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INITIAL ~~BAE~~ DATE 1/25/93

**DECISION DOCUMENTATION PACKAGE
COVER SHEET**

PREPARED IN ACCORDANCE WITH

**TRACK 1 SITES:
GUIDANCE FOR ASSESSING
LOW PROBABILITY SITES
AT INEL**

SITE DESCRIPTION: North side of CFA-680 (Tank CFA-680)

SITE ID: CFA-36

OPERABLE UNIT: 04-03

WASTE AREA GROUP: 04

I. SUMMARY - PHYSICAL DESCRIPTION OF THE SITE:

CFA-36 is the historical site of a 55 gal underground storage tank (UST) that lies north of building CFA-680. It was accessed by a concrete manhole and is known as CFA-680. Tank CFA-680 was used as a storage tank for leaded gasoline to power a water pump. The tank (construction material was probably steel) with galvanized steel piping was installed in 1951 and put out of service in 1983.

On May 22, 1989, a liquid sample was taken from the tank and sent to the EG&G Environmental Chemistry Unit to determine the waste profile. EPTOX, semi-volatile and volatile organic analyses were performed on the sample. On August 20, 1990, an unknown amount of gasoline was pumped from the tank by H&M Oil, Pocatello to be recycled by burning for energy recovery. The tank was excavated on October 16, 1990 and field analysis with a Microtip PID showed VOC levels below EG&G regulatory action limits. Laboratory analyses on soil samples taken from the tank bed confirm that there is no contamination. The laboratory reported "not detected" for TPH and BETX. The pit was backfilled with half a truckload (approximately 6 yd³) of clean soil.

The tank was cut on November 28, 1990 and shipped to Pacific Steel in Idaho Falls on December 18, 1990. Nothing is reported about the disposition of the piping.

DECISION RECOMMENDATION

II. SUMMARY - QUALITATIVE ASSESSMENT OF RISK:

The qualitative risk assessment for benzene, toluene, ethylbenzene and xylenes is low. The overall reliability of the assessment is high. Using the qualitative risk and reliability table, "no action required" is the recommendation for all the compounds.

III. SUMMARY - CONSEQUENCES OF ERROR:

Excavating a non contaminated site would spend tax dollars unnecessarily. Failure to remediate a contaminated site could cause harm or injury to humans.

IV. SUMMARY - OTHER DECISION DRIVERS

The hazardous constituents analyzed for (BTEX) were not detected in the soil samples. TPH were also not detected.

RECOMMENDED ACTION:

CFA-36 is a COCA site at the Central Facilities Area. CFA-36 was the site of an underground storage tank that stored leaded gasoline. During excavation of the tank, soil samples were collected and analyzed. The laboratory analysis verified the absence of contaminants. It is recommended that no further action be taken at the COCA-36 site.

SIGNATURES

PAGES:

DATE: 2/27/92

Prepared By: *Frank J. [Signature]*

DOE WAG Manager:

Approved By:

Independent Review: *Shannon Waters*

NO FURTHER ACTION DETERMINATION

The U. S. Department of Energy, U. S. Environmental Protection Agency-Region 10 and the State of Idaho have completed a review of the referenced information for Central Facilities Area CFA-36 hazardous site, as it pertains to the INEL Federal Facility Agreement of December 4, 1991. Based on this review, the parties have determined that no further action for purposes of investigation or study is justified. This decision is subject to review at the time of issuance of the Record of Decision.

Brief Summary of the basis for no further action:

see Decision statement

References:

*Track 1 pkg
Initial Assessment
Tank removal file*

DOE Project Manager	<u><i>Lisa Beem for JLL</i></u>	<i>1/7/93</i>	Date
EPA Project Manager	<u><i>Wayne Fene</i></u>	<i>1/7/93</i>	Date
Idaho Project Manager	<u><i>Clayton V. Mygard</i></u>	<i>1/7/93</i>	Date

DECISION STATEMENT
(BY DOE RPM)

DATE RECD:

1/7/93

CFA - 36

DISPOSITION:

The tank at CFA-36 has been removed and contaminated soil removed from the site. No hazardous substances remain above risk-based concentrations, therefore no further action is recommended.

DATE:

1/7/93

PAGES (DECISION STATEMENT)

NAME:

Lisa Green for J. Lyle

SIGNATURE:

Lisa Green for J. Lyle

DECISION STATEMENT
(BY EPA RPM)

DATE RECD:

1/6/93

CFA-36

DISPOSITION:

55 gal UST for leaded gas storage (tank CFA 680). Tank used between '51 and '83. Tank was excavated in '90. PID readings < 10 ppm. BTEX also done on 6 soil samples which were ND. Analysis of tank contents showed 70 ppm lead in the gas. (failed EP Tox for lead). Photos show rusted tank but no obvious holes which support the tank pump out ~7 yrs after removed from service. No further action is recommended for this source area

DATE:

1/7/93

PAGES (DECISION STATEMENT)

NAME:

Wayne Pierre

SIGNATURE:

Wayne Pierre

DECISION STATEMENT
(BY STATE RPM)

DATE RECD:

1/7/93 CFA-36

DISPOSITION:

Soils ^{samples} collected indicated contamination but the tank and these soils were removed. Soil samples were collected below the contaminated soil that was removed. Based on data contained in the Tank & Summary report (undated), samples were collected ^{Removal} ~~under~~ the limit of excavation. These data support that ~~contaminants are not~~ there are no contaminants present remaining that pose an unacceptable risk to human health. No further action is recommended for this source area.

