DEPARTMENT OF THE ARMY
CAMP STANLEY STORAGE ACTIVITY, RRAD
25800 RALPH FAIR ROAD, BOERNE, TX 78015-4800

16 July 2004

U-093-04

Mr. Henry Karnei, Jr.
Texas Commission on Environmental Quality
San Antonio Regional Office, Region 13
Waste Section Manager
14250 Judson Road
San Antonio, TX 78233-4480

Subject: Response to Compliance Evaluation Inspection (CEI) on March 30,2004, Camp Stanley Storage Activity, Boerne, Texas
TCEQ Industrial Solid Waste Registration #69026
EPA Identification Number TX2210020739

Dear Mr. Karnei:

The Camp Stanley Storage Activity (CSSA), Red River Army Depot, Tank-Automotive and Armaments Command, Army Materiel Command, U.S. Army is providing this response to your letter dated June 7, 2004 and to our discussions at your office on July 1, 2004.

Your June 7, 2004 letter forwarded investigative findings for the CEI conducted at CSSA on 30 March 2004. In your findings, you alleged violations and unresolved areas of concern. During our July 1, 2004 meeting, you agreed that there were two outstanding issues that required our response. However, CSSA is responding to your letter to cover each of the alleged violations and unresolved areas of concern to demonstrate that there is no factual or regulatory basis for the Texas Commission on Environmental Quality (TCEQ) proceeding further with respect to any of the allegations in your June 7th letter.

Alleged Violations #1, #2, and #3 - Alleged Failure to Complete and Correct Annual Waste Summary, Land Disposal Restrictions, and Provide Waste Management Documentation

In your June 7, 2004 letter, you alleged that CSSA generated hazardous waste and improperly processed the same when it removed "spent sand" from the Test Firing Room. As a result, you alleged that CSSA failed to submit a complete and correct Annual Waste Summary (AWS) (30 TAC 335.9(a)(2)(A)-(B)) and failed to comply with Land Disposal Restrictions (30 TAC 335.431, 40 C.F.R. 268.7(a)(5) and 40 C.F.R. 268.9(a)). In the following paragraphs, we explain why those provisions did not apply to the sand material.

(a) Relevant Facts

The Test Firing Room had been used in CSSA's weapons' refurbishing operation for well over 30 years—from before the enactment of the Resource Conservation and Recovery Act (RCRA) to the

present—without regulatory challenge until CSSA's receipt of the June 7th letter. The Test Firing Room is used solely for the purpose of testing refurbished military weapons by firing military munitions into a sand trap in front of the weapons barrel. Specifically, the sand in the Test Firing Room reduced the inertia of projectiles fired from weapons refurbished at CSSA. Your inspectors no doubt noted the Test Firing Room operation on many occasions. Since 1980 there has been no documented generation or disposal of the sand media.

(b) Test Firing Room Sand Is Subject to the Process Unit Exception

While the test firing of military munitions activity added lead (Pb) to the sand mixture, this did not generate a hazardous waste under Texas hazardous waste regulations.

As you know, "hazardous wastes" have generally the same meaning under RCRA and the Texas Industrial Solid Waste and Municipal Hazardous Waste regulations. See 30 TAC 335.1(62). In applicable part, 40 C.F.R. 261.4(c) states:

> *[A] hazardous waste which is generated in a product or raw material storage tank, a product or raw material transport vehicle or vessel, a product or raw material pipeline, or in a manufacturing process unit or an associated non-waste-treatment-manufacturing unit, is not subject to regulation under parts 262 through 265, 268, 270, 271 and 124 of this chapter or to the notification requirements of section 3010 of RCRA until it exits the unit in which it was generated.*

Here, the CSSA Test Fire Room is a "process unit" for the purposes of 40 C.F.R. 261.4(c). The sand material in the CSSA Test Fire Room became imbued with lead during the operation of that unit. Accordingly, no waste is generated until the sand material is removed from the unit.

There is no prohibition or restriction on treating material before removing it from the process unit. In 1980, the USEPA published this "manufacturing unit" exception in 40 CFR 261.4(c) provision in the Federal Register. The text in the preamble to this regulation in the Federal Register repeatedly affirmed that no hazardous substance is generated until after the material is removed from the unit or until it remains in an inactive unit for more than 90 days. TCEQ has published the similar guidance.[1] USEPA stated that without this rule, similar units throughout the United States would be subjected to hazardous material storage regulations.[2] The USEPA

---

[1] For example, An Environmental Guide for Texas Printers, Know the Rule Reduce Pollution Save Money, RG-392, April 2002, TCEQ, at page 12, "Photographic Fixer Solution: Fixer solution that is processed by an electrolytic or other silver reclamation unit during the printing process does not become a waste until it exits the reclamation unit. At that stage of the process, the fixer solution may be hazardous waste if the silver content is 5 mg/L (milligrams/liter, also known as parts per million) or more. Before silver recovery, fixer solution that is discharged from a processor to a tank or container for accumulation becomes a waste and must undergo a hazardous waste determination (emphasis added).

[2] 45 Fed. Reg. 72024 (Amendment to 40 CFR 261.4).

recognized that these units were uniformly safe and that there was no reason to needlessly apply burdensome regulations. While the USEPA did not at that time affirmatively provide that the material could be treated in the unit, they interpreted the provision to allow this common sense approach on many occasions thereafter. For example, in an August 16, 2002 memorandum, USEPA stated:

> *USEPA has consistently interpreted its regulations to allow generators to treat hazardous waste[3] in their accumulation tanks and containers, without obtaining a permit or having interim status….Third, treatment often renders waste less hazardous, or more amenable for further treatment, recycling, shipment off site, etc. A requirement for generators to obtain a permit for any on-site treatment would very likely discourage such practices.*[4]

In the past, regulators have treated the Test Firing Room as a 261.4(c) process unit. This is fully consistent with 30 TAC 335.2(f) which exempts from permitting "the storage of hazardous waste under the provisions of 40 CFR § 261.4(c)….." However, this year, TCEQ appears to try to depart from prior practice by attempting to regulate the room as a storage facility and subject it to hazardous material storage rules. That is precisely what the USEPA guidance seeks to prevent. Additionally, CSSA's sole purpose in treating the sand was to reduce the management hazard before shipment and disposal. That is precisely what the relevant USEPA guidance seeks to encourage.

CSSA treated the sand material before it was removed from the Test Firing Room unit using Phosphate-Induced Metal Stabilization (PIMS) material. PIMS uses Apatite II™ to stabilize metals. In this instance, Apatite II was added to the sand before removal from the unit. The sand material was sampled after it was removed from the unit. Waste classification results established that the material was non-hazardous. Accordingly, it was appropriately shipped as non-hazardous waste.

The June 7th letter TCEQ has also based the Test Firing Room alleged violation on the fact that spent sand is one of the potential hazardous waste streams identified as a hazardous waste on CSSA's Notice of Registration (NOR). This was emphasized in your June 7, 2004 letter and again during our July 1, 2004 meeting. In our opinion, this entry on our NOR is irrelevant to the disposal action in question. TCEQ requires a facility to identify all potential hazardous waste streams on the NOR. When CSSA entered spent sand on its NOR many years ago, generation of hazardous waste in the form of spent sand was a very real possibility. At that time, Camp Stanley

---

[3] Although they use the words "hazardous waste," it is apparent from 40 CFR 261.4(c) and related commentary that they meant "material that would otherwise be hazardous waste but for its location in the unit."

[4] Hazardous Materials Generated in Laboratories, Elizabeth Cotsworth, Director, Office of Solid Waste, USEPA, August 16, 1992. The memo clearly envisions treatment for continued use as well as treatment intended to lower the hazard before shipment and disposal. This memo may be found on he TCEQ website at: http://www.tnrcc.state.tx.us/...p2_info/EPA_LabWasteMemo.pdf.

had not considered using PIMS to reduce the hazardous constituents in the material. But while spent sand was listed on the NOR, this is of no consequence in evaluating this alleged violation. The fact a waste stream may be identified as hazardous waste on a NOR does not transform non-hazardous waste to hazardous waste. The better view is that two sand material waste streams were possible. TCEQ's published guidance is consistent with that view:

> *Similarly, within the overall flow of waste form your ordinary operations or processes, a number of particular waste streams can be identified. For example, if your process normally produces a hazardous acidic waste, and at some point you neutralize that waste, these are two separately identifiable "waste streams."*[5]

In this instance, there were two potential sand material waste streams; one hazardous and one non-hazardous. The hazardous waste stream was listed on the CSSA NOR. As a non-industrial facility, there was no requirement to list the non-hazardous waste stream or notify the TCEQ.

In conclusion, CSSA did not improperly treat hazardous waste with PIMS. No waste was generated until the sand was removed from the unit at which time it was non-hazardous. The presence of a hazardous waste code for spent sand on CSSA's NOR is irrelevant and, in any event, cannot transform a non-hazardous waste into a hazardous waste. Accordingly, no revision to the 2003 AWS is required and no Land Disposal Restrictions were violated.

(c) Alternatively, the Test Firing Room Sand Is Subject to the Military Munitions Exception

As explained above, The Test Firing Room is used solely for the purpose of testing refurbished military weapons by firing military munitions directly into the sand media.

As such, bullets fired in the Test Firing Room are "military munitions." Under 30 TAC 335.1(90), military munitions are defined as "all ammunition products and components produced or used by or for the Department of Defense (DOD) or the United States Armed Services for national defense and security, including military munitions under the control of the DOD..."

It is further provided in 30 TAC 335.272(a) that "[t]he regulations contained in 40 CFR Part 266 Subpart M, as amended through February 12, 1997, at 62 Fed Reg 6622 are adopted by reference, subject to the changes indicated in subsection (b) of this section."

In turn, the Test Firing Room is a designated area "set aside, managed, and used to conduct research on, develop, test and evaluate

---

[5] Guidelines for the Classification and Coding of Industrial and Hazardous Wastes, RG-22, April 2000, at page 3.

military munitions and… weapons systems…. Ranges include… test pads, impact areas…." 40 CFR 266.201.

As such, the Pb in sand in the Test Firing Room is not a solid waste so long as it's used for its' intended purpose, including the evaluation of military weapons, 40 CFR 266.202(a), and is exempt from hazardous waste regulation because it is not a solid waste. The Pb in the sand would only become a solid waste (and potentially subject to regulation) when it is transported out of the Test Firing Room. 40 CFR 266.202(c). However, before that time, Apatite II is added to the sand and the sand is rendered non-hazardous and it was appropriately disposed as a non-hazardous solid waste.

Accordingly, no revision to the 2003 AWS is required and no Land Disposal Restrictions were violated.

Unresolved Area of Concern #1 - Safety Kleen Parts Washer

CSSA provided documentation at the July 1, 2004 meeting regarding the Continued Use Program that it utilizes, which exempts the products from solid waste rules. Also there was discussion regarding the flash point of the solvent being used in the processes at Building 90. CSSA uses the Safety Kleen Premium Gold Blend cold solvent, which has a flash point at 148° F. A copy of the material safety data sheet for the solvent is attached.

Unresolved Area of Concern #2 - AOC-65 and F-listed Waste

Another issue left unanswered at our July 1, 2004 meeting concerned characterization of F-listed waste and unresolved area of concern, AOC 65.

As a preliminary matter, we understand that you are only asking that any future removal action follow the contained-in policy. We have every intention to follow the contained-in policy for media wastes that include listed hazardous wastes. What remains for discussion is our difference of opinion as to the identification of F-listed waste. We address this issue because the answer may have an adverse impact on our ability to take corrective action in the future.

AOC-65 consists of potential VOC source areas in the vicinity of Building 90. Pursuant to an interim removal action, shallow soils in and around Building 90 were removed. All excavated material from AOC-65 was categorized as Class 2 non-hazardous waste as determined by waste characterization testing.

In your June 7, 2004 correspondence, you state:

> *All indications are that the contaminants under Building 90 (AOC-65) are from the former solvent tank that contained TCE and PCE under building 90…any future soil/or groundwater removal action…should*

follow the contained-in policy regulations for characteristic and listed waste.

First, we disagree with the conclusion that all indications are that contaminants originated from the former solvent tank. Further, we believe that while one may speculate that the tank is the source, the applicable regulations and related policy mandate a determination based on a considered review of documents and the conduct of interviews.

Despite diligent efforts by CSSA, no evidence has been identified (i.e., there are no personal recollections, records, or documentation) that indicates in any way that the contamination resulted from the former solvent tank. In addition, there are several good reasons to question whether the contaminants originated from the former solvent tank. For example: (1) CSSA (formerly named Camp Funston and Leon Springs Military Reservation) has existed for military operations for many decades, circa 1906. The contamination may have occurred long before 1980 and the advent of the land disposal restrictions.[6] (2) During the site investigation, contaminant concentrations directly below the vat were significantly lower than those in a ditch approximately 60 feet away (see figure 2-2 of the AOC-65 Interim Removal Action Report, a copy of this figure is attached). (3) Camp Stanley has not always been a fenced installation providing access to the area by persons on and off the installation. (4) Camp Stanley is situated on Karst formations. The migration path of contaminants will follow irregular, unexpected routes. We believe these issues demonstrate that as a factual matter, all indications do not support the theory that the vat is the source of contamination and that they support our contrary determination.

The applicable regulations also support CSSA's determination. Primary classification of hazardous waste is by listing or by characteristics. The key issue in this case is whether the excavated material should have been determined F-listed waste. 30 TAC 335.504(2) states:

> *If the material is a solid waste, determine if the waste is listed as, or mixed with, or derived from a listed hazardous waste identified in 40 Code of Federal Regulations (CFR) Part 261, Subpart D.*

In 40 C.F.R. 261.31, F-listed waste is described as waste from nonspecific sources. The regulation requires an entity to collect documents and other evidence in an attempt to determine the source of the contaminant. At the end of this process, if the entity is unable to establish the source, the entity is allowed to presume that the source is unknown.

---

[6] Management of Remediation of Waste Under RCRA, USEPA 530-F-98-026 (If the date of disposal cannot be determined through a good faith search, the operator may assume disposal occurred prior to the effective dates of land disposal restrictions. If so, the media are not subject to FOIA).

USEPA has published a great deal of commentary on how to determine whether contamination is caused by a listed hazardous waste. For example, a memorandum USEPA issued on October 14, 1998 provides:

> *Determination of When Contamination is Caused by Listed Hazardous Waste. Where a facility owner/operator makes a good faith effort to determine if a material is a listed hazardous waste but cannot make such a determination because documentation regarding a source of contamination, contaminant, or waste is unavailable or inconclusive, USEPA has stated that one may assume the source, contaminant or waste is not listed hazardous waste and, therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply. This approach was first articulated in the Proposed NCP preamble which notes that it is often necessary to know the source of a waste (or contaminant) to determine whether a waste is a listed hazardous waste under RCRA. Listing determinations are often particularly difficult in the remedial context because the listings are generally identified by the sources of the hazardous wastes rather than the concentrations of various hazardous constituents; therefore, analytical testing alone, without information on a waste's source, will not generally produce information that will conclusively indicate whether a given waste is a listed hazardous waste under RCRA and also notes that, "at many CERCLA [Comprehensive Environmental Response, Compensation and Liability Act] sites no information exists on the source of the wastes." The proposed NCP [National Contingency Plan] preamble goes on to recommend that the lead agency use available site information such as manifests, storage records and vouchers in an effort to ascertain the sources of wastes or contaminants, but that when this documentation is not available or inconclusive the lead agency may assume that the wastes (or contaminants) are not listed RCRA hazardous wastes. This approach was confirmed in the final NCP preamble. See, 53 FR 51444, December 21, 1988 for proposed NCP preamble discussion; 55 FR 8758, March 13, 1990 for final NCP preamble discussion.*
>
> *This approach was also discussed in the HWIR-Media proposal preamble, 61 FR 18805, April 29, 1996, where it was expanded to also cover dates of waste disposal - i.e., if, after a good faith effort to determine dates of disposal a facility owner/operator is unable to make such a determination because documentation of dates of disposal is unavailable or inconclusive, one may assume disposal occurred prior to the effective date of applicable land disposal restrictions. This is*

important because, if hazardous waste was originally disposed of before the effective dates of applicable land disposal restrictions and media contaminated by the waste are determined not to contain hazardous waste when first generated (i.e., removed from the land, or area of contamination), the media are not subject to RCRA requirements, including LDRs.[7]

The USEPA published the above-cited memorandum to summarize many of the regulatory and policy initiatives previously adopted by USEPA in an effort to limit the application of hazardous waste requirements to site remediation activities. It was intended to make hazardous waste regulations more realistic, encourage remediation, while continuing to protect the public and provide interpretations that facilitate, rather than impede remediation.

