ENVIRONMENTAL ACTIVITIES AT THE DISTRICT LEVEL

MS-4270
TTS

PRESENTATION BY

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DALLAS - DISTRICT 18

TODAYS TOPICS

STRIPING TRUCKS DISPOSAL OF WASH WASTES

UNKNOWNS FOUND ON THE HIGHWAY

PAINT DRUMS

MAINTENANCE CONFERENCE
APRIL 6,7 & 8, 1992
ABILENE, TEXAS

I. STRIPING TRUCKS: DISPOSAL OF WASH WASTES

A. PAINT SIMILARITIES: (Water and Oil Base)
1. Heavy Metals
Lead
Chrome
Nickel
2. Solvents
MEK
Toluene or
Others

B. PAINT DIFFERENCES:
1. Solvent Content
Water Base
Approximately ~4% by Weight, and/or
~6% by Volume
Oil Base
Approximately ~26% by Weight, and/or
~50% by Volume

II. DISPOSAL (Water and Oil Base Traffic Paint)

A. Typical Disposal Techniques:

1. Fuel Blend Program
a. Specifications: (Typical)
Waste Must have 3,000 to 5,000 BTU Value
b. Restrictions: (Dependent on Disposers Permit)
Contains - < 4,000 ppm Lead
- < 3,000 ppm Chromium
c. Points of Interest:
Very Limited Liability:
(Present or Future)
Cost: $110 - $400 per drum
Note: Price Variance is due mostly to the state of the waste (liquid - sludge - solid)

2. Land Disposal
a. Hazardous Waste Landfill
1) Specifications : (Typical)
"Usually" no limit on amount (ppm) of lead. The waste may have to be stabilized (made to pass the TCLP Leach Test), by adding fly ash, kiln dust, etc. to the paint. This will be called a "Treatability Study, Treatability Recipe, etc.", in other words they will have to determine how much and what kind of ash or other constituent to add to the paint to pass the TCLP Leach Test.

2) Points of Interest:
Liability is with you forever; meaning, if the landfill gets into trouble and a clean-up is imminent, the State may be involved in the clean-up.

Hazardous Waste Landfills are required to have additional protection for their clients through engineered protective devices, such as, leachate collection areas, monitor wells, etc.

b. Type 1; Municipal Landfill

1) Specifications:
Typically some of the same criteria as the Hazardous Waste Landfill above.
Consequently:
Once a recipe has been established which allows the paint waste to pass the TCLP, it is possible that the paint waste can be disposed of in the "Local Type 1 Landfill", if indeed, the Local Landfill will take the waste.
To Do this:
A TCLP (Approximately $1200) must be ran and sometimes more than once (see note below);
1st time - before the waste is tampered with (treated) to determine if the paint will pass the TCLP in the first place, and by how much it failed.
2nd time - after adding fly ash or some other constituent to determine if the recipe works.
3rd time plus - differing recipes.
NOTE: A full TCLP may not be necessary after the first run, ie., you will know what metals or volatiles you are dealing with and a "complete" TCLP may not be required.

2) Points of Interest:
a) Cradle to grave liability
b) This landfill does not have the same, or as stringent, engineering criteria as the Hazardous Waste Landfill.
c) May be cheaper, but, not in all cases; check the differences before making a final judgement on disposal method.

3. Incineration (Not discussed here in detail)
   a. Specifications:
      10,000 ppm Lead; [Maximum, most cases
      (The 10,000 ppm lead limit will "probably" throw Incineration out of the Disposal picture)]

III. UNKNOWNS FOUND ON THE HIGHWAY

A. WASTE CLASSIFICATION

****
SOUTHWESTERN LABORATORIES (HANDOUT)
****

WASTE CLASSIFICATION

The EPA classifies a solid waste as a "hazardous waste" based on one of the following criteria:

1) The waste is a listed waste (40CFR261 Subpart D and is not exempted under 260.20 or 260.22).

2) It is a waste that exhibits any of the characteristics of a hazardous waste as identified in 40CFR261 Subpart C.{(These characteristics are ignitability, corrosivity, reactivity, and EP Toxicity (now Toxicity characteristic Leaching Procedure)}.