DATE:

1/7/93

PAGES (DECISION STATEMENT)

NAME:

Dean J. Nygaard

SIGNATURE:

Dean J. Nygaard

PROCESS/WASTE WORKSHEET

SITE ID: CFA-36

col 1 Processes Associated with this site	col 2 Waste Description & Handling Procedures	col 3 Description & Location of any Artifact/Structures/Disposal Areas Associated with this Waste or Process
Process Underground storage tank	Tank holds leaded gasoline 06/10/92 Col. 3 Description: piping - Galvanized Iron or Black Iron Sch. 40 pipe? <u>Fill in description.</u>	Artifact: 55 gal storage tank Location: N. of building CFA680 Description: construction was probably steel - not recorded in TMP file Artifact: Associated piping Location: Attached to tank CFA680 Description: Artifact: Location: Description:
Process Removing contents of tank	C Fill in description.	Artifact: Undetermined amount of gasoline Location: H & M Oil - recycled by burning for energy recovery Description: Leaded gasoline Artifact: Location: Description: Artifact: Location: Description:
Process Excavating the tank		Artifact: UST - probably constructed of steel Location: Recycled by Pacific Steel Description: Rusty tank Artifact: Associated piping Location: Unknown Description: Galvanized steel Artifact: Location: Description:

CONTAMINANT WORKSHEET

SITE ID: CFA-36

PROCESS (col 1): UST

Col 4 What known/potential hazardous substances/constituents are associated with this waste or process?	Col 5 Potential sources associated with this hazardous material?	Col 6 Known/estimated concentrations of hazardous substances/constituents ^a	Col 7 Risk based concentration mg/kg	Col 8 Qualitative risk assessment (Hi/Med/Lo)	Col 9 Overall reliability (Hi/Med/Lo)
TPH (GC Headspace)	Gasoline contaminated soil	ND DL= 0.5			
Benzene (GC Headspace)	Gasoline contaminated soil	ND DL= 0.5	2.27 E-01	Low	High
Toluene (GC Headspace)	Gasoline contaminated soil	ND DL= 0.5	1.66 E+03	Low	High
Ethylbenzene (GC Headspace)	Gasoline contaminated soil	ND DL= 0.5	2.19 E+03	Low	High
Xylenes (GC Headspace)	Gasoline contaminated soil	ND DL= 0.5	3.70 E+04	Low	High
2-Methylnapthalene (EPA SW-846-8270)	Gasoline sample	2905 mg/kg			
Napthalene (EPA SW-846-8270)	Gasoline sample	2479 mg/kg			
Phenanthrene (EPA SW-846-8270)	Gasoline sample	8.12 mg/kg			
Benzene (EPA SW-846-8240)	Gasoline sample	1284 mg/kg			
Ethylbenzene (EPA SW-846-8240)	Gasoline sample	2212 mg/kg			
Methylene chloride (EPA SW-846-8240)	Gasoline sample	45.1 mg/kg			
Toluene (EPA SW-846-8240)	Gasoline sample	45406 mg/kg			
Xylene (m & p) (EPA SW-846-8240)	Gasoline sample	80732 mg/kg			
Xylene (o) (EPA SW-846-8240)	Gasoline sample	35608 mg/kg			
Arsenic (EPA SW-846-6010)	Gasoline sample	<2.44 mg/kg			
Barium (EPA SW-846-6010)	Gasoline sample	<19.5 mg/kg			
Cadmium (EPA SW-846-6010)	Gasoline sample	<0.49 mg/kg			
Chromium (EPA SW-846-6010)	Gasoline sample	<0.98 mg/kg			
Copper (EPA SW-846-6010)	Gasoline sample	<2.4 mg/kg			
Lead (EPA SW-846-6010)	Gasoline sample	70.8 mg/kg			

a. ND = not detected

DL = detection limit in mg/kg

CONTAMINANT WORKSHEET

SITE ID: CFA-36

PROCESS (col 1): UST

Col 4 What known/potential hazardous substances/constituents are associated with this waste or process?	Col 5 Potential sources associated with this hazardous material?	Col 6 Known/estimated concentrations of hazardous substances/constituents ^a	Col 7 Risk based concentration mg/kg	Col 8 Qualitative risk assessment (Hi/Med/Lo)	Col 9 Overall reliability (Hi/Med/Lo)
Mercury (EPA SW-846-7470)	Gasoline sample	<.020 mg/kg			
Nickel (EPA SW-846-6010)	Gasoline sample	<3.9 mg/kg			
Selenium (EPA SW-846-6010)	Gasoline sample	<29.3 mg/kg			
Silver (EPA SW-846-6010)	Gasoline sample	<0.98 mg/kg			
Thallium (EPA SW-846-6010)	Gasoline sample	<48.8 mg/kg			
Zinc (EPA SW-846-6010)	Gasoline sample	16.9 mg/kg			
EPTOX					
Arsenic (EPA SW-846-6010)	Gasoline sample	<19.900 mg/L			
Barium (EPA SW-846-6010)	Gasoline sample	<15.900 mg/L			
Cadmium (EPA SW-846-6010)	Gasoline sample	<0.400 mg/L			
Chromium (total) (EPA SW-846-6010)	Gasoline sample	<0.800 mg/L			
Lead (EPA SW-846-6010)	Gasoline sample	57.700 mg/L			
Mercury (EPA SW-846-7470)	Gasoline sample	<0.0160 mg/L			
Selenium (EPA SW-846-6010)	Gasoline sample	<23.900 mg/L			
Silver (EPA SW-846-6010)	Gasoline sample	<0.800 mg/L			

a. ND = not detected
DL = detection limit in mg/kg
mg/L converted from ug/L

QUALITATIVE RISK AND RELIABILITY EVALUATION TABLE			
	QUALITATIVE RISK		
	LOW	MEDIUM	HIGH
HIGHLY UN-RELIABLE	screening data	TRACK II	screening data
HIGHLY RELIABLE	NO ACTION REQUIRED	RI/FS	INTERIM ACTION*
reliability	LOW concentration resulting in risk < 10 ⁻⁶	MEDIUM	HIGH concentration resulting in risk > 10 ⁻⁶
	qualitative risk		

* if there exist sufficient data to identify an appropriate remedy

Question 1. What are the waste generation process locations and dates of operation associated with this site?

