

N00639.AR.002121
NSA MID SOUTH
5090.3a

LETTER TRANSMITTING TECHNICAL GUIDANCE DOCUMENT 014 AND DISCUSSING ITS
USAGE TO DETERMINE IN NAVY EXCHANGE SERVICE STATION UNDERGROUND
STORAGE TANKS ARE ELIGIBLE FOR RANKING SYSTEM MILLINGTON SUPPACT TN
7/26/1995
STATE OF TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
MEMPHIS ENVIRONMENTAL FIELD OFFICE
SUITE E-645, PERIMETER PARK
2510 MT. MORIAH
MEMPHIS, TENNESSEE 38115-1520

July 26, 1995

CERTIFIED MAIL Z 412 235 010
RETURN RECEIPT REQUIRED

Mr. John Karlyk, Commanding Officer
South NavFac Engineering Command
Code 1846, P.O. Box 190010
North Charleston, SC 29419-9010

RE: UST Site Ranking System
NAS Exchange Service Station
Facility ID # 0-791718, Shelby County

Dear Mr. Karlyk:

The Division has developed Technical Guidance Document - 014 which outlines the procedure to determine the numerical ranking of UST sites contaminated with petroleum hydrocarbons. The UST Site Ranking System may allow for other options concerning the cleanup activities at the site.

Refer to the enclosed Technical Guidance Document - 014 to determine if the site is eligible for the UST Site Ranking System.

If the site is eligible for ranking and the numerical ranking score for the site is below 500, then Department of the Navy shall, by **August 28, 1995**, either:

1. Request the Monitoring Only option, as described in TGD-007; or,
2. Request that the Division complete the review of the **Environmental Assessment Report (EAR)** and **Corrective Action Plan (CAP)**.

If the site is not eligible for ranking **or** the numerical ranking score for the site is at or above 500, then the Department of the Navy shall notify the Division by **August 28, 1995**.

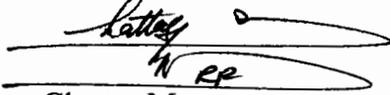
Send one copy of all correspondence, including reports, to this office and one copy to:

Tennessee Department of Environment and Conservation
Division of Underground Storage Tanks
4th Floor, L & C Tower
401 Church Street
Nashville, Tennessee 37243-1541

Mr. John Karlyk
July 26, 1995
Page 2

If you have any questions concerning this correspondence, call (901) 368-7973.

Sincerely,

A handwritten signature in black ink, appearing to read "Ghattas Murr", is written over a horizontal line. The signature is stylized and includes a long, sweeping flourish that extends to the right.

Ghattas Murr
Division of Underground Storage Tanks

GEM\79025207\ag FO-101

Enclosures: Technical Guidance Document-014

c: Nashville Central Office - Technical Review Section
Memphis UST Field Office



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF UNDERGROUND STORAGE TANKS
TECHNICAL GUIDANCE DOCUMENT - 014

EFFECTIVE DATE: JANUARY 19, 1994

RE: UST SITE RANKING SYSTEM

PURPOSE

The purpose of this Technical Guidance Document is to determine the numerical ranking for Underground Storage Tank Sites.

If any of the following conditions exist or have existed, then site ranking shall not be applicable and the owner/operator shall proceed with the full environmental assessment and the submittal of the Environmental Assessment Report (EAR) and Corrective Action Plan (CAP) and/or a Site Specific Standard (SSS).

1. Vapor and/or explosion hazards
2. The aquifer or water source is classified as a "drink water supply"

If the numerical ranking is less than the Action Number, the owner/operator has the following options:

1. Submit the findings of the first four (4) soil borings and monitoring wells in an EAR and begin a monitoring only program with no active remediation being performed. This option shall require monitoring until contaminant concentrations are below the applicable cleanup levels. If during the monitoring period, the Action Number is exceeded or one of the two conditions above are discovered, then additional assessment, if necessary, and corrective action will be required.
2. Complete the full environmental assessment and submit the findings in an EAR.