3) It is a mixture of a solid waste and a hazardous waste that is listed in subpart D solely because it exhibits one or more of the characteristics identified in subpart C, unless the mixture no longer exhibits any characteristic of hazardous waste identified in subpart C.

Summarizing, a waste can be classified as hazardous by the EPA because it is listed, it exhibits hazardous characteristics, or it is a mixture of wastes that contains a listed waste, or a characteristic waste.

The determination as to whether a waste is hazardous can therefore be made by:

1) Checking the EPA list (if the chemical names of the hazardous materials in the waste are known). Since the EPA also provides a list of sources that generate hazardous waste, this source list must also be checked (For example plating bath waste residues from electroplating where cyanides are used in the process).
2) Knowledge of process

3) Testing the waste for hazardous characteristics

When the waste is an unknown waste or from an unknown source, the available options are usually limited to analytical testing. A complete RCRA waste analysis is time consuming and costly. The analyses may require 4 to 6 weeks and cost $1200 to $2000 per sample. The full RCRA profile would include testing for Ignitability, Reactivity, Corrosivity, and Toxicity Characteristic Leaching Procedure (TCLP). Disposal requirements may also require additional testing for heat capacity (BTU), density, solids content, etc. Just to perform a full TCLP test may take a month and cost as much as $1500. Obviously, this problem becomes magnified when dealing with unlabeled waste drums that mysteriously show up on highway right of ways, public parking lots etc. These drums have to be removed from the highway right of ways and be properly stored until appropriate disposal can be determined and arranged. Frequently I am asked if there are any alternatives to this problem that could save time and reduce costs. The answer to this question is <u>sometimes.</u>

For simplicity, we will assume that reactivity, corrosivity, and ignitability (RCI) must be done. (RCI is only a minor component of analytical cost, and can usually be done in one to two weeks anyway). By making this assumption, we can now deal only with the TCLP procedure. When the TCLP procedure replaced the EP-Tox procedure the number of test parameters increased from 14 to 40. The additional test parameters included volatile and semivolatile organic compounds and required two extraction procedures instead of the one required for the EP-Tox. Before the extraction procedure can be done, a filtration procedure may be required to determine if the waste is to be handled as a liquid waste, solid waste, or multiphasic waste. In addition a screening test is required to determine which of two extraction fluids should be used for the extractions. The screening test/filtration test may require as much as 1/2 day to complete. The extraction procedure will then require another day to complete. Finally, the TCLP list is made up of several chemical groups (see TCLP enclosure), which require special preparation/extraction/digestion procedures be completed before analysis of that group can begin. All of these steps add time and increase cost to the ultimate objective which is to determine whether or not a waste is hazardous. Can we make the same determination by another process that is quicker and less costly? Yes in some instances!

There is one very important fact that can be gleaned from reading the final TCLP procedure (approximately twelve pages of three column fine print in the Federal Register). That fact is that if you are dealing with an EPA defined solid waste, the TCLP extraction procedure always extracts one part of waste into twenty parts of extraction fluid (i.e. the waste is dilute 20 to 1). Further, the TCLP procedure requires that analytical results be reported as weight of toxic parameter per volume of extraction fluid (typically these units are expressed as MG/L). Each waste is determined to be hazardous or non-hazardous by comparing the results of each TCLP toxic parameter to regulatory compliance criteria for that test parameter. This compliance criteria is based on maximum concentration limits (MCL's) and is expressed as MG/L (See enclosed TCLP Compliance Criteria). As an example lets assume a waste was found to have a TCLP lead concentration of 5.0 MG/L. If we assume that the lead in the original waste was 100% soluble in the TCLP extraction fluid, then the minimum concentration of lead that could have been present in the waste would have to be 100 MG/KG (Based on the 20 to 1 ratio, 5.0 x 20 = 100. This assumption can be applied to all the TCLP parameters. Of course it would be extremely rare to find a situation where there is 100% solubility for any of the TCLP test parameters, but clearly we can now determine the minimum quantity for any of the TCLP parameters that would be required for the waste to fail the TCLP procedure. It is now logical to conclude that if the total concentration of the hazardous constituents are easier and less costly to determine than the TCLP concentrations, then

