UST REMOVALS

How to ensure safety and compliance

Reasons for UST Removal

- Single wall tank sunset
- Non-compliance/testing failure
- Unpermitted tank (Easter egg)
- Other

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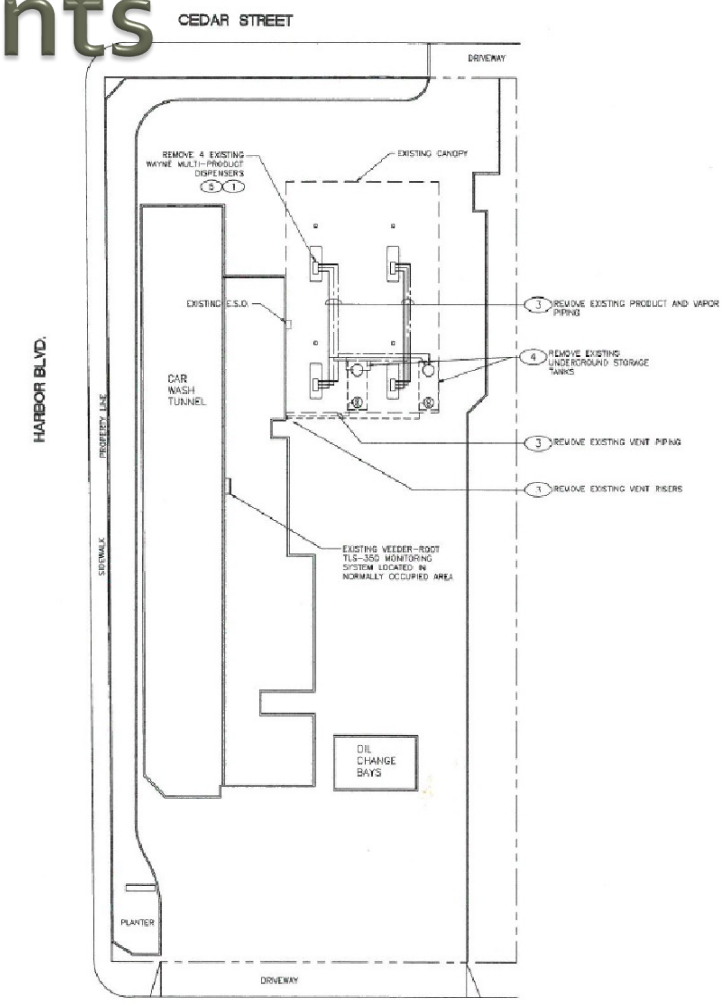
Plan Check: Key Elements

- Qualifications
- Site Plan
- Haz or Non-Haz removal
- Disposition of Tanks and Site

Be sure to cross-reference with CERS and agency files where possible.



What kind of documentation should accompany the removal plan?

- Facility Closure Plan (if applicable)
- City Building Division Permits (if applicable)
- Copy of current City Business License
- Copy of Workers' Compensation Coverage
- Copy of California Contractor's License (A, B, C-36 D-40 only)
- Copy of Hazardous Substance Removal Certification


dca
CONTRACTORS
STATE LICENSE BOARD
ACTIVE LICENSE
588098
CORP
TAIT ENVIRONMENTAL SERVICES INC
C10 B A ASB HAZ
02/29/2020
www.cslb.ca.gov

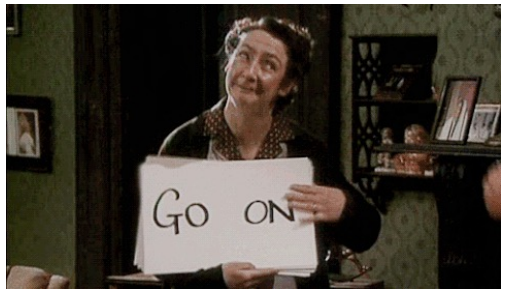
Documentation (continued)

- Completed Permit Application
- Three (3) sets of plans which include: tank(s) size, current and past contents, location of tank(s) and piping, utilities, structures, property lines and streets
- Appropriate Permit Fee
- Statement indicating whether UST(s) will be transported as hazardous or non-hazardous waste
- A statement from the property owner indicating the intended disposition of the property once the tanks have been removed (e.g. reinstallation, sale of property)

Other permit conditions?

- Notify AHJ prior to start of work.
- Site shall be secured.
- Tanks shall not be uncovered past the midway point (spring line) without approval.
- Leave tank-top hardware in place for inspection. If piping must be removed it shall be set aside for inspection.
- Access tanks through existing openings. No cutting shall be performed without specific permission of the AHJ.

