FOR RAVENNA ARSENAL, INC. 8451 STATE ROUTE 5 RAVENNA, OHIO 44266

Conducted By:

Nozzle New, Inc.

Date: December 18, 1991

Project: 1029-91

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The Ravenna Arsenal, Inc., is located in Ravenna, Ohio on State Route 5. The arsenal is a military facility that receives fuel oil, kerosene and other fuels via truck and rail. Ravenna Arsenal, Inc., commissioned Nozzle New, Inc., to remove up to twenty two (22) suspected underground storage tanks (USTs) at this location. As shown by Table 1, these steel tanks were reportedly installed from 1941 to 1976 and abandoned from 1941 to 1989.

TABLE 1: SUSPECTED USTs

Tank No.	Yr. Installed	Yr. Abandoned
RV20	1971	1989
RV21	1969	1989
RV46	1941	1968
RV50	1976	1984
RV55	1941	1989
RV56	1941	1989
RV57	1941	1989
RV58	1941	1989
RV59	1941	1989
RV60	1941	1989
RV61	1941	1989
RV62	1941	1989
RV63	1941	1989
RV64	1941	1989
RV80	1941	1968
RV81	1941	1955
RV82	1941	1955
RV83	1941	1955
RV86	1941	1941
RV87	1941	1941
RV88	1941	1941
RV89	1941	1941

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RV62	1941	1989
RV63	1941	1989
RV64	1941	1989
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RV62	1941	1989
RV63	1941	1989
RV64	1941	1989
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RV63	1941	1989
RV64	1941	1989
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RV62	1941	1989
RV63	1941	1989
RV64	1941	1989
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		Typic
RV20	1969	1971 1989
RV21	1969	1971 1989
RV46	1941	1984 - NO TANK FOUND'62"
RV50	1976	1984
RV55	1941	1989
RV56	1941	1989
RV57	1941	1989
RV58	1941	1989
RV59	1941	1989
RV60	1941	1989
RV61	1941	1989
RV62	1941	1989
RV63	1941	1989
RV64	1941	1989
RV80	1941	1989 1968
RV81	1941	1 984 1955
RV82	1941	1 984 1955
RV83	1941	1 984 1955
RV86	1941	1984 - NO TANK FOUND 1941
RV87	1941	1984 - No TANK FOUND 1941 1984 - NO TANK FOUND 1941
RV88	1941	1984 - NO TANK FOUND 1941
RV89	1941	1984 - NO TANK FOUND 1941

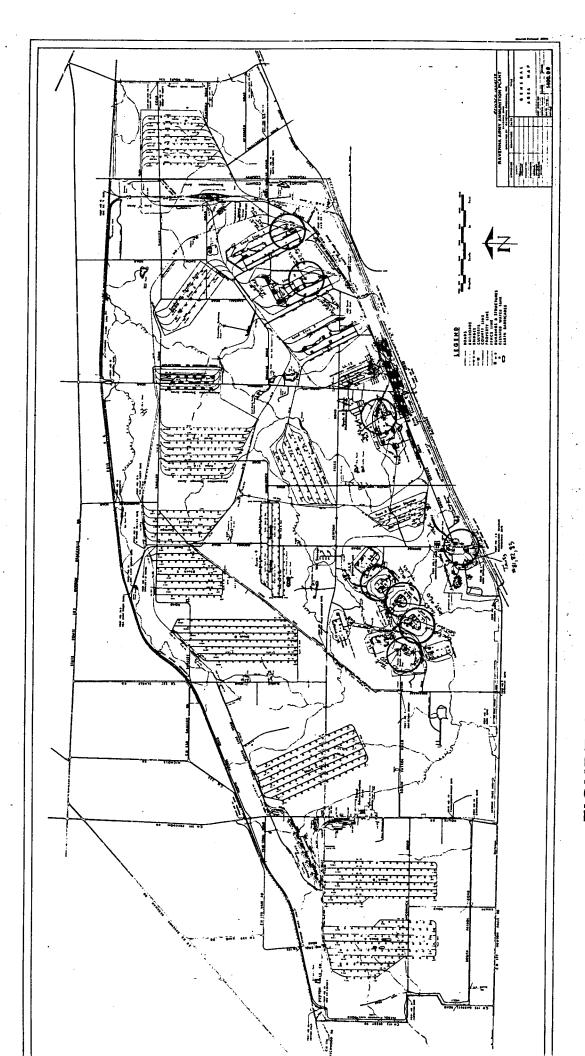


FIGURE 1 - SITE DIAGRAM OF RAVENNA ARSENAI

2.0 UST REMOVALS

Table 2 summarizes dates on which Nozzle New removed seventeen (17) USTs from the Ravenna Arsenal. Table 2 also documents tank capacities and contents. Tank removal occurred between June 3, 1991 and November 15, 1991.

Prior to removing tanks, Nozzle New:

- Sampled tank contents for chemical analysis,
- Removed tank contents for proper disposal, and
- Purged the empty tanks with dry ice.

After removing tanks, Nozzle New:

- Sampled soil at each end of each removed UST,
- Placed visqueen over and under spoils piles,
- Sampled water encountered in any cavity, and
- Returned surface to grade using material supplied from other sections of the Arsenal property.

When appropriate, Nozzle New used a Foxboro OVA to conduct field screening of soil samples prior to sending the soil samples with the highest field reading to Environment One for analysis.

Extensive excavation (20' by 20' grid search) conducted June 3rd and 6th, 1991 located no USTs existed at potential UST sites RV46, RV86, RV87, RV88 and RV89.

As shown in Appendix C, spoils (1457.4 tons) were disposed of at A&B Refuse Disposal, Inc. on August 15 & 16, 1991; October 16, 17, & 18, 1991, and November 18, 19, & 20, 1991.

TABLE 2 - USTS REMOVED AT RAVENNA ARSENAL

TANK #	1991 DATE REMOVED	LOCATION		STEEL TANK CONTENTS/SIZE (gal)
* RV81	6/4	Bldg. 1047		gasoline/1000
* RV82	6/4	Bldg. 1047		gasoline/1500
* RV83	6/4	Bldg. 1047		gasoline/1500
RV50	6/5	WW4		# 2 fuel oil/1000
RV20	6/7	DB-27, LL2		# 2 fuel oil/15000
RV21	6/7	DB-27, LL2		# 2 fuel oil/15000
RV57	6/10	Powerhouse 2,	LL2	# 5 heating oil/15000
RV58	6/10	Powerhouse 2,	LL2	# 5 heating oil/15000
RV63	6/12	Powerhouse 7,	LL4	# 5 heating oil/15000
RV64	6/12	Powerhouse 7,	LL4	# 5 heating oil/20000
RV59	6/17	Powerhouse 4,	Near LL5	# 5 heating oil/20000
RV60	6/17	Powerhouse 4,	Near LL5	# 5 heating oil/20000
RV55	10/17	Powerhouse 1,	LL1	# 5 heating oil/20000
RV56	10/17	Powerhouse 1,	LL1	# 5 heating oil/20000
RV62	10/22	Powerhouse 5,	Near LL10	# 5 heating oil/20000
RV61	10/22	Powerhouse 5,	Near LL10	# 5 heating oil/20000
RV80	11/15	George Rd. Gas	st.	# 2 gasoline/12000

⁻ No tank found at RV46, RV86, RV87, RV88, RV89 after extensive 20' X 20' grid search.

^{*} RV81, 82, and 83 were originally believed to have been 10,000 gallon tanks but actual sizes are shown above.

3.0 SAMPLING AND ANALYSIS METHODS

All site sampling was done by Philip Marek of Nozzle New, Inc. Soil was sampled underneath each end of removed USTs using decontaminated steel trowels. Each sample was placed into a labeled glass container, capped and placed in a chilled cooler. Samples were then transferred, under chain-of-custody (See Appendix A) to the laboratory of Environment One, Inc., at 7777 Wall Street, Valley View, Ohio 44125.

Samples were analyzed for the parameters listed below using the analytical methods listed.

PARAMETER	TEST METHOD	EPA DOCUMENT
Total Petroleum Hydrocarbon (TF	PH) 418.1 (a)	600/4-79-020
Total Petroleum Hydrocarbon (TF	PH) 9071 (b)	SW-846
Benzene, Ethylbenzene, Toluene, Xylene (BTEX)	8020	SW-846
Total Lead (Pb) Preparation Analysis	3050 6020	SW-846 SW-846
Total Chromium (Cr) Preparation Analysis	3050 6020	SW-846 SW-846
TCLP Metals	1311 4	0 CFR Part 261 Appendix II
Flash Point	1010	SW-846

- For liquid samples use 418.1 protocols for extraction, clean-up and analysis.
- b For soil samples used 9071 protocols for extraction, then use 418.1 for clean up and analysis.

Liquid samples were obtained using disposable glass coliwasa tubes.

4.0 SAMPLING AND ANALYSIS RESULTS (See Appendix B)

Nozzle New sampled tank contents, soils, spoils, and cavity water during work at the Ravenna Arsenal. Sample locations are shown on Figures 2-10.

4.1 Tank Content Testing

In order to insure proper disposal of tank contents Nozzle New sampled oil layers, water layers, sludges and solids found in the seventeen (17) removed tanks. These analysis can respectively be found in Appendices B2, B3, and B4.

4.2 Soil Testing

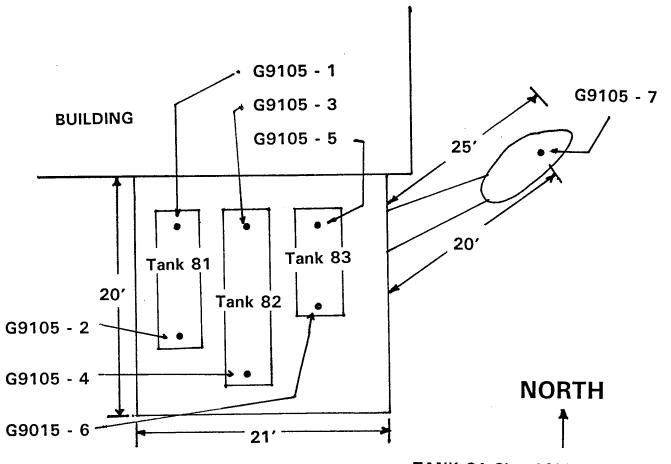
Results of soil sampled from tank cavities is given below:

CLIENT SAMPLE I.D.	EOI SAMPLE I.D.	TPH (ppm)	BENZENE (ppb)	TOLUENE (ppb)	ETHYLBENZENE (ppb)	XYLENE	Pb(T) (ppm)	Cr(T)
Tank 81 #1	G9105-1	<10	<2	<2	<2	<2	5.40	6.67
Tank 81 #2	G9105-2	10	<2	<2	<2	<2	4.92	6.83
Tank 82 #1	G9105-3	25	<2	<2	<2	<2	4.37	6.57
Tank 82 #2	G9105-4	12	<2	<2	<2	<2	4.56	6.95
Tank 83 #1	G9105-5	10	<2	<2	<2	<2	4.77	7.04
Tank 83 #2	G9105-6	15	<2	<2	<2	<2	5.33	7.25
Product Line Island	G9105-7	15	<2	<2	<2	<2	6.33	11.00
Sample 1 Tank #50	G9110-9	18	<2	<2	<2	<2	3.85	3.90
Sample 2 Tank #50	G9110-10	12	<2	<2	<2	<2	4.43	3.37
Sample 1 Tank #20	G9110-11	10	<2	<2	<2	<2	9.76	15.7

CLIENT SAMPLE I.D.	EOI SAMPLE I.D.	TPH (ppm)	BENZENE (ppb)	TOLUENE (ppb)	ETHYLBENZENE (ppb)	XYLENE (ppb)	Pb(T) (ppm)	Cr(T) (ppm)
Sample 2 Tank #20	G9110-12	12	<2	<2	<2	<2	10.1	15.4
Sample 1 Tank #21	G9110-13	10	<2	<2	<2	<2	8.64	14.6
Sample 2 Tank #21	G9110-14	<10	<2	<2	<2	<2	9.34	16.5
Sample 1 Tank #57	G9112-1	15	<2	<2	<2	<2	7.05	12.2
Sample 2 Tank #57	G9112-2	15	<2	<2	<2	<2	7.58	14.1
Sample 1 Tank #58	G9112-3	15	<2	<2	<2	<2	15.8	10.6
Sample 2 Tank #58	G9112-4	13	<2	<2	<2	<2	6.63	13.2
Sample 1 Tank #63	G9113-32	10	<2	<2	<2	<2	8.24	6.60
Sample 2 Tank #63	G9113-33	12	<2	<2	<2	<2	7.85	6.75
Sample 1 Tank #64	G9113-34	10	<2	<2	<2	<2	6.90	6.48
Sample 2 Tank #64	G9113-35	12	<2	<2	<2	<2	6.18	6.10
Sample 1 Tank #59	G9119-4	<10	<2	<2	<2	<2	10.5	6.23
Sample 2 Tank #59	G9119 - 5	<10	<2	<2	<2	<2	11.6	6.13
Sample 1 Tank #60	G9119-6	<10	<2	<2	<2	<2	10.5	6.15
Sample 2 Tank #60	G9119-7	<10	<2	<2	<2	<2	12.1	6.69
Sample 1 Tank #55	L9123-6	13	<2	<2	<2	<2	10.3	1.71

CLIENT SAMPLE I.D.	EOI SAMPLE I.D.	TPH (ppm)	BENZENE (ppb)	TOLUENE (ppb)	ETHYLBENZENE (ppb)	XYLENE (ppb)	Pb(T) (ppm)	Cr(T) (ppm)
Sample 2 Tank #55	L9123-7	10	<2	<2	<2	<2	10.1	2.07
Sample 1 Tank #56	L9123-8	10	<2	<2	<2	<2	11.7	1.95
Sample 2 Tank #56	L9123-9	14	<2	<2	<2	<2	11.7	1.94
Sample 1 Tank #62	L9123-10	13	<2	<2	<2	<2	10.6	3.35
Sample 2 Tank #62	L9123-11	<10	<2	<2	<2	<2	12.5	3.96
Sample 1 Tank #61	L9130-5	14	<2	<2	<2	<2	9.04	2.27
Sample 2 Tank #61	L9130-6	<10	<2	<2	<2	<2	9.63	2.09
Tank #80 Sample #1	N9102-18	42	<2	<2	<2	<2	24.8	3.80
Tank #80 Sample #2	N9102-19	23	<2	<2	<2	<2	19.2	5.00
Background Sample Section A	d M9119-14	32	<2	<2	<2	<2	9.51	2.89
Background Sample Section B	d M9119-15	50	<2	<2	<2	<2	18.7	3.06

Spoil pile analysis (G9105-8) showed elevated TPH (140ppm) and BTEX (1340/710/1010/850 ppb) levels. Analysis of spoils is given in Appendix B5. Water analysis tied to water in cavities is given in Appendix B6.