As discussed above, 40 C.F.R. 261.31, requires an entity to collect documents and other evidence in an attempt to determine the source of the contaminant. USEPA guidance requires an entity to make a good faith effort to determine the source and time of contamination based on available documentation. At the end of this effort, if the documentation is inconclusive, the entity may presume that the source is unknown. CSSA performed a comprehensive search and conducted interviews with employees. This inquiry failed to produce documents or statements to identify the source of contaminants in the soil removed from the vicinity of building 90. Accordingly, CSSA is authorized to presume that the source is unknown and to determine that the contamination was not caused by F-listed waste.

CSSA published its determination in its Waste Management Plan dated August 2002 (copy attached). This document was sent to both the USEPA and to the TCEQ. The document discussed at length the process by which CSSA determined that the soil was not F-listed. USEPA approved the Waste Management Plan on October 17, 2002 (copy of letter attached). TCEQ did not respond. Subsequent to the March 2004 CEI, TCEQ substituted its judgment for that of CSSA.

While TCEQ had the authority to review the Waste Management Plan in 2002, 2004 or at another point in the future, we believe any review should have been limited to an inquiry into whether CSSA had acted in good faith. If an owner/operator through a **good faith effort** is unable to determine whether the waste is listed, **the owner/operator may presume** the source is not listed waste.[8] Responsibility for the determination is clearly assigned to the owner/operator. Unless the owner/operator fails to act in good faith, TCEQ should not independently weigh the evidence and substitute its own judgment.

---

[7] Management of Remediation Waste Under RCRA, USEPA 530-F-98-026

[8] Management of Remediation Waste Under RCRA, USEPA 530-F-98-026. See also, 53 FR 51444 December 21, 1988 (use available site information, manifests, storage records, and vouchers...when not available, the agency may assume that the wastes are not listed), 55 FR 8758, 8763, March 8, 1990 (may assume it is not listed waste if documentation is unavailable).

If you have any questions regarding this information, please feel free to contact me at (210) 295-7416 or Mr. Rod Hudson at (210) 221-2373.

Sincerely,

Jason D. Shirley
Installation Manager

Attachments

cc: Mr. Greg Lyssy
EPA Region 6

Mr. Sonny Rayos
TCEQ, Corrective Action

Mr. Richard Garcia
TCEQ Region 13

Mr. Stan Citron
U.S. Army, Army Materiel Command, Command Counsel, General Law Division (AMCCC-G)

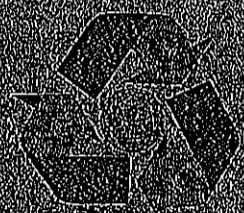
Mr. Rod Hudson
U.S. Army, Army Medical Command, Fort Sam Houston, Staff Judge Advocate

Ms. Neyda Gutierrez
Air Force Center for Environmental Excellence

Ms. Julie Burdey
Parsons

ATTACHMENT A: Continued Use Brochure, Page One

The Solution To Waste Minimization



The Safety-Kleen Continued Use Program

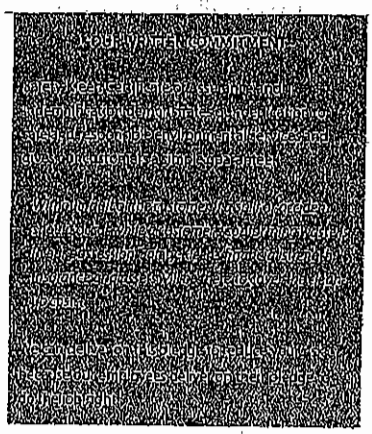
You told us you wanted a way to reduce the amount of waste parts cleaning fluid leaving your facility. Safety-Kleen is proud to announce its Continued Use™ Program. This program uses an alternative approach to manage parts cleaning solutions removed from your facility.

Continued Use Means Less Regulation

That means:

- *The cleaning solution is not classified as hazardouse waste (it will be used for cleaning within Safety-Kleen).*
- *A reduction in the overall volume of waste that you generate.*
- *No manifesting used parts cleaning solvents (so you're no longer required to maintain copies of hazardous waste manifests associated with the trasnportation and treatment of your used parts cleaning solution).*
- *EPA ID Number may not be required, unless you generate other hazardous waste.*
- *No Land Disposal Restriction forms.*

As your total waste management company, Safety-Kleen is offering participation in this program to its qualified customers at ***no additional cost.*** Under our Continued use Program, Safety-Kleen continues to use your parts cleaning fluid for cleaning so it is not a waste when we pick it up from your facility. Therefore, you are not required to manage it as a hazardous waste. After Safety-Kleen uses the solvent, Safety-Kleen becomes the generator of any hazardous waste, not you. Contact your local Safety-Kleen representative for all the details. Remember, capacity is limited.



Continued Use Means Safety-Kleen's Highest Standards Are Met

The Safety-Kleen Continued Use Program is another example of our commitment to Best Practices -- to handling all materials we process in the way that is best for the environment and our customers. This means that your material (whether Continued Use or not) goes through the Safety-Kleen quality processes. In other words, your material will be managed through our state-of-the-art facilities. Unlike other waste handling services, Safety-Kleen can tell you exactly where - and how - your parts cleaning solution is managed and recycled. So when you work with Safety-Kleen, you know you are getting the quality that you have come to expect.

safety-kleen.

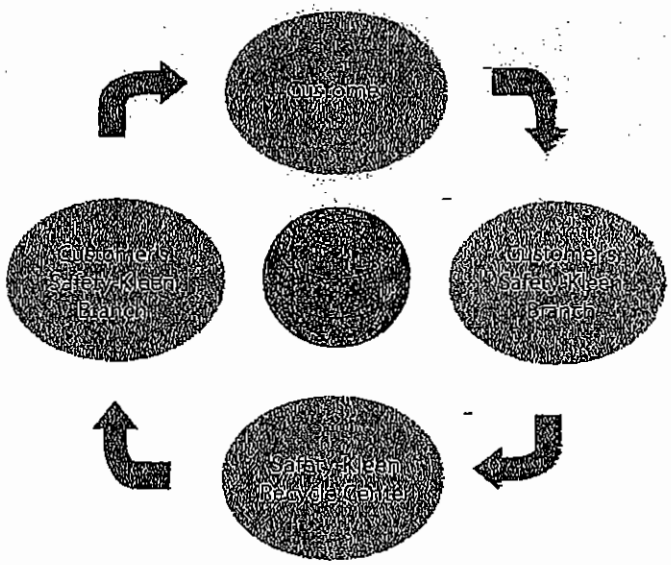
ATTACHMENT A: Continued Use Brochure, Page Two

Safety-Kleen Continued Use Program...

After a customer's normal use of Safety-Kleen supplied solvent, the used solvent can continue to be used for its originally intended purpose (i.e., cleaning) without processing. Safety-Kleen needs to use your solvent to clean its drums when we return to our branch. The used solvent continues to retain its solvent properties that enable its continued use for cleaning purposes. When solvents become "spent," they become a secondary material that is subject to RCRA hazardous waste regulation unless otherwise excluded. The used solvent in the Continued Use Program continues to be used as a solvent for its solvent properties and is not considered "spent". However, used solvent material being used for an entirely different purpose, such as an ingredient in a manufacturing process, is considered "spent" and may be a hazardous waste. Continued Use Program solvents have not lost their "solvent" properties and are still suitable to clean our drums, so it is truly a win-win for Safety-Kleen and our customers.

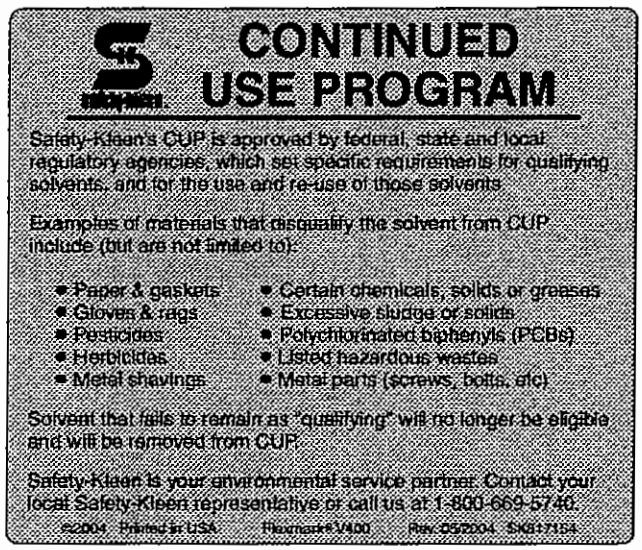
...closes the loop...

The chart shows the typical "handling path" of used parts cleaning solution. All of the solution remains in the control of Safety-Kleen, which helps eliminate third party processing.



...and renews a non-renewable resource.

The Safety-Kleen Continued Use material is recycled, allowing for its beneficial use over and over again.


CONTINUED
USE PROGRAM
Safety-Kleen's CUP is approved by federal, state and local regulatory agencies, which set specific requirements for qualifying solvents, and for the use and re-use of those solvents.
Examples of materials that disqualify the solvent from CUP include (but are not limited to):
• Paper & gaskets
• Gloves & rags
• Pesticides
• Herbicides
• Metal shavings
• Certain chemicals, solids or greases
• Excessive sludge or solids
• Polychlorinated biphenyls (PCBs)
• Listed hazardous wastes
• Metal parts (screws, bolts, etc)
Solvent that fails to remain as "qualifying" will no longer be eligible and will be removed from CUP.
Safety-Kleen is your environmental service partner. Contact your local Safety-Kleen representative or call us at 1-800-669-5740.
©2004 Printed in USA Flexmark® V400 Rev. 05/2004 SK017154

AUG 21 1998

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 21 1998

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Ms. Catherine A. McCord
Manager, Environment and Business Integration
Safety-Kleen
1000 North Randall Road
Elgin, Illinois 60123-7857

Dear Ms. McCord:

Thank you for your April 25, 1997 letter to Michele Anders requesting a written confirmation of the regulatory status of used parts washing solvent that is to be used for drum wash at Safety-Kleen's facilities without first being reclaimed. You asked whether the used parts washing solvent would be excluded from the definition of solid waste pursuant to 40 CFR §261.2(e)(1) when it is used as an effective substitute for a commercial product. Based on the information that you provided, it is the Agency's understanding that Safety-Kleen intends to collect used parts washing solvents from its customers. Some of the used parts washing solvent from designated customers would be used for drum washing at Safety-Kleen facilities. This used solvent designated for drum washing would be consolidated, but would not be reclaimed, prior to its use for drum washing. The solvents designated for drum washing would also be segregated (i.e., always in separate containers or tanks) from the other used solvents collected from Safety-Kleen's customers.

Because the material (i.e., used solvent continuing to be employed in solvent uses) remains a product, your question about the applicability of 40 CFR §261.2(e)(1) is moot. That regulatory section is intended to apply to secondary materials, which is not the case for used solvents that are not yet "spent."

The Agency has previously stated that when a used solvent is employed for another solvent use, this continued use indicates that the solvent remains a product. The used solvent in this case is a material continuing to be used as a solvent, the purpose for which it is intended, rather than a spent material being reused. Consequently, the used solvent to be employed for drum washing would not be considered a solid waste and would not be subject to the Resource Conservation and Recovery Act ("RCRA") Subtitle C hazardous waste regulations when generated, transported, or used. 50 Fed. Reg. 614, 624 (1985). Accordingly, used parts washing solvents that are collected and consolidated by Safety-Kleen and then used for drum washing without first being reclaimed would not be a RCRA solid waste.

In the case of shipments of used solvents in tanker trucks, if any part of a shipment of solvent is reclaimed, burned for energy recovery, or otherwise defined as solid or hazardous waste (as opposed to being directly used only for drum wash), the entire shipment must be managed according to the

applicable RCRA Subtitle C regulations. In situations in which used solvents collected from multiple sources are handled in separate drums or containers on the same truck, each container must be handled according to the applicable regulations (depending on how the solvent is to be used or managed), including hazardous waste manifest requirements. After the solvents have been used for drum washing, any residual solvents would be subject to a hazardous waste determination and must be managed according to the applicable RCRA Subtitle C requirements.

Furthermore, the Agency is aware of the potential for the "continued use" policy to be abused, and thus, notes that the continued use must be legitimate for the used solvents to be excluded from regulation as a solid waste. The Agency would consider the continued use of the used solvents for drum washing to be legitimate in situations in which: 1) the used solvents are effective for the drum-washing operation, especially if the used solvents substitute for solvents that would otherwise have to be purchased (if the used solvents would not be an effective washing agent for the drums, using the used solvents in lieu of other effective drum-washing agents would not be considered legitimate), 2) the used solvents are used only for washing drums that actually need it (if the used solvents are used as drum-washing agent when the drums do not need washing, using the used solvents would not be considered legitimate), and 3) the used solvents are not used in excess of what would normally be required to wash drums (if the used solvents are being used in excess of the amount of solvents needed for the drum-washing operation, e.g., more than would be necessary to wash the drums effectively, using the used solvents would not be considered legitimate).

The regulatory interpretation provided above is based on the U.S. EPA's interpretation of federal regulations. Some states in which the continued use of the used parts washing solvent occurs may have different regulatory requirements or interpretations. For case-specific determinations on the status of the continued use of the parts washing solvent for drum wash, please contact the appropriate state regulatory agency or EPA Regional Office.

If you have any questions or would like additional information, please contact Jeff Gaspel at (703) 308-8826.

Sincerely,

David Bussard
Director, Hazardous Waste Identification Division
Office of Solid Waste

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

February 1, 1999

Mr. Timothy F. Kent
District EHS Manager
Safety-Kleen
One Brinckman Way
Elgin, IL 60123-7857

Re: Safety-Kleen's Continued Use Program
Technical Analysis File Number 1-99

Dear Mr. Kent:

This is in response to your December 18, 1998 letter regarding Safety-Kleen's recycling of solvents through its "Continued Use Program".

According to the information in your letter, the information provided by Ms. Catherine McCord and the information provided in a December 8, 1998 meeting between representatives from Safety-Kleen and the Texas Natural Resource Conservation Commission (TNRCC):

- Safety-Kleen has historically used waste parts washer solvent (mineral spirits) to washout and clean drums in which parts washer solvents arrive at Safety-Kleen sites. Based upon the experience gained in doing so, the results of an engineering study conducted by Safety-Kleen, customer requests and a thorough researching of RCRA rules, Safety-Kleen has developing what it calls the "Continued Use Program";

- The dual objectives of the Continued Use Program are: (1) to provide qualified Safety-Kleen customers with a means by which they can recycle their parts washer solvent and at the same time legitimately exempt the solvent from the definition of a solid waste (thus realizing relief from most regulatory requirements) and (2) to allow Safety-Kleen a legitimate means of meeting the challenge posed by some of its competitors who offer their customers the option of exempting their parts washer solvent from the definition of a solid waste (thus giving them a potential marketing advantage over Safety-Kleen);

- Upon its arrival at a Safety-Kleen site, the first step in the actual physical processing of parts washer solvent in the Continued Use Program occurs when the solvent is emptied from drums which have a capacity from 16 to 30 gallons into a vat that is physically separated from the entry point for solvent which is not from the Continued Use Program;

Re: Safety-Kleen's Continued Use Program
Technical Analysis File Number 1-99

- Once the solvent has been used to clean the drums, Safety-Kleen acknowledges that all of it meets the definition of a spent material as defined in 40 Code of Federal Regulations (CFR) Section § 261.1(c)(1)/30 Texas Administrative Code (TAC) § 335.17(8)(I). Furthermore, Safety-Kleen acknowledges that it will be the generator of the spent solvent and all wastes associated with it (e.g., sludges from the reclamation of the spent solvent);

- From the results of its engineering study, Safety-Kleen has determined the volume of parts washer solvent necessary to clean a given size drum. This volume multiplied by the number of drums to be cleaned provides each Safety-Kleen site with the maximum volume of solvent that the site can accept into its Continued Use Program. As an added measure of control, each site's maximum capacity is monitored by Safety-Kleen's Branch Automation Program which tracks the amount of Continued Use Program solvent coming into a given site. This plus the site's own monitoring efforts will insure that the site does not accept more solvent than it can legitimately use to clean the drums that arrive at that site;

- Once cleaned, the drums are then refilled with fresh solvent; and

- Safety-Kleen wishes for the TNRCC to confirm that the portion of parts washer solvent in the Continued Use Program is exempt from being a solid waste pursuant to 40 CFR §261.1(e)(1)/30 TAC §335.1(F)(i).