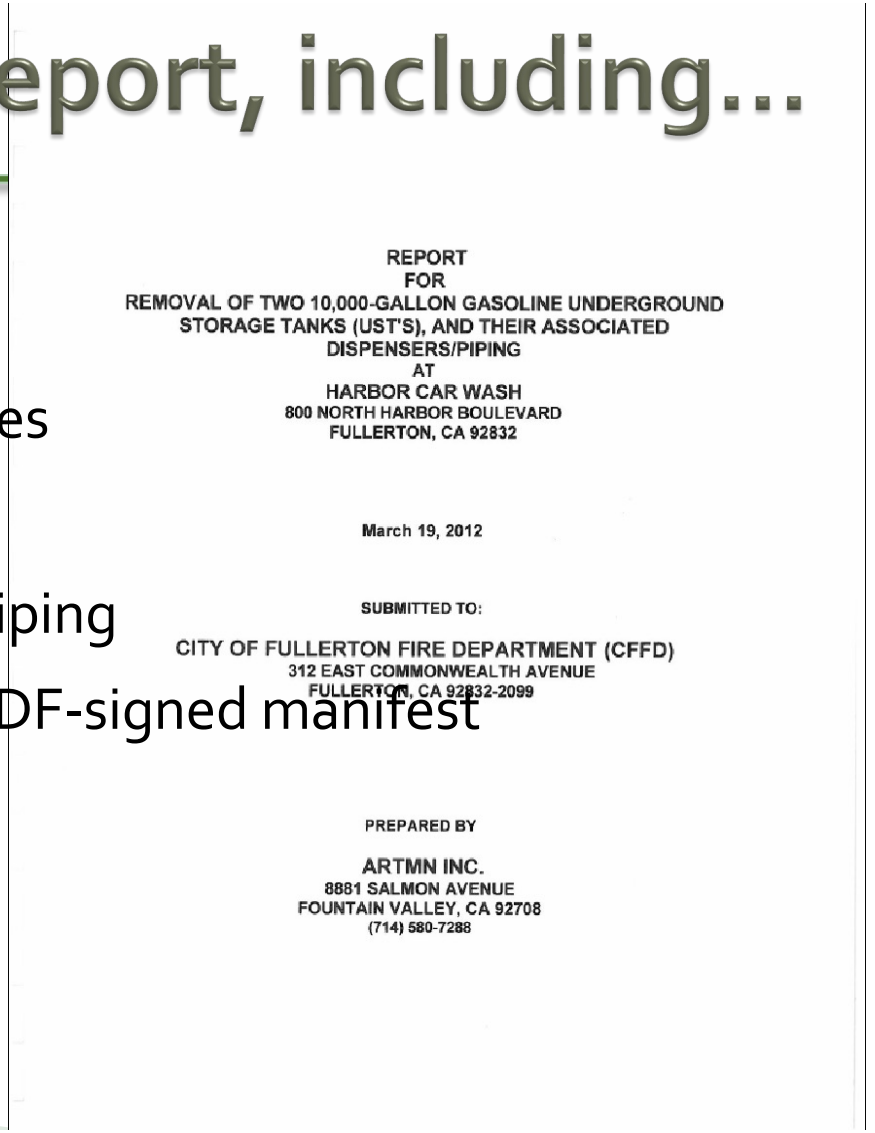
Sure, why not…



- Tank must be certified non-hazardous by a registered Marine Chemist or certified Industrial Hygienist. (22 CCR § 67383.3)
- Tanks shall not be lifted without approval of AHJ.
- All piping and electrical wiring associated with the tanks shall be removed and properly disposed of.
- Soil samples shall be collected in brass or stainless steel cylinders with caps, Teflon and labels. A sealable cooler with cooling material must be on site. Samples shall be transported under a chain of custody.
- Crane required for lifting tanks greater than 550 gallons

Don't forget the closure report, including…

- White copy of chain of custody for samples
- Lab results for all samples
- Destruction certificate for all tanks and piping
- Photocopy of generator manifest and TSDF-signed manifest
- Copy of Marine Chemist/IH certificate



REPORT
FOR
REMOVAL OF TWO 10,000-GALLON GASOLINE UNDERGROUND
STORAGE TANKS (UST'S), AND THEIR ASSOCIATED
DISPENSERS/PIPING
AT
HARBOR CAR WASH
800 NORTH HARBOR BOULEVARD
FULLERTON, CA 92832

March 19, 2012

SUBMITTED TO:

CITY OF FULLERTON FIRE DEPARTMENT (CFFD)
312 EAST COMMONWEALTH AVENUE
FULLERTON, CA 92832-2099

PREPARED BY

ARTMN INC.
8881 SALMON AVENUE
FOUNTAIN VALLEY, CA 92708
(714) 580-7288

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Where do you get the authority to ask for all this stuff?

- Health and Safety Code 6.7, section 25298
- California Code of Regulations, Title 23, section 2671
- 2022 California Fire Code 105.6.8, 105.6.12

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Preparing for the pull: Site size-up

Site size up: Potential concerns

- Neighboring occupancies (schools, busy commercial areas)
- Traffic (difficulties for truck, crane access)
- Overhead hazards (power lines, canopies)
- Weather (Lightning/Wind/Rain)

Site size up: Onsite hazards

- Other hazmat (LPG tanks, waste storage, etc)
- Ignition sources (hot work, equipment)
- Underground hazards (gas, electrical and sewer lines)

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Day of the pull: Being prepared

- Bring copy of stamped plans & permit
- Understand vehicle staging
- Understand who the players are
- Attend safety meeting/make sure everyone familiar with onsite safety plan

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And now a word about PPE…

- Hardhat
- Steel-toe boots
- Reflective Vest
- Gloves (for soil handling)

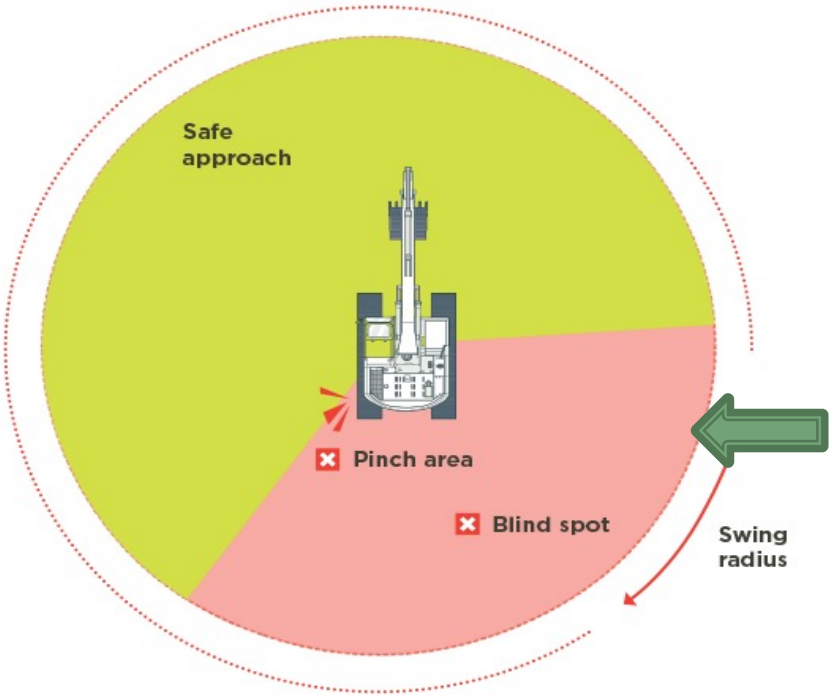
Always follow your department protocol and/or site requirements.