Tank # 81 SAMPLE 1-5' From North Wall 11' From Building

SAMPLE 2-5' From North Wall 19' From Building TANK 81 Size 12' X 5' Diameter

TANK 82 Size 14' X 5' Diameter

TANK 83 Size 8'6" X 4'5" Diameter

Tank # 82 SAMPLE 1-10' From North Wall 11' From Building

SAMPLE 2-10' From North Wall 19' From Building

Tank # 83 SAMPLE 1-15' From North Wall 11' From Building

SAMPLE 2-15' From North Wall 19' From Building

FIGURE 2 - SITE MAP & SAMPLING LOCATIONS Tanks 81, 82 83

CONCRETE WALL

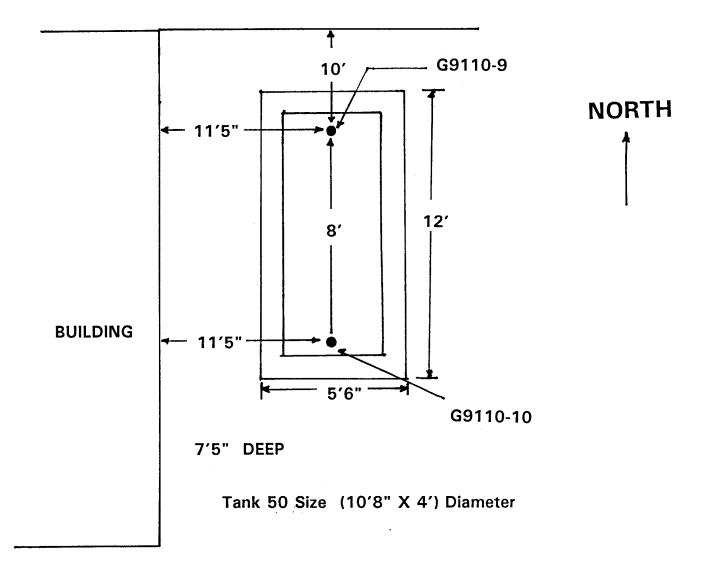


FIGURE 3 - SITE MAP & SAMPLING LOCATION

TANK 50

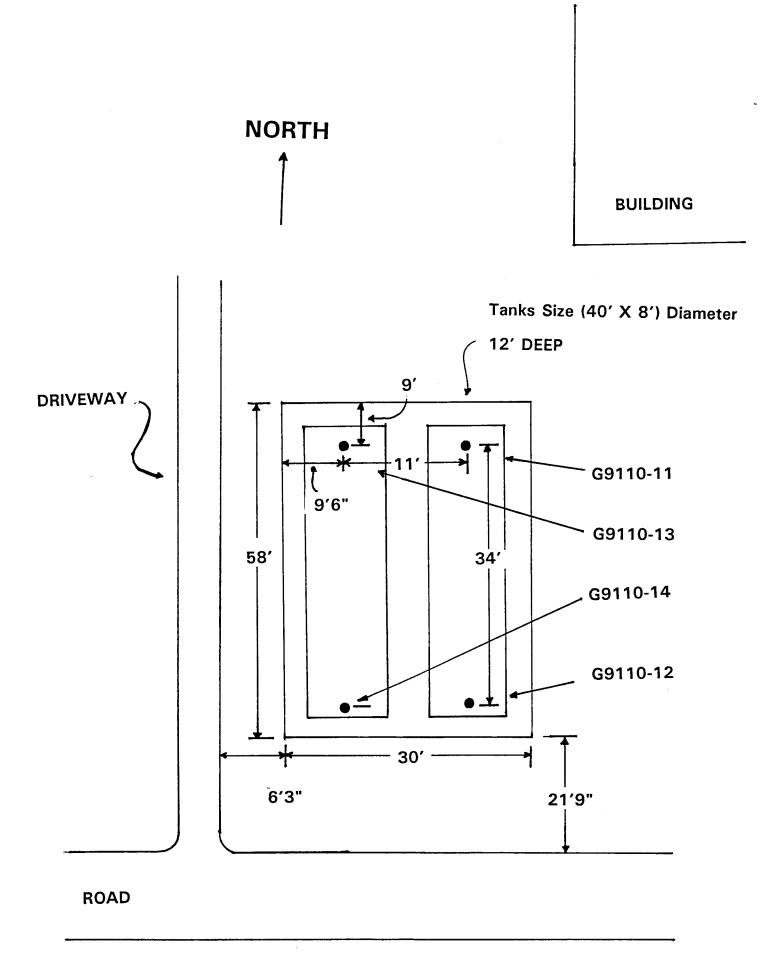


FIGURE 4 - SITE MAP & SAMPLING LOCATIONS

TANKS 20 & 21

NORTH -----→

TANK SIZE (21' X 10'8") DIAMETER

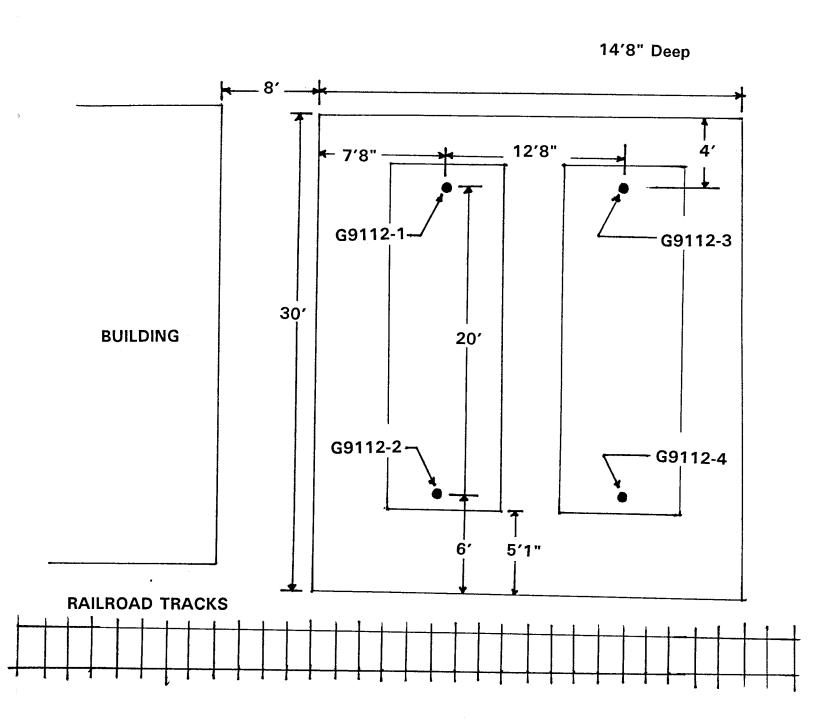


FIGURE 5 - SITE MAP & SAMPLING LOCATIONS
TANKS 57 & 58

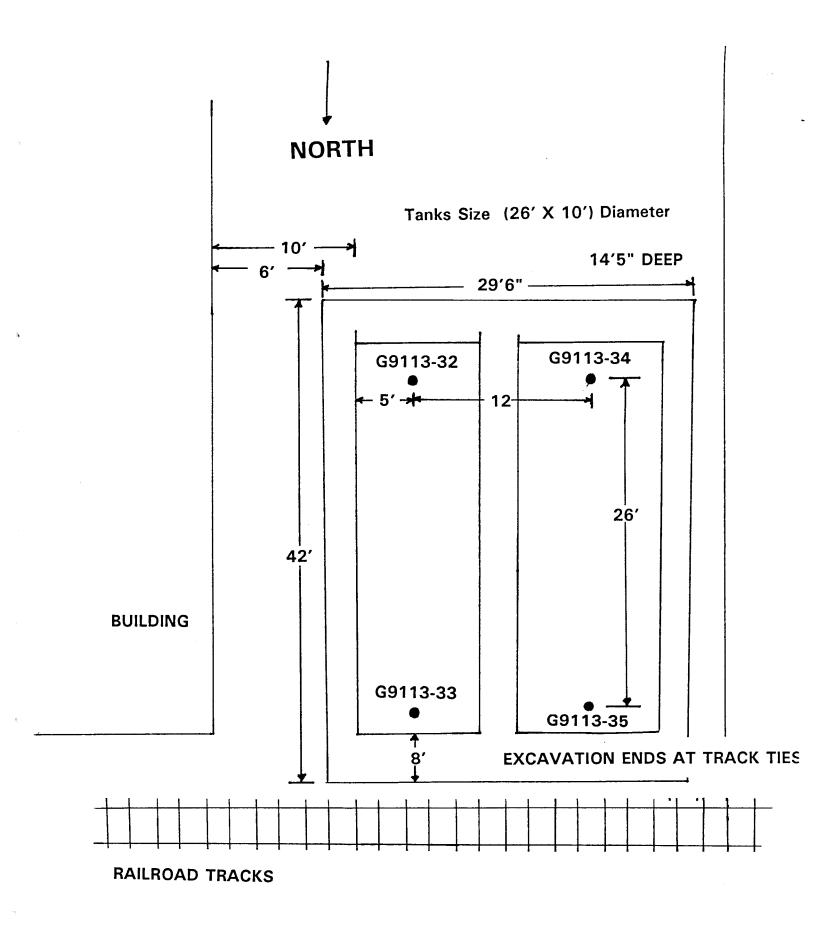
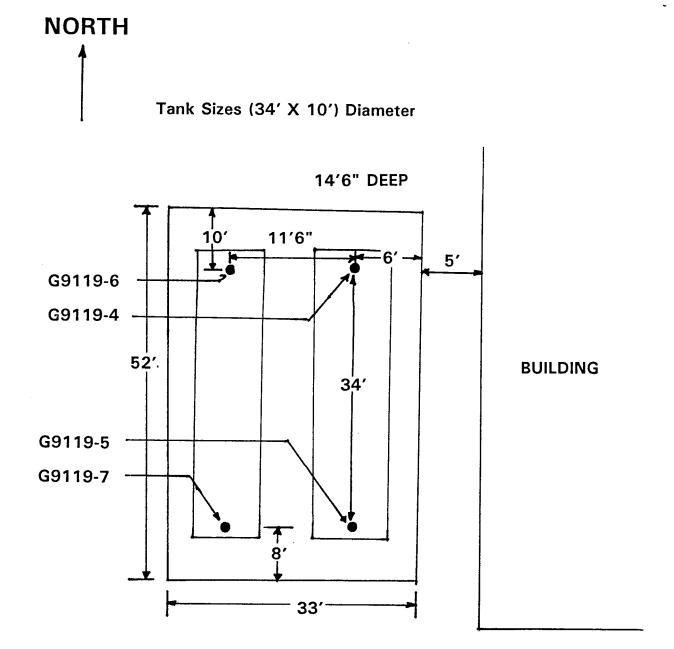


FIGURE 6 - SITE MAP & SAMPLING LOCATIONS
TANKS 63 & 64



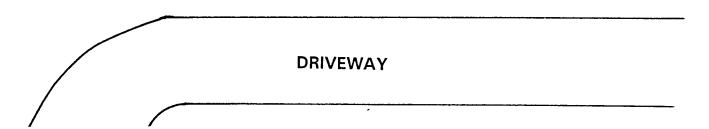
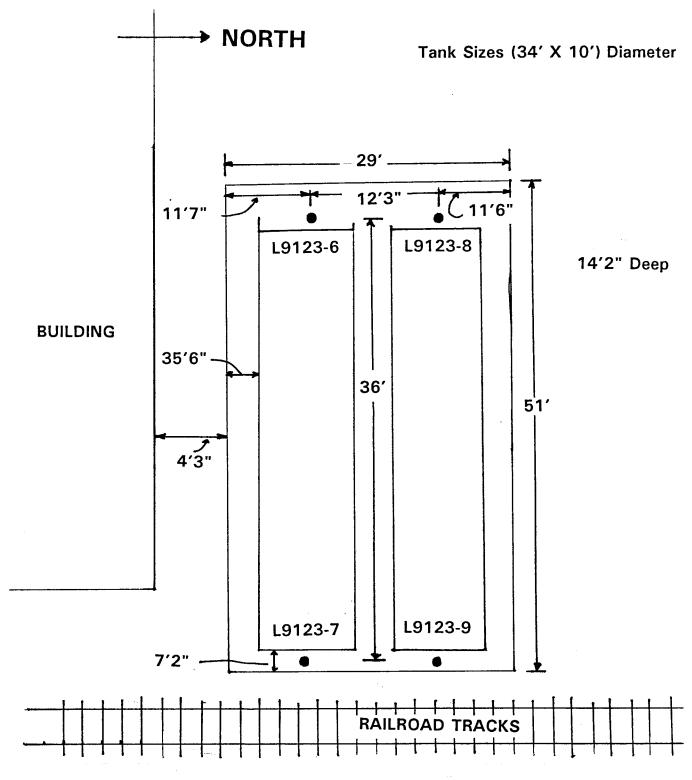