we may have a valuable alternative for determining whether a waste is hazardous or non-hazardous. As a minimum, the cost and time involved in the extraction procedure can be saved. Typically this can save several hundred dollars and several days to as much as a week, depending on the laboratory and sample backlog. One important point to remember is that is possible to have the total concentration of a toxic parameter be very high in a waste and not be leachable in the TCLP procedure. Therefore, it is reasonable to conclude that if the total concentrations are all less than 20 times the TCLP MCL's, then it could be better to determine the total concentrations rather than the TCLP concentrations. The trick is to make the right decision relative to testing for total concentration verse TCLP concentrations. This decision can only be made after considering all of the pertinent facts for each specific situation. Some important considerations are:

1) If possible, perform a visual examination of the waste (Frequently, a great deal can be learned from a good visual examination)

2) Examine all containers for potential information.

3) Determine quantity of waste (number of drums etc)

4) If multiple drums, determine if there is similar waste in any of the drums. Analytical cost may be reduced if several drums can be composited for testing.

5) Insure that cost savings are sufficient to justify the risk of possibly having to later run the TCLP anyway.(an example is provided).

6) Insure that available waste disposal facility will accept total analyses data (There are instances where the applicable regulatory agency may not accept anything but the TCLP procedure, or the disposal facility may not understand that the regulatory agency will accept the data).

In summary there are instances where it is possible to show that a waste is not TCLP hazardous without actually running the TCLP procedure. If this procedure is combined with knowledge of process it is more effective and less risky. Where little is known about a waste (such as mystery drum drop offs) it is more difficult, and a somewhat more risky, but I certainly would not automatically omit it from consideration.

TABLE 1-MINIMUM TOTAL CONCENTRATION REQUIRED TO FAIL TCLP COMPLIANCE CRITERIA
(ASSUMING 100% LEACHABILITY)

COMPLIANCE PARAMETER	TCLP COMPLIANCE MCL	EQUIVALENT MIN. TOTAL CONCENTRATION
Metals	**MG/L**	**MG/KG**
Arsenic	5.0	100
Barium	100.0	2000
Cadmium	1.0	20
Chromium	5.0	100
Lead	5.0	100
Mercury	0.2	4
Selenium	1.0	20
Silver	5.0	100
Herbicides	**MG/L**	**MG/KG**
2,4-D	10.0	200
2,4,5-TP (Silvex)	1.0	20
Pesticides	**MG/L**	**MG/KG**
Chlordane	0.03	0.6
Endrin	0.02	0.4
Heptachlor	0.008	0.16
Heptachlor Epoxide	0.008	0.16
Lindane	0.40	8
Methoxychlor	10.0	200
Toxaphene	0.50	10
Semivolatiles	**MG/L**	**MG/KG**
o-Cresol	200.0	4000
m-Cresol	200.0	4000
p-Cresol	200.0	4000
2,4-Dinitrotoluene	0.13	2.6
Hexachlorobenzene	0.13	2.6
Hexachlorobutadiene	0.50	10
Hexachloroethane	3.0	60
Nitrobenzene	2.0	40
Pentachlorophenol	100.0	2000
Pyridine	5.0	100
2,4,5-Trichlorophenol	400.0	8000
2,4,6-Trichlorophenol	2.0	40
1,4-Dichlorobenzene	7.5	150
Volatiles	**MG/L**	**MG/KG**
Benzene	0.5	10
Carbon Tetrachloride	0.5	10
Chlorobenzene	100.0	2000
Chloroform	6.0	120
1,2-Dichloroethane	0.5	10
1,1-Dichloroethylene	0.7	14
Methyl Ethyl Ketone	200.0	4000
Tetrachloroethylene	0.7	14
Trichloroethylene	0.5	10
Vinyl Chloride	0.2	4

Note:

Disposal of anything requires a process of elimination to determine disposal technique. Before automatically performing a TCLP which costs up to $1,500.00 think about the differing types of disposal methods and acquaint yourself with the different disposers in the area and how they handle wastes. It is usually much cheaper to deal with a disposer directly than to always go through a waste broker. You can usually find three disposers to bid, check the disposers prices against the brokers prices. It is a good practice to know quite a number of disposers and brokers to stay abreast of disposal practices and pricing.