Site Hazards That May Not Be Apparent

Sloughing of excavation walls

Site Hazards That May Not Be Apparent

Swing radius (arm and cab) of excavators and cranes



Rendering the UST Safe For Transport

Hazardous

- Fuel is removed from UST (usually hazwaste) & piping triple-rinsed (rinseate is hazwaste)
- Dry ice is added to the tank (a minimum of 22.2 pounds per 1000 gallon of capacity*)
- Oxygen reading should be below 5% (allow time for dry ice to sublime)
- UST is hauled to TSDF on a hazardous waste manifest

Non-Hazardous

- UST & piping is triple-rinsed (rinseate = hazwaste)
- Industrial Hygienist or Marine Chemist takes readings with a CGI.
- I.H. or M.C. certifies the UST as non-hazardous (get a copy prior to pull)
- UST can be transported as non-hazardous

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To Cut Or Not to Cut?

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Most USTs have sufficient openings for cleaning, certifying, and/or introducing dry ice

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Cutting should only be permitted when operationally necessary

UST lacks sufficient openings:

- Older, smaller USTs
- USTs damaged by grading operations

UST contents are not easily removed:

- Slurry
- Solid material
- Sludge

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What conditions should be put on cutting?

- Only with specific AHJ approval
- Only with approval of I.H. or Marine Chemist*
- Only cold-cutting with non-sparking tools
- Limit the number and size of cuts to the minimum necessary (usually no greater than two 24" x 24" windows)

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A quick word about CGI's

- Must have current calibration per manufacturer
- LEL is displayed in % of Lower Explosive Limit.
- Reading is only true if measuring the same substance as used to calibrate meter. CGI shows a "relative response"
- "1" only equals "1" if what you're monitoring is what the meter is calibrated to.

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When LEL isn't LEL…

- If your CGI is calibrated to methane and you are monitoring another substance, reading must be multiplied by a correction factor (CF) to determine the actual percentage of LEL.
- Readings are only valid in a normal oxygen environment (i.e. no dry ice/no active venting)
- Take readings at multiple locations/depths and be sure to allow enough response time

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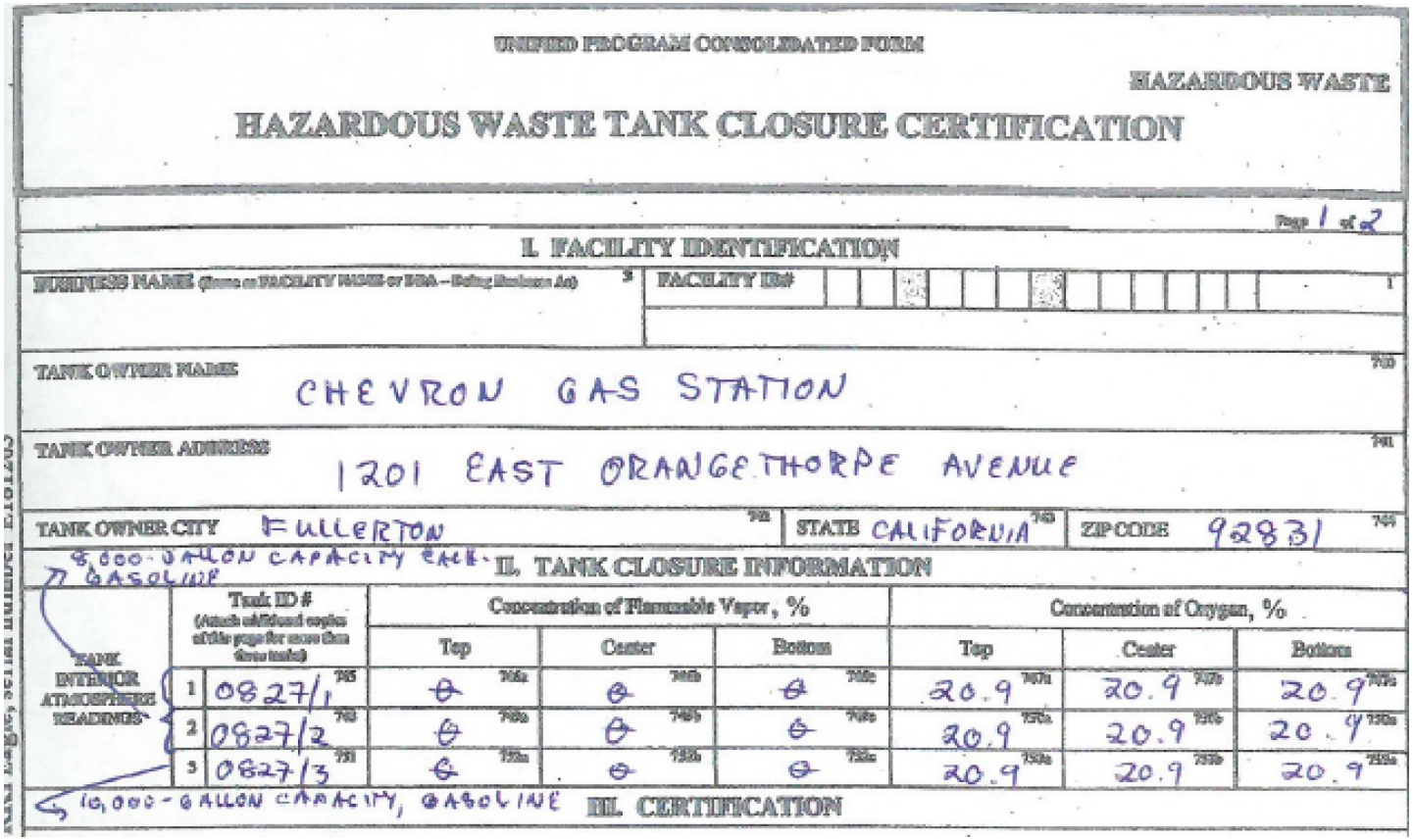
Review certification prior to giving approval to pull