FIGURE 7 - SITE MAP & SAMPLING LOCATIONS
TANKS 59 & 60



EXCAVATION EXTENDS TO RAILROAD TRACKS

FIGURE 8 - SITE MAP & SAMPLING LOCATIONS

TANKS 55 & 56

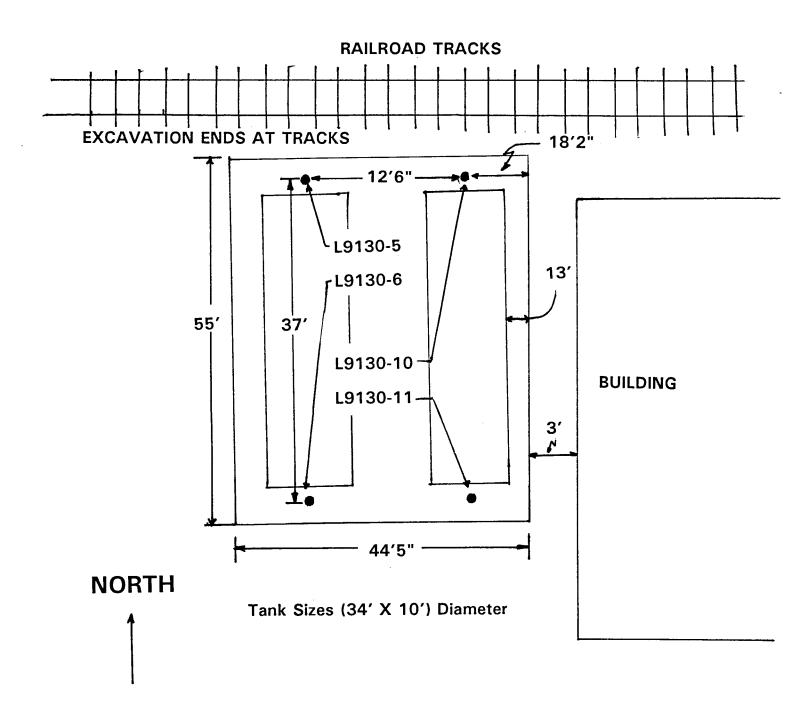


FIGURE 9 - SITE MAP & SAMPLING LOCATIONS
TANKS 61 & 62

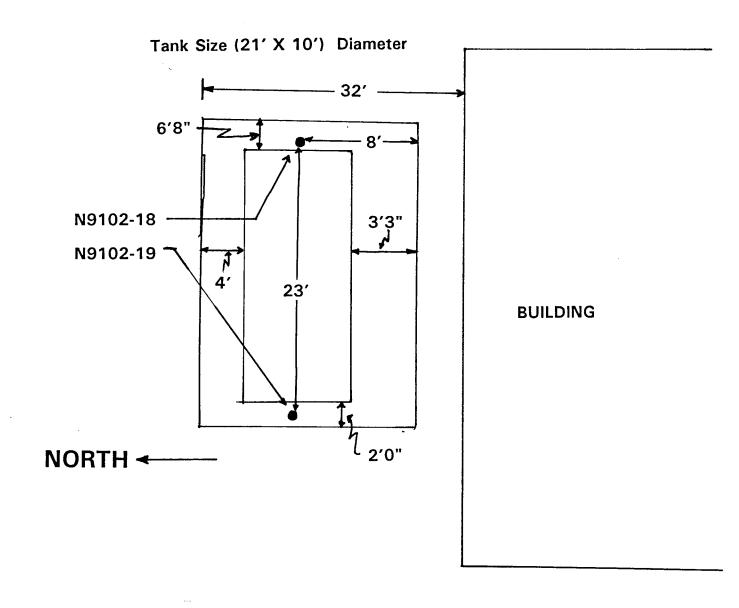


FIGURE 10 - SITE MAP & SAMPLING LOCATION

TANK 80

5.0 CONCLUSIONS

- All soils tested have Total Chromium (Cr) levels below the Regulatory Action Level (Farm Soils) of 20 ppm.
- All soils tested have Total Lead (Pb) levels below the Regulatory Action Level (farm soils) of 29 ppm.
- The Following soils samples had TPH values above 40 ppm, but below 105 ppm.

Tank # 80, Sample 1 - 42 ppm

Background Sample, Section B - 50 ppm

All soil samples had BTEX values under 2 ppb.

APPENDIX A CHAIN OF CUSTODY FORMS

CHAIN OF CUSTODY RECORD

TOWER .	CONTACT DI M. I.
Nozzle New Inc	Phone NUMBER
DDRESS DILL DI	248-5552
STATE, ZIP	TITLE Vicer President
Solon OH 49137	W (CONTRED WY
SAMPLE I.D.	listlack a No 73 k IVen
LOCATION/GENERATOR	DATE AND TIME 6/4/91 z:00 P.M.
Kounna Hrysnal US/ Memour	Or Spain Barne
SAMPLE DESCRIPTION Real Solution	NUMBER OF
TYPE OF SAMPLE	NUMBER OF & CONTAINERS
COMPOSITE GRAD AIR OTHER	
FIELD C	CUSTODY
/ SIGNATURE	SIGNATURE DATE TIME
RELINQUISHED BY () / ().M	RECEIVED BY 1.00
pain and	RECEIVED BY DATE TIME
RELINQUISHED BY	
	ANALYSIS REQUIRED
FIELD I.D. EOI I.D.	
1. Tank- 81 41	TPH, BTEX, To 1.1 Pl., Total Cr
	.
2 AZ	
3. Tank 82 #1	
4. · H2	
5. Tal 83 #/	
6.	
7. Product Line Island	
8. Spoil Pile Tak # 8187, 83	Flori Point TPH, BTEX TELP Mahle
•	
9	
10.	

CHAIN OF CUSTODY RECORD

	CONTACT
CUSTOMER Nozzle New Inc	Phil Marek
ADDRESS DILL D	PHONE NUMBER 248-5552
CITY, STATE, ZIP	TITLE
Solon OH 44139	SAMPLED BY
SAMPLE I.D.	0 1/0 77 k 1 Vew
Ta-ks 81,83 83 LOCATION/GENERATOR	DATE AND TIME
Kauna Hrsenal UST Tremovar	of sampling 6/9/9/ 2:00 (P.M.)
SAMPLE DESCRIPTION Box Sol	NUMBER OF ©
TYPE OF SAMPLE	NUMBER OF CONTAINERS
COMPOSITE GRAB AIR OTHER	
FIELD (CUSTODY
/ SIGNATURE	SIGNATURE DATE TIME
RELINQUISHED BY () / () M	RECEIVED BY 1 6/5/91 9:00
free men	RECEIVED BY DATE TIME
RELINQUISHED BY	
FIELD I.D. EOI I.D.	ANALYSIS REQUIRED
1. Tank- 81 41	TPH, BTEX, Total Ph Total Cr
1. Tank- 81 41	
2. 111 HZ	-:-
3. Tank 82 #1	
•	
4. HZ	
5. Tal 83 4/	
6. #2	
7. Product Line Island	
8. Spoil Pile Tak # 8182 83	Flash Point TPH, BTEX TCLA Matale
0. 3 post 11/2 lak - 5,5	•
9.	

CHAIN OF CUSTODY RECORD

CUSTOMER	CONTACT
Nozzle New	Vince or Phil Marek
ADDRESS	PHONE NUMBER
34412 Pettibone Rd.	216-248-5552
CITY, STATE, ZIP	TITLE
So10~ OH 44139	VICE PRESIDENT
SAMPLE I.D.	SAMPLED BY
See Below LOCATION/GENERATOR	Philip MAREIC
	DATE AND TIME OF SAMPLING (/5/9) 5:00 P.M.)
Rayenna Arsenal	of sampling $(5/9)$ 5:00 (e.m.)
SAMPLE DESCRIPTION	·
Brown Soils TYPE OF SAMPLE	VINCED OF
COMPOSITE GRAB AIR OTHER	NUMBER OF CONTAINERS 2
COMPOSITE GRAB AIR TOTHER	(OILE) IN COOKE CONTAINERS -
	:
FIELD	CUSTODY
11666	0031001
	SIGNATURE
RELINGUESHED BY	RECEIVED BY DATE TIME
	Lee 0 +3 616191 7 AM
RELINQUISHED BY	RECEIVED BY DATE TIME
FIELD I.D. EOI I.D.	ANALYSIS REQUIRED
1. <u>Sample #1 TANK</u> 2	TPH BIEX PBCT) AND CR(TOTAL) METHOD TYPE USEPA METHOD 7190
#	METHOD THOU WEERS METHO 7190
2	Managyte Weeky Managy in
	··
3. <u>SAMPLE</u> = 2 4. TANK #50	EAME
1. TANK #50	
4.	
5.	
5	
6.	
7.	
8.	·
9	

10.

CHAIN OF CUSTODY RECORD

CUSTOMER	CONTACT
Nozzle New	Vince or Phil Marek
ADDRESS	PHONE NUMBER
34412 Pettibone Rd.	216-248-5552
CITY, STATE, ZIP	TITLE
Solov in 44139	Vice PRESIDENT
SAMPLE I.D.	SAMPLED BY
Sor Below	Philip MAREIL
LOCATION/GENERATOR	DAME AND MIND
Ravenna Arsenal	OF SAMPLING 6/6/91 3:95 P.M.
SAMPLE DESCRIPTION	The state of the s
Brown Soils WATER	
TYPE OF SAMPLE	NUMBER OF
COMPOSITE GRAB AIR OTHER	STERED IN COELER CONTAINERS 5
	7 CONTAINERS
	•

FIELD CUSTODY

	SIGNATURE	SIGNATURE	}	
RELINQUISHED BY RELINQUISHED BY		RECEIVED BY	DATE 6 · 7 -91	TIME 8:00AM
		RECEIVED BY	DATE	TIME
FIELD I.D.	EOI I.D.	ANALYSIS REQUIRED		
1. SAND IN TANK		TBH BTEX	Sh Part	_

TOTAL FROM SOAL TOTAL TOTAL TOTAL FORMALLS Y

2. #80

TOTAL PRINTED Floring Point

4. #80

TOTAL PRINTED Floring Form Soal

TOTAL PRINTED FOR F.P.

7. PAILS #1 - Octange

8. Sample From Soal

PAILS #2-Tan

0.

CHAIN OF CUSTODY RECORD

CUSTOMER	CONTACT	4
Nozzle New	Vince or Phil M	Marek
ADDRESS	PHONE NUMBER 216-248-5552	•
34412 Pettibone Rd.	TITLE /	
CITY, STATE, ZIP	Vice Preside	ent
SO/0.1 OH 44139 SAMPLE I.D.,	SAMPLED BY	
See Berbu	VINIO WIAREK	
LOCATION/GENERATOR	DATE AND TIME) V
Rayenna Arsenal	OF SAMPLING	6791 4:45 (P.M.)
SAMPLE DESCRIPTION		, .
Brown Soils		
TYPE OF SAMPLE	6 TO COO : 11	NUMBER OF
COMPOSITE GRAB AIR OTHER	STORED IN	containers 5
	:	
·		
EIEI	D CUSTODY	•
1166		
		- A.V. MVT-13
SIGNATURE		GNATURE DATE TIME
RELINQUISHED BY	RECEIVED BY	6-10-91 7 AM
RELINQUISHED BY	RECEIVED BY	DATE TIME
KEDINQUISHED BI	LECELVED DI	
	Systycic Dr	COULDED
FIELD I.D. EOI I.D.	ANALYSIS RE	_
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3. Stuple #2 TANK		
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5. <u>Sample</u> # 1 TAML 6. # 21		·
2.7		
6. # 2 <u>1</u>		
7. Sande #2 TAIL	•	•
8. E 2.7		•
8		
or control was a series		
TAUR = 20121 ERRANTION		
10. TENT TE SO LAT ESTUNION		

7777 WALL STREET VALLEY VIEW, OHIO 44125 (216) 524-0888

CHAIN OF CUSTODY RECORD

CUSTOMER	CONTACT
Nozzle New	Vince or Phil Marek
ADDRESS	PHONE NUMBER
34412 Pettibone Rd.	216-248-5552
SOLU OL 49139	VICE PRESIDENT
SAMPLE I.D.	SAMPLED BY March
LOCATION/GENERATOR Ravenna Arsenal	DATE AND TIME 6/10/91 6:00 A.M. OF SAMPLING 6/10/91 6:00 A.M.
SAMPLE DESCRIPTION	OF SAMPLING Off II P.M.
Brown Soils	
TYPE OF SAMPLE	NUMBER OF
COMPOSITE GRAB AIR OTHER	STORED IN COOLERCONTAINERS 4
	:
FIE	LD CUSTODY
SIGNATURE	CT CNA MITTO
RELINQUISHED BY	RECEIVED BY DATE TIME
	M. Dozois Glishi 8.00x
RELINQUISHED BY	RECEIVED BY DATE TIME
FIELD I.D. EOI I.D. 1. Sample # TAUK	ANALYSIS REQUIRED TPA BTEX Total Pb & Cr.
# 57	18# pier, lotel to / CF.
2.	
3. DAUPLE F2 TANK	
457	
5. SAMPLE #1 TANK 6. #58 7. SAMPLE #2 TANK 8. #58	
6	
7. Sample #2 TANK	
8. <u>±58</u>	
9.	
.0.	

7777 WALL STREET VALLEY VIEW, OHIO 44125 (216) 524-0888

CHAIN OF CUSTODY RECORD

CUSTOMER	CONTACT Vince or Phil Marek
Nozzle New	PHONE NUMBER
ADDRESS	216-248-5552
34412 Pettibone Rd.	TITLE /
CITY, STATE, ZIP	VICE PRESIDEN
Solow OH 44139	SAMPLED BY
SAMPLE I.D.	$O(1) \sim O(1) \sim O(1)$
2 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	DATE AND TIME (/ (:2)
LOCATION/GENERATOR	OF SAMPLING 6/12/91 9 50 (P.MI
Pavenna Arsenal	
SAMPLE DESCRIPTION	
Brown Soils	NUMBER OF
TYPE OF SAMPLE	OTHER STORED IN COOLER CONTAINERS
COMPOSITE GRAB AIR	OTHER STORED IN COURSE CONTAINED

FIELD CUSTODY

	SIGNATURE	SIGNATURE	3	TIME
RELÎNQUIŞHED BY	RECEIVED	BY 3	DATE 6-13-91	3:30Ar
RELINQUISHED BY	RECEIVED	BY	DATE	TIME

FIELD I.D.	EOI I.D.	٠	ANALYSIS REQUIRED THE BOOK COOK PROOF
1. (SAupk # 1			7 P/7 S/CA CIGI 13(1)
2. { TAUK # 6	3	<u></u>	
3. { Sample #2			
1. TANK # 6	3		
5. 4 Sauple #1			
6. TANK # 6"	9		
7. \$ 5 Auplo # 2			
8. TA-K # 69			V
9.			
10.			