Based upon the aforementioned information, the TNRCC has concluded that there is no reason at this time to object to Safety-Kleen or its customers exempting from the definition of a solid waste parts washer solvent participating in Safety-Kleen's Continued Use Program provided that the following points (many of which are discussed in an August 21, 1998 letter from Mr. David Bussard of the Environmental Protection Agency (EPA) to Ms. Catherine McCord of regarding Safety-Kleen's Continued Use Program) about Safety-Kleen's Continued Use Program are taken into consideration:

- The solvent in the Continued Use Program would be considered by the TNRCC to be exempt from being a solid waste only if it has the capacity to function effectively as a solvent in the aforementioned drum cleaning operation. The TNRCC would not consider solvent used in the Continued Use Program which had lost all or the great majority of its solvent properties (e.g., through contamination) to be exempt from being a solid waste;

- The solvent in the Continued Use Program must be used only for washing drums that actually need it and only in quantities sufficient to wash the aforementioned drums. The TNRCC would not consider solvent used in excess of that which would normally be required to wash the drums to be exempt from being a solid waste;

Re: Safety-Kleen's Continued Use Program
Technical Analysis File Number 1-99

- Solvent in the Continued Use Program and solvent which is not in the Continued Use Program must be kept physically separated until they exit the drum washer portion of the aforementioned unit. Each container of the two types of solvents must be handled according to the applicable state and federal rules. If any portion of the Continued Use Program solvent is reclaimed, burned for energy recovery or used in a manner which would otherwise cause it to be a solid waste (as opposed to being directly used only for drum wash), then it is a solid waste and must be managed accordingly; and

- The TNRCC wishes to especially emphasize to Safety-Kleen the importance of ***properly creating and maintaining the documentation to show that it is complying with all applicable state and federal regulations (including those implied in the aforementioned points) at all times and at all of its sites.***

On behalf of the TNRCC, I wish to thank you, the other representatives of Safety-Kleen (most notably Ms. McCord who met and communicated on several occasions with Mr. Boultinghouse of the Technical Analysis Team) and Safety-Kleen for your efforts to promote and encourage legitimate recycling of parts washer solvents in Texas.

If you have any questions regarding this matter, please contact Mr. Jesse Boultinghouse of the Technical Analysis Team at (512) 239-6832.

Sincerely,

Dorca Zaragoza, Leader
Technical Analysis Team
Waste Evaluation Section
Registration and Evaluation Division

DZ/JKB/tgk

cc: Ms. Catherine McCord, Director, Business and Environmental Management, Safety-Kleen Corporation, 1000 North Randall Road, Elgin, IL 60123

Dear Safety-Kleen Customer:

As a valued customer and participant in Safety-Kleen's Continued Use Program (CUP), I want to review with you the benefits and requirements of the CUP.

The CUP can help you reduce parts cleaning and regulatory compliance costs. In cooperation with Safety-Kleen, customers who manage their qualifying parts cleaning solvent in an approved manner are exempt from having their used solvent classified as a hazardous waste, which eliminates regulatory compliance costs. All a customer has to do is follow a few simple requirements for keeping their qualifying solvent "clean."

The CUP program in each state is pre-approved by state and local regulatory authorities and, in the event that such a regulatory authority might ask you about your participation in the program, we believe the information in the attached CUP Customer Notification and Program Requirements Fact Sheet will be of value to you.

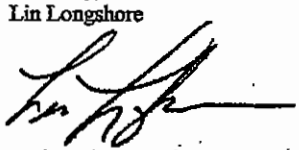
The CUP allows Safety-Kleen solvent that has been used for parts cleaning to be used again for other cleaning applications, so long as it has not been contaminated in specific ways by the customer. In this sense, the CUP is a true partnership – Safety-Kleen can help you keep your costs down if you will help us by keeping our solvent "clean" enough to meet the regulatory requirements for re-use.

To be eligible for CUP participation, customers need to first discuss their cleaning needs with a Safety-Kleen representative and determine if a qualifying solvent can meet those needs. If so, the customer simply needs to select an appropriate, qualifying solvent, complete some necessary paperwork for CUP participation, and then ensure that, during its use, the solvent does not become excessively contaminated.

Please note that it is the customer's responsibility to prevent the solvent from becoming excessively contaminated. If, upon testing after use, it is determined by Safety-Kleen that the used solvent no longer qualifies for the CUP due to contamination, Safety-Kleen will be required by law to manage that solvent as a hazardous waste. Understanding the CUP requirements in the attached document will help you minimize the potential for such a situation.

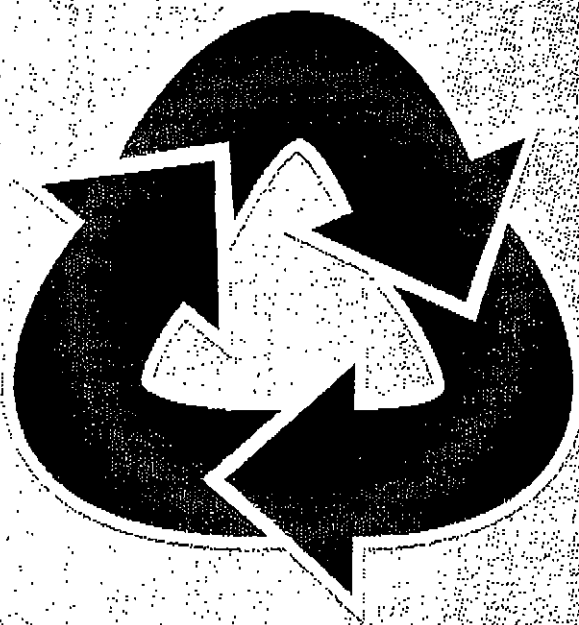
We appreciate your interest in the CUP and the enclosed information. If you have any questions regarding this program, please contact your local area Safety-Kleen service location for more information, or call 1-800-669-8905.

Sincerely,
Lin Longshore



Senior Vice President, Environmental Compliance
Safety-Kleen Systems, Inc.

Eliminate The Waste!



Safety-Kleen's Continued Use™ Program

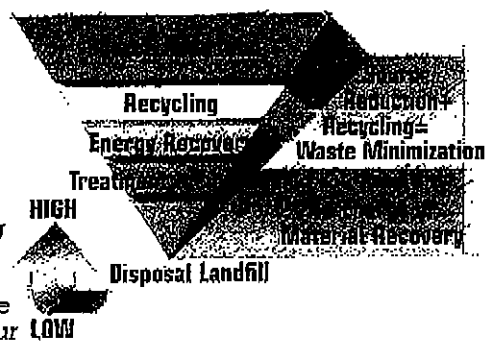
You told us that you wanted a way to stop manifesting used parts cleaning fluid leaving your facility. Safety-Kleen is proud to announce its Continued Use™ Program. This program uses an alternative approach to manage the parts cleaning solutions removed from your facility.

Continued Use Means Less Regulation

That means:

- *The cleaning solution is not classified as a hazardous waste (it will be used for cleaning within Safety-Kleen).*
- *A reduction in the overall volume of waste that you generate.*
- *No manifesting used parts cleaning solvents (so you're no longer required to maintain copies of hazardous waste manifests associated with the transportation and treatment of your used parts cleaning solution).*
- *EPA ID Number may not be required. (unless you have other hazardous waste)*
- *No Land Disposal Restriction forms.*

As your Total Waste Management Company, Safety-Kleen is offering participation in this program to its qualified customers <u>at no additional cost.</u> Under our Continued Use Program, Safety-Kleen becomes the waste generator; therefore, you are no longer required to manage the used parts cleaning solution as a hazardous waste. Contact your local Safety-Kleen representative for all the details. Remember, capacity is limited.



The above diagram is the EPA Waste Management Hierarchy. Safety-Kleen incorporates this approach in our cost-effective, environmentally preferred methods of managing your waste.

Continued Use Means Safety-Kleen's Highest Standards Are Met

Safety-Kleen's Continued Use Program is another example of our commitment to Best Practices to handling all materials we process in the way that's best for the environment and our customers. This means that your material (whether Continued Use or not) goes through Safety-Kleen's quality processes. In other words, every drop of your material will be managed through our state-of-the-art facilities. Unlike other waste handling services, Safety-Kleen can tell you exactly where—and how—your parts cleaning solution is managed and recycled. So when you work with Safety-Kleen, you know you are getting the quality that you have come to expect!

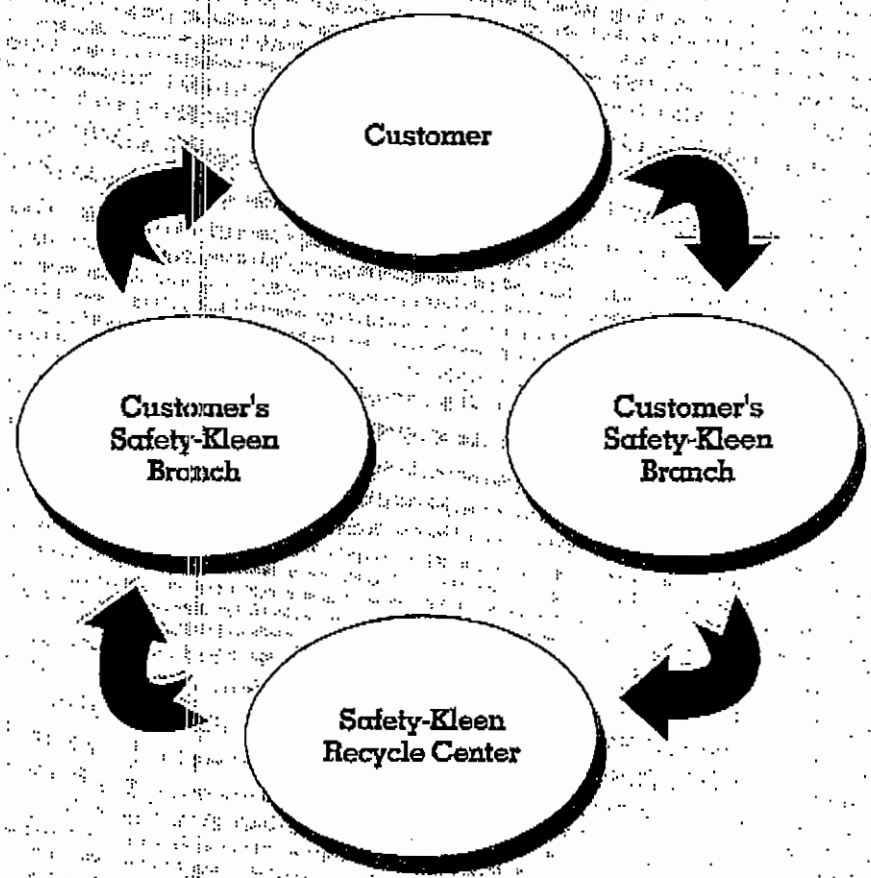
Safety-Kleen.

THE SAFETY-KLEEN CONTINUED USE PROGRAM

You will no longer be required to manifest the used parts cleaning solution leaving your facility!

Safety-Kleen Closes The Loop...

The chart shows the typical "handling path" of used parts cleaning solution. Every drop of solution remains in Safety-Kleen's control, minimizing potential liability by not utilizing third parties.



...And Renews A Non-Renewable Resource

Safety-Kleen's Continued Use material is recycled, preserving a natural resource for a beneficial use over and over again.

Continued Use Also Means Assurance

Written Commitment

Safety-Kleen's Certificate of Assurance and Indemnification demonstrates our dedication to safe and responsible service and gives our customers a simple guarantee:

Without fault of the customer, if a spill or accident should occur while a customer's waste is in our possession, including ground and water pollution, Safety-Kleen's financial strength and assets will be there to pay the costs to clean it up.

We can deliver on this pledge to reduce your risk, because our employees deliver on their pledge to do the job right.

safety-kleen.

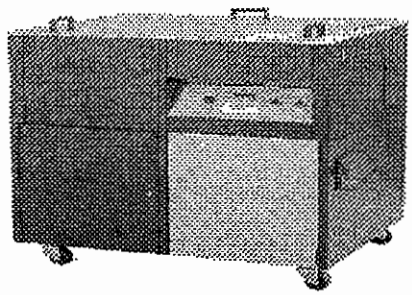
CONTACT SAFETY-KLEEN FOR DETAILS.

800/323-5040

Form 21931

safety-kleen

Plus Series



The Plus Series is similar to the Standard Series in design but has a larger although more shallow tank to accommodate parts with one dimension up to 35 inches. Features include a pump and dual filter, overflow weir, surface sparger, and digital control of process parameters including temperature, tank warm-up, and ultrasonic time. This unit is self-contained on casters and ready to go where it is needed. There are two Neptune generators that are housed inside the chasis for easy access or removal.

Differences between Plus Models

The SK-1735 is the smaller of the two units and comes standard without a basket and without a drain. The heat and the ultrasonics for this model are interlocked. When the ultrasonics are turned on, the heat automatically shuts off. The optional oil skimmer must be unplugged to be turned off. The SK-6315 holds 6 gallons more and comes standard with a basket. The heat and ultrasonics run simultaneously. The optional oil skimmer has an on-off switch.

Model	Capacity (gallons)	Tank Dimensions (LR x FB x HT)	Unit Dimensions (LR x FB x HT)	Ultrasonic Power (watts rms)	Heat Power (watts rms)	Voltage
SK-1735	34	32" x 23" x 10.75"	39" x 32.5" x 41"	2000	4000	240v
SK-6315	40	35" x 23" x 10.75"	41.5" x 32.5" x 41"	2000	4000	240v

Standard Ultrasonic Frequency is 40kHz

Options:

-Auto fill -Additional Parts Basket -Task Light -Oil Skimmer

-Ships with a technical manual and filters, (1) 50 micron and (1) 125 micron disposable filters.

Warranty: 1 year on workmanship, 2 years on the generators & 10 years on the bondment of the transducers.

Proudly Manufactured in the U.S.A. by Blackstone-NEY Ultrasonics

SAFETY-KLEEN PREMIUM SOLVENT
SAFETY-KLEEN PREMIUM GOLD SOLVENT
MATERIAL SAFETY DATA SHEET FOR USA AND CANADA

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **SAFETY-KLEEN PREMIUM SOLVENT**
SAFETY-KLEEN PREMIUM GOLD SOLVENT

SYNONYMS: Parts Washer Solvent; Petroleum Distillates; Petroleum Naphtha; Naphtha, Solvent; Stoddard Solvent; Mineral Spirits.

PRODUCT CODE: 6605, 6638

PRODUCT USE: Cleaning and degreasing metal parts.
If this product is used in combination with other products, refer to the Material Safety Data Sheet for those products.

24-HOUR EMERGENCY PHONE NUMBERS

These numbers are for emergency use only. If you desire non-emergency product information, please call a phone number listed below.	MEDICAL:	TRANSPORTATION (SPILL):
	1-800-752-7869	1-800-468-1760

SUPPLIER: Safety-Kleen Systems, Inc.
5400 Legacy Drive
Cluster II, Building 3
Plano, Texas 75024
USA
1-800-669-5740
www.Safety-Kleen.com

TECHNICAL INFORMATION: 1-800-669-5740 Press 1 then Enter 7500

MSDS FORM NUMBER: 82658 **ISSUE:** September 12, 2003

ORIGINAL ISSUE: January 26, 1995 **SUPERSEDES:** July 8, 2003

PREPARED BY: Product MSDS Coordinator **APPROVED BY:** MSDS Task Force

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

WT%	NAME	SYNONYM	CAS NO.	OSHA PEL** TWA	OSHA PEL** STEL	ACGIH TLV® TWA	ACGIH TLV® STEL	LD[a]	LC[b]
					ppm	ppm			
100	Distillates (petroleum), hydrotreated light	N. Av.	64742-47-8	500[c] ppm 2900[c] mg/m^3	N. Av.	100[c]	N. Av.	5000[c] mg/kg	5500[c] mg/m3/4h

**OSHA Final PEL value (enforceable). Some States have adopted more stringent values.

N. Av. = Not Available
[a]Oral-Rat LD_{50}
[b]Inhalation-Rat LC_{50}
[c]Based on Stoddard Solvent

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE
Liquid, clear, colorless to pale yellow, mild hydrocarbon odor.

WARNING!

PHYSICAL HAZARDS
Combustible liquid and vapor.

HEALTH HAZARDS
May be harmful if inhaled.
May irritate the respiratory tract (nose, throat, and lungs), eyes, and skin.
May be harmful if swallowed.
Contains material that may cause central nervous system and kidney damage.