B. Screening Techniques

1. An X-Ray Florescence (XRF) will tell you very quickly if any metals are present and the basic metals of highest concentration.
2. BTU Value (For Fuel Blending)
3. Total Metals (Full AA run or specific metals)
4. Simply running a volatiles or semivolatiles (Not the TCLP)
5. pH test (simple pH paper will do)
6. On liquids take some water paste (the same past to check the bottoms of your underground storage tanks) and check if the liquid is mostly water. If yes, call someone who disposes of oily water and save a bunch of money.
7. RCI (Reactivity, Corrosivity, and Ignitability)

NOTE:

You may want to talk with the Texas Department of Health before going into screening or random testing. Know some properties of your waste before calling. For example, is it a solid, liquid, sludge, etc., pH, amount, and any other information you can draw off simply observing the waste and typical samples.

C. Final Comment

There may be other screening techniques. Talk to the chemist at your contract laboratory, and the likely contractors for disposal. The disposer must be in your information link. Find out what tests are required by the disposers; their minimum requirements.

IV. PAINT DRUMS

A. Disposal to a Drum Recycler

The main reason paint drums are mentioned is because of the high content of heavy metals (mainly lead), in our traffic paint. Your drums may or may not have greater than one (1) inch of residue in the bottom of your drums. Those that do will more than likely have to be cleaned out before you can dispose of them. This residue will have to be disposed of; just like the paint wash wastes discussed earlier.

Some drum recyclers will not take the drums with much residue in them at all. Those that do should be checked to determine how they will handle our drums.

1. Checks On The Drum Recycler

a. Burning of the Paint Residues

Most drum recyclers burn the paint residues out of the drums as part of the process.

Does the burning mechanism used by the drum recycler have an after burner for fugitive emissions and does the recycler dispose of your ash properly?

b. Disposal and Analysis of the Ash

If the ash is being handled properly the recycler should have an analysis of the ash. This should be in his files and yours along with a manifest showing the final destination of the ash for proper disposal.

OTHER METHODS OF DRUM DISPOSAL NOT DISCUSSED

TEXAS WATER COMMISSION

PROTECTING TEXANS' HEALTH AND SAFETY BY PREVENTING AND REDUCING POLLUTION

Re: Guidance Document Regarding the Reuse of Petroleum-Substance Contaminated Soils

Attached is the TWC Guidance Document on the Reuse of Petroleum-Substance Contaminated Soils. This document describes possible uses for slightly contaminated soils that are an alternative to landfill disposal. This document applies only to those nonhazardous soils which are contaminated with a petroleum substance as a result of a release from an underground or aboveground storage tank.

Should you have any questions regarding this document, contact the Responsible Party Remediation Section of the PST Division at 512/371-6200 or the local TWC District Field Office.

Reuse of Petroleum-Substance Contaminated Soil

The Texas Water Commission (TWC) encourages the development and operation of alternative methods of soil treatment and recognizes that additional uses for the treated soils promote recycling and minimize waste disposal.

The following policy regarding soil reuse defines the potential uses and associated contaminant levels for treated soils and is designed to provide reasonable alternatives to waste disposal. The maximum contaminant levels suitable for each method of reuse should be readily attainable with current treatment technologies while still providing for the protection of human health and safety and the environment.

NOTE: This policy relates to a person's responsibility under the Underground and Aboveground Storage Tank regulations as well as Sections 26.121, 26.042, and other relevant sections of the Texas Water Code. Compliance with the guidelines does not excuse a person from any civil liability to third parties associated with the handling, use, or sale of soils.