UNIFIED PROGRAM CONSOLIDATED FORM

HAZARDOUS WASTE

HAZARDOUS WASTE TANK CLOSURE CERTIFICATION

Page 1 of 2

I. FACILITY IDENTIFICATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 5 | FACILITY ID# 1

TANK OWNER NAME: CHEVRON GAS STATION 710

TANK OWNER ADDRESS: 1201 EAST ORANGETHORPE AVENUE 741

TANK OWNER CITY: FULLERTON 742 | STATE: CALIFORNIA 743 | ZIP CODE: 92831 745

8,000-GALLON CAPACITY EACH, GASOLINE

II. TANK CLOSURE INFORMATION

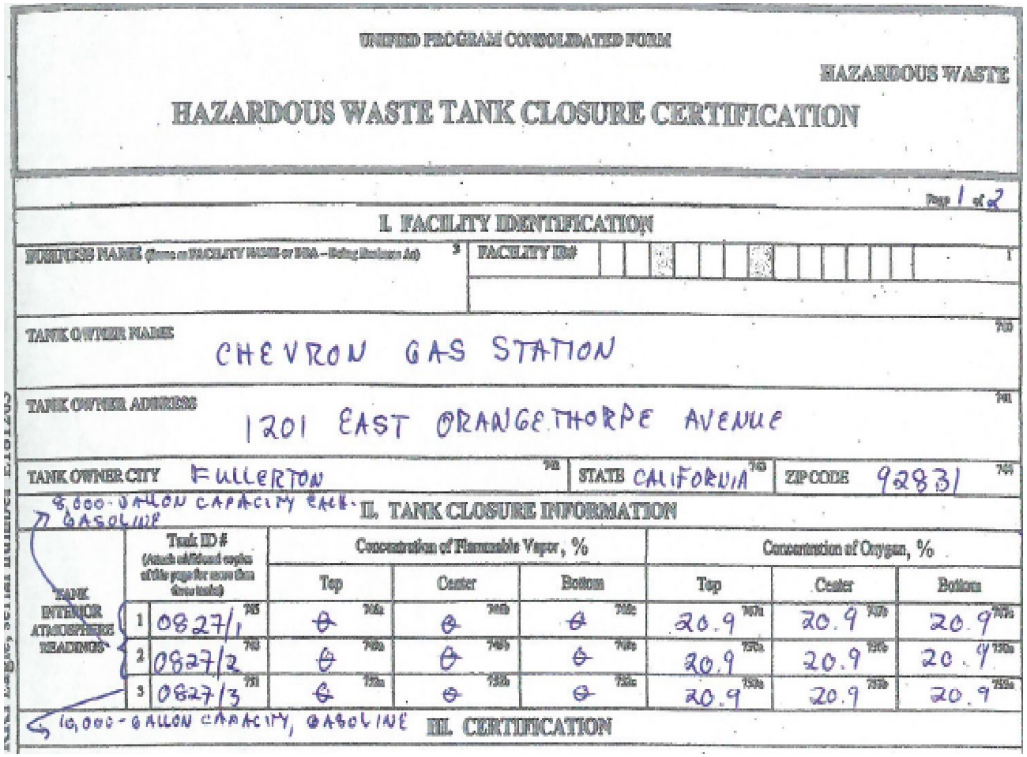
	Tank ID # (Attach additional copies of this page for more than three tanks)	Concentration of Flammable Vapor, %			Concentration of Oxygen, %		
		Top	Center	Bottom	Top	Center	Bottom
TANK INTERIOR ATMOSPHERIC READINGS 1	0827/1 745	0 746a	0 746b	0 746c	20.9 747a	20.9 747b	20.9 747c
2	0827/2 749	0 748a	0 748b	0 748c	20.9 750a	20.9 750b	20.9 750c
3	0827/3 751	0 752a	0 752b	0 752c	20.9 753a	20.9 753b	20.9 753c

10,000-GALLON CAPACITY, GASOLINE

III. CERTIFICATION

CUPA FORUM

- Cert should list UST type and capacity
- Cert should include readings for flammability and oxygen taken at the top, center and bottom of the tank
- Each UST should be assigned a number, listed on the form and spray painted on the tank
- The certification is only good for 24 hours, due to the potential for USTs to "sweat" residual hydrocarbons



UNIFIED PROGRAM CONSOLIDATED FORM

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8,000-GALLON CAPACITY EACH - GASOLINE

II. TANK CLOSURE INFORMATION

TANK INTERIOR ATMOSPHERIC READINGS	Tank ID # (Attach additional copies of this page for more than three tanks)	Concentration of Flammable Vapor, %			Concentration of Oxygen, %		
		Top	Center	Bottom	Top	Center	Bottom
1	0827/1 735	0 736a	0 736b	0 736c	20.9 737a	20.9 737b	20.9 737c
2	0827/2 750	0 750a	0 750b	0 750c	20.9 751a	20.9 751b	20.9 751c
3	0827/3 751	0 752a	0 752b	0 752c	20.9 753a	20.9 753b	20.9 753c