ENVIRONMENTAL HAZARDS
Not toxic to aquatic life.

POTENTIAL HEALTH EFFECTS

INHALATION (BREATHING): High concentrations of vapor may be harmful if inhaled. High concentrations of vapor or mist may irritate the respiratory tract (nose, throat, and lungs). High concentrations of vapor or mist may cause nausea, vomiting, headaches, dizziness, loss of coordination, numbness, and other central nervous system effects. Massive acute overexposure may cause rapid central nervous system depression, sudden collapse, coma, and/or death.

EYES: May cause irritation.

SKIN: May cause irritation. Not likely to be absorbed in harmful amounts.

INGESTION (SWALLOWING): May be harmful if swallowed. May cause throat irritation, nausea, vomiting, and central nervous system effects as noted under **INHALATION (BREATHING)**. Breathing product into the lungs during ingestion or vomiting may cause lung injury and possible death.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Individuals with pre-existing respiratory tract (nose, throat, and lungs), central nervous system, kidney, eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

CHRONIC: Prolonged or repeated inhalation may cause toxic effects as noted under **INHALATION (BREATHING)**. Prolonged or repeated exposure may cause central nervous system and kidney damage. Prolonged or repeated eye contact may cause inflammation of the membrane lining the eyelids and covering the eyeball (conjunctivitis). Prolonged or repeated skin contact may cause drying, cracking, redness, itching, swelling (dermatitis) and/or burns..

CANCER INFORMATION: No known carcinogenicity. For more information, see **SECTION 11: CARCINOGENICITY**.

Also see **SECTION 15: CALIFORNIA**.

POTENTIAL ENVIRONMENTAL EFFECTS

Product is not toxic to aquatic life. Also see **SECTION 12: ECOLOGICAL INFORMATION**.

SECTION 4: FIRST AID MEASURES

INHALATION (BREATHING): Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Oxygen should only be administered by qualified personnel. Someone should stay with victim. Get medical attention if breathing difficulty persists.

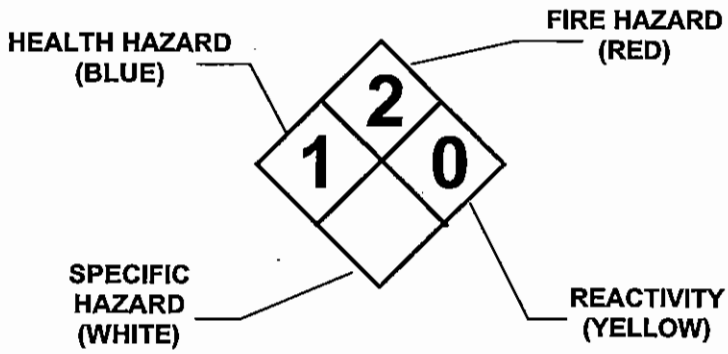
EYES:	If irritation or redness from exposure to vapor develops, move away from exposure into fresh air. Upon contact, immediately flush eyes with plenty of lukewarm water, holding eyelids apart, for 15 minutes. Get medical attention.
SKIN:	Remove affected clothing and shoes. Wash skin thoroughly with soap and water. Get medical attention if irritation or pain develops or persists.
INGESTION (SWALLOWING):	Do NOT induce vomiting. Immediately get medical attention. Call 1-800-752-7869 for additional information. If spontaneous vomiting occurs, keep head below hips to avoid breathing the product into the lungs. Never give anything by mouth to an unconscious person.
NOTE TO PHYSICIANS:	Treat symptomatically and supportively. Treatment may vary with condition of victim and specifics of incident. Call 1-800-752-7869 for additional information.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT:	148°F (64°C) (approximately)Tag Closed Cup	
FLAMMABLE LIMITS IN AIR:	**LOWER:** 0.7 VOL% (minimum)	**UPPER:** 5 VOL% (maximum)
AUTOIGNITION TEMPERATURE:	410°F (210°C) (minimum)	
HAZARDOUS COMBUSTION PRODUCTS:	Decomposition and combustion materials may be toxic. Burning may produce carbon monoxide and unidentified organic compounds.	
CONDITIONS OF FLAMMABILITY:	Heat, sparks, or flame.	
EXTINGUISHING MEDIA:	Carbon dioxide, regular foam, dry chemical, water spray, or water fog.	

NFPA 704
HAZARD IDENTIFICATION:

This information is intended solely for the use by individuals trained in this system.



FIRE FIGHTING INSTRUCTIONS:

Keep storage containers cool with water spray. A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

FIRE AND EXPLOSION HAZARDS:

Vapor explosion hazard indoors, outdoors, or in sewers. Vapors may travel to ignition source and flashback. Vapors will spread along the ground and collect in low or confined areas. Run-off to sewer may create a fire hazard. Heated containers may rupture or be thrown into the air. "Empty" containers may retain residue and can be dangerous. Products are not sensitive to mechanical impact. Products may be sensitive to static discharge, which could result in fire or explosion.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Remove all ignition sources. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.** Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. A vapor suppressing foam may be used to reduce vapors. Contain spill away from surface water and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean, sparkproof tool into a sealable container for disposal.

Additionally, for large spills: Water spray may reduce vapor, but may not prevent ignition in closed spaces. Dike far ahead of liquid spill for collection and later disposal.

SECTION 7: HANDLING AND STORAGE

HANDLING: Keep away from heat, sparks, or flame. Where flammable mixtures may be present, equipment safe for such locations should be used. Use clean, sparkproof tools and explosion-proof equipment. When transferring product, metal containers, including trucks and tank cars, should be grounded and bonded. Do not breathe vapor or mist. Use in a well ventilated area. Avoid contact with eyes, skin, clothing, and shoes. Do not smoke while using this product.

SHIPPING AND STORING: Keep container tightly closed when not in use and during transport. Store containers in a cool, dry place. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Keep containers away from heat, flame, sparks, static electricity, or other sources of ignition. Empty product containers may retain product residue and can be dangerous. See **SECTION 14: TRANSPORTATION INFORMATION** for Packing Group information.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide general ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below applicable exposure limits. Where explosive mixtures may be present, equipment safe for such locations should be used.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: Use NIOSH-certified P- or R- series particulate filter and organic vapor cartridges when concentration of vapor or mist exceeds applicable exposure limits. Protection provided by air purifying respirators is limited. Do not use N-rated respirators. Selection and use of respiratory protective equipment should be in accordance in the USA with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.

EYE PROTECTION: Where eye contact is likely, wear chemical goggles; contact lens use is not recommended.

SKIN PROTECTION:	Where skin contact is likely, wear neoprene, nitrile, or equivalent protective gloves; use of natural rubber or equivalent gloves is not recommended. To avoid prolonged or repeated contact with products where spills and splashes are likely, wear appropriate chemical-resistant faceshield, boots, apron, coveralls, long sleeve shirts, or other protective clothing.
PERSONAL HYGIENE:	Use good personal hygiene. Wash thoroughly with soap and water after handling product and before eating, drinking, or using tobacco products. Clean affected clothing, shoes, and protective equipment before reuse. Discard affected clothing, shoes, and/or protective equipment if they cannot be thoroughly cleaned. Discard leather articles, such as shoes, saturated with this product.
OTHER PROTECTIVE EQUIPMENT:	Where spills and splashes are likely, facilities storing or using these products should be equipped with an emergency eyewash and shower, both equipped with clean water, in the immediate work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE, APPEARANCE, AND ODOR:	Liquid, clear, colorless to pale yellow, mild hydrocarbon odor.
ODOR THRESHOLD:	30 ppm (based on Stoddard Solvent)
MOLECULAR WEIGHT:	Not available.
SPECIFIC GRAVITY:	0.77 to 0.82 at 60°F (15.6°C) (water = 1)
DENSITY:	6.4 to 6.8 LB/US gal (780 to 820 g/l)
VAPOR DENSITY:	5 (air = 1) (approximately)
VAPOR PRESSURE:	0.2 mm Hg at 68°F (20°C) (approximately) 0.6 mm Hg at 100°F (37°C) (approximately)
BOILING POINT:	350°F (177°C) (initial)
FREEZING/MELTING POINT:	-45°F (-43°C) (maximum)
pH:	Not applicable.
EVAPORATION RATE:	0.1 (butyl acetate = 1) (based on Stoddard Solvent)

SOLUBILITY IN WATER:	Insoluble.
FLASH POINT:	148°F (64°C) (approximately)Tag Closed Cup
FLAMMABLE LIMITS IN AIR:	**LOWER:** 0.7 VOL% (minimum) **UPPER:** 5 VOL% (maximum)
AUTOIGNITION TEMPERATURE:	410°F (210°C) (minimum)

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable under normal temperatures and pressures. Avoid heat, sparks, or flame.
INCOMPATIBILITY:	Avoid acids, alkalies, oxidizing agents, reducing agents, or reactive halogens.
REACTIVITY:	Polymerization is not known to occur under normal temperature and pressures. Not reactive with water.
HAZARDOUS DECOMPOSITION PRODUCTS:	None under normal temperatures and pressures. See also **SECTION 5: HAZARDOUS COMBUSTION PRODUCTS.**

SECTION 11: TOXICOLOGICAL INFORMATION

SENSITIZATION:	Based on best current information, there is no known human sensitization associated with this product.
MUTAGENICITY:	Based on best current information, there is no known mutagenicity associated with this product.
CARCINOGENICITY:	Based on best current information, there is no known carcinogenicity as categorized by ACGIH A1 or A2 substances; as categorized by IARC Group 1, Group 2A, or Group 2B agents; or as listed by NTP as either known carcinogens or substances for which there is limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals. Also see **SECTION 15: CALIFORNIA.**

REPRODUCTIVE TOXICITY:	Based on best current information, there is no known reproductive toxicity associated with this product. Also see **SECTION 15: CALIFORNIA.**
TERATOGENICITY:	Based on best current information, there is no known teratogenicity associated with this product.
TOXICOLOGICALLY SYNERGISTIC PRODUCT(S):	Based on best current information, there are no known toxicologically synergistic products associated with this product.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY:	A Static Acute Bioassay as per California Department of Fish and Game WPCL was done using fathead minnows and up to 750 ppm of the products in water. The material passed the bioassay.
OCTANOL/WATER PARTITION COEFFICIENT:	Not available.
VOLATILE ORGANIC COMPOUNDS:	100 WT%; 6.4 to 6.8 LB/US gal; 780 to 820 g/l As per 40 CFR Part 51.100(s).

SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSAL:	Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Safety-Kleen regarding proper recycling or disposal.
USEPA WASTE CODE(S):	Not regulated. Based on available data, this information applies to the product as supplied to the user. Processing, use, or contamination by the user may change the waste code applicable to the disposal of this product.

SECTION 14: TRANSPORT INFORMATION

DOT: **Shipping Name:** Combustible liquid, n.o.s. (petroleum naphtha) **UN/NA #:** NA1993 **Hazard Class:** Combustible liquid **Packing Group:** III

TDG: **Shipping Name:** Non-regulated goods.

EMERGENCY RESPONSE GUIDE NUMBER: 128 Reference *North American Emergency Response Guidebook*

SECTION 15: REGULATORY INFORMATION

USA REGULATIONS

SARA SECTIONS 302 AND 304: Based on the ingredients listed in **SECTION 2**, this product does not contain any "extremely hazardous substances" listed pursuant to Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 302 or Section 304 as identified in 40 CFR Part 355, Appendix A and B.

SARA SECTIONS 311 AND 312: This product poses the following health hazards as defined in 40 CFR Part 370 and are subject to the requirements of sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA):

Immediate (Acute) Health Hazard
Delayed (Chronic) Health Hazard
Fire Hazard

SARA SECTION 313: This product does not contain "toxic" chemicals subject to the requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 372.

CERCLA: Based on the ingredient listed in SECTION 2, this product does not contain any "hazardous substances" listed pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) in 40 CFR Part 302, Table 302.4.

TSCA: The component of this product is listed on, or is automatically included as "naturally occurring chemical substances" on, or is exempted from the requirement to be listed on, the TSCA Inventory.

CALIFORNIA: This product may contain a detectable amount of benzene CAS 71-43-2

(at or below 0.4 mg/L) and p-dichlorobenzene CAS 106-46-7 (at or below 5 mg/L). WARNING: These chemicals are known to the State of California to cause cancer.

This product may contain a detectable amount of benzene CAS 71-43-2 (at or below 0.4 mg/L) and toluene CAS 108-88-3 (at or below 30 mg/L). WARNING: These chemicals are known to the State of California to cause birth defects or other reproductive harm.

CANADIAN REGULATIONS

This product have been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all information required by the CPR.

WHMIS: Class B3 - Combustible Liquid
Class D2B - Irritating to eyes and skin.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): The component of this product is listed on, or is automatically included as "substance occurring in nature" on, or is exempted from the requirements to be listed on, the Canadian Domestic Substances List (DSL).

SECTION 16. OTHER INFORMATION

REVISION INFORMATION: This MSDS has been revised in the following sections:
Section 14: Change in transportation

LABEL/OTHER INFORMATION: These products are United States Department of Agriculture (USDA) approved and ETL classified.

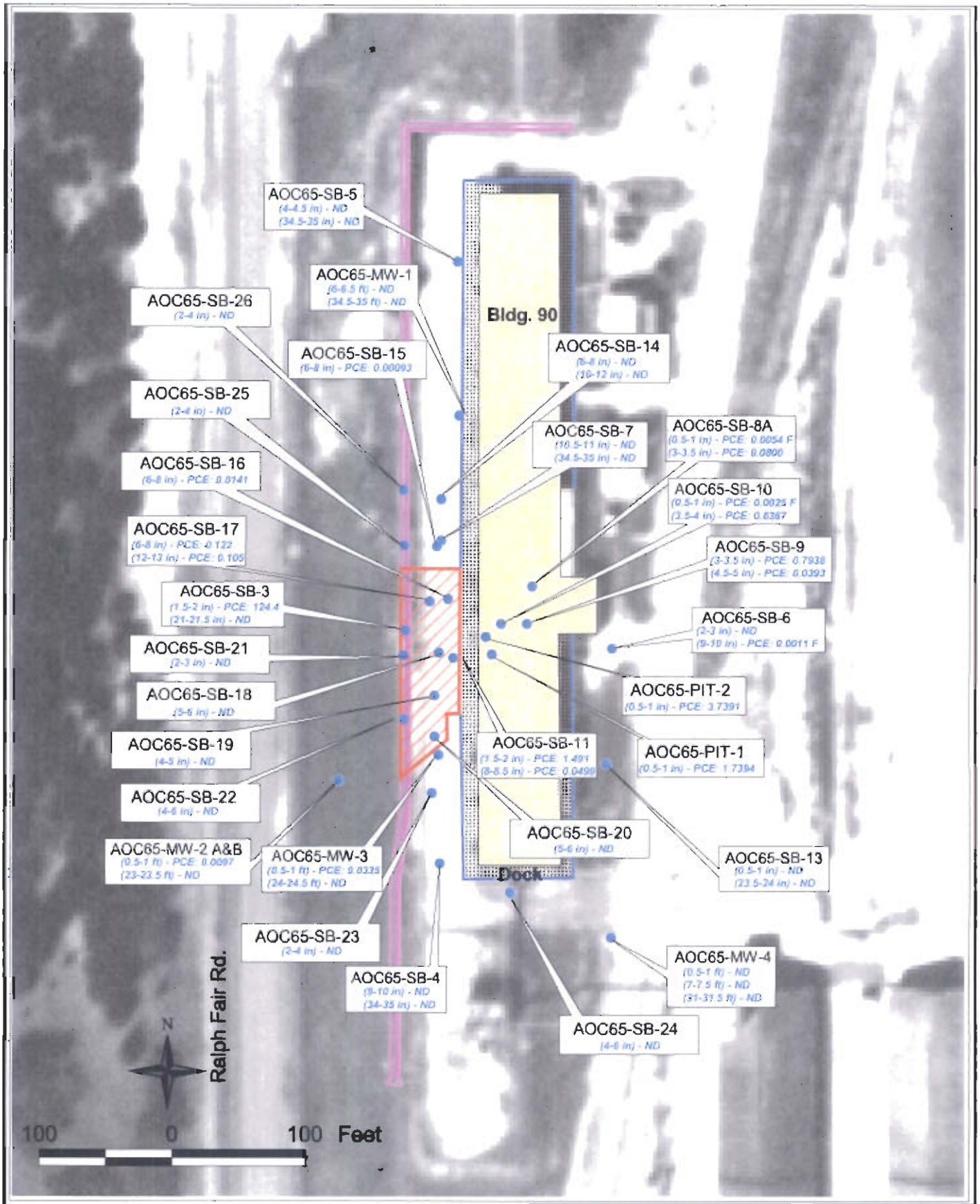


Figure 2-2

AOC-65 Soil Boring Locations with Soil/Rock Sample Analytical Results for PCE

Camp Stanley Storage Activity

j:\740999\treatabilitystudy\aoc65treatability2.apr

RFI AND INTERIM MEASURES WASTE MANAGEMENT PLAN

Prepared for:

Camp Stanley Storage Activity
Boerne, Texas

AUGUST 2002

RFI AND INTERIM MEASURES WASTE MANAGEMENT PLAN

Camp Stanley Storage Activity
Boerne, Texas

Prepared For

Camp Stanley Storage Activity
Boerne, Texas

AFCEE/ERD QAE
Brooks AFB, Texas

F41624-00-D-8024
Delivery Order 0058

AUGUST 2002

RECORD OF REVISIONS

All revisions to this hazardous waste management plan will be made in the form of replacement pages. All revisions will be recorded in the format shown below. Any revision will be made according to the following procedure:

1. Insert the new page(s).
2. Remove the affected old page(s). No existing page will be removed until a corresponding new page(s) has been inserted.
3. Enter an appropriate revision number in sequence (e.g., 1, 2, 3,....). Enter the date the change was made in the record of revisions below and initial it.