NOTE: This policy applies only to <u>nonhazardous</u> soils contaminated with petroleum substances as a result of a release from an underground or aboveground storage tank as defined in Title 31, Texas Administrative Code, Chapter 334. Any other types of wastes, including all wastes classified as hazardous under state or federal law and any petroleum-substance wastes which contain other contaminants, are not covered by this guidance. These other wastes are likely to be covered under state and federal rules relating to hazardous and solid waste. The hazardous and solid waste rules may require significantly different handling requirements, and there may be substantial fines and penalties imposed on a person who violates those rules.

This guidance assumes that the owner or operator of the leaking tank has made a determination as to what type of waste was removed from the ground. However, the failure of the owner to make a proper waste determination does not excuse any other person who stores, transports, disposes of, or otherwise handles the waste from liability for violation of hazardous and solid waste rules which may apply to them.

I. Responsibilities of the Tank Owner/Operator:

Under 31 TAC Section 334.85 of the TWC rules, all wastes must be managed in the manner required by law. Section 334.482 requires that wastes be disposed of at facilities permitted by the TWC or other appropriate agencies, or in a manner authorized by the TWC. An owner/operator must manage nonhazardous petroleum-substance contaminated soils in accordance with these guidelines or they must insure that these soils are transferred to an authorized facility.

II. Responsibilities of Any Person Who Applies Nonhazardous Petroleum-Substance Contaminated Soils to the Land:

Any person who applies nonhazardous petroleum-substance contaminated soils to the land must either follow this guidance or make the land application in accordance with other applicable rules of the TWC or other appropriate agency. Failure to do so may be considered a violation of 31 TAC Section 334.482 and other rules and may result in substantial penalties for those violations.

III. Reporting Requirements:

Documentation regarding the reuse activities must be submitted to the TWC with one copy each sent to the Central Office in Austin and to the TWC District Office(s) which encompasses the activity. The documentation should consist of at least the following information:

1. The name, address, phone number, and authorized representative for the generating facility. In the case of a Class A treatment facility (as defined in the attachment) this would be the treatment facility owner. For a Class B, Class C, or Class D treatment facility, this would be the LPST site.

2. The name, address, phone number, and authorized representative for the receiving facility or location. If the receiving location cannot be defined by a street address, then other specifics should be included to identify the exact location.

3. The name, address, phone number, and authorized representative for the landowner at the receiving location.

4. The quantity of soil reused.

5. Documentation on the soil sampling and analytical methods, sample chain-of-custody, and all analytical results (except for soil utilized in an asphalt mix).

6. A detailed description of the reuse methods.

7. The date(s) of reuse.

8. Copies of the consent form signed by the receiving landowner.

IV. Sampling:

Treated soils destined for reuse as fill for tankholds or as fill for other uses must be sampled for Total Petroleum Hydrocarbons (TPH) at the rate of one sample per fifty cubic yards of soil (or other sampling frequency as determined by the Executive Director). Soils which will be used for nonasphaltic roadbase material must be sampled at the rate of one sample per 100 cubic yards of material. Each sample shall consist of a composite which is representative of each fifty or 100 cubic yard unit. Every fifth sample should also be analyzed for Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), and Total Lead. Additionally, each sample must be collected, handled, and analyzed in accordance with all EPA-approved methods. Please note that under no circumstances may the soil be mixed with clean soil or any other material for the purpose of reducing the contaminant levels by dilution.

V. Detection Limits:

For the purposes of this policy, nondetectable levels of BTEX and TPH will be 0.5 mg/kg for each component of BTEX and 10.0 mg/kg TPH. Any soils which are properly documented to have nondetectable levels of BTEX and TPH and which do not contain other contaminants (non-petroleum substances) may be utilized in any manner except as limited by this paragraph. Uses and limitations for soils with contaminant levels above detection limits are described below. However, under no circumstances may the soils be used in the recharge or transition zone of a sole-source aquifer or in any other manner which poses a threat to human health or any water in the state.

VI. Reuse Options:

A. Soils Utilized in Asphalt Batching:

The use of petroleum-substance contaminated soils in an asphalt batching operation must have the approval of the operator and owner of the plant. Additionally, prior to accepting these soils, the plant owner or operator must contact the Texas Air Control Board (TACB) to determine whether a permit or an amendment to their existing permit is required. Contaminated soils may not be accepted without proper authorization or permitting from the TACB.