CHAIN OF CUSTODY RECORD

CUSTOMER	
Nozzle New	CONTACT
ADDRESS	Vince or Phil Marek
34412 Pettibone Rd.	PHONE NUMBER 216-248-5552
CITY, STATE, ZIP	TITLE
Solon OH 49179	 ,
SAMPLE I.D.	SAMPLED, BY V
·	Mhilip MARE!
LOCATION/GENERATOR	DATE AND TIME
Ravenna Arsenal	OF SAMPLING 6/14/9) 3:30 (P.M.)
SAMPLE DESCRIPTION	
Brown Soils	
TYPE OF SAMPLE	NUMBER OF
COMPOSITE GRAB AIR OTHER	STORED IN COOLERCONTAINERS
:	1
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F	FIELD CUSTODY
SIGNATURE	
RELINOUTSHED BY	SIGNATURE
D-WV//and	RECEIVED BY DATE TIME
RELINQUISHED BY	RECEIVED BY DATE TIME
	RECEIVED BY DATE TIME
DINIA	
FIELD I.D. EOI I.D	ANALYSIS REQUIRED
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- IN IN IN	TPH BIEX TE.P. TC.LP (METALEUCI'S
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2	2'\
3	•••
4	
5	•
6.	•
7.	
/ •	•
8.	
	•
9.	

CHAIN OF CUSTODY RECORD

CUSTOMER	CONTACT
Nozzle New	Vince or Phil Marek
ADDRESS 34412 Pettibone Rd.	PHONE NUMBER 216-248-5552
CITY, STATE, ZIP	TITLE
SAMPLE I.D.	SAMPLED BY The high Arch
LOCATION/GENERATOR	DATE AND THE
Rayenna Arsenal SAMPLE DESCRIPTION	OF SAMPLING GIN 91 9:00 P.M.
Brown Soils TYPE OF SAMPLE	
COMPOSITE GRAB AIR OTHER	STORES IN COOKER CONTAINERS

FIELD CUSTODY

RELINQUISHED BY//	SIGNATURE				
* hull March	RECEIVED BY	DATE 6-18-91	TIME		
RELINQUISHED BY	RECEIVED BY	DATE	TIME		
FIELD I.D. EOI I.D.	ANALYSIS REQUIRED	,			
1. Saplo #1	TPH BTEX PB(T),	(7190) (2 (7)			
2. TANK # 59					
3. SARL# 2 7Ark#59					
1. TANK # 60					
3. SA PLE # 59 5. TANK # 60 5. TANK # 60 5. TANK # 60	V	 			
6. L-ROUND WATER Sapla	Tour.		 .		
7. 3 - CONTAINER	- Paris Marce voice				
8. TANKS #59860	con in regid.				
9	Anity dis His AFTER-				
10.	NECN. TEE -				

CHAIN OF CUSTODY RECORD

CUSTOMER	CONTACT
Nozzle New	
ADDRESS	Vince or Phil Marek
34412 Pettibone Rd.	PHONE NUMBER 216-248-5552
CITY, STATE, ZIP	TITLE
<u>Dolon</u> Ohio 99139	VICE PRESIDENT
SAMPLE I.D.	SAMPLED BY
	Thilip MARGEL
LOCATION/GENERATOR	DATE AND TIME
Ravenna Arsenal	OF SAMPLING 10/17/9) 4:00 A.M.
SAMPLE DESCRIPTION	SAMPLING TOLL TO SOME M.
Brown Soils	•
TYPE OF SAMPLE	
	NUMBER OF
THE COLLECT	STOREN IN COULER CONTAINERS
	:
:	·

FIELD CUSTODY

DEL TROST CUES	GNATURE		STG	NATURE		
RELINOUISHED BY		RECEIVED	BY .	I	DATE	TIME
RELINQUISHED BY		RECEIVED	ВУ		/9-9/ ATE	TIME
FIELD I.D.	EOI I.D.	Ana	LYSIS REO	JIRED		
1. SAMPLE # 1 TANK# 35		···				
1. TANY # 55						
5. SAMPLE #1 6. TANK # 56					÷	
7. <u>Sample # 2</u> 8. TANK #56			•			
)						

ENVIRONMENT ONE, INC. 7777 WALL STREET VALLEY VIEW, OHIO 44125 (216) 524-0888

CHAIN OF CUSTODY RECORD

CONTACT

CUSTOMER

Nozzle New ADDRESS

		Vince or Phil	Marek
ADDRESS		PHONE NUMBER	
34412 Pettibone Rd.		216-248-5552	• •
CITY, STATE, ZIP		TITLE	
Salow Dhis 44130	<u> </u>	1) KUT PRITT	0e~\\
SAMPLE I.D.		SAMPLED BY	,)e, (
		PhilipMAR	0011
LOCATION/GENERATOR		DATE AND TIME	
Ravenna Arsenal		OF SAMPLING	10/22/5) 2:30 A.M.
SAMPLE DESCRIPTION			10/20 1 (F.M.)
Brown Soils			
TYPE OF SAMPLE			NUMBER OF
COMPOSITE GRAB AIR	OTHER S	DREN IN COOK	CONTAINERS C
:			C CONTAINERS C
		:	
	•		
•	FIELD	01107071	•
	FIELD	CUSTODY	•
SIC	SNATURE	9.	IGNATURE
RELANGUASHED BY //		RECEIVED BY	DATE TIME
- WWwell		Jac Obs	- 10-22-9/ 7:00 Pm
RELINQUISHED BY		RECEIVED BY	DATE TIME
FIELD I.D.	EOI I.D.	ANALYSIS RE	COUIRED
1 SAMPly #1			
TANK HEZ			
2.		<u> </u>	
3 5. 1 42			
7. E.A.		··	
3 SAmple = 2		••	
TANK #62	·	•••	
- DAMPLE		••	
1. TANK #62			
1. TANK #62			
1. TANK #62 5.			
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1. TANK #62 5			
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1. TANK #62 5. 6. 7. 8.		•	
1. TANK #62 5. 6. 7		•	

ENVIRONMENT ONE, INC. 7777 WALL STREET VALLEY VIEW, OHIO 44125 (216) 524-0888

CHAIN OF CUSTODY RECORD

CUSTOMER	
Nozzle New	CONTACT
ADDRESS	Vince or Phil Marek
34412 Pettibone Rd.	PHONE NUMBER
CITY, STATE, ZIP	216-248-5552
2010 OH 04120	TITLE
SAMPLE I.D.	CAMPLED DIE (RESIDENT
LOCAMANA	SMIPLED BY
LOCATION/GENERATOR	DATE AND TIME
Ravenna Arsenal	
SAMPLE DESCRIPTION Brown Soils : WATER	OF SAMPLING (0/23/9/ 2:00 P.M.
TYPE OF SAMPLE	
COMPOSITE CDAR	NUMBER OF
COMPOSITE GRAB AIR (OTHER)	STOREO IN COOLER CONTAINERS
	CONTAINERS
•	\cdot

FIELD CUSTODY

SIGNATURE

BUNDUISHED BY		PECELUED PHE SIGNATURE
RELINQUISHED BY		RECEIVED BY DATE TIME RECEIVED BY DATE TIME RECEIVED BY DATE TIME M. D. Source 10 /24/11 9:2001
FIELD I.D. 1. Saple # 4 7 ANK # 61 1. Saple # 2 1. TANK # 61	EOI I.D.	ANALYSIS REQUIRED TPH, BTEX, POCT, Crct) TPH, BTEX POCT (CCT)
EXAVATION TANK		-TPH FIPT

7777 WALL STREET VALLEY VIEW, OHIO 44125 (216) 524-0888

CHAIN OF CUSTODY RECORD

CHEMONER	CONTACT
CUSTOMER	Vince or Phil Marek
Nozzle New	PHONE NUMBER
ADDRESS	216-248-5552
34412 Pettibone Rd.	
CITY, STATE, ZIP	TITLE
Salar 0140 99139	DAL BERRIDEN
SAMPLE I.D.	SAMPLED BY
LOCATION/GENERATOR	DATE AND TIME 11/5/91 A.M.
Ravenna Arsenal	of sampling 1:35 (P.M.
SAMPLE DESCRIPTION	
Brown Soils	
TYPE OF SAMPLE	NUMBER OF
COMPOSITE GRAB AIR OTHER	STORED IN CERTEC CONTAINERS
	<u>.</u>

FIELD CUSTODY

	SIGNATURE		SIGNATU	RE	
RELINQUISHED BY		WED BY	0B-	DATE - /1-19-91	Time 8:00 AM
RELINQUISHED BY	RECEI	YED BY		DATE	TIME

	FIELD I.D.	EOI I.D.	•	ANALYSIS REQUIRED	
1.	Sample # 1. TANK #80				
2.	TANK # 80		···		
3.	Secolo = 2		•••		
4.	SANK = 20				·
5.	SApple = :				
6.	TANK = 1.				
7.	SANDE = C. TANK = C. SANK # 2 TANK # 1				
8.	TANK # 1				
9.	SANGLE #1 TANK #2				
10.	TANK #2		,		

APPENDIX B RESULTS OF CHEMICAL ANALYSIS

B1 - SOIL ANALYSIS

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Client Sample I.D.: Ravenna
Arsenal
EOI Sample I.D.: <u>G9105-1-7</u>
Sampled By: <u>Client</u>
P.O.#:
Sample Description: brown soils

	CLIENT SAMPLE I.D.	EOI SAMPLE I.D.	TPH*	BENZENE (ppb)	TOLUENE (ppb)	ETHYLBENZENE (ppb)	XYLENE (ppb)	Pb(T) (ppm)	Cr(T)
•	Tank 81 #1	G9105-1	<10	<2	<2	<2	<2	5.40	6.67
	Tank 81 #2	G9105-2	10	<2	<2	<2 .	<2	4.92	6.83
•	Tank 82 #1	G9105-3	25	<2	<2	<2	<2	4.37	6.57
•	Fank 82 #2	G9105-4	12	<2	<2	<2	<2	4.56	6.95
,	Fank 83 #1	G9105-5	10	<2	<2	<2	<2	4.77	7.04
•	Fank 83 #2	G9105-6	15	<2	<2	<2	<2	5:33	7.25
	Product Line Island	G9105-7	15	<2	<2	<2	<2	6.33	11.00

Lead Practical Quantitation Limit - 0.02 mg/l Recovery of Lead Standard - 89 %

Chromium Practical Quantitation Limit - 0.02 mg/l Recovery of Chromium Standard - 97 %

Nozzle New, Inc. G9105-1-7 page 2

BTEX	Surrogate	Recovery:	(G9105-1)	-	62	%	(G9105-5)	-	81	%
	•	-	(G9105-2)	-	84	%	(G9105-6)	-	72	%
			(G9105-3)	-	114	%	(G9105-7)	-	75	%
			(G9105-4)	-	81	%				

* Total Petroleum Hydrocarbons - Method 418.1: EPA 600\4-79-020 Method 9071: EPA SW-846

Benzene, Toluene, Ethylbenzene, Xylene - Method 8020: EPA SW-846

honald A. Landona Ronald A. Baraona LABORATORY MANAGER

RAB/tlg

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 6/10/91	Client Sample I.D.: _	Ravenna
Date Reported: 6/14/91		Arsenal
	EOI Sample I.D.:	9110-9-14
	Sampled By:Client	
Nozzle New, Inc.	P.O.#: <u>vb. VM/JO</u>	
34412 Pettibone Road	Sample Description: _	brown soils
Solon, Ohio 44139		
Attn: Mr. Vince Marek		
		· · · · · · · · · · · · · · · · · · ·

CLIENT SAMPLE I.D.	EOI SAMPLE I.D.	TPH*	BENZENE (ppb)	TOLUENE (ppb)	ETHYLBENZENE (ppb)	XYLENE (ppb)	Pb(T) (ppm)	Cr(T) (ppm)
Sample 1 Tank #50	G9110-9	18	<2	<2	<2	<2	3.85	3.90
Sample 2 Tank #50	G9110-10	12	<2	<2	<2	<2	4.43	3.37
Sample 1 Tank #20	G9110-11	10	<2	<2	<2	<2	9.76	15.7
Sample 2 Tank #20	G9110-12	12	<2	<2	<2	<2	10.1	15.4
Sample 1 Tank #21	G9110-13	10	<2	<2	<2	<2	8.64	14.6
Sample 2 Tank #21	G9110-14	<10	<2	<2	<2	<2	9.34	16.5

Lead Practical Quantitation Limit - 0.01 mg/l Recovery of Lead Standard - 97 %

Chromium Practical Quantitation Limit - 0.01 mg/l Recovery of Chromium Standard - 88 %

ew, Inc.