Block 1 Answer:

CFA-36 is the historical site of a 55 gal underground storage tank on the north side CFA-680. Tank CFA-680 was accessed by a concrete manhole that was 3 feet deep. The tank (probably constructed of steel) and its galvanized steel piping were installed in 1951 and remained in use until 1983. The tank stored leaded gasoline used for a water pump. In August 1991, the contents of the tank were pumped out by H&M Oil to be recycled by burning for energy recovery. The field logbook states that 110 gal. of gasoline were removed from the tank, but the level of fuel in the truck where the gasoline was pumped was not recorded. The tank was excavated in October 1990 revealing that it was indeed a 55 gal tank and it appeared to be rusted. In November 1990 the tank was cut and disposed of in December 1990 at Pacific Steel in Idaho Falls.

Block 2 How reliable is/are the information source/s? X High Med Low (check one)

EXPLAIN THE REASONING BEHIND THIS EVALUATION.

Information taken from the summary assessment, field logbook and TMP file.
Photographs of site and tank from the excavation.

Block 3 Has this INFORMATION been confirmed? Yes X No (check one)

IF SO, DESCRIBE THE CONFIRMATION.

Block 4 Sources of Information: (check appropriate box(es) and write in source)

No available information	<input type="checkbox"/>	_____	Analytical data	<input type="checkbox"/>	_____
Anecdotal	<input type="checkbox"/>	_____	Documentation about data	<input type="checkbox"/>	_____
Historical process data	<input type="checkbox"/>	_____	Disposal data	<input type="checkbox"/>	_____
Current process data	<input type="checkbox"/>	_____	Q.A. data	<input type="checkbox"/>	_____
Aerial photographs	<input type="checkbox"/>	_____	Safety analysis report	<input type="checkbox"/>	_____
Engineering/site drawings	<input type="checkbox"/>	_____	D&D report	<input type="checkbox"/>	_____
Unusual Occurrence Report	<input type="checkbox"/>	_____	Initial assessment	<input type="checkbox"/>	_____
Summary documents	<input checked="" type="checkbox"/>	(8)	Well data	<input type="checkbox"/>	_____
Facility SOPs	<input type="checkbox"/>	_____	Construction data	<input type="checkbox"/>	_____
OTHER	<input checked="" type="checkbox"/>	(2) (4) (9)			

Question 2. What are the disposal process locations and dates of operation associated with this site? How was the waste disposed?

Block 1 Answer:

On May 22, 1989, the contents of tank CFA-680 were sampled to determine the waste profile. An undetermined amount of gasoline in the tank was pumped from the tank on August 21, 1990 (the field logbook states the 110 gal. of gasoline were pumped from the tank. Historical data and photographs taken when the tank was excavated determine that CFA-680 was a 55 gal tank) by H&M Oil, Pocatello to be recycled by burning for energy recovery. The tank was excavated on October 16, 1990. Soil samples were collected for analysis. The depths of the samples were not recorded. Sample numbers cannot be definitively assigned to sample locations from the information provided in the field logbook. PID reading show contamination levels well below the EG&G regulatory action limit for field analysis of VOCs (25 mg/kg). Laboratory results report that TPH and BTEX were "not detected" and therefore are below state regulatory action limits. The pit was backfilled with one half truckload (approximately 6 yd³) of clean soil. The tank was cut on November 28, 1990 and disposed of on December 18, 1990 by Pacific Steel in Idaho Falls.

Block 2 How reliable is/are the information source/s? High Med Low (check one)

EXPLAIN THE REASONING BEHIND THIS EVALUATION.

The information is taken from field logbooks. Although there is a discrepancy as to how much gasoline was pumped from the tank, there is no question that the tank capacity is 55 gal. according to photographs and field logbooks.

Block 3 Has this INFORMATION been confirmed? Yes No (check one)

IF SO, DESCRIBE THE CONFIRMATION.

Block 4 **Sources of Information:** (check appropriate box(es) and write in source)

No available information	<input type="checkbox"/>	Analytical data	<input checked="" type="checkbox"/> (1)
Anecdotal	<input type="checkbox"/>	Documentation about data	<input type="checkbox"/>
Historical process data	<input type="checkbox"/>	Disposal data	<input type="checkbox"/>
Current process data	<input type="checkbox"/>	Q.A. data	<input type="checkbox"/>
Aerial photographs	<input type="checkbox"/>	Safety analysis report	<input type="checkbox"/>
Engineering/site drawings	<input type="checkbox"/>	D&D report	<input type="checkbox"/>
Unusual Occurrence Report	<input type="checkbox"/>	Initial assessment	<input type="checkbox"/>
Summary documents	<input checked="" type="checkbox"/> (8)	Well data	<input type="checkbox"/>
Facility SOPs	<input type="checkbox"/>	Construction data	<input type="checkbox"/>
OTHER	<input checked="" type="checkbox"/> (2) (4) (7) (9)		

Question 3. Is there empirical, circumstantial, or other evidence of migration?
If so, what is it?

Block 1 Answer:

There is no evidence of migration at the site of tank CFA-680. Field analysis for VOCs with a Microtip PID show concentration levels below EG&G regulatory action limit (25 mg/kg). Laboratory analyses confirm that TPH and BTEX were "not detected" and are well below the state regulatory action limit (100 mg/kg for TPH in gasoline).

Block 2 How reliable is/are the information source/s? High Med Low (check one)

EXPLAIN THE REASONING BEHIND THIS EVALUATION.

Information is taken from field sampling notebook and Data Chem laboratory results.

Block 3 Has this INFORMATION been confirmed? Yes No (check one)

IF SO, DESCRIBE THE CONFIRMATION.