10,000-GALLON CAPACITY, GASOLINE

III. CERTIFICATION

Congratulations! Now comes the hard part…

- Certified UST is a minimal fire or hazmat hazard
- The physical hazards of the removal are significant
- Fuel USTs generally weigh between 5000 and 20000 pounds
- Besides the tank(s) there are vehicles, equipment and the excavation to keep in mind

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Be conscious of…

- Escape routes
- Protective barriers
- Footing

Practice situational awareness

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Lifting the tanks

Talk to your crane operator:

- Is the crane and the counterweight sufficient for the load and the angle of the pull
- Are the outriggers positioned appropriately
- What will be the path of travel for the USTs
- What sign or signal will be given to stop work immediately
- Do they have any concerns about the lift

Lifting the tanks

- Do NOT use the lifting eyes/lugs
- Keep the tank shored until the crane operator can pull the straps or chains taut (static load)
- Be aware that wet or muddy soil can create a suction effect, increasing the effective load on the crane
- Keep your eyes and ears open for indications of strain on the crane or the tank being lifted

Keep in mind the rule of three…

< 3 points of contact = higher risk

>/= 3 points of contact = lower risk

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Once the tank has been secured

- Contractor will usually perform some cleaning of the UST either by scraping or hitting the tank
- This gives the inspector an opportunity to inspect the tank for signs of damage/release
- NEVER attempt to inspect the tank unless there are at least three points of contact

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When pulling multiple USTs…

- Make sure the first UST is secured before starting to pull the next one
- Unless multiple tanks are being transported on one trailer, the first tank should be down the road and the next trailer ready before beginning the next pull
- In short, don't put a tank in the air if you don't have a safe place to put it down

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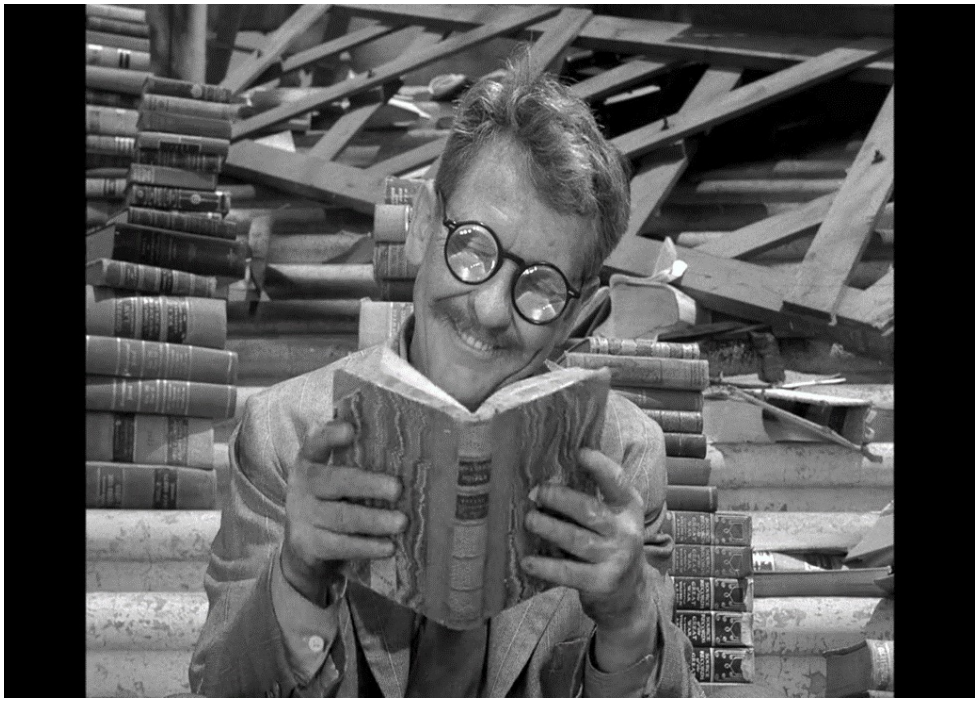
Let's take a moment to talk about documentation

- Former and current UST sites are often the subject of records requests and litigation
- An inspector should try to document the removal with photographs and with notes
- If possible, have one person from the AHJ responsible for documenting so that the other can concentrate on safety
- If only one inspector, safety always takes priority over documentation



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UST REMOVAL 1430 E. ORANGETHORPE AVENUE 12/17/09

WEATHER: ~70 DEGREES SLIGHT BREEZE FROM THE EAST

0920 WITNESSED CLEANING OF UST

1040 RECEIVED CERTIFICATION OF THE UST AS NON-HAZARDOUS FROM C.I.H.

1130 UST #1217/1 REMOVED (OWENS CORNING S/N# 174009). UST MISLABELLED AS "40000" GALLONS, ACTUALLY 4000 GALLONS. SOME SCRAPE MARKS CONSISTENT WITH EXCAVATION OBSERVED.

1220 TOOK SAMPLE "TBW" @ ~12ft BGS WESTERN UST PIT NO STAINING/ODOR OBSERVED. PID READING = 0.

1235 TOOK SAMPLE "TBE" @ ~12ft BGS EASTERN UST PIT NO STAINING/ODOR OBSERVED. PID READING = 0.

1254 TOOK SAMPLE "P2" @ ~2ft BGS AT POINT WHERE FUEL LINE TRANSITIONED INTO GENERATOR BUILDING. SOME STAINING AND SLIGHT ODOR OBSERVED. PID = 0

1300 TOOK SAMPLE "P1" @ ~1.5ft BGS AT A POINT ALONG THE PIPING RUN 9' WEST OF GENERATOR BUILDING NO STAINING/ODOR OBSERVED. PID = 0.

