifications must begin within 30 days of the stamped approval date and completed within 90 days of the stamped approval date on plans to remain valid. Any changes made to the original approved plans must have a written addendum submitted & approved by this department. The addendum(s) may be subject to an hourly charge for review and approval. A stamped, approved set of plans shall be on site at all times.

The Hazardous Materials Management Branch shall inspect tank systems at four (4) separate construction phases:

- a. Setting of tanks.
- b. During primary piping NFPA 30 testing (hydrostatic or pneumatic testing of lines for 30 minutes).
- c. Inspection of all secondary containment, including testing in accordance with manufacturer's guidelines.
- d. At the final inspection, including all portions of the leak detection system.

All applicable UST operating fees and any additional plan check/inspection fees shall be submitted to the HMMB at the Final Inspection.

The contractor performing the work shall maintain a General "A" with HAZ Certification. Prior to starting work the contractor shall provide a copy of their CSLB license, ICC Certifications and Manufacturer's Training Certifications to Riverside County Environmental Health Hazmat Branch.

Any individual(s) installing underground storage tank system components shall meet the following requirements, or work under the direct and personal supervision of an individual physically present at the work site who meets the following requirements: 1. The individual has been adequately trained as evidenced by a current certificate of training issued by the manufacturer(s) of the underground storage tank system components. 2. The individual shall possess a current Underground Storage Tank System Installation/Retrofitting Certificate from the International Code Council (ICC).

Service technicians shall possess or work under the direct and personal supervision of an individual physically present at the work site who possesses a current certificate from the International Code Council (ICC), indicating he or she has passed the California UST Service Technician exam.

All new installations of piping, fittings and components must comply with the revised UL 971 Standard. Piping manufacturers' are required by UL to mark the date of manufacture on the piping at 10-foot intervals, and on fittings or fitting bulk packaging. Therefore, the date of manufacture must be on or after July 1, 2005. Contact your piping manufacturer to ensure that your new piping system is ordered correctly.

The underground storage tank system(s) shall be compatible with the product to be stored.

The tank construction/testing shall be in accordance with nationally recognized codes.

All continuous monitoring equipment shall be on the State's approved equipment list and all equipment shall be approved for use with the continuous monitoring system.

All underground storage tank (UST) equipment shall meet voluntary consensus standards.

All materials to be used (piping, couplings, sealant, adhesive, resins, etc.) shall be compatible and used as per nationally recognized codes.

All materials shall be installed as per manufacturers' specifications.

The electrical supply wiring for the continuous monitoring system shall be hardwired to the junction/breaker box.

All sensors will be properly mounted at the low point in the sumps and secured to prevent tampering using mounting kits or sleeves.

The contractor shall ensure that all fills and monitoring wells are properly labeled.

The contractor shall ensure that the Emergency shut-off switch is operational.

The contractor shall ensure that the secondary piping terminations within sumps are not obstructed and will allow a release to drain into a monitored sump. (This does not apply to VPH systems.)

The contractor shall ensure that on-line leak detectors are installed on turbines and are operational. All leak detectors shall be properly tested in line by a certified technician.

2. USE THESE STATEMENTS ONLY FOR NEW VPH SYSTEMS:

As per AB 1702, before the underground storage tank is placed in use, the UST shall be tested after installation using one of the methods in Health & Safety Code 25290.1(j) to

demonstrate that the tank is product tight. According to the State Water Resources Control Board (SWRCB), ELD is the only approved test method at this time. The UST will be tested after installation, before it is placed into use, using enhanced leak detection (ELD). If the results of post-installation testing indicate that the UST system is leaking liquid or vapor, the owner or operator must take appropriate actions to correct the leakage, and retest the system using ELD, until the system is no longer leaking liquid or vapor. Approval to operate will not be given until the UST system has a passing ELD test.

FOR THE FINAL INSPECTION (For new VPH systems)

Operational sensors in interstices and sump(s)/Positive shut-down demonstrated if required: *The HMMB Specialist shall witness a properly certified technician test all sensors to ensure they indicate an audible and visual alarm. If required, positive shut-down, and fail-safe, of the turbine shall also be demonstrated for applicable sensors. All sensors shall perform as per manufacturer's specifications and the standards of LG-113. LG-113 can be found at http://www.waterboards.ca.gov/water_issues/programs/ust/leak_prevention/lg113/*

Electronic monitor secured/accessible to operator and operational: *Ensure the monitoring panel is hardwired through conduit to the junction/breaker box. Ensure sensor alarms are able to be detected by the operator. The monitoring panel shall be fully operational as per manufacturer's specifications, with audible and visual alarms, and a printer, if required.*