Block 4 **Sources of Information:** (check appropriate box(es) and write in source)

No available information	<input type="checkbox"/>	_____	Analytical data	<input checked="" type="checkbox"/>	(1)
Anecdotal	<input type="checkbox"/>	_____	Documentation about data	<input type="checkbox"/>	_____
Historical process data	<input type="checkbox"/>	_____	Disposal data	<input type="checkbox"/>	_____
Current process data	<input type="checkbox"/>	_____	Q.A. data	<input type="checkbox"/>	_____
Aerial photographs	<input type="checkbox"/>	_____	Safety analysis report	<input type="checkbox"/>	_____
Engineering/site drawings	<input type="checkbox"/>	_____	D&D report	<input type="checkbox"/>	_____
Unusual Occurrence Report	<input type="checkbox"/>	_____	Initial assessment	<input type="checkbox"/>	_____
Summary documents	<input type="checkbox"/>	_____	Well data	<input type="checkbox"/>	_____
Facility SOPs	<input type="checkbox"/>	_____	Construction data	<input type="checkbox"/>	_____
OTHER	<input checked="" type="checkbox"/>	(2)			

Question 4. Is there evidence that a source exists at this site? If so, list the sources and describe the evidence.

Block 1 Answer:

There is no evidence that a source exists at the site of tank CFA-680. The field analysis show concentrations below the EG&G regulatory action limit (25 mg/kg). Laboratory analyses confirm that no source exists at the tank site. TPH as gasoline and BETX were "not detected" according to the laboratory report.

Block 2 How reliable is/are the information source/s? High Med Low (check one)

EXPLAIN THE REASONING BEHIND THIS EVALUATION.

Information taken from field sampling notebook and Data Chem laboratory results.

Block 3 Has this INFORMATION been confirmed? Yes No (check one)

IF SO, DESCRIBE THE CONFIRMATION.

Block 4 **Sources of Information:** (check appropriate box(es) and write in source)

No available information	<input type="checkbox"/>	_____	Analytical data	<input checked="" type="checkbox"/>	(1)
Anecdotal	<input type="checkbox"/>	_____	Documentation about data	<input type="checkbox"/>	_____
Historical process data	<input type="checkbox"/>	_____	Disposal data	<input type="checkbox"/>	_____
Current process data	<input type="checkbox"/>	_____	Q.A. data	<input type="checkbox"/>	_____
Aerial photographs	<input type="checkbox"/>	_____	Safety analysis report	<input type="checkbox"/>	_____
Engineering/site drawings	<input type="checkbox"/>	_____	D&D report	<input type="checkbox"/>	_____
Unusual Occurrence Report	<input type="checkbox"/>	_____	Initial assessment	<input type="checkbox"/>	_____
Summary documents	<input type="checkbox"/>	_____	Well data	<input type="checkbox"/>	_____
Facility SOPs	<input type="checkbox"/>	_____	Construction data	<input type="checkbox"/>	_____
OTHER	<input checked="" type="checkbox"/>	(2)			

Question 5. Does the site operating or disposal historical information allow estimation of the pattern of potential contamination? If the pattern is expected to be a scattering of hot spots, what is the expected minimum size of a significant hot spot?

Block 1 Answer:

If there was a hole in the tank, it would be suspected that a plume of contamination would be centered at that hole. There were no apparent holes in the tank when it was excavated nor was there any history of the tank leaking. Field and laboratory analyses confirm that assumption. Results from laboratory analyses are reported as "not detected."

Block 2 How reliable is/are the information source/s? High Med Low (check one)

EXPLAIN THE REASONING BEHIND THIS EVALUATION.

Evaluation based on verbal contact with professional that excavated USTs.

Block 3 Has this INFORMATION been confirmed? Yes No (check one)

IF SO, DESCRIBE THE CONFIRMATION.

Block 4 **Sources of Information:** (check appropriate box(es) and write in source)

No available information	<input type="checkbox"/>	Analytical data	<input checked="" type="checkbox"/> (1)
Anecdotal	<input checked="" type="checkbox"/> (7)	Documentation about data	<input type="checkbox"/>
Historical process data	<input type="checkbox"/>	Disposal data	<input type="checkbox"/>
Current process data	<input type="checkbox"/>	Q.A. data	<input type="checkbox"/>
Aerial photographs	<input type="checkbox"/>	Safety analysis report	<input type="checkbox"/>
Engineering/site drawings	<input type="checkbox"/>	D&D report	<input type="checkbox"/>
Unusual Occurrence Report	<input type="checkbox"/>	Initial assessment	<input type="checkbox"/>
Summary documents	<input type="checkbox"/>	Well data	<input type="checkbox"/>
Facility SOPs	<input type="checkbox"/>	Construction data	<input type="checkbox"/>
OTHER	<input checked="" type="checkbox"/> (2) (5)		

Question 6. Estimate the length, width, and depth of the contaminated region. What is the known or estimated volume of the source? If this is an estimated volume, explain carefully how the estimate was derived.

Block 1 Answer:

The volume formerly occupied by tank CFA-680 and the concrete manhole was backfilled with half a truckload of clean soil (approximately 6 yd³).

The risk based maximum allowable concentration was calculated by assuming the tank was full (55 gal gasoline spilled).

Using the equation

$$V_s = \frac{0.2 \times V_{HC}}{p \times (RS)}$$

where V_s = Volume of contaminated soil at residual saturation (yd³).

V_{HC} = Volume of discharged hydrocarbons in barrels
= (N gallons of spilled fuel) x (1 barrel per 44 gallons)

p = soil porosity (0.35)

RS = residual saturation (for gasoline, $RS = 0.10$)

$$V_s = \frac{0.2 \times 55/44}{0.35 \times 0.10} = 7.14 \text{ yd}^3$$

A reasonable upper bound for the volume of soil which could have been contaminated by tank CFA-680 is 7.14 yd³ (3 yd x 1.5 yd x 1.5 yd) which is the approximate volume that one tank volume would saturate.

Block 2 How reliable is/are the information source/s? High Med Low (check one)

EXPLAIN THE REASONING BEHIND THIS EVALUATION.