Revision Number	Date	Comments/Amendments	Initials

CONTENTS

Page

ACRONYMS AND ABBREVIATIONS

- AOC Area of Concern
- ARARs Applicable or Relevant and Appropriate Requirements
- BS Bexar Shale
- CAMU Corrective Action Management Unit
- CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
- CC Cow Creek
- CFR Code of Federal Regulations
- CLP Cleaner, lubricant, protector
- CMS Corrective Measures Study
- COC Chemical of Concern
- CSSA Camp Stanley Storage Activity
- CWA Clean Water Act
- DoD Department of Defense
- DOT Department of Transportation
- DRMO Defense Reutilization and Marketing Office
- FR Federal Register
- FSP Field Sampling Plan
- FWPCA Federal Water Pollution Control Act
- GAC Granular Activated Carbon
- HASP Health and Safety Plan
- HW Hazardous Waste
- HWIR Hazardous Waste Identification Rule
- IDW Investigation Derived Waste
- IM Interim Measures
- IRA Interim Removal Action
- ISCP Installation Spill Contingency Plan
- LDR Land Disposal Restrictions
- LGR Lower Glen Rose
- LQG Large Quantity Generator

ACRONYMS AND ABBREVIATIONS, continued

- MCL Maximum Contaminant Limit
- NCP National Contingency Plan
- NH Nonhazardous
- NOR Notice of Registration
- OSHA Occupational Safety and Health Administration
- O&M Operations and maintenance
- Order USEPA Section 3008(h) Administrative Order on Consent
- Parsons Parsons Engineering Science, Inc.
- PCE Perchloroethylene (or tetrachloroethylene)
- PCL Protective concentration limit
- PID Photoionization detector
- PVC Polyvinyl chloride
- QAPP Quality Assurance Project Plan
- QPP Quality Program Plans
- RAP Remedial Action Plan
- RCRA Resource Conservation and Recovery Act
- RFI RCRA Facility Investigation
- RRAD Red River Army Depot
- SAP Sampling and analysis plan
- SARA Superfund Amendment and Reauthorization Act
- SPCCP Spill prevention, control, and countermeasures plan
- SQG Small quantity generator
- SVE Soil vapor extraction
- SWMU Solid waste management unit
- TAC Texas Administrative Code
- TCLP Toxicity characteristic leaching procedure
- TNRCC Texas Natural Resource and Conservation Commission
- TPDES Texas Pollution Discharge Elimination System
- TRRP Texas Risk Reduction Program

ACRONYMS AND ABBREVIATIONS, continued

- TSD Treatment, storage, and disposal
- TU Treatment Unit
- USC United States Code
- USDA United States Department of Agriculture
- USEPA United States Environmental Protection Agency
- VEW Vapor extraction well
- VMP Vapor monitoring point
- VOC Volatile organic compound
- WMP Waste management plan
- WRPA Waste Reduction Policy Act
- WWTP Wastewater treatment plant

SECTION 1
INTRODUCTION

1.1 PURPOSE

This document is an addendum that modifies the **Sampling and Analysis Plan (SAP)** for SWMU Closures at Camp Stanley Storage Activity (CSSA) **(Volume 1-4 of the Environmental Encyclopedia, Field Sampling and Analysis Plan and QAPP)** for investigation, treatability studies and remedial activities as specified in various Task Orders for CSSA. The purpose of this addendum is to address changes to the existing **SAP** specifically related to management of contaminated media and waste generated through investigative, study or remedial activities. The activities to be conducted include performance of Resource Conservation and Recovery Act (RCRA) Facility Investigations (RFIs), conducting treatability studies, and removal actions at CSSA.

This waste management plan (WMP) is prepared for the use and implementation at CSSA located in Bexar County, Texas. CSSA is a Department of Defense (DoD) facility. This plan describes activities in support of and in compliance with the USEPA Administrative Order on Consent (Order), United States Environmental Protection Agency (USEPA) identification number TX2210020739, proceeding under Section 3008(h) of RCRA, as amended, 42 United States Code (U.S.C.) Section 6928(h). This plan is also designed to ensure that the waste management tasks performed in support of the Order at the installation, comply with the applicable federal, state, local, and army regulations.

This plan will be used by all personnel at CSSA involved in the management of investigation/remediation wastes containing hazardous constituents. The plan establishes specific procedures to be followed while performing waste management activities such as waste generation, classification, containerizing and packaging, labeling, transportation, and accumulation.

This plan should be considered as an overview of waste management procedures and requirements associated with planned RFI, Treatability Studies, and remedial actions. Applicable regulations should be reviewed periodically and this plan updated to ensure that the complete and most current listing of waste management requirements is incorporated.

1.2 GENERAL INSTALLATION INFORMATION

CSSA is located approximately 19 miles northwest of downtown San Antonio in south central Texas, and has a total area of 4,004.18 acres. CSSA is immediately east of State Highway 3351 (Ralph Fair Road), approximately 0.5 mile from Interstate Highway 10. CSSA has an approximate workforce of 115 and is a subinstallation of Red River Army Depot (RRAD).

CSSA is a restricted-access installation due to its explosive ordnance storage and testing missions with inner cantonment lands to the southwest and outer cantonment areas to the east and north. Operational buildings and igloo storage magazines are located within the inner cantonment. Outer cantonment land is primarily undeveloped open range.

The eastern boundary of CSSA and part of its northern and southern boundaries are contiguous with the Camp Bullis Military Training Reservation Fort Sam Houston. The surrounding area to the west is primarily rural and zoned for residential use. Some residential development is also present west, northwest, and southwest of the installation.

The primary mission of CSSA is the receipt, storage, issue, and maintenance of ordnance materiel, as well as quality assurance testing and maintenance of military weapons and ammunition[1]. CSSA also has an agreement with the United States Department of Agriculture (USDA) Agricultural Research Service which permits cattle grazing on CSSA lands. CSSA personnel or other parties are allowed to hunt wildlife on a restricted basis. Although RRAD is proposed for realignment, no changes to the CSSA mission and military activities are expected in the future.

The name and address of the owner and operator of the installation are:

Installation Manager
Camp Stanley Storage Activity
25800 Ralph Fair Road
Boerne, Texas 78006-4800
Phone: (210) 295-7416

The designated person in charge of USEPA 3008(h) Delivery Orders and related issues at the installation is the installation Environmental Officer.

1.3 HAZARDOUS WASTE ACTIVITIES

The CSSA installation is classified as a small quantity hazardous waste generator (USEPA Identification Number TX2210020139). In addition, the facility also generates nonhazardous wastes, and stores hazardous and nonhazardous wastes (Texas Solid Waste Registration Number 69026). The installation generates hazardous and nonhazardous

---

[1] Environmental Health Engineering Department, Fifth US Army Medical Laboratory, Report of Engineering-Survey-Industrial Waste and Wastewater Treatment Plant, Camp Stanley Storage Activity, Texas, October, 1971.

wastes from various activities involved in performing the primary missions of the installation and tasks associated with the Order.

In addition to the wastes generated directly from primary missions activities, some waste streams are also generated from post support activities. The specific investigation/remediation activities generating potential hazardous and nonhazardous wastes are discussed in detail in Section 2.

1.4 GENERAL PLAN OVERVIEW

This document contains six sections, including this introductory section. Section 2 presents a brief summary of anticipated significant waste streams generated at the facility in association with the Order. The regulatory background for the waste management activities are detailed in Section 3. Section 4 describes various waste management tasks and identifies responsible personnel for implementing the waste management tasks. Section 4 draws on many appendices to describe a detailed step-by-step waste management procedures. Spill prevention and response activities are described in Section 5. The recordkeeping and reporting requirements for waste management activities at the post are described in Section 6.

Any and all revisions to this plan will be approved by the USEPA and incorporated by replacing the old affected pages with the new ones and documenting the revisions on a Record of Revisions page presented in front of this document (page *ii*).

SECTION 2
ANTICIPATED WASTE GENERATION ACTIVITIES

CSSA currently is classified as a conditionally exempt small quantity hazardous waste generator (30 Texas Administrative Code TAC 335.1). The installation also generates several nonhazardous waste streams. The installation generates hazardous and nonhazardous wastes from various activities associated with the primary mission at the installation.

In addition to the wastes generated directly from the primary mission activities, some waste streams are also generated from miscellaneous post support activities such as those associated with RFI activities, and waste removal activities in association with the Order. The specific activities that are anticipated in generating potential hazardous and nonhazardous wastes are discussed below.

2.1 RFI ACTIVITIES

This section describes activities in support of and in compliance with the USEPA Administrative Order on Consent, USEPA identification number TX2210020739, proceeding under Section 3008(h) of RCRA, as amended, 42 U.S.C. Section 6928(h).

The objectives of the RFI include:

- Identifying possible releases;
- Investigating and preventing the further spread of identified releases of hazardous waste and /or hazardous constituents to the environment at and/or from the facility; and
- Ensuring that corrective actions protect human health and environment.

In addition to this addendum to the SAP, the Quality Program Plans (QPP), are included in **Volume 1-4 and Volume 1-5**, respectively. The QPP includes the **Sampling and Analysis Plan** (SAP) and the **Health and Safety Plan** (HASP). The SAP consists of the **Quality Assurance Project Plan** (QAPP) and the **Field Sampling Plan** (FSP). The SAP is included in **Volume 1-4** and the HASP is included in **Volume 1-5.** A detailed description of the RFI measures for each SWMU and AOC is provided in **Volume 1-2 and Volume 1-3.**

In addition to RFIs and other ongoing environmental investigations, CSSA has been undertaking a large-scale groundwater investigation and monitoring program to define the vertical and lateral extent of solvent plumes impacting the Middle Trinity Aquifer that

serves municipal as well as domestic consumers in the vicinity of northwest San Antonio. Recent data suggest that the plume has moved beyond the boundaries of the government-owned facility, and has impacted off-post drinking water wells. The need for hydrologic characterization and plume delineation as soon as possible is the greatest priority to the facility.

To this end, CSSA has been aggressively implementing a groundwater monitoring program to address these issues in compliance with the Order. Phase I of this investigation, which included the installation of 15 new groundwater monitoring wells was recently completed. The Phase I wells took nearly a year to fully implement, and encountered many challenges including the handling of copious quantities of drilling material generated during their installation.

For Phase II, a total of 17 monitoring wells that are scheduled to be installed in three units of the Middle Trinity Aquifer underlying CSSA. The hydrologic units of interest are the Lower Glen Rose (LGR) Limestone, the Bexar Shale (BS), and the Cow Creek (CC) Limestone. The actual drilling depth will be a function of each well's location and land surface elevation. In general, wells ranging between 120 to 500 feet below ground surface are to be installed during the Phase II drilling operation. The end product will be 13 wells with a nominal 4" diameter casing and maximum screen length of 25 feet. Additionally, four wells will be installed using the Westbay's multilevel sampling system to approximate depths of 300 feet below ground surface. Depending on the hydrologic zone of interest, different well designs will be implemented to ensure the integrity of each monitoring point.

Drilling to depths up to 500 feet produces significant amounts of drill cuttings (soil and limestone) as well as groundwater. It is estimated that as much as 170 cubic feet (6.3 cubic yards) of soil drill cuttings can be generated from a single well. In addition, the relatively slow advance of the drill bit in relation to the pumping action inherent with the air rotary drilling methodology generates a large volume of extracted groundwater when drilling below the water table. As much as 28,000 gallons of groundwater may be produced during the course of drilling a single well.

Because of the previous experience of the Phase I drilling project, CSSA has estimated the amount of total solids and liquids that will be generated from the Phase II drilling as it is currently scoped. We anticipate approximately 100 cubic yards of solids (drill cuttings) and between 300,000 to 400,000 gallons of formation water (i.e. groundwater) to be generated during the well installation activities. As much as 100,000 additional gallons of groundwater will be generated during the development phase. Approximately 1,800 cubic yards (nearly 100 roll-off containers or 350,000 gallons) of drilling material (i.e., mud and groundwater) are expected to be generated over the 14-month drilling schedule.

Adequate storage capacity will be required to effectively handle the generated investigative derived media. Two options have been identified for management of the groundwater media. The first is use of 20-cubic yard containers during the Phase II well installation efforts. The second is the use of a settling basin located near CSSA's outfall

002. CSSA believes the settling basin methodology is deemed to be a more economical and appropriate method of handling the generated drilling materials while continuing to be protective of human health and the environment. However, either management or a combination of both management methods may be used in managing the expected investigative derived media.

2.1.1 Management of Groundwater Investigation Derived Media

The first option allows for the use of approximately 140 20-cubic yard containers for management of Investigation Derived Waste (IDW) media. Approximately six containers per well will be required in order to handle the generation of media from well installations. Additionally, four containers will be staged at CSSA's Outfall 002 for possible treatment requirements. This option assumes that all containers will be sampled before any resulting media management is to occur.

The second option allows for the use of settling basin(s) for management of groundwater investigative derived media. This options assumes that periodic sampling will occur before any resulting media management is to occur. At this time, CSSA does not anticipate using lined settling basins. Appropriate requirements will be met if the settling basins are used in the RFI, interim measures (IM) remediation, or other corrective action activities at CSSA.

For the second option, a drilling subcontractor would transport all generated drilling materials to the basins via vacuum truck. Depending upon the circumstances, two smaller ponds may be constructed to be more proximal to the two major areas of investigation, thereby reducing transport times. Multiple transportable 20 to 30-yard roll-off boxes will also be placed at each well cluster to temporarily contain drilling media when production occasionally exceeds the transportation capability of the drilling subcontractor. Periodically, sampling of the drilling materials will identify any additional management methods that may be necessary (i.e. if materials are above Texas Risk Reduction Program (TRRP) Tier 1 Protective Concentration Limits (PCLs) or Maximum Contaminant limits (MCLs) they would be routed through the granular activated carbon (GAC) unit at CSSA's Outfall 002). If analysis of the materials indicates that the COCs are below the health based standards (PCLs or MCLs) they would be discharged to the ground surface. The use of TRRP Tier 1 PCLs or MCLs standards in determining management of investigative derived media are as applicable or relevant and appropriate requirements (ARARs).

Any remaining mud/solids will be sampled for Volatile Organic Compounds (VOCs) for characterization and managed as soil investigative derived media discussed in the following section 2.1.2.

2.1.2 Management of Solid Investigative Derived Media

Solids with VOC concentrations at or less than background will be transported and managed onsite as fill material. Concentrations of VOCs greater than subject criteria will require off-site disposal.

Periodically, sampling of solid investigative derived media will occur in order to identify appropriate management methods for the contained materials. If analysis of the materials indicates that the COCs are below the health based standards (i.e., TRRP Tier 1 PCLs) they will be discharged to the ground surface near the vicinity for which the media was generated. Otherwise, management of drilling materials will be in accordance with applicable laws and regulations.