1325 TOOK SAMPLE "SP1" FROM NORTHERN SPOILS PILE. NO STAINING/ODOR OBSERVED. PID = 0.

1326 TOOK SAMPLE "SP2" FROM SOUTHERN SPOILS PILE. NO STAINING/ODOR OBSERVED. PID = 0.

Once the removal is complete, sampling can be conducted

Per 23CCR§2672: "soil samples shall be taken immediately beneath the removed portions of the tank, a minimum of two feet into native material at each end of the tank in accordance with section 2649. A separate sample shall be taken for each 20 linear-feet of trench for piping."

Sampling continued…

In practical terms:

- One sample at each end of each tank.
- Samples at piping junctions and transitions, including all UDC's
- Soil in the spoils pile may be characterized with a composite sample(s)
- Better too many samples than too few (32 were taken at the site pictured)

Yes, this is new piping. It's called creative license.

Coordinate with the sampler on locations, depths, analytics for samples

23CCR§2672 again: "Soils shall be analyzed…for all constituents of the previously stored hazardous substances and their breakdown or transformation products. The local agency may waive the requirement for analysis of all constituents, breakdown or transformation products when key constituents that pose a significant threat to water quality or the environment can be identified for analysis."

Bottom line: **The owner/operator shall "demonstrate to the satisfaction of the local agency that an unauthorized release has not occurred."**

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Piping/UDC samples are generally taken with a hand auger

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The sampling equipment should be cleaned between each sample to prevent cross-contamination of samples

Samples from the tank pit may be taken with the excavator minimize risk to sampling personnel

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Samples should be labeled (and may be sealed with evidence tape) prior to placing in a cooler

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Sampling continued…

A photoionization detector (PID) can be useful tool for confirming the presence or absence of contamination

- Can detect even small amounts of volatile organic compounds (voc's)
- Reads out in ppm
- Does not differentiate what voc's are being detected
- Like CGI must be calibrated and given sufficient reaction time
- Will react to atmospheric contaminants like diesel exhaust

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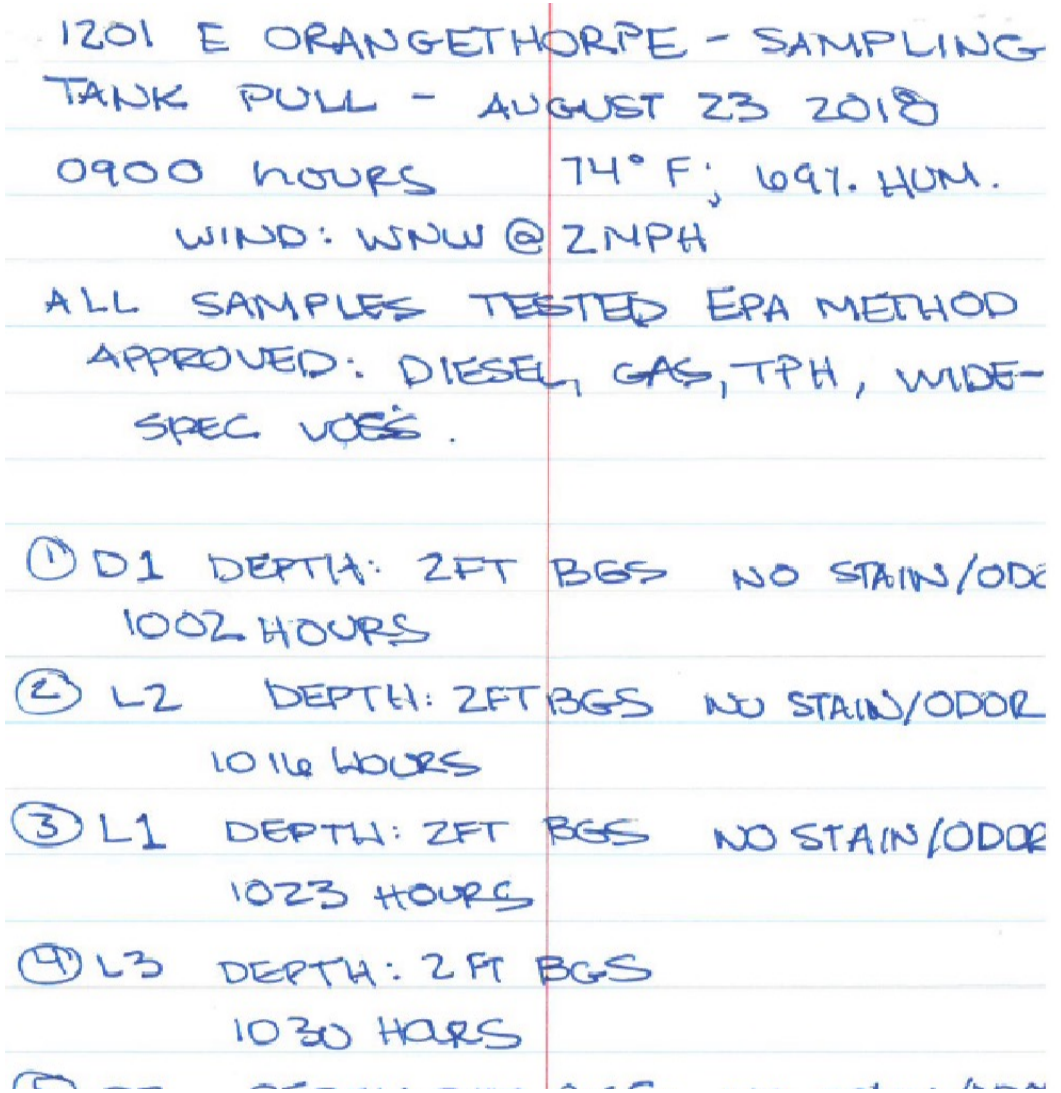
Sampling Documentation

Keep a log of samples as they taken. The log should indicate:

- ❑ Sample name
- ❑ Approximate depth and time
- ❑ Any observations regarding staining or odor
- ❑ Any PID readings
- ❑ General atmospheric conditions