The information is derived from a calculation and gives an estimate of the volume of contaminated soil if a full tank was completely emptied into the soil.

Block 3 Has this INFORMATION been confirmed? Yes No (check one)

IF SO, DESCRIBE THE CONFIRMATION.

Block 4 Sources of Information: (check appropriate box(es) and write in source)

No available information	<input type="checkbox"/>	_____	Analytical data	<input checked="" type="checkbox"/>	(1)
Anecdotal	<input type="checkbox"/>	_____	Documentation about data	<input type="checkbox"/>	_____
Historical process data	<input type="checkbox"/>	_____	Disposal data	<input type="checkbox"/>	_____
Current process data	<input type="checkbox"/>	_____	Q.A. data	<input type="checkbox"/>	_____
Aerial photographs	<input type="checkbox"/>	_____	Safety analysis report	<input type="checkbox"/>	_____
Engineering/site drawings	<input type="checkbox"/>	_____	D&D report	<input type="checkbox"/>	_____
Unusual Occurrence Report	<input type="checkbox"/>	_____	Initial assessment	<input type="checkbox"/>	_____
Summary documents	<input type="checkbox"/>	_____	Well data	<input type="checkbox"/>	_____
Facility SOPs	<input type="checkbox"/>	_____	Construction data	<input type="checkbox"/>	_____
OTHER	<input checked="" type="checkbox"/>	(7) (10)			

Question 7. What is the known or estimated quantity of hazardous substance/constituent at this source? If the quantity is an estimate, explain carefully how the estimate was derived.

Block 1 Answer:

Laboratory analysis of soil samples taken from the tank bed support the conclusion that there are not significant quantities of hazardous substances at the tank site CFA-680. TPH and BTEX values for each of the samples were below the detection limit (0.05 mg/kg) and the state regulatory action limits (100 mg/kg for TPH in gasoline).

Hazardous substances found in the fuel sample are listed on the contaminant worksheet. The contaminants found in the fuel correspond to the contaminants found in the soil.

The maximum amount of hazardous substance at this source would be 55 gal, the size of the tank.

Block 2 How reliable is/are the information source/s? High Med Low (check one)

EXPLAIN THE REASONING BEHIND THIS EVALUATION.

Information taken from the Data Chem laboratory results.

Block 3 Has this INFORMATION been confirmed? Yes No (check one)

IF SO, DESCRIBE THE CONFIRMATION.

Block 4 **Sources of Information:** (check appropriate box(es) and write in source)

No available information	<input type="checkbox"/>	Analytical data	<input checked="" type="checkbox"/> (1)
Anecdotal	<input type="checkbox"/>	Documentation about data	<input type="checkbox"/>
Historical process data	<input type="checkbox"/>	Disposal data	<input type="checkbox"/>
Current process data	<input type="checkbox"/>	Q.A. data	<input type="checkbox"/>
Aerial photographs	<input type="checkbox"/>	Safety analysis report	<input type="checkbox"/>
Engineering/site drawings	<input type="checkbox"/>	D&D report	<input type="checkbox"/>
Unusual Occurrence Report	<input type="checkbox"/>	Initial assessment	<input type="checkbox"/>
Summary documents	<input type="checkbox"/>	Well data	<input type="checkbox"/>
Facility SOPs	<input type="checkbox"/>	Construction data	<input type="checkbox"/>
OTHER	<input type="checkbox"/>		

Question 8. Is there evidence that this hazardous substance/constituent is present at the source as it exists today? If so, describe the evidence.

Block 1 Answer:

There is no evidence that hazardous substances are present at the COCA site CFA-36. The source of potential contamination, tank CFA-680 was removed and the pit was backfilled with clean soil. Soil samples were tested and the laboratory reported "not detected" for TPH and BTEX.

Block 2 How reliable is/are the information source/s? X High Med Low (check one)

EXPLAIN THE REASONING BEHIND THIS EVALUATION.

Information was taken from field sampling logbook and Data Chem laboratory results.

Block 3 Has this INFORMATION been confirmed? Yes X No (check one)

IF SO, DESCRIBE THE CONFIRMATION.