BTEX Surrogate Recovery: (G9110-9) - 86 % (G9110-12) - 70 % (G9110-10) - 52 % (G9110-13) - 80 % (G9110-11) - 93 % (G9110-14) - 81 %

* Total Petroleum Hydrocarbons - Method 418.1: EPA 600\4-79-020 Method 9071: EPA SW-846

Benzene, Toluene, Ethylbenzene, Xylene - Method 8020: EPA SW-846

Konald A. Danaona Ronald A. Baraona LABORATORY MANAGER

RAB/tlg

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 6/12/91	Client Sample I.D.: Ravenna
Date Reported: 6/17/91	Arsenal
	EOI Sample I.D.: <u>G9112-1-4</u>
	Sampled By:Client_
Nozzle New, Inc.	P.O.#:
34412 Pettibone Road	Sample Description:brown soils
Solon, Ohio 44139	
Attn: Mr. Vince Marek	
CLIENT FOT	

CLIENT SAMPLE I.D.	EOI SAMPLE I.D.	TPH*	BENZENE (ppb)	TOLUENE (ppb)	ETHYLBENZENE (ppb)	XYLENE	Pb(T) (ppm)	Cr(T) (ppm)
Sample 1 Tank #57		15	<2	<2	<2	<2	7.05	12.2
Sample 2 Tank #57	G9112-2	15	<2	<2	<2	<2	7.58	14.1
Sample 1 Tank #58	G9112-3	15	<2	<2	<2	<2	15.8	10.6
Sample 2 Tank #58	G9112-4	13	<2	<2	<2	<2	6.63	13.2

Lead Practical Quantitation Limit - 0.02 mg/l Recovery of Lead Standard - 85 %

Chromium Practical Quantitation Limit - 0.02 mg/l Recovery of Chromium Standard - 83 %

zle New, Inc. 112-1-4 page 2

BTEX Surrogate Recovery: (G9112-1) - 60 % (G9112-2) - 60 % (G9112-3) - 60 % (G9112-4) - 65 %

* Total Petroleum Hydrocarbons - Method 418.1: EPA 600\4-79-020 Method 9071: EPA SW-846

Benzene, Toluene, Ethylbenzene, Xylene - Method 8020: EPA SW-846

Noncoll H. Domoore Ronald A. Baraona LABORATORY MANAGER

RAB/tlg

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: _	6/13/91	Client Sample I.D.:	Ravenna			
Date Reported:	6/26/91		Arsenal			
		EOI Sample I.D.:	G9113-32-35			
		Sampled By: Client				
Nozzle New, Ir	nc.	P.O.#:				
34412 Pettibor	ne Road	Sample Description: <u>brown soils</u>				
Solon, Ohio	14139					
Attn: Mr. Vir	nce Marek	<u> </u>				

CLIENT SAMPLE I.D.	EOI SAMPLE I.D.	TPH* (ppm)	BENZENE (ppb)	TOLUENE (ppb)	ETHYLBENZENE (ppb)	XYLENE (ppb)	Pb(T) (ppm)	Cr(T) (ppm)
Sample 1 Tank #63	G9113-32	10	<2	<2	<2	<2	8.24	6.60
Sample 2 Tank #63	G9113-33	12	<2	<2	<2	<2	7.85	6.75
Sample 1 Tank #64	G9113-34	10	<2	<2	<2	<2	6.90	6.48
Sample 2 Tank #64	G9113-35	12	<2	<2	<2	<2	6.18	6.10

Lead Practical Quantitation Limit - 0.02 mg/l Recovery of Lead Standard - 97 %

Chromium Practical Quantitation Limit - 0.02 mg/l Recovery of Chromium Standard - 93 %

e New, Inc. 3-32-35 ge 2

BTEX Surrogate Recovery: (G9113-32) - 82 % (G9113-33) - 92 % (G9113-34) - 83 % (G9113-35) - 60 %

* Total Petroleum Hydrocarbons - Method 418.1: EPA 600\4-79-020 Method 9071: EPA SW-846

Benzene, Toluene, Ethylbenzene, Xylene - Method 8020: EPA SW-846

Konald A. Baraona Ronald A. Baraona LABORATORY MANAGER

RAB/tlg

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 6/19/91	Client Sample I.D.: Ravenna		
Date Reported: 7/01/91	Arsenal		
	EOI Sample I.D.: G9119-4-7		
	Sampled By: Client		
Nozzle New, Inc.	P.O.#: <u>vb. VM/JO</u>		
34412 Pettibone Road	Sample Description:brown soils		
Solon, Ohio 44139			
Attn: Mr. Vince Marek			

SA	ENT MPLE .D.	EOI SAMPLE I.D.	TPH* (ppm)	BENZENE (ppb)	TOLUENE (ppb)	ETHYLBENZENE (ppb)	XYLENE (ppb)	Pb(T) (ppm)	Cr(T) (ppm)
_	ple 1 k #59	G9119-4	<10	<2	<2	<2	<2	10.5	6.23
_	ole 2 c #59	G9119-5	<10	<2	<2	<2	<2	11.6	6.13
_	ole 1 c #60	G9119-6	<10	<2	<2	<2	<2	10.5	6.15
	ole 2 c #60	G9119-7	<10	<2	<2	<2	<2	12.1	6.69

Lead Practical Quantitation Limit - 0.02 mg/l Recovery of Lead Standard - 103 %

Chromium Practical Quantitation Limit - 0.02 mg/l Recovery of Chromium Standard - 107 %

Nozzle New, Inc. G9119-4-7
Page 2

BTEX Surrogate Recovery: (G9119-4) - 72 % (G9119-5) - 71 % (G9119-6) - 65 % (G9119-7) - 118 %

* Total Petroleum Hydrocarbons - Method 418.1: EPA 600\4-79-020 Method 9071: EPA SW-846

Benzene, Toluene, Ethylbenzene, Xylene - Method 8020: EPA SW-846

Conald A. DMUONA Ronald A. Baraona LABORATORY MANAGER

RAB/tlg

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 10/23/91	Client Sample I.D.: Ravenna		
Date Reported:10/28/91	Arsenal		
	EOI Sample I.D.: <u>L9123-6-11</u>		
	Sampled By: Client		
Nozzle New, Inc.	P.O.#:		
34412 Pettibone Road	Sample Description: brown & gra		
Solon, Ohio 44139	soils		
Attn: Mr. Vince Marek			

CLIENT SAMPLE I.D.	EOI SAMPLE I.D.	TPH* (ppm)	BENZENE (ppb)	TOLUENE (ppb)	ETHYLBENZENE (ppb)	XYLENE (ppb)	Pb(T) (ppm)	Cr(T)
Sample 1 Tank #55	L9123-6	13	<2	<2	<2	<2	10.3	1.71
Sample 2 Tank #55	L9123-7	10	<2	<2	<2	<2	10.1	2.07
Sample 1 Tank #56	L9123-8	10	<2	<2	<2	<2	11.7	1.95
Sample 2 Tank #56	L9123-9	14	<2	<2	<2	<2	11.7	1.94
Sample 1 Tank #62	L9123-10	13	<2	<2	<2	<2	10.6	3.35
Sample 2 Tank #62	L9123-11	<10	<2	<2	<2	<2	12.5	3.96

Lead Practical Quantitation Limit - 0.02 mg/l Recovery of Lead Standard - 103 %

Chromium Practical Quantitation Limit - 0.02 mg/l Recovery of Chromium Standard - 99 %

, Inc.

BTEX Surrogate Recovery: (L9123-6) - 106 % (L9123-9) - 135 % (L9123-7) - 114 % (L9123-10) - 79 % (L9123-8) - 135 % (L9123-11) - 76 %

* Total Petroleum Hydrocarbons - Method 418.1: EPA 600\4-79-020 Method 9071: EPA SW-846

Benzene, Toluene, Ethylbenzene, Xylene - Method 8020: EPA SW-846

Morald A. Baraona Ronald A. Baraona LABORATORY MANAGER

RAB/tlg

7777 Wall Street Valley View; Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Rece		10/30	/91		Client Sample	I.D.:	Rav	enna
Date Repo	orted:	11/08	/91					enal
					EOI Sample I.D	.:		
¥7	•				Sampled By: _			
	New, Inc				P.O.#:vb.	VM/JO		
	Pettibone				Sample Descrip	tion:	brown	soils
	Ohio 44							
Actn;	Mr. Vinc	e Marek	S					
CLIENT	EOI							
SAMPLE I.D.	SAMPLE I.D.	TPH* (ppm)	BENZENE (ppb)	TOLUENI (ppb)	E ETHYLBENZENE (ppb)	XYLENE (ppb)	Pb(T) (ppm)	Cr(T) (ppm)
Sample 1 Tank #61	L9130-5	14	<2	<2	<2	<2	9.04	2.27
Sample 2 Tank #61	L9130-6	<10	<2	<2	<2	<2	9.63	2.09

Lead Practical Quantitation Limit - 0.02 mg/l Recovery of Lead Standard - 101 %

Chromium Practical Quantitation Limit - 0.02 mg/l Recovery of Chromium Standard - 100 %

BTEX Surrogate Recovery: (L9130-5) - 65 % (L9130-6) - 65 %

* Total Petroleum Hydrocarbons - Method 418.1: EPA 600\4-79-020 Method 9071: EPA SW-846

Benzene, Toluene, Ethylbenzene, Xylene - Method 8020: EPA SW-846

Ronald A. Baraona LABORATORY MANAGER

*RAB/tlg

The foregoing is limited to findings based upon material received for analysis and/or information furnished by client. Samples received will be disposed of after 30 days.

B2 - TANK OIL CONTENTS

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 4/04/91	Client Sample I.D.: Tank # 55-56
Date Reported: 4/11/91	Ravenna Arsenal
	EOI Sample I.D.: D9104-13
	Sampled By: <u>Client</u>
Nozzle New, Inc.	P.O.#: vb. VM/TD
34412 Pettibone Road	Sample Description: black liquid
Solon, Ohio 44139	
Attn: Mr. Vince Marek	

BTU

16,670 BTU/lb

Halogens as Chlorine 970 ppm

Flash Point (PMCC) >200 F

PCB's

1.4 ppm (Aroclor 1232)
<1.0 ppm each other*</pre>

* Aroclor 1242, 1248, 1252, 1260, 1262

Sulfur

0.45 %

Water, Karl Fischer

70 ppm

Ronald A. Baraona LABORATORY MANAGER

RAB/tlg

The foregoing is limited to findings based upon material received for analysis and/or information furnished by client. Samples received will be disposed of after 30 days.

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 4/04/91	Client Sample I.D.: Tank # 57-58
Date Reported: 4/11/91	Ravenna Arsenal
	EOI Sample I.D.: D9104-14
	Sampled By: Client
Nozzle New, Inc.	P.O.#: vb. VM/TD
34412 Pettibone Road	Sample Description: <u>black liquid</u>
Solon, Ohio 44139	
Attn: Mr. Vince Marek	

BTU

19,100 BTU/lb

Halogens as Chlorine

410 ppm

Flash Point (PMCC)

>200 F

PCB's

<1 ppm each*

* Aroclor 1232, 1242, 1248, 1252, 1260, 1262

Sulfur

0.55 %

Water, Karl Fischer

<10 ppm

LABORATORY MANAGER

RAB/tlg

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 4/04/91	Client Sample I.D.: Tank # 59-60
Date Reported: 4/11/91	Ravenna Arsenal
	EOI Sample I.D.: D9104-15
	Sampled By: <u>Client</u>
Nozzle New, Inc.	P.O.#: <u>vb. VM/TD</u>
34412 Pettibone Road	Sample Description: <u>black liquid</u>
Solon, Ohio 44139	
Attn: Mr. Vince Marek	

BTU

16,230 BTU/lb

Halogens as Chlorine

265 ppm

Flash Point (PMCC)

>200 F

PCB's

2.2 ppm (Aroclor 1232)
<1.0 ppm each other*</pre>

* Aroclor 1242, 1248, 1252, 1260, 1262

Sulfur

0.50 %

Water, Karl Fischer

<10 ppm

Ronald A. Baraona LABORATORY MANAGER

RAB/tlg

The foregoing is limited to findings based upon material received for analysis and/or information furnished by client. Samples received will be disposed of after 30 days.

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 4/04/91	Client Sample I.D.: Tank # 61-62
Date Reported: 4/11/91	Ravenna Arsenal
	EOI Sample I.D.: D9104-16
	Sampled By: <u>Client</u>
Nozzle New, Inc.	P.O.#:
34412 Pettibone Road	Sample Description: black liquid
Solon, Ohio 44139	
Attn: Mr. Vince Marek	

BTU

19,050 BTU/lb

Halogens as Chlorine

365 ppm

Flash Point (PMCC)

>200 F

PCB's

<1 ppm each*

* Aroclor 1232, 1242, 1248, 1252, 1260, 1262

Sulfur

0.41 %

Water, Karl Fischer

<10 ppm

Ronald A. Baraona LABORATORY MANAGER

RAB/tlg

The foregoing is limited to findings based upon material received for analysis and/or information furnished by client. Samples received will be disposed of after 30 days.

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 4/04/91	Client Sample I.D.: Tank # 63-64
Date Reported: 4/11/91	Ravenna Arsenal
	EOI Sample I.D.: D9104-17
	Sampled By: <u>Client</u>
Nozzle New, Inc.	P.O.#:
34412 Pettibone Road	Sample Description: <u>black liquid</u>
Solon, Ohio 44139	
Attn: Mr. Vince Marek	

BTU

16,000 BTU/lb

Halogens as Chlorine

240 ppm

Flash Point (PMCC)

>200 F

PCB's

1.1 ppm (Aroclor 1232) <1.0 ppm each other*

* Aroclor 1242, 1248, 1252, 1260, 1262

Sulfur

0.40 %

Water, Karl Fischer

60 ppm

Ronald A. Baraona LABORATORY MANAGER

RAB/tlg

The foregoing is limited to findings based upon material received for analysis and/or information furnished by client. Samples received will be disposed of after 30 days.

B3 - TANK WATER CONTENTS

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Client Sample I.D.: Ravenna		
Arsenal		
EOI Sample I.D.: <u>D9104-18-20</u>		
Sampled By:Client		
P.O.#: <u>vb. VM/TD</u> Sample Description: <u>clear liquids</u>		

Client Sample I.D.	EOI Sample I.D.	Flash Point (PMCC)
Tank Water 55-56,58-59,61-62	D9104-18	>200 F
Tank Water 59-60	D9104-19	>200 F
Tank Water 63-64	D9104-20	>200 F

PCB's (Composite of Above)

<1 mg/l each*

* Aroclor 1232, 1242, 1248, 1252, 1260, 1262

Ronald A. Baraona LABORATORY MANAGER

RAB/tlg

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 4/04/91

Date Reported: 4/15/91

Client Sample I.D.: Ravenna Arsenal

EOI Sample I.D.: D9104-18-20 Comp

Nozzle New, Inc. 34412 Pettibone Road Sampled By: Client
P.O.#: vb. VM/JO

Sample Description: <u>clear liquid</u>

Composite of Tank Water 55-56, 58-

Solon, Ohio 44139 Attn: Mr. Vince Marek

59, 61-62, Tank Water 59-60 &

Tank Water 63-64

	TCLP* EXTRACTION (mg/l)	REAGENT BLANK (mg/l)	STANDARD RECOVERY (%)
Arsenic	<0.01	<0.01	99
Barium	0.05	<0.01	94
Cadmium	<0.01	<0.01	97
Chromium	<0.01	<0.01	102
Lead	<0.01	<0.01	98
Mercury	<0.01	<0.01	112
Selenium	<0.01	<0.01	94
silver	<0.01	<0.01	95

^{* 40} CFR Part 261, Appendix II - Method 1311.