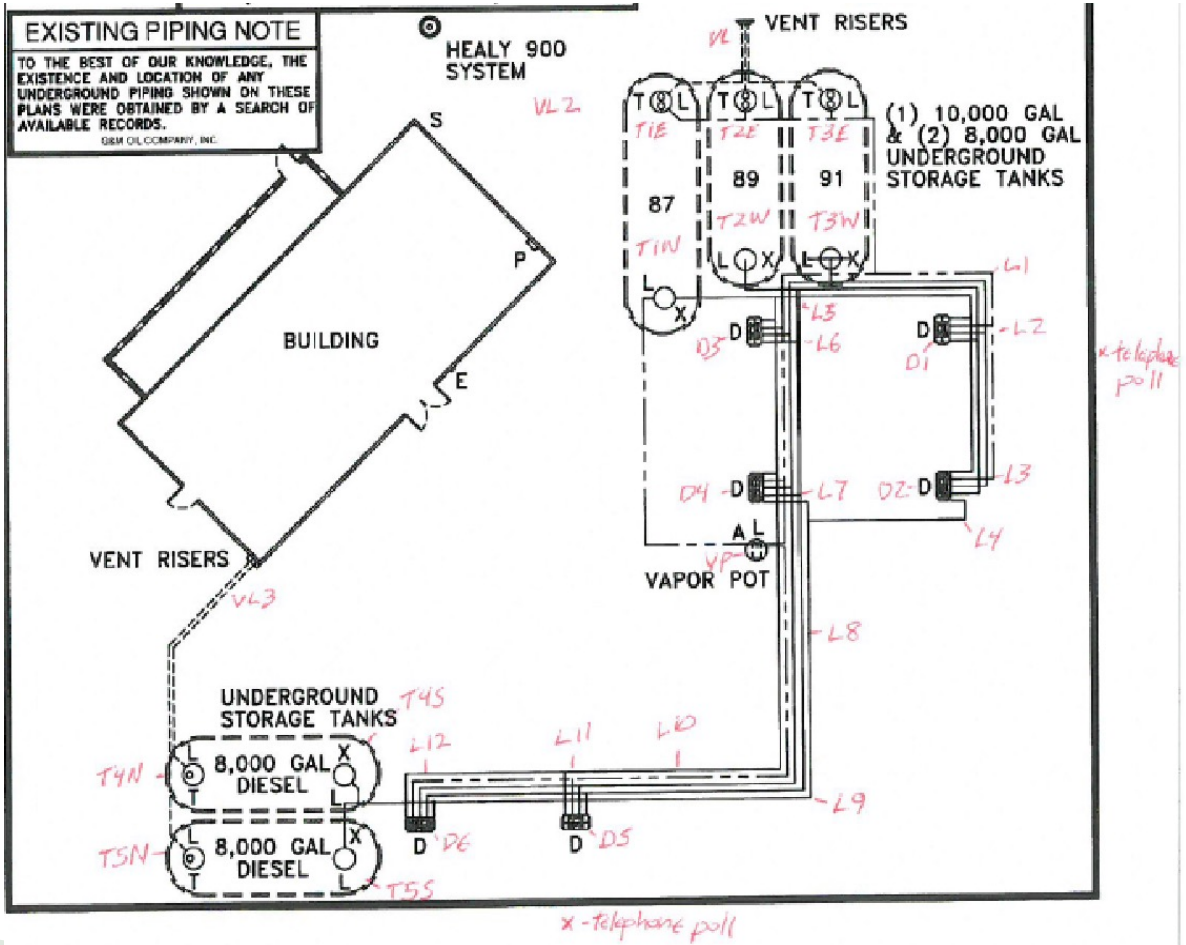

1201 E ORANGETHORPE - SAMPLING
TANK PULL - AUGUST 23 2018
0900 HOURS 74° F; 69% HUM.
WIND: WNW @ 2MPH
ALL SAMPLES TESTED EPA METHOD
APPROVED: DIESEL, GAS, TPH, WIDE-
SPEC VOCS.

① D1 DEPTH: 2FT BGS NO STAIN/ODO
1002 HOURS
② L2 DEPTH: 2FT BGS NO STAIN/ODOR
1016 HOURS
③ L1 DEPTH: 2FT BGS NO STAIN/ODOR
1023 HOURS
④ L3 DEPTH: 2 FT BGS
1030 HOURS