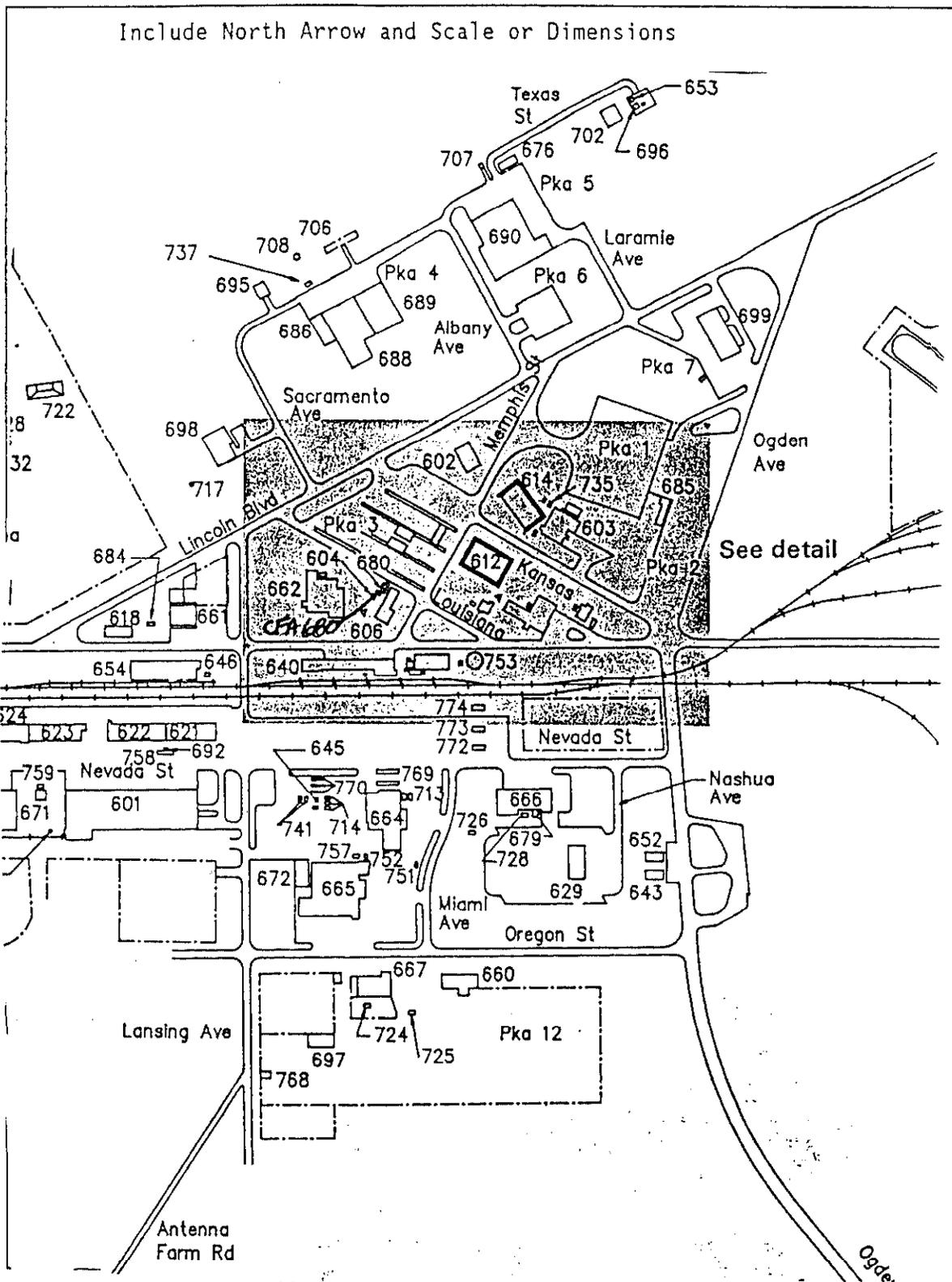
Block 4 Sources of Information: (check appropriate box(es) and write in source)

No available information	<input type="checkbox"/>	_____	Analytical data	<input checked="" type="checkbox"/>	(1) _____
Anecdotal	<input type="checkbox"/>	_____	Documentation about data	<input type="checkbox"/>	_____
Historical process data	<input type="checkbox"/>	_____	Disposal data	<input type="checkbox"/>	_____
Current process data	<input type="checkbox"/>	_____	Q.A. data	<input type="checkbox"/>	_____
Aerial photographs	<input type="checkbox"/>	_____	Safety analysis report	<input type="checkbox"/>	_____
Engineering/site drawings	<input type="checkbox"/>	_____	D&D report	<input type="checkbox"/>	_____
Unusual Occurrence Report	<input type="checkbox"/>	_____	Initial assessment	<input type="checkbox"/>	_____
Summary documents	<input type="checkbox"/>	_____	Well data	<input type="checkbox"/>	_____
Facility SOPs	<input type="checkbox"/>	_____	Construction data	<input type="checkbox"/>	_____
OTHER	<input checked="" type="checkbox"/>	(2) _____			

REFERENCES

- (1) Data Chem Laboratories. Environmental Soil Report (TPH and BTEX for CFA-680). December 20, 1990.
- (2) Daniel, V.E. EG&G Idaho, Inc. Sampling Logbook
- (3) EG&G Idaho, Inc. Environmental Chemistry Analytical Report, ROA # 268 (January 5, 1990) and ROA # 890073-1 (June 26, 1990).
- (4) EG&G Idaho, Inc. Tank Disposition Form for CFA-680, November 28, 1990.
- (5) EG&G Idaho, Inc. Tank removal photographs.
- (6) Gitt, M.J. Sampling and Analysis Plan for Site Assessment during the Closure or Replacement of Nonradioactive Underground Storage Tanks. EGG-ESQ-9116, August 1990.
- (7) Daniel, V. E. Personal Communication, November 12, 1991.
- (8) Ludi, K.M. EG&G Tank Removal Summary For CFA-680.
- (9) Permann, P.J. Environmental Science and Technology Sampling Logbook, pp. 0033, 0035, 0036. May 22, 1989.
- (10) Rood, A.S. Estimation Of Volume Of Contaminated Soil From A Fuel Oil Spill. August 7, 1991.