The aforementioned management methods for the solid materials were authorized by letter dated August 12, 1996 from Mr. Richard Clarke of the TNRCC Corrective Action Section (attached), which specified Investigative Derived Waste (IDW) criteria for release to ground surface. Mr. Clarke indicated that any IDW which were below Risk Reduction Standard 2 criteria (identified in 30 TAC 335 subchapter S) were authorized for placement back onto the ground surface in the vicinity of extraction location. The use of TRRP Tier 1 PCLs standards in determining management of investigative derived media are as ARARs. CSSA intends to close all applicable sites under Risk Reduction Standard 1, as identified in 30 TAC 335 subchapter S, where practical.

2.2 TREATABILITY STUDIES

As part of the Order, CSSA is to identify candidate technologies for a treatability studies program. The treatability studies program will include the following evaluations: (1) installation and operation of a system designed to recover and control migration of hazardous waste and constituents in ground water; (2) installation and operation of a system designed to recover and control migration of hazardous waste and constituents in soil; (3) installation and operation of a system designed to recover and control migration of hazardous waste and constituents in surface water; (4) installation and operation of a system designed to control migration of hazardous waste and constituents in air; and (5) any additional candidate technologies for a treatability studies program. The listing of candidate technologies will cover the range of technologies required for alternatives analysis. The specific data requirements for the testing program will be determined and refined during the RFI and corrective measures study (CMS) implementation. The treatability study(ies) shall include the following:

2.2.1 Literature Survey

A literature survey to gather information on performance, relative costs, applicability, removal efficiencies, operation and maintenance (O&M) requirements, and implementability of candidate technologies. If practical candidate technologies have not been sufficiently demonstrated, or cannot be adequately evaluated for this site on the basis of available information, treatability testing will be conducted.

2.2.2 Evaluation of Technologies

Once a decision has been made to perform treatability studies, CSSA and USEPA will decide on the type of treatability testing to use (e.g., bench versus pilot). Because of the time required to design, fabricate, and install pilot scale equipment as well as perform testing for various operating conditions, the decision to perform pilot testing should be

made as early in the process as possible to ensure that results are integrated into the evaluation of corrective measure alternatives within the CMS.

The program shall include innovative corrective action technologies when appropriate, especially in situations where there are a limited number of applicable existing corrective measure technologies.

The program shall rely on standard engineering practice to determine which of the previously identified technologies appear most suitable for the Facility. Technologies can be combined to form the overall corrective action alternatives. The alternatives developed should represent a workable number of option(s) that each appears to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies.

The program shall evaluate and document the technology limitations of the corrective measure alternatives identified above which may prove infeasible to implement given the existing set of waste and site specific conditions.

Currently, CSSA's treatability studies program has included Soil Vapor Extraction (SVE), Electrokinetic Remediation, Phytoextraction, Density Separation, and Stabilization. These technologies will continue to be investigated and are anticipated to generate potential hazardous waste and nonhazardous waste. A detailed description of the treatability studies planned is provided in **Volume 1-2, Volume 1-3 and Volume 4.**

Two SVE pilot systems are proposed for installation at AOC-65 to evaluate the potential for SVE to reduce the levels of contaminants detected in soils at the site. One system will consist of installing extraction wells beneath the floor of Building 90 will comprise the Building 90 subslab ventilation system. The second SVE system will consist of six vapor extraction wells (VEWs) and six multi-depth vapor monitoring points (VMPs) outside the building for use in the treatability study conducted at AOC-65. Building 90 subslab ventilation will be conducted in conjunction with the removal actions planned for AOC-65.

2.3 INTERIM REMOVAL ACTION(S)

Interim removal actions (IRAs) are planned for SWMU B-3 and AOC 65 are detailed in their respective workplans. Summaries of the planned removal actions are discussed below. Other IRA(s) will be presented in their respective workplan(s) as they are addressed.

2.3.1 AOC-65

The purpose of the IRA at AOC-65 is to excavate soil material with high VOC levels. Excavating the most contaminated areas will help reduce the amount of contaminants that migrate to the groundwater and surrounding areas. Another aspect of the removal action is installation of a subslab ventilation system in Building 90. The subslab ventilation system will act similarly to a soil vapor extraction system and will expedite reduction in the mass of accumulated VOCs beneath the building, as well as minimize any possible adverse impacts from soil vapors entering Building 90.

Based on results of previous investigations, it has been anticipated that any removal action inside the building will concentrate on the abandonded solvent storage pit former solvent tank vault and surrounding areas. The area to be excavated is preliminarily estimated to be 40 feet by 40 feet with an average depth of 5 feet, for a total of approximately 600 cubic yards of material.

If VOC levels present in fill material can be adequately reduced through subslab ventilation, excavation of fill materials beneath Building 90 and the contaminant removal of the former solvent tank vault and flooring may not be necessary. Parsons will prepare a comparative evaluation based on the soil boring samples and results of the subslab ventilation study to determine if any excavation activities are warranted.

If undertaken, excavation work inside Building 90 would include removal of the citrus cleaner storage container located on a metal plate above the former solvent tank vault. The outer dock of Building 90 might also be removed to facilitate better access to the excavation areas inside the building. Temporary wood walls with plastic lining will be constructed around the removal action area inside Building 90 and negative pressure airflow will be established to prevent unnecessary exposure to CSSA employees. One personal air monitoring station will be set up inside the excavation area and two stations will be set up inside the building outside the sealed temporary walls, to ensure that the engineering controls are effective. Since Building 90 is considered a historical building, coordination with the State Historical Preservation Office will be necessary if any modifications will be necessary.

The exact locations and extent of excavations to be performed outside Building 90 will be determined from results of the exterior soil borings. It is anticipated that asphalt and soil will be excavated along the abandoned drainpipe and the drainage ditch in the vicinity of the drainpipe outfall.

There are at least 20 gutters from Building 90 currently piped underneath the existing asphalt drive which discharge to the drainage ditch. Portions of the gutter system below the asphalt will also be excavated as part of the removal actions outside Building 90. Drainage from the gutters will be rerouted after completion of the removal actions so it is diverted from VOC source areas and disturbed recharge zones. Runoff diversion to the southwest or eastern side of the building is being considered.

All removal work will be performed in Level D personal protective equipment. The excavated material will be handled and disposed as determined by waste characterization testing. Confirmation samples will be taken from the drainpipe excavation and from the ditch. Depending on the size of the excavation, at least two samples will be collected to represent each excavated segment of pipe or ditch, or one sample for each 500 ft^2 exposed area. Sampling methodology and quality control are described in the SAP addenda **(AOC-65 Treatability Study Sampling and Analysis Plan Addendum, Parsons, April 2002).**

2.3.2 SWMU B-3

An IRA will be performed to remove soils at SWMU B-3 to achieve closure of the soil zone under Texas Risk Reduction Rules, Standard 1. The closure methodology and procedures are described in Volume 1-1, Section 2. Background information on SWMU B-3 can be found in the **RL74 RFI Work Plan Addendum** and **RL83 RFI Work Plan Addendum** for Solid Waste Management Unit B-3 dated August 1999 **(Volume 3-1 of the CSSA Environmental Encyclopedia)**.

Temporary stockpile areas, silt fencing for sediment control, and storm water diversion berms will be constructed as required for the work. The exact location of these features will be field-determined.

Prior to excavation, the existing SVE system will be dismantled. CSSA will remove the power to the SVE and disconnect electrical utilities, leaving all underground electrical utilities dead. Parsons will salvage the blower and remove above ground piping as needed.

Once the SVE system has been removed, the upper soil cover will be removed and stockpiled nearby for future use as fill or top soil. This clean fill stockpile will be sampled every 250 cubic yards to ensure no waste materials are placed back into the excavation. Waste characterization methodology is presented in Section 3 of this WMP. All foreign matter will be removed from the stockpile before using as a backfill material or it will be disposed of accordingly. Each of the trench's contents and contaminated soils will be removed and placed in lined stockpile areas for eventual off-post disposal. Four stockpile areas will be constructed based on analytical data and field screening assessments:

- Clean Stockpile,
- Non-hazardous Class 1 Waste Stockpile,
- Non-hazardous Class 2 Waste Stockpile, and
- Scrap Stockpile.

The Class 1 and Class 2 waste stockpile areas will be lined with 20-mil plastic and bermed to divert run-on. Materials will be segregated based on the characterization performed during the RFI and photoionization detector (PID) readings taken during excavation. Metal debris that is deemed recyclable will be segregated into a scrap stockpile. The trench contents and impacted soil will be excavated to bedrock. Surveys of the excavation and stockpile will be made on a routine basis to document the volume of soil excavated and those designated for disposal. It is anticipated that as much as 8,000 cubic yards of soil will require some form of management.

2.3.3 Other SWMU/AOC(s)

Other IRA(s) for SWMUs and/or AOCs will be presented in their respective workplan(s) as they are addressed.

SECTION 3
REGULATORY OVERVIEW

Various federal, state, and local regulations govern waste management activities. This section presents a brief introduction to these regulations related to the waste management activities at the installation. These regulations may be broadly classified as those pertaining to waste classification, accumulation and storage, treatment and disposal, transportation, and spills and releases. In addition, certain documenting and reporting is required for each of these waste management activities.

This regulatory overview is for reference and general information purposes only, and should not be considered a complete listing of all applicable regulatory requirements. The most current and applicable regulations should be referenced for determining regulatory requirements associated with waste management activities. Specific regulatory citations should be reviewed to determine applicability to specific situations.

3.1 WASTE CLASSIFICATION

A waste once generated may be broadly classified as a hazardous or a nonhazardous solid waste. Management of hazardous wastes is governed mostly by the regulations under RCRA and its associated state regulations, and management of nonhazardous wastes is governed by state regulations. Under the authority of the USEPA, the Texas Commission on Environmental Quality (TCEQ) administers the RCRA program for the State of Texas. In addition to hazardous and nonhazardous solid wastes, other wastes, such as wastewater and storm water, may be generated and regulated under Clean Water Act (CWA) and Texas Pollution Discharge Elimination System (TPDES). The waste classification regulations are further discussed below.

3.1.1 Hazardous Wastes

Various hazardous wastes are identified and classified in accordance with Title 40 Code of Federal Regulations (CFR) Parts 260 and 261. The State of Texas has adopted these rules by reference in 30 TAC Section §335.504. The hazardous waste classification system developed by the state is detailed in 30 TAC §335 Subchapter R.

For any waste to be classified as a hazardous waste, first it must be a solid waste as defined in 40 CFR Part 261.2. Specific wastes such as wastewater, mining wastes, and oil and gas exploration wastes are excluded from the hazardous waste regulations. These exclusions are described in under 40 CFR Part 261.4. In addition, some wastes which are

reused or recycled (40 CFR 261.2 and 261.3) are exempt from all or portions of hazardous waste regulations.

Primary classification of hazardous wastes is by listing and by characteristics. Listed hazardous wastes include wastes generated from nonspecific sources, specific sources or processes, and hazardous chemicals and spill residues. Hazardous wastes listed for nonspecific source uses are assigned an "F" waste code, and include waste codes from F001 through F039 (40 CFR 261.31). The hazardous wastes listed for specific sources or uses are assigned "K" waste codes, and include waste codes from K001 through K151 (40 CFR 261.32). Hazardous chemicals and spill residues are classified as "P" waste codes for acute hazardous chemicals [P001 through P122, 40 CFR 261.33 (e)], and as "U" waste codes for nonacute hazardous chemicals [U001 through U249, 40 CFR 261.33 (f)]. In addition to these listed hazardous wastes, mixtures of listed hazardous waste(s) and solid wastes or other materials may also be classified as listed wastes. The waste codes of such waste mixtures will be based on the listed wastes present in the mixture.

Solid waste that is not a listed hazardous waste may be classified as hazardous waste based on certain waste characteristics. These characteristics include ignitability (40 CFR 261.21), corrosivity (40 CFR 261.22), reactivity (40 CFR 261.23), and toxicity (40 CFR 261.24). The toxicity characteristics are based on the presence of specific chemical constituents above the chemical-specific concentration limits in the liquid fraction or the leachate of a solid waste using a standard test method such as toxicity characteristic leaching procedure (TCLP Method 1311)[2]. Hazardous wastes by characteristics are assigned "D" waste codes and include waste codes from D001 through D043.

The following discussion reviews the regulations that appear to be pertinent to the classification of wastes (including excavated soil and extracted groundwater) generated during the anticipated removal actions and its proper management. Direct quotes from the CFR Federal Register (FR) and the TAC are provided in small type and indented with the citation provided in bold.

The regulations pertaining to waste classification are provided in 30 TAC Chapter 335 Subchapter R - Waste Classification. Section 335.501 requires generators of industrial solid waste and municipal hazardous waste to classify their waste according to the standards set forth in Subchapter R. This may be done without any prior approval or communication with the agency. However, Section 335.512 provides for an Executive Director Review process that can be used to resolve a dispute in classification such as when the generator and the agency or two fractions of the agency are not in agreement on the classification of the waste in question.

The identification of hazardous waste under 30 TAC Section 335.504 of the Texas regulations refers the regulated community to the federal regulations 40 CFR Part 261 Subparts C and D for characterization and listing. Under 30 TAC Section 335.62, the generator must refer to this chapter (TAC Chapter 355) and to 40 Parts 261, 264, 265,

---

[2] *Test Methods for Evaluation of Solid Waste*, Physical/Chemical Methods, EPA Publication SW-846.

266, 268, and 273 for any possible applicable exclusions or restrictions pertaining to management of the specific waste.

The soil and ground water are environmental media that are not subject to solid waste regulations unless they are excavated/extracted and discarded. Under 40 CFR 261.2, a solid waste is any discarded material (solid, liquid, or containerized gas) that is abandoned, recycled or inherently waste-like. In-place soil and groundwater are considered media and not a solid waste since they are not discarded material. Under 40 CFR 261.3, only solid wastes can be classified as hazardous wastes. If the media is not a solid waste, it cannot be classified as a hazardous waste.

USEPA has adopted a "contained-in-policy" that is also utilized by the TCEQ for contaminated media. In their interpretations (September 15, 1995 Letter 9441.1995(32), OSW Faxback 11948), USEPA states the following:

> The contained-in-policy is intended to clarify the application of RCRA hazardous waste regulations to environmental media. As stated in previous guidance on this policy, contaminated media are not considered solid wastes in the sense of being abandoned, recycled, or inherently waste-like as those terms are defined in the RCRA regulations. However, environmental media that contain listed hazardous waste must be managed as hazardous wastes because--and only as long as--they contain listed waste(s). USEPA regions and authorized states may apply the contained-in-policy to determine site-, media-, and contaminant-specific levels, such that if the concentration of the hazardous constituents in the environmental media fall below these levels, the environmental media may be determined to no longer contain hazardous waste.

USEPA provided further discussions of the contained-in-policy in a memorandum issued on October 14, 1998, Management of Remediation Waste Under RCRA; EPA530-F-98-026. This memorandum provides the following guidance:

> **Contained-in policy.** Contaminated environmental media, of itself, is not hazardous waste and, generally, is not subject to regulation under RCRA. Contaminated environmental media can become subject to regulation under RCRA if they "contain" hazardous waste. As discussed more fully below, USEPA generally considers contaminated environmental media to contain hazardous waste: (1) when they exhibit a characteristic of hazardous waste; or, (2) when they are contaminated with concentrations of hazardous constituents from listed hazardous waste that are above health-based levels.
>
> If contaminated environmental media contain hazardous waste, they are subject to all applicable RCRA requirements until they no longer contain hazardous waste. USEPA considers contaminated environmental media to no longer contain hazardous waste: (1) when they no longer exhibit a characteristic of hazardous waste; and (2) when concentrations of hazardous constituents from listed hazardous wastes are below health-based levels. Generally, contaminated environmental media that do not (or no longer) contain hazardous waste are not subject to any RCRA requirements; however, as discussed below, in some circumstances, contaminated environmental media that contained hazardous waste when first generated (i.e., first removed from the land, or area of contamination) remain subject to LDR [land disposal restriction] treatment requirements even after they "no longer contain" hazardous waste.

The determination that any given volume of contaminated media does not contain hazardous waste is called a "contained-in determination." In the case of media that exhibit a characteristic of hazardous waste, the media are considered to "contain" hazardous waste for as long as they exhibit a characteristic. Once the characteristic is eliminated (e.g., through treatment), the media are no longer considered to "contain" hazardous waste. Since this determination can be made through relatively straightforward analytical testing, no formal "contained-in" determination by USEPA or an authorized state is required. Just like determinations about whether waste has been adequately decharacterized, generators of contaminated media may make independent determinations as to whether the media exhibit a characteristic of hazardous waste. In the case of media that are contaminated by listed hazardous waste, current USEPA guidance recommends that contained-in determinations be made based on direct exposure using a reasonable maximum exposure scenario and that conservative, health-based, standards be used to develop the site-specific health-based levels of hazardous constituents below which contaminated environmental media would be considered to no longer contain hazardous waste. Since this determination involves development of site-specific health-based levels, the approval of USEPA or an authorized state is required.