Sampling Documentation

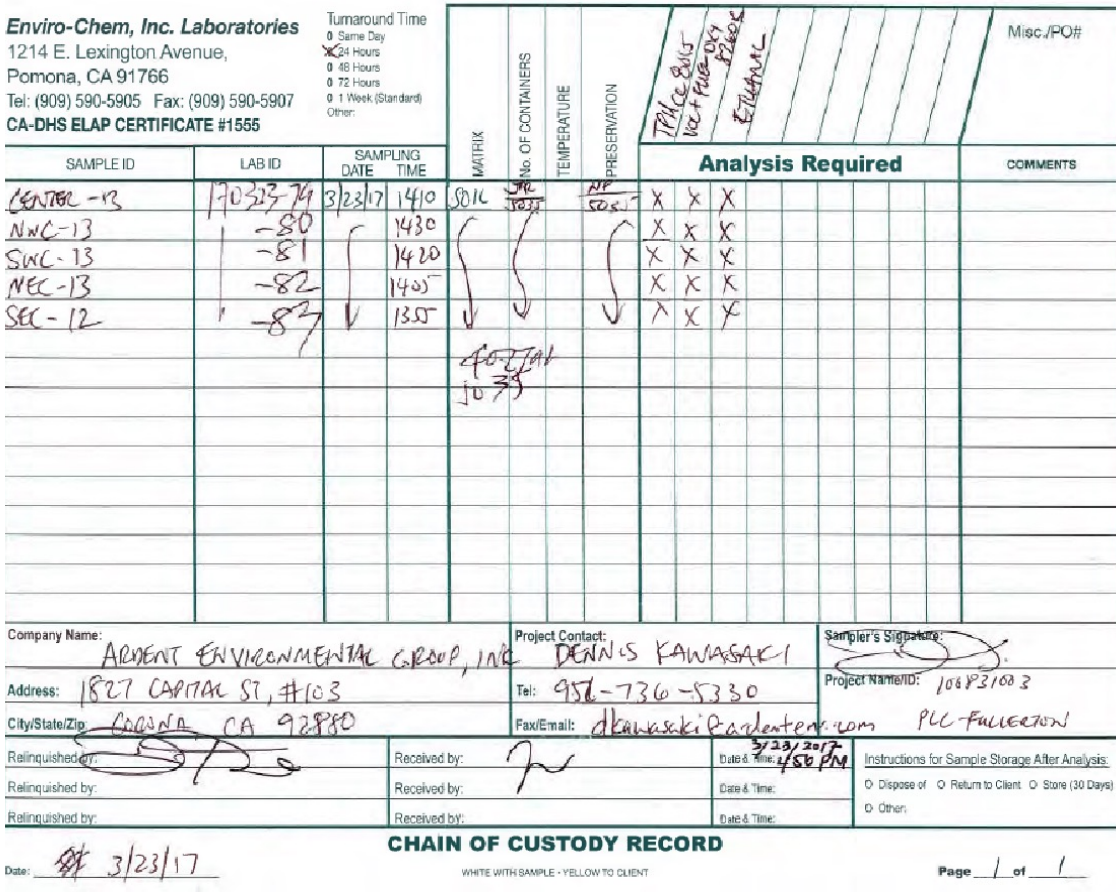
Create a sampling site plan:

- Can use existing monitoring site plan
- If no site plan, indicate locations of USTs, piping, and dispensers
- Be sure to indicate reference points that will remain post-removal



Follow your department's policies on analytical methods and chain of custody

- Parameters will depend on UST contents
- For example, "TPH-Gas, TPH-diesel, Full scan VOCs with oxygenates"
- Waste USTs analytical protocols will be different
- Since oil is the most common waste in USTs, let's talk about that…



Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE #1555

Turnaround Time
0 Same Day
X 24 Hours
0 48 Hours
0 72 Hours
0 1 Week (Standard)
Other:

Misc./PO#

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	Analysis Required	COMMENTS
CENTER -13	1703237-79	3/23/17	1410	SOIL	3 JAR		NP SOIL	X X X	
NWC-13	-80		1430					X X X	
SWC-13	-81		1420					X X X	
NEC-13	-82		1405					X X X	
SEC-12	-83		1355					X X X	
				40-Tal Jar					

Company Name: ARDENT ENVIRONMENTAL GROUP, INC
Project Contact: DENNIS KAWASAKI
Sampler's Signature:
Address: 1827 CAPITAL ST, #103
Tel: 951-736-5330
Project Name/ID: 10683103
City/State/Zip: CORONA CA 92880
Fax/Email: dkawasaki@ardentenv.com PLC-FULLERTON

Relinquished by:
Received by:
Date & Time: 3/23/2017 4:50 PM
Instructions for Sample Storage After Analysis:
O Dispose of O Return to Client O Store (30 Days)
O Other:

Relinquished by:
Received by:
Date & Time:

Relinquished by:
Received by:
Date & Time:

CHAIN OF CUSTODY RECORD

Date: 3/23/17
WHITE WITH SAMPLE - YELLOW TO CLIENT
Page 1 of 1

CALIFORNIA CUPA FORUM

Follow your department's policies for review of the Closure Report and follow up

- For a site with no evidence of a release your agency may issue a "No Further Action" (NFA) letter.
- For a site with evidence of a release your agency may refer it to the Local Oversight Program or Regional Water Board who will review and oversee site assessment by the responsible party

TABLE OF CONTENTS

CALIFORNIA CUPA FORUM

Sample NFA Letter

Whether or not your agency issues an NFA letter, be sure to issue a closure statement to the operator and document all activities at a UST removal. This includes filing the plans, permit, and closure report.

September 21, 2012

Sommerville Conzelman Co.
Attention: Steve Mohler
1010 E. Chestnut St.
Santa Ana, CA 92701

Re: No Further Action
Former General Contractors Yard
201 S. Balcom Avenue, Fullerton CA 92832

Dear Mr. Mohler:

This letter confirms the completion of the tank removal activities located at 201 S. Balcom Avenue, Fullerton, California. With the provision that the information, such as laboratory results and other documents provided to the Fullerton Fire Department was accurate, it is the position of this office that no further action is required at this time.

Please be advised that this letter does not relieve you of any liability under the California Health and Safety Code or Water Code for past, present or future use of the site. Nor does it relieve you of the responsibility to clean up existing, additional or previously unidentified conditions at the site, which cause or threaten to cause pollution or otherwise pose a threat to water quality or public health.

Additionally, be advised that changes in the present or proposed use of the site may require further site characterization and mitigation activity. It is the property owner's responsibility to notify this agency of any changes in report content, future contamination findings, or site usage.

Please call me at 714-738-5359 if you have any questions.

Regards,

Grant Miner
Environmental Compliance Specialist

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Closure Documentation (continued)

Make sure that appropriate closure documentation is submitted, reviewed and approved in CERS, including the installation date for the removed USTs.

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In Conclusion:

- UST removals rarely go exactly as planned
- Preparation and patience: "Go slow or don't go"
- Reach out for help if needed
- Don't be afraid to stop any action you believe is unsafe

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Questions?

Grant Miner
HazTAC Inc.
Hazardous Materials Training & Compliance

haztacinc@gmail.com

949-422-8527

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