FIELD SKETCH OF TANK LOCATION



Recorded by: *PJ Permann*

Checked By: _____

✓
DIESEL FUEL TANK
500 GAL. UNDER N.E. QUADRANT

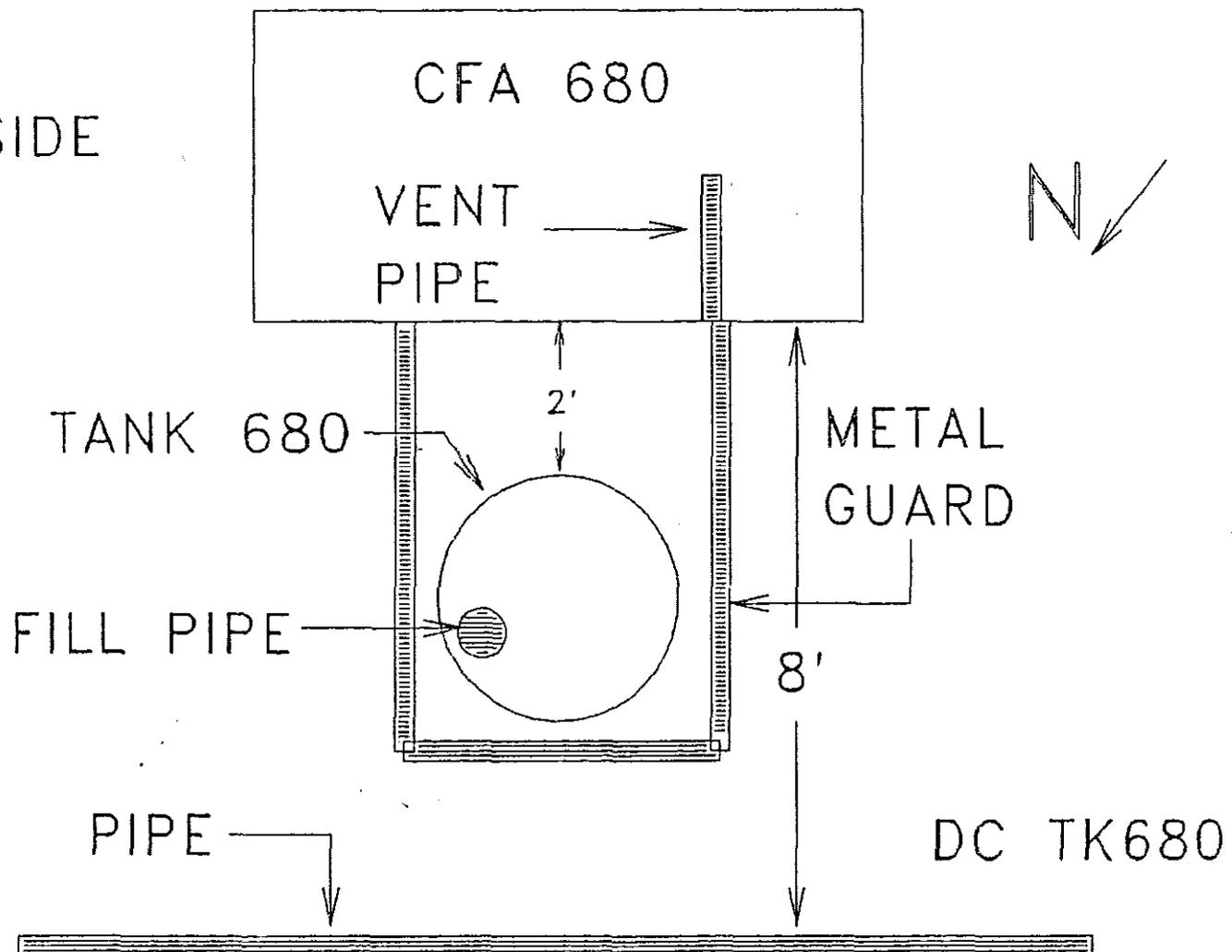
GASOLINE TANK (ABANDONED)
UNDER NORTH HALF

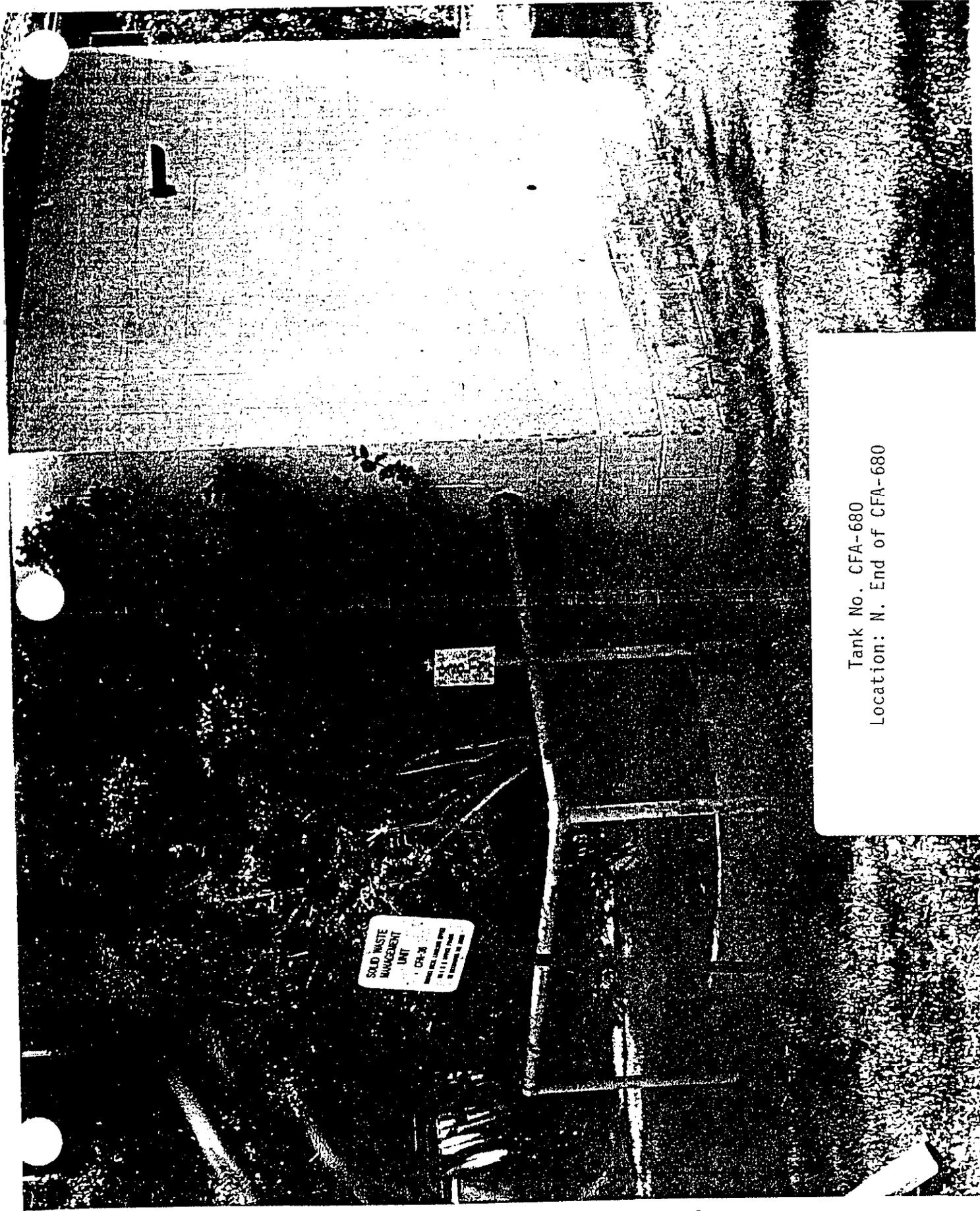
680

604



NOTE! TANK INSIDE
MANHOLE COVER
3 FT. DEEP





SOLID WASTE
MANAGEMENT
UNIT
CFA-680
[Illegible text]