Ronald A. Baraona
LABORATORY MANAGER

RAB/tlg

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received:4/19/91	Client Sample I.D.: Tank Water
Date Reported: 4/25/91	Ravenna Arsena
	EOI Sample I.D.: D9119-9
	Sampled By:Client
Nozzle New, Inc.	P.O.#:
34412 Pettibone Road	Sample Description:light yellow
Solon, Ohio 44139	liguid
Attn: Mr. Vince Marek	

TCLP SEMI-VOLATILE ORGANICS

PARAMETER	RESULT* (mg/1)	PQL (mg/l)	REGULATORY LEVEL (mg/l)
Cresols	LTPQL	0.04	200.0
2,4-Dinitrotoluene	LTPQL	0.04	0.13
Hexachlorobenzene	LTPQL	0.04	0.13
Hexachlorobutadiene	LTPQL	0.04	0.5
Hexachloroethane	LTPQL	0.04	3.0
Nitrobenzene	LTPQL	0.04	2.0
Pentachlorophenol	LTPQL	3.6	100.0
Pyridine	LTPQL	0.04	5.0
2,4,5-Trichlorophenol	LTPQL	0.04	400.0
2,4,6-Trichlorophenol	LTPQL	0.04	2.0
1,4-Dichlorobenzene	LTPQL	0.04	7.5

LTPQL = Less Than Practical Quantitation Limit

Matrix Spike Recovery - 100 %

Ronald A. Baraona
LABORATORY MANAGER

RAB/tlg

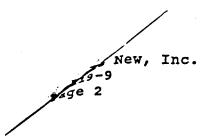
7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 4/19/91	Client Sample I.D.: Tank Water
Date Reported: 4/23/91	Ravenna Arsenal
•	EOI Sample I.D.: D9119-9
	Sampled By: Client
Nozzle New, Inc.	P.O.#:
34412 Pettibone Road	Sample Description: light yellow
Solon, Ohio 44139	liquid
Attn: Mr. Vince Marek	

TCLP VOLATILE ORGANICS

PARAMETER	RESULT (mg/l)	PQL (mg/l)	REGULATORY LEVEL (mg/1)
Benzene	LTPQL	0.002	0.5
Carbon Tetrachloride	LTPQL	0.01	0.5
Chlorobenzene	LTPQL	0.005	100.0
Chloroform	LTPQL	0.005	6.0
1,2-Dichloroethane	LTPQL	0.01	0.5
1,1-Dichloroethylene	LTPQL	0.001	0.7
Methyl Ethyl Ketone	LTPQL	0.005	200.0
Tetrachloroethylene	LTPQL	0.02	0.7
Trichloroethylene	LTPQL	0.02	0.5
Vinyl Chloride	LTPQL	0.02	0.2

LTPQL = Less Than Practical Quantitation Limit



SURROGATE RECOVERIES

PARAMETER	% RECOVERY
Volatile Organic Compounds	
Bromochloromethane	150
1-Chloro-2-Bromopropane	160
1,4-Dichlorobutane	97

tonald A. Baragna Ronald A. Baragna LABORATORY MANAGER

RAB/tlg

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 6/11/91	Client Sample I.D.: Ravenna Arsenal
Date Reported: 6/18/91	Water in Tank #80
	EOI Sample I.D.: G9111-4
	Sampled By: <u>Client</u>
Nozzle New, Inc.	P.O.#:
34412 Pettibone Road	Sample Description: <u>clear liquid</u>
Solon, Ohio 44139	
Attn: Mr. Vince Marek	

Flash Point (PMCC)

>200 F

Benzene	Toluene	Ethylbenzene	Xylene	Surrogate Recovery
250 ppb	690 ppb	66 ppb	640 ppb	52 %
Benzene,	Toluene, Ethylb	enzene, Xylene	- Method 8020	: EPA SW-846

	TCLP* EXTRACTION (mg/l)	PQL (mg/l)	STANDARD RECOVERY (%)
Arsenic	0.04	0.01	101
Barium	0.07	0.01	102
Cadmium	<0.01	0.01	102
Chromium	<0.01	0.01	99
Lead	<0.01	0.01	102
Mercury	<0.01	0.01	_
Selenium	<0.01	0.01	99
Silver	0.02	0.01	93

^{* 40} CFR Part 261, Appendix II - Method 1311.

PQL = Practical Quantitation Limit

Nozzle New, Inc. G9111-4 page 2

TCLP VOLATILE ORGANICS

PARAMETER	RESULT* (mg/1)	PQL (mg/l)	REGULATORY LEVEL (mg/1)
Benzene	LTPQL	0.01	0.5
Carbon Tetrachloride	LTPQL	0.05	0.5
Chlorobenzene	LTPQL	0.025	100.0
Chloroform	LTPQL	0.025	6.0
1,2-Dichloroethane	LTPQL	0.05	0.5
1,1-Dichloroethylene	LTPQL	0.005	0.7
Methyl Ethyl Ketone	LTPQL	0.025	200.0
Tetrachloroethylene	LTPQL	0.1	0.7
Trichloroethylene	LTPQL	0.1	0.5
Vinyl Chloride	LTPQL	0.1	0.2

LTPQL = Less Than Practical Quantitation Limit

SURROGATE RECOVERIES

PARAMETER	% RECOVERY
Volatile Organic Compounds	
Bromochloromethane	70
1-Chloro-2-Bromopropane ·	65
1,4-Dichlorobutane	75

Honald A. Baraona
LABORATORY MANAGER

RAB/tlg

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 6/19/91	Client Sample I.D.: Water in
Date Reported: 7/01/91	Tank #80, Ravenna Arsenal
	EOI Sample I.D.: G9119-3
	Sampled By: <u>Client</u>
Nozzle New, Inc.	P.O.#:
34412 Pettibone Road	Sample Description: <u>light yellow</u>
Solon, Ohio 44139	liquid/
Attn: Mr. Vince Marek	black sediment

TPH*

<1 mg/l

Flash Point (PMCC)

>200 F

Benzene	Toluene	Ethylbenzene	Xylene	Surrogate Recovery
73 ug/l	26 ug/l	24 ug/l	540 ug/l	106 %

Benzene, Toluene, Ethylbenzene, Xylene - Method 8020: EPA SW-846

^{*} Total Petroleum Hydrocarbons - Method 418.1: EPA 600/4-79-020 Method 9071: EPA SW-846

	TCLP* EXTRACTION (mg/l)	PQL (mg/l)	STANDARD RECOVERY (%)
Arsenic	0.04	0.01	104
Barium	0.06	0.01	111
Cadmium	<0.01	0.01	101
Chromium	<0.01	0.01	103
Lead	<0.01	0.01	101
Mercury	<0.01	0.01	107
Selenium	<0.01	0.01	95
Silver	<0.01	0.01	101

^{* 40} CFR Part 261, Appendix II - Method 1311.

PQL = Practical Quantitation Limit

TCLP VOLATILE ORGANICS

PARAMETER	RESULT* (mg/l)	PQL (mg/l)	REGULATORY LEVEL (mg/l)
Benzene	0.011	0.002	0.5
Carbon Tetrachloride	LTPQL	0.01	0.5
Chlorobenzene	LTPQL	0.005	100.0
Chloroform	LTPQL	0.005	6.0
1,2-Dichloroethane	LTPQL	0.01	0.5
1,1-Dichloroethylene	LTPQL	0.001	0.7
Methyl Ethyl Ketone	0.005	0.005	200.0
Tetrachloroethylene	LTPQL	0.02	0.7
Trichloroethylene	0.02	0.02	0.5
Vinyl Chloride	LTPQL	0.02	0.2

LTPQL = Less Than Practical Quantitation Limit

SURROGATE RECOVERIES

PARAMETER	% RECOVERY
Volatile Organic Compounds	
Bromochloromethane .	89
1-Chloro-2-Bromopropane	68
1,4-Dichlorobutane	61

Modeld H. DAMOW Ronald A. Baraona LABORATORY MANAGER

RAB/tlg

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 10/30/91 Date Reported: 11/08/91 Nozzle New, Inc.	Client Sample I.D.: Ravenna Arsenal Excavation Tank #61 and Tank #62 EOI Sample I.D.: L9130-7 Sampled By: Client P.O.#:		
34412 Pettibone Road Solon, Ohio 44139 Attn: Mr. Vince Marek	Sample Description: water sample yellow liquid		

Flash Point (PMCC)

>200 F

TPH*

<1 mg/1

* Total Petroleum Hydrocarbons - Method 418.1: EPA 600/4-79-020 Method 9071: EPA SW-846

honald A. Baraona LABORATORY MANAGER

RAB/tlg

The foregoing is limited to findings based upon material received for analysis and/or information furnished by client. Samples received will be disposed of after 30 days.

Analytical Services & Environment 1

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 11/11/91	Client Sample I.D.:	Gas/Water
Date Reported: 11/20/91	·	Ravenna Arsenal
	EOI Sample I.D.:	M9111-7
	Sampled By:Cli	ent
Nozzle New, Inc.	P.O.#:	0
34412 Pettibone Road	Sample Description:	light yellow
Solon, Ohio 44139	**************************************	liquid/
Attn: Mr. Phil Marek		orange sediment

BTU

did not bomb

Flash Point (PMCC)

>200 F

Halogens as Chlorine

130 ppm

pH (direct read)

7.5

B4 - TANK SLUDGE/SOLID CONTENTS

ENVIRO

ENVIRONMENT ONE, INC.

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 6/11/91	Client Sample I.D.: Ravenna Arsenal		
Date Reported: 6/18/91	Sand in Tank #80		
	EOI Sample I.D.: G9111-3		
	Sampled By: <u>Client</u>		
Nozzle New, Inc.	P.O.#:		
34412 Pettibone Road	Sample Description: brown & black		
Solon, Ohio 44139	sandy soil		
Attn: Mr. Vince Marek			

TPH*

27 ppm

Flash Point (PMCC)

>140 F

Benzene	Toluene	Ethylbenzene	Xylene	Surrogate Recovery
7 ppb	15 ppb	20 ppb	41 ppb	65 %

* Total Petroleum Hydrocarbons - Method 418.1: EPA 600/4-79-020 Method 9071: EPA SW-846

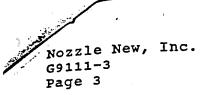
Benzene, Toluene, Ethylbenzene, Xylene - Method 8020: EPA SW-846

Nozzle New, Inc. G9111-3 Page 2

	TCLP* EXTRACTION (mg/l)	PQL (mg/l)	STANDARD RECOVERY (%)
Arsenic	0.03	0.01	101
Barium	0.23	0.01	102
Cadmium	<0.01	0.01	102
Chromium	0.03	0.01	99
Lead	0.10	0.01	102
Mercury	<0.01	0.01	-
Selenium	<0.01	0.01	99
Silver	<0.01	0.01	93

^{* 40} CFR Part 261, Appendix II - Method 1311.

PQL = Practical Quantitation Limit



TCLP VOLATILE ORGANICS

PARAMETER	RESULT* (mg/l)	PQL (mg/l)	REGULATORY LEVEL (mg/1)
Benzene	LTPQL	0.002	0.5
Carbon Tetrachloride	LTPQL	0.01	0.5
Chlorobenzene	LTPQL	0.005	100.0
Chloroform	LTPQL	0.005	6.0
1,2-Dichloroethane	LTPQL	0.01	0.5
1,1-Dichloroethylene	LTPQL	0.001	0.7
Methyl Ethyl Ketone	LTPQL	0.005	200.0
Tetrachloroethylene	LTPQL	0.02	0.7
Trichloroethylene	LTPQL	0.02	0.5
Vinyl Chloride	LTPQL	0.02	0.2

LTPQL = Less Than Practical Quantitation Limit

SURROGATE RECOVERIES

PARAMETER		<u>:</u>	% RECOVERY
Volatile Organic Compounds			
Bromochloromethane			88
1-Chloro-2-Bromopropane	•	,	60
1,4-Dichlorobutane			80

Konald # Paraona Ronald A. Baraona LABORATORY MANAGER

RAB/tlg

The foregoing is limited to findings based upon material received for analysis and/or information furnished by client. Samples received will be disposed of after 30 days.

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 6/11/91	Client Sample I.D.: Ravenna Arsena
Date Reported: 6/18/91	Sample from 5 gallon Pails #1 Orange
	EOI Sample I.D.: G9111-5
	Sampled By: Client
Nozzle New, Inc.	P.O.#:
34412 Pettibone Road	Sample Description: rust colored
Solon, Ohio 44139	semi-solid
Attn: Mr. Vince Marek	

Flash Point (PMCC)

85 F

	TCLP* EXTRACTION (mg/l)	PQL (mg/l)	STANDARD RECOVERY (%)
Arsenic	0.02	0.01	101
Barium	1.39	0.01	102
Cadmium	0.11	0.01	102
Chromium	0.01	0.01	99
Lead	3.09	0.01	102
Mercury	<0.01	0.01	-
Selenium	<0.01	0.01	99
Silver	<0.01	0.01	93

^{* 40} CFR Part 261, Appendix II - Method 1311.

PQL = Practical Quantitation Limit

Nozzle New, Inc. G9111-5 Page 2

TCLP VOLATILE ORGANICS

PARAMETER	RESULT* (mg/1)	PQL (mg/l)	REGULATORY LEVEL (mg/l)
Benzene	LTPQL	0.002	0.5
Carbon Tetrachloride	LTPQL	0.01	0.5
Chlorobenzene	LTPQL	0.005	100.0
Chloroform	LTPQL	0.005	6.0
1,2-Dichloroethane	LTPQL	0.01	0.5
1,1-Dichloroethylene	LTPQL	0.001	0.7
Methyl Ethyl Ketone	LTPQL	0.005	200.0
Tetrachloroethylene	LTPQL	0.02	0.7
Trichloroethylene	LTPQL	0.02	0.5
Vinyl Chloride	LTPQL	0.02	0.2

LTPQL = Less Than Practical Quantitation Limit

SURROGATE RECOVERIES

PARAMETER	% RECOVERY
Volatile Organic Compounds	
Bromochloromethane	89
1-Chloro-2-Bromopropane	60
1,4-Dichlorobutane	65

Ronald A. Baraona LABORATORY MANAGER

RAB/tlg

The foregoing is limited to findings based upon material received for analysis and/or information furnished by client. Samples received will be disposed of after 30 days.