The option selected shall be addressed in the Executive Summary of the Environmental Assessment Report. Regardless of the Action Number for the site, the Division may require the full environmental assessment to be performed and the submittal of the EAR and CAP and/or SSS.

If free product is present, it shall be completely recovered regardless of the site ranking.

For sites scoring greater than the Action Number, the owner/operator shall complete the full environmental assessment.

Instructions for completing the Site Ranking

After installing the first four soil borings/monitoring wells and obtaining the analytical results, the attached Site Ranking Form shall be completed from the data generated.

Geologic and Hydrogeologic Factors:

1. Minimum depth to water table

The distance between the surface and the water table shall be determined from the four (4) monitoring wells. The minimum distance shall be used to determine the score in this category.

2. Minimum distance between the water table and contaminated soil

The distance between the soil with concentrations above the applicable cleanup levels and the water table shall be determined. The minimum distance shall be used to determine the score in this category.

3. Soil permeability

The soil permeability shall be determined as described in the Environmental Assessment Guidelines. The maximum permeability shall be used to determine the score in this category.

4. Calculated ground water flow rate

The ground water flow rate shall be calculated and the maximum value shall be used to determine the score for this category. Regardless of the calculated ground water flow rate, if karst conditions exist in the area of the site, 30 points shall apply for this category.

Receptor Factors:

For categories 5 through 8 the following applies:

All sampling locations where analytical results document contamination above any applicable cleanup level shall be identified as known contamination. These sampling locations include soil borings/monitoring wells, soil or water from tank pits, soil or water from line trenches, etc.

To determine the score for each of these categories, the first step is to determine if any of the receptors (i.e. basement, sanitary sewer, etc.) are within a 50 foot radius of known contamination. If a receptor exists within this area, the highest score shall apply and no additional investigation is warranted to determine the score for each category. If a receptor does not exist within 50 feet of the known contamination, the investigation shall continue in each additional area (50 to 100 foot radius, etc.) until a receptor is identified or it has been determined that a receptor does not exist within 300 feet of known contamination.

For categories 9 through 11 the following applies:

To determine the score for each category, the first step is to determine if a water source is within a 0.1 mile radius of Monitoring Well 4 (MW-4) as defined in the Environmental Assessment Guidelines. If a water source is within this area, the highest score shall apply and no additional investigation is warranted to determine the score for each category. If a water source does not exist within 0.1 miles of MW-4, the investigation shall continue in each additional area (0.1 to 0.25 mile radius, etc.) until a water source is identified or it has been determined that a water source does not exist within 0.5 miles of MW-4.

Special note for Category 11 - If surface water has been visibly impacted by a petroleum product (i.e. sheen, iron flocculate, etc.) 200 points shall be applied to that category.

Contamination Factors:

12. Contaminant Concentration

- A. Determine the maximum concentrations from any sampling point of the following:
 - 1. Benzene and TPH in ground water
 - 2. BTX and TPH in soil
- B. Determine the applicable cleanup levels in accordance with the Environmental Assessment Guidelines.
- C. Divide the maximum concentrations (A) by the applicable cleanup levels (B) to obtain the Contaminant Concentration Ratio (C).

For Categories 13 through 16 the following applies:

Use the Contaminant Concentration Ratios as computed in Category 12 to determine the score in each category. All numbers shall be rounded up to the next whole number.

17. Total Site Score

Sum the scores for Categories 1 through 16 to determine the Total Site Score.

Signature Page

The following signature page shall be attached to the Site Ranking Form *ONLY IF* it is not submitted with the Environmental Assessment Report.

I certify under penalty of law, including but not limited to penalties for perjury, that the information contained in this report and on any attachments, is true, accurate and complete to the best of my knowledge, information, and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for intentional violations.

Owner/Operator (Print)

Signature

Date

P.E. or P.G. (Print)

Signature TN Lic./Reg. #

Date

If a P.E. signs the report, please indicate the area of expertise.