Tank No. CFA-680
Location: N. End of CFA-680

ESTIMATION OF VOLUME OF CONTAMINATED SOIL
FROM A FUEL OIL SPILL

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PROBLEM: What is the volume of contaminated soil which would result from a surface fuel oil spill of a known or estimated quantity?

ASSUMPTIONS:

- N GALLON FUEL SPILL
- SOIL POROSITY = 0.35 (ρ) (Case et al., pg A-62)
- THE RESIDUAL SATURATION CAPACITY (RS) = { 0.10, 0.15, 0.20 }

The residual saturation for fuel oils is approximately 33% of the water holding capacity of the soil. Dragun (1988) reports maximum RS values for different fuel oils.

Table 1. Residual Saturation (RS) values for different fuels.

Fuel	RS
light oil and gasoline	0.10
diesel and light fuel oil	0.15
lube and heavy fuel oil	0.20

The volume of soil in cubic yards contaminated by a spill is given by (Dragun, 1988)

$$V_s = \frac{0.2 \times V_{\text{ec}}}{\rho \times (\text{RS})} \quad (1)$$

where V_s = Volume of contaminated soil at residual saturation (yd^3).

V_{ec} = volume of discharged hydrocarbons in barrels

= (N gallons of spilled fuel) x (1 barrel per 44 gallons)

ρ = soil porosity

RS = residual saturation from Table 1

The estimated volume in cubic yards contaminated by a light oil or gasoline spill is given by:

$$V_s = \frac{0.2 \times N/44}{0.35 \times 0.10}$$

The estimated volume in cubic yards contaminated by a diesel or light fuel oil spill is given by:

$$V_s = \frac{0.2 \times N/44}{0.35 \times 0.15}$$

The estimated volume in cubic yards contaminated by a lube or heavy fuel oil spill is given by:

$$V_s = \frac{0.2 \times N/44}{0.35 \times 0.20}$$

Calculate a volume:

N = _____ gallons

RS = _____ (from Table 1)

Therefore:

$$V_s = \frac{0.2 \times \underline{\hspace{2cm}} / 44}{0.35 \times \underline{\hspace{2cm}}} = \underline{\hspace{2cm}} \text{ cubic yards of contaminated soil}$$

References:

Case, M. J., Maheras, S. J. et al., Radioactive Waste Management Complex Performance Assessment. EG&G Idaho Informal Report, EGG-WM-8773, June, 1990, Page A-62

Dragun, James, Soil Chemistry of Hazardous Materials. Hazardous Materials Control Research Institute, Chapter 2, 1988.

SUMMARY TABLE OF RISK-BASED SOIL SCREENING CONCENTRATIONS FOR
CFA-36 SOIL CONTAMINATION FOR BENZENE

Exposure	Scenarios			
	Occupational		Residential	
Pathways	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)
Soil Ingestion	1.97E+02	--	2.21E+01	--
Inhalation of Fugitive Dust	6.26E+05	--	3.80E+05	--
Inhalation of Volatiles	7.77E+02	--	5.16E+02	--
Groundwater Ingestion	NA	NA	2.27E-01	--

NA = Not Applicable.

-- = Calculation not performed because of no published toxicity value.

Shaded box = Lowest risk-based soil concentration.

SUMMARY TABLE OF RISK-BASED SOIL SCREENING CONCENTRATIONS FOR
CFA-36 SOIL CONTAMINATION FOR ETHYLBENZENE

Exposure	Scenarios			
	Occupational		Residential	
Pathways	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)
Soil Ingestion	--	2.00E+05	--	2.70E+04
Inhalation of Fugitive Dust	--	1.92E+09	--	1.39E+09
Inhalation of Volatiles	--	9.82E+06	--	7.81E+06
Groundwater Ingestion	NA	NA	--	2.19E+03

NA = Not Applicable.

-- = Calculation not performed because of no published toxicity value.

Shaded box = Lowest risk-based soil concentration.

SUMMARY TABLE OF RISK-BASED SOIL SCREENING CONCENTRATIONS FOR
CFA-36 SOIL CONTAMINATION FOR TOLUENE

Exposure	Scenarios			
	Occupational		Residential	
Pathways	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)
Soil Ingestion	--	4.00E+05	--	5.40E+04
Inhalation of Fugitive Dust	--	3.77E+09	--	2.73E+09
Inhalation of Volatiles	NA	1.03E+07	NA	8.23E+06
Groundwater Ingestion	NA	NA	--	1.66E+03

NA = Not Applicable.

-- = Calculation not performed because of no published toxicity value.

Shaded box = Lowest risk-based soil concentration.

SUMMARY TABLE OF RISK-BASED SOIL SCREENING CONCENTRATIONS FOR
CFA-36 SOIL CONTAMINATION FOR XYLENES

Exposure	Scenarios			
	Occupational		Residential	
Pathways	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)
Soil Ingestion	--	4.00E+06	--	5.40E+05
Inhalation of Fugitive Dust	--	5.69E+08	--	4.12E+08
Inhalation of Volatiles	--	2.45E+06	--	1.95E+06
Groundwater Ingestion	NA	NA	--	3.70E+04

NA = Not Applicable.

-- = Calculation not performed because of no published toxicity value.

Shaded box = Lowest risk-based soil concentration.