B. Roadbase Material:

Petroleum-substance contaminated soils may be utilized as roadbase or parking lots that will be covered with concrete or asphalt if the contaminant levels of the soil prior to use are less than 0.5 mg/kg for each component of BTEX and less than 500.0 mg/kg TPH. Roads or parking lots which will not be covered with asphalt or concrete may utilize soils which have contaminant levels prior to usage of less than .5 mg/kg for each component of BTEX and less than 200 mg/kg of TPH. The contaminated soil must be professionally mixed into stabilized base in order to utilize this option. Soil which is not mixed into stabilized road base would have to meet the criteria for clean soil in order to be spread on a road or parking lot. The owner of the road or parking lot (if different from the landowner) must also provide consent for the placement of soil (a copy of the consent form is attached). This option is viable only if the area is not located within a 100-year floodplain. Additionally, this option should not be used when there is a risk of human exposure to the soil.

C. Fill for Other LUST Tankhold:

Soil may be used as fill in another LUST site tankhold under specific conditions. This option may be utilized if the contaminant levels do not exceed 0.5 mg/kg for each component of BTEX and 10.0 mg/kg TPH. Higher contaminant levels may be considered by the TWC if technical documentation is provided to demonstrate that there is no threat of groundwater contamination at the receiving site. The owner of the USTs at the receiving facility along with the landowner (if different) must give consent for this activity. The soil must not be utilized in a tankhold in which a new tank installation will occur.

In all cases, the generator should follow the guidance set forth in this document. Any proposal to deviate from these directives must receive prior authorization from the TWC. Additionally, it remains the responsibility of the generator to ensure that all soil reuse is accomplished in a manner that prevents any unauthorized discharge of contaminants at all times.

In all cases of soil reuse, authorization must be obtained from the landowner of the property on which the soil will be placed, or in the case of asphalt batching, from the owner and operator of the batching plant. This authorization should be in writing with copies maintained by both the generator and the receiver.

ATTACHMENTS

CLASSES OF TREATMENT AND STORAGE FACILITIES

Class A Facilities:

Facilities or treatment units which are authorized by the TWC to store or treat petroleum-substance contaminated soils generated from more than one LPST site. Although these facilities will most likely be located elsewhere than a LPST site, one could be located at a LPST site if they manage soils from more than one site.

Class B Facilities:

A mobile treatment unit which will treat petroleum-substance-contaminated waste at only one LPST site at a time.

Class C Facilities:

Facilities or treatment units located elsewhere than the LPST site which are authorized by the TWC to store or treat petroleum-substance contaminated soils generated from only one LPST site.

Class D Facilities:

A facility located at the LPST site which will store or treat the petroleum-substance waste generated from only that site.

CONSENT

I consent to having the following amount of petroleum-substance contaminated soil deposited on my property:

Amount of Soil: _____

Address/Exact Location Where Deposited: _____

_____

_____

Soil Received From: (Name, Address, Zip) _____

_____

_____

Date Deposited: _____

BTEX Concentration: _____
(Information supplied by generator)

TPH Concentration: _____
(Information supplied by generator)

_____
Printed Name of Property Owner

_____ _____
Signature of Property Owner Date

_____
Address, City, State, Zip

_____
Phone Number

Texas Department of Health

Robert Bernstein, M.D., F.A.C.P.
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Robert A. MacLean, M.D.
Deputy Commissioner

February 4, 1991

Disposal of Petroleum-Product-Contaminated Soils at Landfills Permitted by the Texas Department of Health
(Revised Requirements)

The requirements established for the disposal of petroleum-product-contaminated soils at landfills permitted by TDH, issued on August 7, 1989, are hereby revised. The revision is necessary because significant quantities of contaminated soils are being sent to municipal landfills due to remedial actions required for underground fuel storage tanks and other spill/release incidents.