(Print or Type)

Stamp/Seal

All signatures above must be notarized.

UST SITE RANKING FORM

Facility ID Number: _____

Facility Name: _____

Facility Address: _____

Geologic and Hydrogeologic Factors

1	Minimum depth to the water table	
	< 5.0 Feet	50
	5.1 to 10.0 Feet	45
	10.1 to 15.0 Feet	40
	15.1 to 30.0 Feet	35
	30.1 to 50.0 Feet	25
	50.1 to 75.0 Feet	15
	75.1 to 100.0 Feet	10
	> 100.0 Feet	5
	Score	

2	Minimum distance between water table and contaminated soil	
	< 5.0 Feet	50
	5.1 to 10.0 Feet	45
	10.1 to 15.0 Feet	40
	15.1 to 30.0 Feet	35
	30.1 to 50.0 Feet	25
	50.1 to 75.0 Feet	15
	75.1 to 100.0 Feet	10
	> 100.0 Feet	5
	Score	

3	Soil Permeability	
	> 10 ⁻⁴ cm/sec	30
	10 ⁻⁴ to 10 ⁻⁶ cm/sec	20
	< 10 ⁻⁶ cm/sec	10
	Score	

4	Calculated Ground Water Flow Rate	
	< 10 feet/day	3
	10 to 40 feet/day	6
	40 to 90 feet/day	12
	90 to 130 feet/day	18
	130 to 260 feet/day	24
	> 260 feet/day	30
	Karst	30
	Score	

Receptor Factors

5	Basements		
	< 50.0 feet from known contamination	150	
	50.1 to 100.0 feet from known contamination	75	
	100.1 to 200.0 feet from known contamination	50	
	200.1 to 300.0 feet from known contamination	25	
	> 300.1 feet	0	
		Score	

6	Sanitary sewers		
	< 50.0 feet from known contamination	75	
	50.1 to 100.0 feet from known contamination	40	
	100.1 to 200.0 feet from known contamination	20	
	200.1 to 300.0 feet from known contamination	10	
	> 300.1 feet	0	
		Score	

7	Storm water sewers		
	< 50.0 feet from known contamination	50	
	50.1 to 100.0 feet from known contamination	30	
	100.1 to 200.0 feet from known contamination	10	
	200.1 to 300.0 feet from known contamination	5	
	> 300.1 feet	0	
		Score	

8	Other subsurface utilities		
	< 50.0 feet from known contamination	30	
	50.1 to 100.0 feet from known contamination	20	
	100.1 to 200.0 feet from known contamination	10	
	200.1 to 300.0 feet from known contamination	5	
	> 300.1 feet	0	
		Score	

9	Public water supply source		
	< .1 miles	300	
	.1 to .25 miles	200	
	.25 to .5 miles	100	
	> .51 miles	0	
		Score	

10	Private water supply source		
	< .1 miles	200	
	.1 to .25 miles	150	
	.25 to .5 miles	100	
	> .51 miles	0	
		Score	

11	Distance to surface water		
	< .1 miles		25
	.1 to .25 miles		15
	.25 to .5 miles		5
	> .51 miles		0
	Visibly impacted surface water from a petroleum product		200
		Score	

Contaminant Factors

		A. Max. Contam. Levels	B. App. Cleanup Levels	C. Cont. Conc. Ratio A/B
12	Contaminant Concentration			
	Benzene in ground water			
	TPH in ground water			
	BTX in soil			
	TPH in soil			

13	Benzene in ground water		
	< 1.0		0
	1.1 to 10.0		25
	10.1 to 50.0		50
	50.1 to 100.0		100
	100.1 to 500.0		200
	> 500.1		300
		Score	

14	TPH in ground water		
	< 1.0		0
	1.1 to 10.0		20
	10.1 to 50.0		40
	50.1 to 100.0		80
	100.1 to 500.0		120
	> 500.1		200
		Score	