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 6/11/91	Client Sample I.D.: Ravenna Arsenal
Date Reported: 6/18/91	Sample from 5 gallon Pails #2 Tan
•	EOI Sample I.D.: G9111-6
	Sampled By: Client
Nozzle New, Inc.	P.O.#:
34412 Pettibone Road	Sample Description: tan semi-solid
Solon, Ohio 44139	
Attn: Mr. Vince Marek	

Flash Point (PMCC)

65 F @ Room Temp.

·	TCLP* EXTRACTION (mg/1)	PQL (mg/l)	STANDARD RECOVERY (%)
Arsenic	<0.01	0.01	101
Barium	0.31	0.01	102
Cadmium	<0.01	0.01	102
Chromium	0.03	0.01	99
Lead	0.71	0.01	102
Mercury	<0.01	0.01	-
Selenium	<0.01	0.01	99
Silver	<0.01	0.01	93

^{* 40} CFR Part 261, Appendix II - Method 1311.

PQL = Practical Quantitation Limit

Nozzle New, Inc. G9111-6 page 2

TCLP VOLATILE ORGANICS

PARAMETER	RESULT* (mg/1)	PQL (mg/l)	REGULATORY LEVEL (mg/l)
Benzene	LTPQL	0.002	0.5
Carbon Tetrachloride	LTPQL	0.01	0.5
Chlorobenzene	LTPQL	0.005	100.0
Chloroform	LTPQL	0.005	6.0
1,2-Dichloroethane	LTPQL	0.01	0.5
1,1-Dichloroethylene	LTPQL	0.001	0.7
Methyl Ethyl Ketone	LTPQL	0.005	200.0
Tetrachloroethylene	LTPQL	0.02	0.7
Trichloroethylene	LTPQL	0.02	0.5
Vinyl Chloride	LTPQL	0.02	0.2

LTPQL = Less Than Practical Quantitation Limit

SURROGATE RECOVERIES

PARAMETER	% RECOVERY
Volatile Organic Compounds	
Bromochloromethane	73
1-Chloro-2-Bromopropane	65
1,4-Dichlorobutane	138

Monald A. Baraona
Ronald A. Baraona
LABORATORY MANAGER

RAB/tlg

The foregoing is limited to findings based upon material received for analysis and/or information furnished by client. Samples received will be disposed of after 20 days

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: <u>10/15/91</u> Date Reported: <u>10/28/91</u>	Client Sample I.D.: Ravenna Arsenal
	Solids from Gasoline UST
•	EOI Sample I.D.: L9115-5
<u>.</u>	Sampled By: <u>Client</u>
Nozzle New, Inc.	P.O.#:
34412 Pettibone Road	Sample Description: brown liquid/
Solon, Ohio 44139	brown solid
Attn: Mr. Vince Marek	

BTU

did not bomb

Halogens as Chlorine

100 ppm

	TOTAL METALS (ppm)	PQL (mg/l)	STANDARD RECOVERY (%)
Arsenic	9.81	0.02	92
Barium	33.8	0.02	98
Cadmium	1.17	0.02	96
Chromium	34.8	0.02	100
Lead	722.	0.02	98
Mercury	<0.02	0.02	83
Selenium	0.07	0.02	93
Silver	0.10	0.02	97

PQL = Practical Quantitation Limit

New, Inc.

TCLP VOLATILE ORGANICS

PARAMETER	RESULT* (mg/1)	PQL (mg/1)	REGULATORY LEVEL (mg/1)
Benzene	LTPQL	0.10	0.5
Carbon Tetrachloride	LTPQL	0.10	0.5
Chlorobenzene	LTPQL	0.10	100.0
Chloroform	LTPQL	0.10	6.0
1,4-Dichlorobenzene	LTPQL	0.10	7.5
1,2-Dichloroethane	LTPQL	0.10	0.5
1,1-Dichloroethylene	LTPQL	0.10	0.7
Methyl Ethyl Ketone	LTPQL	0.10	
Tetrachloroethylene	LTPQL	0.10	200.0
Trichlorooth	211 21	0.10	0.7
Trichloroethylene	LTPQL	0.10	0.5
Vinyl Chloride	LTPQL	0.10	0.2

LTPQL = Less Than Practical Quantitation Limit

Matrix interference due to the large amount of hydrocarbons present in the sample prevents calculation of surrogate recoveries.

Ronald A. Baraona
LABORATORY MANAGER

RAB/tlg

The foregoing is limited to findings based upon the material received for analysis and/or information furnished by client. Samples received will be disposed of after 30 days.

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 10/15/91 Date Reported: 10/28/91	Client Sample I.D.: Ravenna Arsenal #2 Fuel Oil Solids
	EOI Sample I.D.: L9115-6
•	Sampled By:Client
Nozzle New, Inc.	P.O.#:
34412 Pettibone Road	Sample Description: <u>black liquid/</u>
Solon, Ohio 44139	hlack solid

BTU

8,300 BTU/1b

Halogens as Chlorine

1,130 ppm

PCBs

<1 ppm each*

* Aroclor 1232, 1242, 1248, 1254, 1260, 1262

	TOTAL METALS (ppm)	PQL (mg/l)	STANDARD RECOVERY (%)
Arsenic	3.82	0.02	92
Barium	3.50	0.02	98
Cadmium	0.36	0.02	96
Chromium	5.62	0.02	100
Lead	54.0	0.02	98
Mercury	<0.02	0.02	83
Selenium	0.02	0.02	93
Silver	0.05	0.02	97

PQL = Practical Quantitation Limit

Nome of H. Demand Ronald A. Baraona LABORATORY MANAGER

RAB/tlq

The foregoing is limited to findings based upon the material received for analysis and/or information furnished by client. Samples received will be disposed of after 30 days.

Analytical Services & Environmental Consulting

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 11/12/91	Client Sample I.D.: Ravenna Arsena
Date Reported: 11/13/91	#2 Fuel Oil Solid
	EOI Sample I.D.: L9115-6
	Sampled By: <u>Client</u>
Nozzle New, Inc.	P.O.#:vb. VM/JO
34412 Pettibone Road	Sample Description: <u>black liquid/</u>
Solon, Ohio 44139	black solid
Attn: Mr. Vince Marek	

Additional Analysis

	TCLP* EXTRACTION (mg/l)	PQL (mg/l)	STANDARD RECOVERY (%)
Arsenic	0.04	0.01	112
Barium	0.08	0.01	104
Cadmium	0.01	0.01	108
Chromium	0.05	0.01	100
Lead	0.47	0.01	95
Mercury	<0.01	0.01	-
Selenium	0.01	0.01	120
Silver	<0.01	0.01	107

* 40 CFR Part 261, Appendix II - Method 1311.

PQL = Practical Quantitation Limit

Monald A. Dagona Ronald A. Baraona LABORATORY MANAGER

RAB/tlg

The foregoing is limited to findings based upon material received for analysis and/or information furnished by client. Samples received will be disposed of after 30 days.

B5 - SPOILS PILE

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

nk #81,#82,#83, Ravenna Arsenal Sample I.D.: G9105-8
Sample I.D.: G9105-8
npled By: <u>Client</u>
0.#: <u>vb. VM/JO</u>
nple Description: brown, gray 8
black soil

TPH*

140 ppm

Flash Point (PMCC)

>140 F

Benzene	Toluene	Ethylbenzene	Xylene	Surrogate Recovery
1340 ppb	710 ppb	1010 ppb	850 ppb	94 %

* Total Petroleum Hydrocarbons - Method 418.1: EPA 600/4-79-020 Method 9071: EPA SW-846

Benzene, Toluene, Ethylbenzene, Xylene - Method 8020: EPA SW-846

Mozzle New, Inc. G9105-8 Page 2

	TCLP* EXTRACTION (mg/1)	PQL (mg/l)	STANDARD RECOVERY (%)
Arsenic	<0.01	0.01	108
Barium	0.35	0.01	102
Cadmium	<0.01	0.01	102
Chromium	<0.01	0.01	114
Lead	<0.01	0.01	97
Mercury	<0.01	0.01	108
Selenium	<0.01	0.01	104
Silver	<0.01	0.01	104

^{* 40} CFR Part 261, Appendix II - Method 1311.

PQL = Practical Quantitation Limit

Ronald A. Baraona
LABORATORY MANAGER

RAB/tlg

The foregoing is limited to findings based upon material received for analysis and/or information furnished by client. Samples received will be disposed of after 30 days.

B6 - GAVITY WATER

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Client Sample I.D.: Ground Water
Client Sample 1.D.: Ground water
Tanks #59 & #60, Ravenna Arsenal
EOI Sample I.D.: G9119-8
Sampled By: Client
P.O.#:
Sample Description: light yellow
liquid/
brown sediment

TPH*

<1 mg/l

Flash Point (PMCC)

>200 F

Benzene	Toluene	Ethylbenzene	Xylene	Surrogate Recovery
<2 ug/l	<2 ug/l	<2 ug/l	<2 ug/l	80 %

* Total Petroleum Hydrocarbons - Method 418.1: EPA 600/4-79-020 Method 9071: EPA SW-846

Benzene, Toluene, Ethylbenzene, Xylene - Method 8020: EPA SW-846

	TCLP* EXTRACTION (mg/l)	PQL (mg/l)	STANDARD RECOVERY (%)
Arsenic	0.02	0.01	104
Barium	0.07	0.01	111
Cadmium	<0.01	0.01	101
Chromium	<0.01	0.01	103
Lead	<0.01	0.01	101
Mercury	<0.01	0.01	107
Selenium	<0.01	0.01	95
Silver	<0.01	0.01	101

^{* 40} CFR Part 261, Appendix II - Method 1311.

PQL = Practical Quantitation Limit

Nozzle New, Inc. G9119-8
Page 3

TCLP VOLATILE ORGANICS

PARAMETER	RESULT* (mg/1)	PQL (mg/l)	REGULATORY LEVEL (mg/l)
Benzene	LTPQL	0.002	0.5
Carbon Tetrachloride	LTPQL	0.01	0.5
Chlorobenzene	LTPQL	0.005	100.0
Chloroform	LTPQL	0.005	6.0
1,2-Dichloroethane	LTPQL	0.01	0.5
1,1-Dichloroethylene	LTPQL	0.001	0.7
Methyl Ethyl Ketone	LTPQL	0.005	200.0
Tetrachloroethylene	LTPQL	0.02	0.7
Trichloroethylene	LTPQL	0.02	0.5
Vinyl Chloride	LTPQL	0.02	0.2

LTPQL = Less Than Practical Quantitation Limit

SURROGATE RECOVERIES

PARAMETER	% RECOVERY
Volatile Organic Compounds	
Bromochloromethane ·	91
1-Chloro-2-Bromopropane	97
1,4-Dichlorobutane	122

mald H. Danang Ronald A. Baraona LABORATORY MANAGER

RAB/tlg

The foregoing is limited to findings based upon material received for analysis and/or information furnished by client. Samples received will be disposed of after 30 days.

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 6/19/91	Client Sample I.D.: Ground Water
Date Reported: 7/01/91	Tanks #20 & #21, Ravenna Arsenal
	EOI Sample I.D.: G9119-9
	Sampled By:Client
Nozzle New, Inc.	P.O.#:
34412 Pettibone Road	Sample Description: <u>light yellow</u>
Solon, Ohio 44139	liquid/
Attn: Mr. Vince Marek	brown sediment
	TPH*
	<1 mg/l
	-1 mg/1
Lead (Total)	PQL Standard Recovery

<0.01 mg/l 0.01 mg/l 103 %

Chromium (Total) PQL Standard Recovery

<0.01 mg/l 0.01 mg/l 107 %

Benzene Toluene Ethylbenzene Xylene Surrogate Recovery

* Total Petroleum Hydrocarbons - Method 418.1: EPA 600/4-79-020
• Method 9071: EPA SW-846

Benzene, Toluene, Ethylbenzene, Xylene - Method 8020: EPA SW-846

PQL = Practical Quantitation Limit

| Mayd N. & My In C Ronald A. Baraona LABORATORY MANAGER

RAB/tlg

The foregoing is limited to findings based upon material received for analysis and/or information furnished by client. Samples received will be disposed of after 30 days.

Analytical Services & Environmental Consulting

7777 Wall Street Valley View, Ohio 44125 (216) 524-0888 FAX (216) 524-2090

Date Received: 8/06/91	Client Sample I.D.: Filtered Water
Date Reported: 8/12/91	Ravenna Arsenal
	EOI Sample I.D.: 19106-14
	Sampled By: Client
Nozzle New, Inc.	P.O.#:
34412 Pettibone Road	Sample Description: <u>clear liquid</u>
Solon, Ohio 44139	
Attn: Mr. Vince Marek	

TPH*

<1 mg/l

Benzene	Toluene	Ethylbenzene	Xylene	Surrogate Recovery
<2 ug/l	<2 ug/l	<2 ug/l	<2 ug/l	65 %

* Total Petroleum Hydrocarbons - Method 418.1: EPA 600/4-79-020 Method 9071: EPA SW-846

Benzene, Toluene, Ethylbenzene, Xylene - Method 8020: EPA SW-846

ronald A. Baraona Ronald A. Baraona LABORATORY MANAGER

RAB/tjb

The foregoing is limited to findings based upon material received for analysis and/or information furnished by client. Samples received will be disposed of after 30 days.

APPENDIX C DISPOSAL TICKETS

3205 E. 79th Street Cleveland, Ohio

6/6/91

Cut and dispose of tank #50, 1,000 gallons. Cut and dispose of tank #81, #82 and #83, 1-1,000 gallons and 2-1,500 gallons. All from Ravenna Arsenal.

3205 E. 79th Street Cleveland, Ohio

6/11/91

Cut and dispose of tank #20 and #21, 2-15,000 gallons from Ravenna Arsenal.

Tini Chomes, Owner

· Chomes

E. 79th Scrap & Auto Wrecking Cutting & Disposing 3205 E. 79th Street Cleveland, Ohio

6/14/91

Cut and dispose of two steel underground storage tanks, No's 57 & 58, 15,000 gallons each from Ravenna Arsenal.

Tini Chomes

The Chomes

Owner

3205 E. 79th Street Cleveland, Ohio

6/17/91

Cut up and dispose of two steel underground storage tanks, 2-20,000 gallon tanks, No's 59-60 from Ravenna Arsenal.

3205 E. 79th Street Cleveland, Ohio

6/18/91

Cut up and dispose of two steel underground storage tanks, 20,000 gallons each, No's 63 and 64 from Ravenna Arsenal.