Effective immediately, municipal landfills with TDH permits may NOT accept petroleum-product-contaminated soils without specific TDH approval except under the following conditions:

1. Automotive gasoline contaminated soils - Soils which have a total concentration of benzene (B), toluene (T), ethylbenzene (E) and xylene (X) [BTEX] of less than 150 mg/kg (ppm); a total petroleum hydrocarbon (TPH) concentration of less than 600 ppm; and a TCLP benzene concentration of less than 0.25 mg/l may be accepted at a Type I landfill without specific TDH authorization. All other landfills require specific authorization.

2. Diesel fuel contaminated soils - Soils which have a total concentration of benzene (B), toluene (T), ethylbenzene (E) and xylene (X) [BTEX] of less than 150 mg/kg (ppm); a total petroleum hydrocarbon (TPH) concentration of less than 600 ppm; and a TCLP benzene concentration of less than 0.25 mg/l may be accepted at a Type I landfill without specific TDH authorization. All other landfills require specific authorization.

3. Used motor oil contaminated soils - Soils must be tested for lead (total, and E.P. Toxicity or TCLP), total petroleum hydrocarbons (TPH) and total organic halogen (TOX). For Type I landfills, specific TDH approval is required unless total lead is less than 250 ppm, E.P. Toxic or TCLP lead is less than 2.5 mg/l, TPH is less than 600 ppm, TOX is less than 50 ppm and TCLP benzene is less than 0.25 mg/l. Specific approval is required for all other landfills.

4. Soils contaminated with any other petroleum products - soils contaminated with <u>any</u> petroleum based product other than gasoline, diesel fuel, or used automotive oil must have written approval from TDH for disposal in a municipal landfill. Disposal requests for these soils will be reviewed on a case-by-case basis.

The above requirements apply irrespective of waste classification code numbers issued by other state agencies. We recommend that the landfill management require copies of, and maintain records of, analytical information received for waste accepted.

Requests to authorize the disposal of contaminated oils must have analytical data from one composite sample for each 50 cubic yards of contaminated soil. The composite should be comprised of at least four separate grab samples from within the 50 yards with the purpose of obtaining a composite sample representative of the 50 yd^3. Each sample must be tested for total petroleum hydrocarbons. If additional parameters, - e.g. benzene, lead, TOX, are required, the number of samples to be tested shall be taken from the samples with the highest TPH values as follows:

0-200 yd^3 - 1 sample
201-500 yd^3 - 2 samples
501 or more yd^3 - 20% of samples

Although the clean-up of environmental pollution from leaking underground tanks is important, we do not believe the solution of that problem is the creation of a potential future problem at municipal landfill sites.

Petroleum-based fuels are complex mixtures of hydrocarbons. The exact composition of a given fuel will depend upon the crude oil source, the refinery and refining process used, and the grade of fuel. Therefore, the quantification of contamination levels is a difficult problem analytically because the target species are unknown.

Our staff will continue to review the potential problems associated with petroleum-contaminated soils and the disposal of these soils in municipal landfills. If you have any questions concerning this policy, please contact L.E. Mohrmann, Ph.D., C.P.C., here in Austin at (512) 458-7271.

T. A. Outlaw, Jr., P.E., Chief
Bureau of Solid Waste Management

ADDENDUM

Texas Department of Health Policy on Disposal of Petroleum Contaminated Soils dated February 4, 1991.

The soils policy statement dated February 4, 1991, indicates that analysis for extractible benzene or lead is required. (TCLP benzene, TCLP lead, or EP Tox lead). If benzene or lead is not present in the sample (not detected*) then the extraction analysis is unnecessary because there is insufficient contaminant present to exceed the limits set by the policy.
In addition, the extraction analysis is not required if the contaminant concentration is below a specific level because even if the contaminant were to leach 100%, there would not be enough contaminant to exceed the regulatory limits.

Therefore, the extraction analysis (TCLP or EP Toxic) is not required under the following conditions.

Contaminant	Level
Lead (Pb)	less than or equal to (≤) 50 ppm
Benzene	less than or equal to (≤) 5 ppm
total BTEX	less than or equal to (≤) 5 ppm

*Detection limit must be equal to or less than the limits specified under level.