15	BTX in soil		
	< 1.0		0
	1.1 to 5.0		25
	5.1 to 10.0		50
	10.1 to 50.0		100
	> 50.1		200
		Score	

16	TPH in soil		
	< 1.0		0
	1.1 to 5.0		20
	5.1 to 10.0		40
	10.1 to 50.0		80
	> 50.1		100
		Score	

17	Total site score		
----	------------------	--	--

This month the activity will award a construction contract to replace the existing USTs # 1547, 1546,1617 and the waste oil storage tank 1648 at the subject site with double wall fiberglass USTs that will meet the Dec. 1998 regulatory requirements. The underground fuel lines as well as the dispenser island will also be replaced. Estimated completion date for the construction is January 1996.

Please call me at (803) 743-0624 if you have questions concerning this correspondence.

Sincerely,

JOHN KARLYK
Environmental Engineer
Petroleum Division

Copy to:
NAS Memphis (Attn: Randy Wilson Code 10010)

ENVIR
18 CIRC
184 CIRC
DAILY

1846
18E1LG



5090
Code 1846
17 July 1995

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Mr. Glenn A. Birdwell
State of Tennessee
Department of Environment and Conservation
Memphis Environmental Field Office
Suite E-645, Perimeter Park
2500 Mt. Moriah
Memphis, TN 38115-1511

NAVAL EXCHANGE SERVICE STATION NAS MEMPHIS, TN FACILITY I.D. #0-
791718, SHELBY COUNTY

Ref: (a) SOUTHDIV LTR of 24 Nov 1993

Dear Mr. Birdwell:

The purpose for this letter is to inquire about the status of the Corrective Action Plan (CAP) and to update you on the USTs upgrade at the Naval Exchange Service Station site.

Reference (a) was forwarded to your office November 1993, but to date I have not received a response. Considering the data obtained by Dr. Frank Chapelle of the U.S. Geological Survey, it was concluded that intrinsic bioremediation (non-enhanced) plus periodic groundwater monitoring is the most prudent choice for this site.

Since the CAP submittal, the technology has gained acceptance and EPA is now a proponent of intrinsic bioremediation.

Dr. Frank Chapelle has proposed that a meeting be convened in the near future at your facility to discuss the merits of intrinsic bioremediation and why it is the method of choice at the subject site.

5090
Code 1846
16 Aug 1995

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Mr. Ghattas Murr
State of Tennessee
Department of Environment and Conservation
Memphis Environmental Field Office
Suite E-645, Perimeter Park
2500 Mt. Moriah
Memphis, TN 38115-1511

UST SITE RANKING NAVAL EXCHANGE SERVICE STATION NAS MEMPHIS, TN
FACILITY I.D. #0-791718, SHELBY COUNTY

Ref: (a) PHONCON btwn TDEC Mr. Ghattas Murr/SOUTHDIV John Karlyk
of Aug. 8, 1995

Dear Mr. Murr:

Per reference (a), I am requesting a time extension until March 1996 for the Site Ranking of the subject site for the following reasons:

1. The Naval Air Station (NAS) does not employ a registered engineer or geologist that is qualified to sign the site ranking form. The ranking of this site needs to be contracted out.
2. NAS has awarded a contract to replace the USTs and the pump island at this service station. The work is scheduled to start this September and should be completed January 1996. I am planning to award a contract to sample the groundwater after the construction is completed, and do the site ranking based on most recent groundwater data.
3. The time extension would allow me to budget the funds to accomplish the groundwater sampling.

I understand that the site ranking can be done by NAS personnel and that the individual doing the site ranking can sign the form. P.E. signature and notarizing the form is not necessary. Please confirm.

If you have any questions, comments or need additional information please call me at (803) 743-0624.

Sincerely,

JOHN KARLYK
Environmental Engineer
Petroleum Branch

Copy to:
NAS Memphis (Attn: Mr. Randy Wilson, Envir)
TDEC, UST Division, Nashville

ENVIR
18 CIRC
184 CIRC
DAILY

1846

18E1LG *Gay*