All sensors will detect the earliest possible release: *Annular space sensors must be properly installed (for steel tanks, wire must be measured to ensure it is long enough for the earliest possible detection of a release.) Ensure all sump and dispenser containment sensors are installed at the lowest point, in a location to detect the earliest possible release and firmly secured to prevent tampering.*

Continuous Monitoring Device Certification submitted: *The Continuous Monitoring Device Certification, including the On-Line Leak Detector Tests and vacuum sensor certification, with the print-out from the alarm panel attached, shall be submitted on the State of California forms found at http://www.waterboards.ca.gov/water_issues/programs/ust/forms/docs/mcf.pdf and http://www.waterboards.ca.gov/water_issues/programs/ust/forms/docs/163_1elecform.doc in order to complete the final inspection.*

All monitoring equipment components have tag/sticker affixed by Licensed Technician: *Ensure the certified technician has affixed proper tags and/ or stickers on all monitoring equipment components, including the panel and each sensor.*

Owner/Operator Agreement: *An Owner/Operator Agreement shall be submitted prior to the final inspection, if the owner and the operator are not one and the same.*

As Builts: *In the event a change is made during construction that deviates from the original approved plans, revised plans ("As Builts") shall be submitted and approved in order to complete the final inspection.*

System Testing: *Tank system(s) integrity tests (enhanced leak detection), on-line leak detector tests, and spill bucket SB989 test results shall be submitted to the HMMB in order to complete the final inspection. Approval to operate will not be given until the UST system has a passing ELD test. Spill bucket tests shall be reported on the State of California form found at http://www.waterboards.ca.gov/water_issues/programs/ust/forms/docs/166spillbucket_form.doc*

The following documents must be submitted electronically through the California Electronic Reporting System (CERS) <https://cers.calepa.ca.gov/>

State Forms Submitted: *State of California UST Forms A, B and C shall be submitted prior to the final inspection. For new installations, one Form A per site, one Form B per tank, and one Form C per tank are required.*

Unauthorized Release Response Plan submitted: *An approved State of California UST Response Plan form E shall be submitted in order to complete the final inspection. (Note: This plan should also be posted and/or available on site.)*

Monitoring Plan completed: *A completed State of California UST Monitoring Plan shall be submitted in order to complete the final inspection.*

Financial Responsibility: *A California State Certificate of Financial Responsibility along with the Letter from the Chief Financial Officer, or other supporting documentation shall be submitted in order to complete the final inspection. The Financial Responsibility Guidebook and forms can be found at http://www.waterboards.ca.gov/water_issues/programs/ustcf/financialresponsibility.shtml*

Hazardous Materials Business Emergency Plan: *Hazardous Materials Business Emergency Plan shall be submitted in order to complete the final inspection.*

3. USE THESE STATEMENTS FOR EXISTING SYSTEMS FOR SECONDARY CONTAINMENT REPAIR:

If concrete is broken, soil/pea gravel samples shall be taken as directed and witnessed by Riverside County Environmental Health, Hazardous Materials Management Branch personnel. The samples should have no headspace and be placed on ice and immediately analyzed on a 24-hour turnaround schedule. Sample results shall be submitted to HMMB prior to backfill. If sampling indicates that there is petroleum hydrocarbon contamination, the contractor shall notify HMMB and the Local Oversight Program of the contamination and obtain guidance on the installation of conductor casing prior to backfilling the areas where the contamination is located.

Sumps installation or repair shall be done in conformance with the California Code of Regulations, Title 23, Division 3, Chapter 16, Section 2661, which states that areas shall be covered with epoxy or isophthalic polyester based resin. Fiberglass cloth with a minimum weight of 1.5 ounce per yard that is silane-treated shall be worked completely in the resin base. The resin base shall be installed a minimum of two inches beyond the fiberglass cloth. All repairs shall include installation of fiberglass cloth with a minimum dimension of 12 by 12 inches centered over the area to be repaired. A second layer of fiberglass cloth of the same weight shall be installed directly over the primary cloth layer and shall be cut to overlap the primary patch by 1.5 inches on all sides.

Secondary containment repairs shall be SB989 tested for integrity by an approved tester and results shall be submitted on the State's Secondary Containment Testing Report Form prior to final inspection. The secondary containment tester shall possess or work under the direct and personal supervision of an individual physically present at the work site who possesses a current certificate from the International Code Council (ICC), indicating he or she has passed the California UST Service Technician exam. (The tester must be on the Riverside County Secondary Containment Testers List.)

FOR THE FINAL INSPECTION (Secondary Containment Repair)

SB-989 Test Results Submitted: SB989 test results shall be submitted on the State's Secondary Containment Testing Report Form in order to complete the final inspection.