In certain circumstances the, RCRA land disposal restrictions will continue to apply to contaminated media that has been determined not to contain hazardous waste. This is the case when contaminated media contain hazardous waste when they are first generated (i.e., removed from the land, or area of contamination) and are subsequently determined to no longer contain hazardous waste (e.g., after treatment), but still contain hazardous constituents at concentrations above land disposal restriction treatment standards. It is also the case when media are contaminated as a result of disposal of untreated (or insufficiently treated) listed hazardous waste after the effective date of an applicable LDR treatment requirement. Of course, if no land disposal will occur (e.g., the media will be legitimately recycled) the LDR treatment standards do not apply. In addition, contaminated environmental media determined not to contain any waste (i.e., it is just media, it does not contain solid or hazardous waste) would not be subject to any RCRA Subtitle C requirements, including the LDRs, regardless of the time of the "contained-in" determination.

The contained-in policy was first articulated in a November 13, 1986 USEPA memorandum, "RCRA Regulatory Status of Contaminated Groundwater." It has been updated many times in Federal Register preambles, USEPA memos and correspondence, see, e.g., 53 FR 31138, 31142, 31148 (Aug. 17, 1988), 57 FR 21450, 21453 (May 20, 1992), and detailed discussion in HWIR-Media proposal preamble, 61 FR 18795 (April 29, 1996). A detailed discussion of the continuing requirement that some soils which have been determined to no longer contain hazardous waste (but still contain solid waste) comply with land disposal treatment standards can be found in the HWIR-Media proposal preamble, 61 FR 18804; the September 15, 1996 letter from Michael Shapiro (USEPA OSW Director) to Peter C. Wright (Monsanto Company); and the preamble to the LDR Phase IV rule, 63 FR 28617 (May 26, 1998).

Note that the contained-in policy applies only to environmental media (soil, ground water, surface water and sediments) and debris. The contained-in policy for environmental media has not been codified. As discussed below, the contained-in policy for hazardous debris was codified in 1992.

It is important to note that the application of the contained-in-policy is contingent on the fact that a listed waste is entrained within the environmental media. At CSSA

Building 90 or SWMU B-3, conclusive evidence has not established that hazardous waste was deposited or spilled into the environmental media.

A review of the potential hazardous waste classifications that may be of concern at Building 90 or SWMU B-3 clarifies the position that this environmental media should not be regulated as if it contains hazardous waste. These potential classifications would include the following:

Listed Hazardous Waste - 40 CFR Part 261 Subpart D provides the "Lists of Hazardous Wastes". Solid wastes are considered to be a listed hazardous waste only if the waste fully meets the listing description provided for 40 CFR 261.31 - Hazardous wastes from non-specific sources, 40 CFR 261.32 - Hazardous wastes from specific sources, or 40 CFR 261.33 - Discarded commercial chemical products, off-specification species, container residues, and spill residues thereof. Potential hazardous waste numbers from Subpart D include U210, U228, and F001 as addressed in the following paragraphs.

U210 - Tetrachloroethylene (PCE, synonyms - perchloroethylene, tetrachlorethene) would apply to discarded commercial chemical products and spill residues thereof as listed under 40 CFR 261.33. Contaminated media resulting from a spill of the commercial product would meet this listing. The comment included in this regulation explains that this listing only applies to a chemical substance that is a commercially pure grade of the chemical or a formulation in which the chemical is the sole active ingredient. It does not refer to solvent mixtures with multiple active ingredients or process wastes. There are no reports or records of raw material spills or disposal in the vicinity of Building 90 or SWMU B-3; therefore, this listing does not apply.

U228 - Trichloroethylene (TCE, synonyms - trichloroethene) would apply to discarded commercial chemical products and spill residues thereof as listed under 40 CFR 261.33. Contaminated media resulting from a spill of the commercial product would meet this listing. The comment included in this regulation explains that this listing only applies to a chemical substance that is a commercially pure grade of the chemical or a formulation in which the chemical is the sole active ingredient. It does not refer to solvent mixtures with multiple active ingredients or process wastes. There are no reports or records of raw material spills or disposal in the vicinity of Building 90 or SWMU B-3; therefore, this listing does not apply.

F001 - Spent halogenated solvents used in degreasing operations. Under 40 CFR 261.31(a), these spent solvents would include mixtures of solvents with TCE and PCE. This classification applies to the spent solvent after it is removed from the vat and the decision has been made that it is spent and will be wasted. It does not refer to materials that are in process or residues on the materials that are being dipped as part of the process. There are no reports or records of F001-spent solvent spills or disposal in the vicinity of Building 90 or SWMU B-3; therefore, this listing does not apply.

Characteristic Hazardous Wastes - 40 CFR Part 261 Subpart C provides the "Characteristics of Hazardous Wastes". Solid wastes are considered to be a characteristic hazardous waste if the waste exhibits any of the characteristics identified in Subpart C. These include ignitability (40 CFR 261.21), corrosivity (40 CFR 261.22), reactivity (40 CFR 261.23), and toxicity (40 CFR 261.24). Assuming that the remediation wastes are not ignitable, corrosive, or reactive, the potential hazardous waste numbers from Subpart C include D039 and D040 under the toxicity characteristic as addressed in the following paragraphs.

D039 - Tetrachloroethylene toxicity would apply if the solid waste has a contaminant value that exceeds 0.7mg/L for liquids or TCLP extract for solids. Only materials that exceed the regulatory level for the contaminant specified would apply this hazardous waste number. If the waste is not a listed waste and has values below the regulatory level the waste is not considered hazardous for toxicity.

D040 - Trichloroethylene toxicity would apply if the solid waste has a contaminant value that exceeds 0.5 mg/L for liquids or TCLP extract for solids. Only materials that exceed the regulatory level for the contaminant specified would apply this hazardous waste number. If the waste is not a listed waste and has values below the regulatory level the waste is not considered hazardous for toxicity.

USEPA also provided further discussion of the determination of when contamination is caused by listed hazardous waste in memorandum issued on October 14, 1998, Management of Remediation Waste Under RCRA, EPA 530-F-98-026. This memorandum provides the following guidance:

Determination Of When Contamination is Caused by Listed Hazardous Waste. Where a facility owner/operator makes a good faith effort to determine if a material is a listed hazardous waste but cannot make such a determination because documentation regarding a source of contamination, contaminant, or waste is unavailable or inconclusive, USEPA has stated that one may assume the source, contaminant or waste is not listed hazardous waste and, therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply. This approach was first articulated in the Proposed NCP preamble which notes that it is often necessary to know the source of a waste (or contaminant) to determine whether a waste is a listed hazardous waste under RCRA Listing determinations are often particularly difficult in the remedial context because the listings are generally identified by the sources of the hazardous wastes rather than the concentrations of various hazardous constituents; therefore, analytical testing alone, without information on a waste's source, will not generally produce information that will conclusively indicate whether a given waste is a listed hazardous waste. and also notes that, "at many CERCLA [Comprehensive Environmental Response, Compensation and Liability Act] sites no information exists on the source of the wastes." The proposed NCP [National Contingency Plan] preamble goes on to recommend that the lead agency use available site information such as manifests, storage records and vouchers in an effort to ascertain the sources of wastes or contaminants, but that when this documentation is not available

or inconclusive the lead agency may assume that the wastes (or contaminants) are not listed RCRA hazardous wastes. This approach was confirmed in the final NCP preamble. See, 53 FR 51444, December 21, 1988 for proposed NCP preamble discussion; 55 FR 8758, March 13, 1990 for final NCP preamble discussion.

This approach was also discussed in the HWIR-Media proposal preamble, 61 FR 18805, April 29, 1996, where it was expanded to also cover dates of waste disposal – i.e., if, after a good faith effort to determine dates of disposal a facility owner/operator is unable to make such a determination because documentation of dates of disposal is unavailable or inconclusive, one may assume disposal occurred prior to the effective date of applicable land disposal restrictions. This is important because, if hazardous waste was originally disposed of before the effective dates of applicable land disposal restrictions and media contaminated by the waste are determined not to contain hazardous waste when first generated (i.e., removed from the land, or area of contamination), the media are not subject to RCRA requirements, including LDRs.

In conclusion, environmental media is not a solid waste until it is extracted and managed as a waste. Generally this would include a decision to waste the extracted media. If investigation or remediation wastes do not meet the listing description or contain listed wastes, the wastes are not listed wastes. If the solid waste does not exhibit characteristics of ignitability, corrosivity, or reactivity and has contaminant values below the regulatory levels for toxicity, the solid waste is not a characteristic hazardous waste. A waste that is not a listed or characteristic hazardous waste is not a hazardous waste. The waste may still require appropriate management as non-hazardous industrial waste depending on the levels of contamination as discussed in the following section 3.1.2.

Through the preparation of the RFA that included a records search and the questioning of long-term staff involved with AOC-65 and SWMU B-3, CSSA has made a good faith effort to determine if the environmental media contain a listed hazardous waste. CSSA as the generator of potential investigation and remedial wastes cannot determine that the contamination resulted from hazardous waste because documentation regarding a source of contamination, contaminant, or waste is unavailable or inconclusive. USEPA regulations (and TCEQ through the adoption of the federal hazardous waste identification regulations and guidance) provide that CSSA may assume the source, contaminant or waste is not listed hazardous waste and, therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA management requirements do not apply.

3.1.2 Nonhazardous Wastes

Nonhazardous waste classification is mandated by the state regulations at 30 TAC §335, Subchapter R. Those solid wastes that do not meet the hazardous waste criteria as defined in 30 TAC §335.504, are classified as nonhazardous wastes. Nonhazardous wastes may be further classified as Class 1 (30 TAC §335.505 and §335.508), Class 2 (30 TAC §335.506 and §335.508), or Class 3 (30 TAC §335.503 and §335.508).

The state regulations require that nonhazardous wastes be classified at the point of generation (within 90 days of generation). A generator can use both waste characteristics,

as determined from analytical data, and process knowledge to classify nonhazardous wastes. The rules allow self-classification of nonhazardous wastes by the generators, provided that the state is notified of the classification prior to waste transfer off site or disposal.

3.2 WASTE ACCUMULATION AND STORAGE

Hazardous wastes, once generated, can be temporarily accumulated (3-days) at the point of generation and later stored for a limited length of time (90-days) at designated storage areas. There are no specific regulations that establish procedures for accumulation or storage of nonhazardous wastes. However, the general prohibition in 30 TAC §335.4 which prohibits management of hazardous constituents in manners harmful to human health and the environment applies to all nonhazardous waste management activities, including accumulation and storage. In addition, the generator of nonhazardous wastes is required to comply with the notification requirements as established in 30 TAC §335.6.

The RCRA regulations, 40 CFR 262.34, establish specific procedures and requirements for accumulation and storage of hazardous wastes. Hazardous waste storage units can be operated to store wastes for no longer than 90 days without obtaining a RCRA permit or interim status for the unit. Such units are also exempt from certain RCRA regulations such as some of the operational and closure requirements. Small quantity generators may store hazardous waste for 180 days (or 270 days if transport is over 200 miles) without a RCRA permit provided that the generator complies with the requirements of 40 CFR 262.34(d, e, & f).

3.3 WASTE TREATMENT AND DISPOSAL

Wastes generated and accumulated at a facility will have to be ultimately treated and/or disposed. Waste treatment and disposal may take place either at an onsite or an offsite facility, or a combination of both. Specific treatment requirements have been established for most hazardous wastes prior to disposal. There are no regulatory treatment requirements for nonhazardous solid wastes prior to disposal. The treatment and disposal standards for the installation wastewater and storm water discharges are established under CWA and TPDES.

Nonhazardous solid wastes can be disposed of only at facilities that have been approved for receipt of such wastes. Offsite facilities for disposal of nonhazardous wastes must be state-permitted facilities. However, on-site facilities for disposal of nonhazardous wastes do not require permitting, but do require notification to the TCEQ and incorporation of such facilities into the installation Notice of Registration (NOR).

Hazardous waste treatment, storage, and disposal (TSD) activities are governed by various state and federal regulations. The majority of state regulations incorporate federal regulations by reference. CSSA is not a permitted facility for the treatment or disposal of hazardous waste. These rules and regulations are included below for an overview of hazardous waste regulations.

3.3.1 Hazardous Waste Treatment

Many of the IRA's will involve the short-term management (i.e., storage or treatment) of remediation waste. For example, wastes may be placed in tanks or containers prior to consolidation for treatment. Normally, RCRA regulations would require CSSA to comply with all requirements of 40 CFR 264 and obtain a full operating permit for storage and/or treatment of hazardous waste in such units (unless conducted in generator 90-day accumulation tanks or containers). The designation of the unit as a "Treatment Unit" (TU) provides the flexibility for short-term management of remediation waste in tanks or container storage units without the burden of compliance with the full 40 CFR 264 standards and without permit requirements. The TU rule to facilitate cleanups under RCRA corrective action provides flexibility in complying with requirements such as design, operation, and closure requirements, so that only those standards required to protect human health and the environment during the operating life of the unit would be required. TUs have a maximum permissible life of not more than 2 years; after this time an owner or operator must submit a permit application and comply with the full 40 CFR 264 requirements (see 40 CFR 264.553).

Within the final Hazardous Waste Identification Rule (HWIR)-Media the manner in which remediation wastes can be managed were promulgated to include the use of corrective action management and treatment units. Also, USEPA finalized the LDR treatment standards for hazardous contaminated soil, which were included in the HWIR-Media proposal, as part of the LDR Phase IV final rule (63 FR 28604, May 26, 1998). The Hazardous Waste Identification Rule (HWIR)-Media final rule has the following elements that affected management of remediation wastes.

- The existing definitions of "corrective action management unit (CAMU)" and "remediation waste" in 40 CFR 260.10 were modified (as discussed above) to clarify that remediation waste need not be generated by corrective actions conducted pursuant to RCRA in order to qualify for management in a CAMU or temporary unit.
- A new type of RCRA permit, a Remedial Action Plan (RAP), with a streamlined permitting process is established for governing treatment, storage, and disposal of hazardous remediation wastes. A RAP does not document and enforce site-specific alternative management requirements for hazardous contaminated media because the HWIR-Media final rule does not provide for such media to be exempted from RCRA Subtitle C, as was proposed. Instead, a RAP offers a streamlined permitting process for treating, storing, and disposing of hazardous remediation wastes, including hazardous contaminated media, in accordance with RCRA Subtitle C. USEPA uses the term "remediation-only facility" to refer to facilities that require RCRA permits solely because they manage hazardous remediation wastes (63 FR 65880).
- A definition for the term "remediation waste management site" is added to 40 CFR 260.10. A remediation waste management site is defined as "a facility where an owner or operator is or will be treating, storing or disposing of hazardous remediation waste." [63 FR 65937]. This definition allows wastes managed at off-site locations to qualify as remediation waste, even if they are removed from their site of origin. The

HWIR-Media final regulations governing remediation waste management sites differ from those governing other hazardous waste management facilities in the following three respects [63 FR 65882]. Remediation waste management sites can be permitted using either the new RAP, or a traditional RCRA permit. If a remediation waste management site is located at a remediation-only facility, facility-wide corrective action is not required, whether the remediation waste management site is permitted using a traditional RCRA permit or a RAP. Remediation waste management sites must comply with performance standards that address general facility requirements, preparedness and prevention, and contingency planning and emergency procedures. They are not compelled to comply with 40 CFR 264, Subparts B, C, and D, which govern the same activities at other hazardous waste management facilities.

- A new type of hazardous waste management unit, the staging pile, is created for accumulation and temporary storage of solid, non-flowing hazardous remediation waste. A definition for the term "staging pile" was also added to 40 CFR 260.10. The HWIR-Media final rule defines a staging pile as "an accumulation of solid, non-flowing remediation waste (as defined in [40 CFR] §260.10) that is not a containment building and is used only during remedial operations for temporary storage at a facility" [63 FR 65939, codifying 40 CFR 264.554(a)]. A staging pile must be located within the contiguous property under the control of the owner/operator where the wastes to be managed in the staging pile originate. Remediation waste may be stored in the staging pile for a maximum of two years, with the possibility of one 180-day extension.

In summary, hazardous waste treatment at CSSA can occur without a RCRA permit or interim status. However, for the planned IRA's associated with this WMP no treatment is expected. If treatment is deemed necessary, CSSA will coordinate with USEPA and the TCEQ to effectively the promulgated rules allowing treatment of remediation waste without obtaining a RCRA permit.