3205 E. 79th Street Cleveland, Ohio

10/18/91

Received three steel tanks from Ravenna Arsenal, tank No. 55 and 56, 20,000 gallons each and tank No. 80, 12,000 gallons. Cut tanks up for scrap.

E. 79th Scrap & Auto Wrecking Cutting & Disposing 3205 E. 79th Street Cleveland, Ohio

10/21/91

Received two 20,000 gallon steel tanks from Ravenna Arsenal, tank No's 61 and 62. Cut tanks up for scrap.

INVOICE

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SERVICE ADDRESS: SERVICE PERIOD:

TERMS: DUE AND PAYABLE UPON RECEIPT, SUBJECT TO 1 1/2% PER MONTH.

RAVENNA ARSENAL SEPTEMBER SERVICE

ACCT. NO.

9343

NOZZLE NEW, INC 34412 PETTIBONE RD SOLON OH 44139

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				15073	LANDFILL FEES	20	/15/91		
				15073	COUNTY FEES IN-DISTR	20	1/15/91		
				15060	LANDFILL FEES	18	/15/91		
				15060	COUNTY FEES IN-DISTR	18	/15/91		
				15064	LANDFILL FEES	18	3/15/91		
				15064	COUNTY FEES IN-DISTR	18	3/15/91		
				150 65	LANDFILL FEES	20	3/15/91		

NOTE: FRONTLOADERS & REARLOADERS & RENTAL AMOUNTS ARE FOR SEPT CHARGES. THANK YOU.

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Ji 325-0073 • (J00) 628-0061 A & B REFUSE DISPOSERS, INC. • 3557 TALLMADGE ROAD • KENT, OHIO 44240 •

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NOZZLE NEW, INC 34412 PETTIBONE RD SOLON OH 44139

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08/15/91	18 COUNTY FFFS IN-DISTR	15066			

,,	10 0001111 1 LLO 111 0101N	12000
08/15/91	20 LANDFILL FEES	15068
08/15/91	20 COUNTY FEES IN-DISTR	15068
08/15/91	18 LANDFILL FEES	15069
08/15/91	18 COUNTY FEES IN-DISTR	15069
08/15/91	20 LANDFILL FEES	15070
08/15/91	20 COUNTY FEES IN-DISTR	15070

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	08/15/91	18 LANDFILL FEES	15071			
	0 8/15/91	18 COUNTY FEES IN-DISTR	15071			
	08/15/91	20 LANDFILL FEES	15072			
	08/15/91	20 COUNTY FEES IN-DISTR	15072			
	08/15/91	20 LANDFILL FEES	15049			
	08/15/91	20 COUNTY FEES IN-DISTR	15049			
	08/15/91	25 LANDFILL FEES	15051			
	08/15/91	25 COUNTY FEES IN-DISTR	15051			
	08/15/91	25 LANDFILL FEES	15052		•	

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A & B REFUSE DISPOSERS, INC. • 3557 TALLMADGE ROAD • KENT, OHIO 44240 • . . . 6) 325-0073 • (800) 628-0061

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	<u> </u>				MOUS BALANCE -		0.00
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	08/15/91	25	LANDFILL FEES	15055			
	08/15/91	25	COUNTY FEES IN-DISTR	15055			
	08/15/91	18	LANDFILL FEES	15056			
	08/15/91	18	COUNTY FEES IN-DISTR	15056			
	08/15/91	20	LANDFILL FEES	15093			
	08/15/91	20	COUNTY FEES IN-DISTR	15093			
	08/15/91	20	LANDFILL FEES	15092		•	
	08/15/91	20	COUNTY FEES IN-DISTR	15092			

NOTE: FRONTLOADERS & REARLOADERS & RENTAL AMOUNTS ARE FOR SEPT CHARGES. THANK YOU.

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	08/16/91	20 COUNTY FEES IN-DISTR	15129			
	08/16/91	18 LANDFILL FEES	15097			
	08/16/91	18 COUNTY FEES IN-DISTR	15097			
*	08/16/91	16 LANDFILL FEES	15103			
	08/16/91	16 COUNTY FEES IN-DISTR	15103			
	08/16/91	20 LANDFILL FEES	15110			
	08/16/91	20 COUNTY FEES IN-DISTR	15110		•	
	08/16/91	18 LANDFILL FEES	15111			

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NOZZUE NEW INC SWATZ PETTEBONE RU SOLON OH 44139

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10/15/91		SET CONTAINER	5748			
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0/16/91	12	LANDFILL FEES	6700			
0/16/91		20-YO O/T HAULEO	6782			
0/16/91	10	LANDFILL FEES	6782			
0/16/91		20-YO O/T HAULED	6783			
10/16/91	₹0	LANDFILL FRES	6703		•	
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PLEASE INCLUDE ACCOUNT NUMBER WHEN PAYING. THANK YOU.

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B REFUSE DISPOSERS, INC. - 3557 TALLMADGE ROAD - KENT, OHIO 44240 - (216) 325-0070 028-0061

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10/17/91	SET CONTAINER	DELIVERY			
10/17/91	20-YD O/T HAULED	17799			
10/17/91	20-YD O/T HAULED	17212			
10/17/91	20-YD O/T HAULED	17211			
10/17/91	20-YD O/T HAULED	17213			
10/17/91	20 LANDFILL FEES	17799			
10/17/91	20 LANDFILL FEES	17212		•	
10/17/91	20 LANDFILL FEES	17211			
PLEASE INCLUDE	E ACCOUNT NUMBER WHEN	PAYING.	,		
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♣ B REFUSE DISPOSERS, INC. : 3557 TALLMADGE ROAD : KENT, OHIO 44240 : (216) 325-0073 : (000) 628-0061

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NOZZLE NEW INC 34412 PETTIBONE RD SOLON OH 44139

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PLEASE DETACH HERE AND RETURN THIS PORTION WITH YOUR PAYMENT.

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MO. DAY YR. QTY. DESCRIPTION REFERENCE CHARGES PAYMENTS/CHEDITS BALANCE

10/17/91 10/18/91 20 LANDFILL FEES SPECIAL SERVICES

17213

17021

PLEASE INCLUDE ACCOUNT NUMBER WHEN PAYING.

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120 DAYS & OVER

NEW BALANCE

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A & B REFUSE DISPOSERS, INC. - 3557 TALLMADGE ROAD - KENT, OHIO 44240 - (216) 325-0073 - (400) 628-0061

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FINANCE CHARGE COMPUTED ON:

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Payment Due: 11/30/91



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SERVICE ADDRESS:

RAVENNA ARSENAL

ACCT. NO.

9343

SERVICE PERIOD: NOVEMBER SERVICE

NOZZLE NEW,INC 34412 PETTIBONE RD SOLON OH 44139

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11/18/91	18	COUNTY FEES OUT-DIST	18194			
11/18/91	18	LANDFILL FEES	18193			
11/18/91	18	COUNTY FEES OUT-DIST	18193			
11/18/91	18	LANDFILL FEES	18191			
11/18/91	18	COUNTY FEES OUT-DIST	18191		•	
11/18/91		LANDFILL FEES	18192			

Please include account number when paying. THANK YOU.

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A & B REFUSE DISPOSERS, INC. - 3557 TALLMADGE ROAD - KENT, OHIO 44240 (216) 325-0073 (3000-026-0061

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NOZZLE NEW, INC 34412 PETTIBONE RD SOLON OH 44139

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11/18/91	1	8 COUNTY FEES OUT-DIST	18185			
11/18/91	1	8 LANDFILL FEES	18188			
11/18/91	1	8 COUNTY FEES OUT-DIST	18188			
11/18/91	1	8 LANDFILL FEES	18186			
11/18/91	1	8 COUNTY FEES OUT-DIST	18186			
11/18/91	1	8 LANDFILL FEES	18181		•	
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A & B REFUSE DISPOSERS, INC. - 3557 TALLMADGE ROAD - KENT, OHIO 44240 - (276) 525-0073 - 3334 028-0061

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RAVENNA ARSENAL

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NOZZLE NEW, INC 34412 PETTIBONE RD SOLON OH 44139

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11/19/9		COUNTY FEES OUT-DIST	19427
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A & B REFUSE DISPOSERS, INC. - 3557 TALLMADGE ROAD - KENT, OHIO 44240 - (216) 325-0073 - 1. FINANCE CHARGE COMPUTED ON:



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NOZZLE NEW, INC 34412 PETTIBONE RD SOLON OH 44139

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SERVICE ADDRESS SERVICE PERIOD

RAVENNA ARSENAL NOVEMBER SERVICE

ACCT. NO.

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NOZZLE NEW, INC 34412 PETTIBONE RD SOLON OH 44139

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SERVICE ADDRESS RAVENNA ARSENAL SERVICE PERIOD NOVEMBER SERVICE

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NOZZLE NEW, INC 34412 PETTIBONE RD SOLON OH 44139

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Please include account number when paying. THANK YOU.

STATE

) - KENT, OHIO 44240 (1.10) 20000.

Payment Due: 12/31/91

Richard F. Celeste Governor

STATE OF OHIO DEPARTMENT OF COMMERCE

Nappy M. Hetzler

Director

DIVISION OF STATE FIRE MARSHAL East Main St. Reymoldshire

8895 East Main St., Reynoldsburg, OH 43068

STORAGE TANK INSTALLER CERTIFICATE UNDERGROUND

CERTIFICATE NUMBER: 90 - *57

VALID: August 6,

1990 through August 5,

This is to certify that the below named person does hereby meet the requirements pursuant to Section 3737.881 of the Ohio Revised Code for installing, repairing, abandoning and removing underground storage tanks in Ohio.

STEVEN MICHAEL SLAGLE NOZZLE NEW CO INC

34412 PETTIBONE SOLON OH 44139

Whom pheury

NON-TRANSFERABLE

William A. Hennosy, State Fire Marshal

APPENDIX D NOZZLE NEW CERTIFICATION

DIVISION OF STATE FIRE MARSHAL
Bureau of Underground Storage Tank Regulations
7510 East Main Street * PO BOX 525 * Reynoldsburg OH 43068-3395
(614) 752-7011 (In Ohio Only: 800-686-2878)

Nancy S. Chiles, Director

01/08/90

Dear Tank Installer:

Congratulations, you have completed the renewal requirements for UST installer certification, and a renewal certificate is being issued in your name.

Attached below is a temporary certificate for your use until we receive permanent certificates from our printer. A photocopy of this temporary certificate may be used to meet the requirements of rule 1301:7-9-11 of the Administrative Code which requires that an installer have the certificate available for inspection. Permanent certificates will be mailed as soon as they arrive.

Your renewal certificate is valid for one year.

Any questions regarding certification should be directed to the Release Prevention section at the Bureau of Underground Storage Tank Regulations.

Very Truly Yours

Mike Nimocks Section Manager Release Prevention

Cut Here

George V. Voinovich
Governor

STATE OF OHIO
DEPARTMENT OF COMMERCE
DIVISION OF STATE FIRE MARSHAL
8895 East Main St., Reynoldsburg, OH 43068

Nancy S. Chiles
Director

UNDERGROUND STORAGE TANK INSTALLER

CERTIFICATE

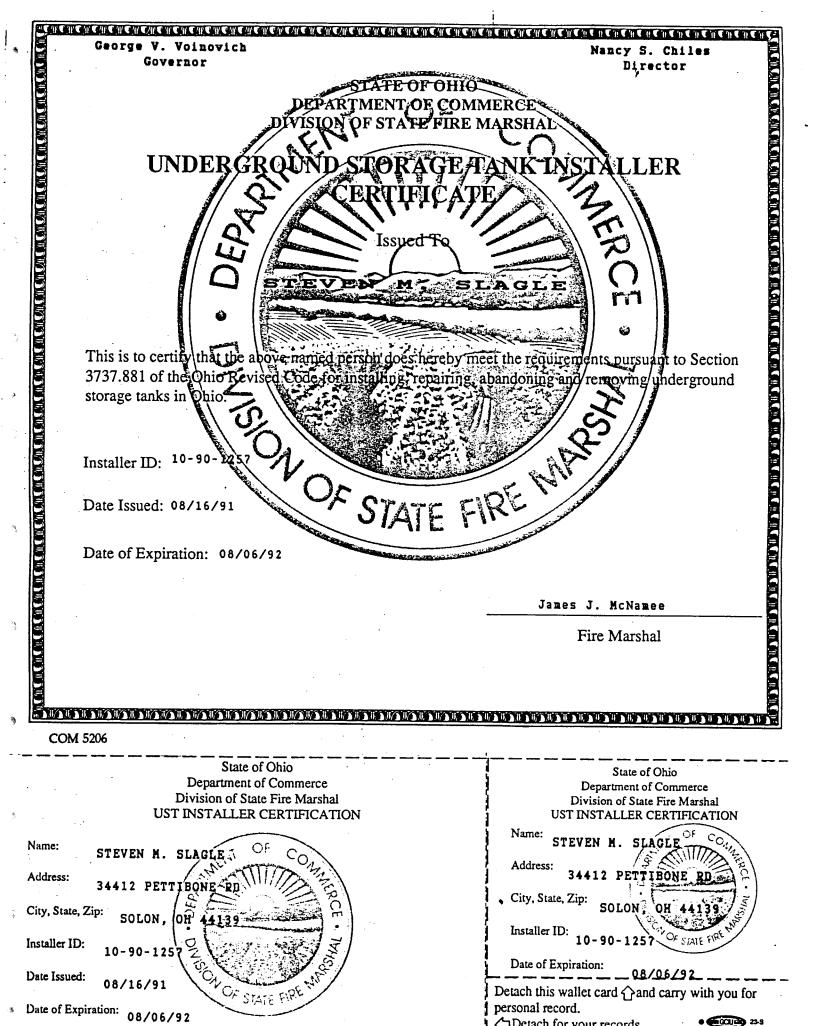
CERTIFICATE NUMBER: 91 - 160 VALID: 01/08/91

through 01/08/92

This is to certify that the below named person does hereby meet the requirements pursuant to Section 3737.881 of the Ohio Revised Code for installing, repairing, abandoning and removing underground storage tanks in Ohio.

PHILIP CHARLES MAREK NOZZLE NEW INC 34412 PETTIBONE RD SOLON OH 44139 NON-TRANSFERABLE

William A. Hennosy, State Fire Marshal



personal record. • (COU) 23-S Detach for your records.