All sensors will detect the earliest possible release: *Annular space sensors must be properly installed (for steel tanks, wire must be measured to ensure it is long enough for the earliest possible detection of a release.) Ensure all sump and dispenser containment sensors are installed at the lowest point, in a location to detect the earliest possible release and firmly secured to prevent tampering.*

Soil Sample Results: *Soil sample test results shall be submitted in order to complete the final inspection. (Soil samples shall be taken at the direction of the HMMB Specialist. Excavations may not be backfilled until the sample results are received. A 24-hour turn around time is required for all sample results.)*

Test Boots: *The owner/operator shall ensure that the secondary containment test boots are pulled back or ports are open so that any product release from the primary piping will flow back to the nearest monitoring sensor and be detected at the earliest possible moment.*

4. USE THESE STATEMENTS FOR EXISTING UST SYSTEMS REPAIRS OR UPGRADES:

If concrete is broken, soil/pea gravel samples shall be taken as directed and witnessed by Riverside County Environmental Health, Hazardous Materials Management Branch personnel. The samples should have no headspace and be placed on ice and immediately analyzed on a 24-hour turnaround schedule. Sample results shall be submitted to HMMB prior to backfill. If sampling indicates that there is petroleum hydrocarbon contamination, the contractor shall notify HMMB and the Local Oversight Program of the contamination and obtain guidance on the installation of conductor casing prior to backfilling the areas where the contamination is located.

Tanks shall remain in an overfill condition during construction to keep fuel vapors in the tanks above the upper explosive limit.

All pneumatic pressure tests shall be conducted using an inert gas to prevent fires and/or explosions.

FOR THE FINAL INSPECTION (Repair/Upgrade)

All sensors will detect the earliest possible release: *Annular space sensors must be properly installed (for steel tanks, wire must be measured to ensure it is long enough for the earliest possible detection of a release.) Ensure all sump and dispenser containment sensors are installed at the lowest point, in a location to detect the earliest possible release and firmly secured to prevent tampering.*

Product Line Testing: Valid Pipeline Integrity Test results for each product line repair, modification or upgrade shall be submitted in order to complete the final inspection.

Soil Sample Results: *Soil sample test results shall be submitted in order to complete the final inspection. (Soil samples shall be taken at the direction of the HMMB Specialist. Excavations may not be backfilled until the sample results are received. A 24-hour turn around time is required for all sample results.)*

Test Boots: *The owner/operator shall ensure that the secondary containment test boots are pulled back or ports are open so that any product release from the primary piping will flow back to the nearest monitoring sensor and be detected at the earliest possible moment.*

5. USE THESE STATEMENTS FOR MONITORING SYSTEM REPAIR OR UPGRADES:

FOR THE FINAL INSPECTION (Monitoring System Repair/Upgrade)

Electronic monitor secured/accessible to operator and operational: *Ensure the monitoring panel is hardwired through conduit to the junction/breaker box. Ensure sensor alarms are able to be detected by the operator. The monitoring panel shall be fully operational as per manufacturer's specifications, with audible and visual alarms, and a printer, if required.*

Operational sensors in interstices and sump(s)/Positive shut-down demonstrated if required: *The HMMB Specialist shall witness a properly certified technician test all sensors to ensure they indicate an audible and visual alarm. If required, positive shut-down, and fail-safe, of the turbine shall also be demonstrated for applicable sensors. All sensors shall perform as per manufacturer's specifications and the standards of LG-113. LG-113 can be found at http://www.waterboards.ca.gov/water_issues/programs/ust/leak_prevention/lq113/*

All sensors will detect the earliest possible release: *Annular space sensors must be properly installed (for steel tanks, wire must be measured to ensure it is long enough for the earliest possible detection of a release.) Ensure all sump and dispenser containment sensors are installed at the lowest point, in a location to detect the earliest possible release and firmly secured to prevent tampering.*

Continuous Monitoring Device Certification submitted: *The Continuous Monitoring Device Certification, including the On-Line Leak Detector Tests and vacuum sensor certification, with the print-out from the alarm panel attached, shall be submitted on the State of California forms found at http://www.waterboards.ca.gov/water_issues/programs/ust/forms/docs/mcf.pdf and http://www.waterboards.ca.gov/water_issues/programs/ust/forms/docs/163_1elecform.doc in order to complete the final inspection.*

All monitoring equipment components have tag/sticker affixed by Licensed Technician: *Ensure the certified technician has affixed proper tags and/ or stickers on all monitoring equipment components, including the panel and each sensor.*

Monitoring Plan completed: *A completed State of California UST Monitoring Plan shall be submitted in order to complete the final inspection.*