3.3.2 Hazardous Waste Disposal

All hazardous waste disposal facilities must have hazardous waste permits and comply with 40 CFR 264 and/or 265. Hazardous wastes may be disposed of in containment systems such as landfills, surface impoundments, and deep well injection systems. The wastes may also be treated via destructive technologies such as incineration and wet air oxidation.

Hazardous waste disposal in land-based systems are further restricted under 40 CFR Part 268. The waste disposal options may also be restricted based on the waste characteristics. All hazardous wastes that are disposed in offsite facilities must be properly manifested.

Hazardous waste disposal cannot occur at CSSA without a RCRA permit or interim status. The planned IRA's associated with this WMP do not plan for any on-site disposal of hazardous waste. All hazardous wastes/treatment residues (if treatment occurs) will be sent to permitted of site TSD facilities for final disposal.

3.4 OFFSITE WASTE TRANSPORTATION

Wastes that are generated and stored at CSSA are transported to offsite facilities for treatment and disposal. Offsite waste transportation (both interstate and intrastate transports) are regulated both under RCRA and the Department of Transportation (DOT). The offsite transportation of hazardous wastes must be performed by a RCRA permitted transporter. Offsite transportation of nonhazardous solid wastes must be performed by state-permitted transporters.

The RCRA regulations that are applicable to hazardous wastes transportation are established at 40 CFR Parts 262 and 263. The regulations in 40 CFR Part 262 establish the requirements with which a generator must comply with respect to waste manifest, pre-transport preparations, and recordkeeping and reporting. The regulations in 40 CFR Part 263 apply to transporters of hazardous wastes. As CSSA does not itself transport hazardous wastes, only the generator requirements established in 40 CFR Part 262 will be discussed in this document. In addition to the RCRA regulations, state regulations established at 30 TAC §335.10 (Shipping and Reporting Procedures Applicable to Generators of Hazardous Waste or Class I Waste) are also applicable.

Hazardous waste generators are required to prepare manifests, in accordance with 40 CFR 262.20, 262.21, 262.22, and 262.23, for wastes designated for offsite management. The generator must also meet pre-transport requirements established at 40 CFR 262 Subpart C. The pretransport requirements are essentially the packaging, labeling, and placarding requirements established by the DOT under 49 CFR Parts 171-179, incorporated by reference under RCRA. In addition, RCRA also requires generators to maintain records and to periodically report hazardous waste shipments (40 CFR Part 262.40 and 262.41). The state requirements for generators shipping hazardous wastes for offsite management (30 TAC §335.10) are essentially identical to the RCRA requirements.

The DOT regulations governing the transport of hazardous wastes are established at 49 CFR Parts 171-180. These regulations include the requirements for hazard class determination (Part 173), pretransport preparation (Part 172), and packaging specifications (Part 178). The DOT regulatory requirements, including recordkeeping and reporting, are in addition to the RCRA requirements, although these requirements overlap or are identical. In other words, the generator should comply with both the RCRA and DOT requirements. Although the generator may not be physically performing offsite transportation or disposal activities, the generator is ultimately responsible for the wastes shipped offsite.

3.5 SPILLS AND RELEASES

Spills and releases of hazardous constituents may occur at the installation from material storage units, transfer areas, various processes, and waste management areas. All spill residues, including spill cleanup debris, should be classified based on the type of material or waste spilled and the characteristics of the residues. The residues should be managed in accordance with the regulations applicable to the waste classification. Spills

and accidental releases of hazardous materials and oils are also discussed in Section 5 and presented in detail in the Spill Prevention, Control, and Countermeasures Plan (SPCCP) and the Installation Spill Contingency Plan (ISCP).

Oil spills are regulated under 40 CFR Part 112. All facilities with oil storage capacity in excess of a specified volume are required to prepare and implement an SPCCP. Any oil spills in excess of the reportable quantities should be reported to appropriate local, state, and federal agencies.

All hazardous waste TSD facilities, including those containing only less-than-90 day storage facilities, are required to prepare and implement an emergency contingency plan. Any spills of hazardous constituents listed in 40 CFR Part 117 to navigable waters of the United States in excess of the reportable quantities should be reported to the appropriate local, state, and federal agencies. In addition, CERCLA also requires notification to local, state, and federal agencies in the event of releases of hazardous wastes or constituents listed in 40 CFR 302 in excess of reportable quantities.

Furthermore, under the Texas Oil and Hazardous Substances Spill Prevention and Control Act, the TCEQ has prepared a spill contingency plan (State of Texas Oil and Hazardous Substances Spill Contingency Plan, October 1988). CSSA must also comply with the requirements of the act and procedures established in the state spill contingency plan when responding to an oil or hazardous substance spill on the installation.

SECTION 4
HAZARDOUS WASTE MANAGEMENT TASKS

This section describes various activities involved in remediation waste management at the installation. The following is a brief description and overview of each of the waste management activities at the installation.

4.1 WASTE IDENTIFICATION

Waste management activities begin at the point of waste generation. The waste classification dictates the sequence of subsequent waste management activities. Hence, the first and foremost activity, once a waste is generated, is to properly identify and classify the waste.

Any remediation wastes generated will require waste characterization for waste classification. Waste characterization may be based on process knowledge or on the results of chemical analysis. After waste classification, the waste stream may be added to the Installation's NOR or managed using a one-time disposal code from the TCEQ. Documentation regarding new waste streams generated should be sent to TCEQ within 90 days of generation, in accordance with 30 TAC §335.513.

4.2 WASTE ACCUMULATION

All waste accumulation areas must be authorized by the CSSA Environmental Office prior to waste accumulation activities. Prior to the approval of a new waste accumulation site, the Environmental Office will consider potential health and environmental consequences in the event hazardous constituents are released during a spill, fire, or explosion, or otherwise released from the accumulation site.

4.3 CONTAINER MANAGEMENT AND STORAGE

The hazardous waste storage facility at CSSA consists of a container storage area at Building 86 (TCEQ facility number 002). Hazardous wastes accumulated at the initial generation points may be transferred to the container storage facility for storage until transportation. Most hazardous waste storage at this facility is accomplished using 55-gallon drums or smaller containers.

The waste storage activities at CSSA involves ensuring integrity of waste containers, storage facility operation and maintenance procedures, inspections, and record keeping.

The designated personnel for the management of the container storage areas shall be responsible for ensuring that the following procedures are implemented. The container storage area waste management procedures include operation, inspection, and record keeping activities associated with these areas.

1. Only the Warehouse Branch designated personnel shall perform the waste management activities at the container storage area. These personnel are required to be trained in proper waste handling and emergency procedures.
2. The personnel conducting waste management activities in the container storage areas must wear appropriate protective clothing and equipment, as required by the personnel hazardous waste training programs. At least two employees shall be present during any work execution at the container storage area.
3. Upon receipt of a hazardous waste container, appropriate personnel will inspect and ensure the following:
   - The containers are in good physical condition.
   - The containers are labeled and all required information is completely filled out.
   - A completed turn-in document, DD Form 1348-1, accompanies the waste container.
   - The container is labeled or stenciled on the outside with words "HAZARDOUS WASTE."
   - The container outer surface is free of apparent contamination.
4. Some waste containers may be designated as "Hold for Test Results": These containers are considered to have insufficient waste profile information, and will be entered into an operating log and stored separately. The container label and the turn-in document will be updated when the waste profile becomes available.
5. Upon the acceptance of waste containers for storage, ensure that these are stored properly according to their waste compatibility.
6. Do not store more than three 55-gallon waste containers on each four barrel pallet.
7. Do not stack the pallets with waste containers more than two rows high.
8. A minimum of 3-feet aisle space shall be maintained for inspections and spill or emergency response activities.
9. At no time exceed the maximum waste storage capacity of the areas. The maximum waste storage capacities of the container storage area is:

   Building 86 - 2,560 gallons

10. Minimize fire and explosion potential by separating and protecting the storage areas from ignition sources. No smoking is allowed in or near the container storage area. Smoking on the installation is permitted only in the designated areas. Also, all container opening/closing tools shall be spark-proof.

11. Place a sign at each entryway into the container storage area that is legible from at least 25 feet away which reads "Danger - Unauthorized Personnel Keep Out."

12. Inspect the container storage area at least once a week, or more often in the event of potential threat to human health or the environment. At a minimum, the following items will be inspected:

    - Monitoring equipment.
    - Safety and emergency equipment.
    - Security devices for preventing, detecting, or responding to environmental or human health hazards.
    - Waste drums (for leaks, corrosion, deterioration, bulging, or damage).
    - Waste drums (for labeling, dating, and proper storage conditions such as aisle space, stack height, and bungs and covers in place).
    - Condition of the secondary containment structure.

13. Inspect the loading and unloading areas at the container storage area on each day of operation for any signs of leaks or spills. The inspection results will be documented on the inspection log. If any spills or leaks are discovered during the inspections, spill response shall be immediately implemented as described in section 5.0. Completion of remedial actions should also be noted on the inspection logs.

14. Inspection records for the facility must be maintained until the closure of the storage area and should be made available, when requested to do so, during facility inspections.

4.4 WASTE LABELING

Waste labeling requirements are established both under RCRA regulations and DOT regulations. The RCRA regulations (40 CFR 262.31-34) apply to all waste labeling required during the waste accumulation and storage activities. These require that during accumulation the container be marked as hazardous waste with contents and accumulation dates. In addition, USEPA has expressly adopted the DOT regulations governing transportation of hazardous wastes (49 CFR Parts 171 through 179). Both USEPA and the DOT have authority to enforce regulations applicable to waste transportation outside the installation, including waste labeling.

4.5 OFFSITE WASTE TRANSPORTATION

Offsite waste transfer occurs when wastes generated at CSSA are shipped for treatment and/or disposal at offsite facilities. Offsite waste transfer will be initiated from initial remediation waste generation points. The offsite waste disposal facilities may include offsite incineration and landfilling facilities. All offsite transfers from CSSA will

be initiated by the Environmental Office. The waste transfer may occur in containers and/or bulk.

SECTION 5
SPILL PREVENTION, REPORTING AND RESPONSE

Accidental spills and releases may occur at the installation during various steps of hazardous materials and waste management activities. These spills may occur at process and operation areas using or generating hazardous substances, or at waste accumulation, transfer, storage, treatment, and/or disposal facilities. Spill response actions are required for any imminent or actual spills or releases at CSSA.

Federal regulation contained in 40 CFR Part 110 defines oil spills or releases that are prohibited under Federal Water Pollution Control Act (FWPCA). Federal regulations at 40 CFR Part 112 require that the installation prepare and implement an SPCCP to address oil spills or releases prohibited under 40 CFR Part 110. This regulation establishes procedures, methods, and equipment to prevent discharge of oil from non-transportation-related facilities into surface waters.

CERCLA, RCRA, and Army regulations expand the scope of the SPCCP to incorporate responses to spills and releases of hazardous substances as defined in 40 CFR 302.3. RCRA regulations for small quantity generator (SQG) require the establishment, posting, and employee training of emergency procedures and information in 40 CFR 262.34(d)(5). RCRA regulations for large quantity generators (LQG) require the preparation of a written Contingency Plan and employee training for spill responses and emergency procedures in 40 CFR 262.34(a) and 265.50-56. Also, the Clean Water Act requires that entities notify appropriate government agencies after certain hazardous substance discharges to navigable waters. In addition, the *State of Texas Oil and Hazardous Substances Spill Contingency Plan*, dated October 1988, also requires notification and response actions following releases of oil and hazardous substances.

In accordance with the requirements of the above mentioned regulations, CSSA has prepared and implemented an **SPCCP** that is available in CSSA's environmental encyclopedia **Volume 1-6**. The plan describe the potential spill sites and equipment and measures available to prevent, control, and respond to spills and releases of oils or hazardous substances.

SECTION 6
RECORDKEEPING AND REPORTING

Federal and state regulations establish requirements for record keeping and reporting for various waste management activities conducted at CSSA. These requirements cover activities including waste generation; waste analysis; waste storage, treatment, and disposal; and spills and releases. The hazardous waste program under RCRA requires "cradle to grave" tracking of hazardous wastes; that is, managing wastes from the point of generation to the point of treatment, storage, or disposal. The following is a brief description of recordkeeping and reporting requirements applicable to CSSA.

6.1 RECORDKEEPING

Various recordkeeping requirements have been established for many of the waste management activities. State regulations at 30 TAC §335.9 require that generators maintain records of all hazardous waste activities regarding the quantities generated, accumulated, processed, and disposed of on site or shipped off site for storage, processing, or disposal. These records may be maintained in any format, provided they are retrievable and easy to copy. The records must be sufficiently detailed and complete to support any contentions or claims made by the generator pertaining to waste management activities. Waste records are maintained at the CSSA Environmental Office. These requirements are described below for each waste management activity.

6.1.1 Waste Generation

The state regulations (30 TAC §335.501 to §335.515) allow self-classification of waste streams by the generator. However, the generator is required to document and maintain all available information necessary to classify the waste stream, as follows:

- Records noting the waste description, characteristics, and classification of each waste should be maintained.
- The quantity of wastes generated should be recorded.
- All records of any test results, waste analyses, or other determinations performed for waste streams generated at CSSA should be maintained (30 TAC §335.70).

CSSA must notify the TNRCC of all waste streams and waste management units at the installation and be listed on the Installation's NOR.

6.1.2 Waste Storage

The generator, in accordance with the state notification requirements, should notify the Executive Director (TCEQ) of waste storage areas as waste management units. Information pertaining to whether the unit is permitted or qualifies for an exemption as a less-than-90 day storage unit should also be submitted. In addition, a listing of the wastes managed in the unit should be provided.

6.1.3 Spills and Releases

CSSA must maintain records of spills and releases of harmful quantities of oil and hazardous substances on the installation. Records of spills should include written descriptions of spills, corrective actions taken, and plans for preventing recurrence. A detailed description of the recordkeeping requirements pertaining to spills and release of oil and hazardous substances are presented in the **SPCCP**.

6.2 REPORTING

The generators are also required to notify and submit reports to the regulatory agencies regarding various waste management activities. These reporting requirements are described below.

1. Each generator of hazardous wastes must submit an annual waste summary on the specified TCEQ Form (*Annual Waste Summary Form*). The instructions for preparation and the mailing address are contained on the form. This form must be submitted to the TCEQ by January 25 of each year [30 TAC §335.9(a)(2) and §335.71(a)].
2. Monthly waste summaries prepared on TCEQ Form 0500, *Waste Shipment Summary*, must be submitted to the TCEQ on the 25th of each month for shipments originating for the previous month. This summary is only completed for those wastes shipped out of state [30 TAC §335.13(b)].
3. Unreturned Manifest Exception reporting is required for unreturned manifests after 45-days for LQG and 60-days for SQG as stated in 40 CFR 262.42.
4. Releases of oil and hazardous substances in harmful quantities into the environment will require certain notification and reporting. These requirements are described in the **CSSA SPCCP**.
5. In the event the ISCP is implemented in response to an emergency situation, CSSA must submit an incident report within 15 days after the incident to the Executive Director.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
SUPERFUND DIVISION
1445 Ross Avenue
Dallas, Texas 75202

October 17, 2002

Mr. Brian K. Murphy
Camp Stanley Storage Activity
25800 Ralph Fair Road
Boerne, Texas 78015-4800

RE: *Camp Stanley Storage Activity Administrative Order on Consent Deliverable Review for the RCRA Facility Investigation and Interim Measures Waste Management Plan*

Dear Mr. Murphy:

In accordance with the final Resource Conservation and Recovery Act (RCRA) Section 3008(h) Administrative Order on Consent (Order) for the Camp Stanley Storage Activity (CSSA), Docket No. RCRA-VI 002(h)99-H FY99, dated May 5, 1999, the following document has been received and reviewed by the U.S. Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ):

- *RCRA Facility Investigation (RFI) and Interim Measures Waste Management Plan*, dated August 2002.

Pursuant to Section XVI of the Order, the above referenced document is hereby approved. If CSSA, or your technical consultants, have any questions regarding the *Waste Management Plan*, please do not hesitate to call me at 214.665.8317, or I may be contacted via e-mail at *lyssy.gregory@epa.gov.* You may also contact Kirk Coulter at TCEQ at 512.239.2572 with questions. Please continue to keep me informed of the activities associated with the field work.

Sincerely,

Greg J. Lyssy
RPM

cc: Kirk Coulter, Texas Natural Resource Conservation Commission