15 (12-75)

New York State Department of Environmental Conservation

MEMORANDUM

TO: Daniel Steenberge, RHWRE, Region 5 - Ray Brook
FROM: Marsden Chen, Bureau of Eastern Remedial Action MC
SUBJECT: Malta Rocket Fuel Area ID No. 546022

DATE: March 11, 1996

Attached is a copy of the report for additional sampling at the Malta Rocket Fuel Area site.

Please have staff review this document and provide your comments to Victor Cardona, of my staff, by March 18, 1996.

If you have any questions, please contact him at (518) 457-3976.

Attachment

Corporate Environmental Programs
General Electric Company
One Computer Drive South, Albany, NY 12205

March 8, 1996

Alison Hess, Project Manager
U.S. Environmental Protection Agency
290 Broadway, 20th Floor, NYCSFB2
New York, New York 10007-1866
(3 copies)

Virginia Capon, Esquire
U.S. Environmental Protection Agency
290 Broadway, 17th Floor, NYCSFB
New York, New York 10007-1866
(1 copy)

Victor Cardona, Project Manager
Bureau of Eastern Remedial Action
Division of Hazardous Waste Remediation
NYS Department of Environmental Conservation
50 Wolf Road - Room 222
Albany, New York 12233
(3 copies)

Re: Malta Rocket Fuel Area Site
Additional Environmental Sampling Report

Dear Ms. Hess, et al.:

The Additional Environmental Sampling Report is submitted herein on behalf of the New York State Energy Research and Development Authority (NYSERDA), U.S. Department of Defense (DOD), and General Electric Company (GE) ("Participating Parties"). This report documents the results of additional sampling performed pursuant to the USEPA-approved Work Plan for Additional Environmental Sampling dated 17 January 1996 and an Addendum to 17 January 1996 Work Plan for Additional Environmental Sampling dated 24 January 1996.

Please contact me at (518) 458-6623, if you have any questions.

Sincerely,

Jill Siebels, GE
Facility Coordinator

enclosure

cc: Leslie Hulse, Esq., GE
Hal Brodie, Esq., NYS Energy Research and Development Authority
Phil Gitlen, Esq., Whiteman, Osterman & Hanna
Don Hooker, US Army Corps of Engineers
Cathy Sanders, Esq., US Army Corps of Engineers
William Miller, ERM - Northeast, w/o enclosure
Scott LeBeau, Martin Marietta
Bob Montione, NYSDOH

ERM-Northeast

501 New Karner Road
Suite 7
Albany, NY 12205
(518) 452-4291
(518) 452-4295 (Fax)

8 March 1996

Ms. Jill Siebels
Facility Coordinator
General Electric Company
1 Computer Drive South
Albany, New York 12205

RE: Malta Rocket Fuel Area Site
Report for Additional Environmental Sampling
ERM-Northeast Project No. 380.174.05

Dear Ms. Siebels:

This letter documents the results of additional sampling performed at the Malta Rocket Fuel Area (MRFA) Site in January-February 1996, pursuant to a Work Plan for Additional Environmental Sampling dated 17 January 1996 and an Addendum to 17 January 1996 Work Plan for Additional Environmental Sampling dated 24 January 1996. Both Work Plans were approved by EPA on January 26, 1996. During the sampling, soil samples were collected from beneath thirteen (13) cesspool locations across the Site and ground water samples were collected from three (3) locations within the VOC plume.

Cesspool Soil Sampling

The 13 cesspool soil samples were collected on 31 January and 1 February, 1996 and can be divided into two groups. The first group (9 samples) were collected from beneath the nine (9) known cesspools, consistent with the 17 January 1996 Work Plan. The second group (4 samples) were collected at four (4) presumed cesspool locations, consistent with the 24 January 1996 Work Plan. The locations of the cesspools are as follows:

Location	# of Cesspools
13	2
14	4
17	1
20	1
24	1
25 (presumed)	4
	13

The soil located 1 foot below the base of the nine accessible cesspools was sampled and analyzed for volatile organic compounds (VOCs) using EPA Method 8260. Figures 1 through 5 show the locations of the cesspools and the labeling used to identify the cesspool samples.

The depths to the bottom of the nine (9) known cesspools ranged from 8-15 feet below land surface. The soil located one (1) foot below the base of each of these cesspools was collected from the ground surface using a clean, stainless steel hand auger with extension rods. The depth of each sample is shown on Table 1. Immediately after retrieving the auger from each cesspool, the soil was placed directly into one 125 ml VOC sample vial with Teflon faced septa.

The four (4) presumed cesspool locations are reportedly associated with the Building 25 septic tank system and are shown on the 1952 Test Station utility map. There is no visible evidence of these cesspools and, if they exist, they are buried. However, stone markers are present at three of the four locations shown on the utility map. Therefore, on 23 January 1996, an attempt was made to locate these cesspools by excavating down to 6 feet at one of the stone markers. No structure or void space was found. As a result, the 24 January Work Plan called for collecting samples using a Geoprobe subsurface sampling device at the location of the stone markers and at the approximate location of the fourth cesspool, as shown on the utility map. The sampling depths of the four (4) samples are shown on Table 1. These depths were selected based on the depth at which samples were collected for the known cesspools. Figure 6 shows the sample locations for the presumed cesspools and the labeling used to identify the samples.

Once containerized, each of the 13 cesspool samples was immediately placed in a cooler on ice and shipped under chain of custody documentation via overnight courier to Inchcape Testing Services in Colchester, Vermont for VOC analysis using EPA Method 8260 with an expedited turnaround time (2 weeks).

Consistent with EPA-approved Work Plans, all sampling and equipment decontamination procedures followed the protocols utilized during the RI and documented in the Project Operations Plan (POP). A duplicate sample was collected and analyzed from the Building 13 cesspool (B13-CP1, labeled DUPE AA), and an MS/MSD sample was collected and analyzed from the Building 17 cesspool (B17-CP). The analytical results are discussed below.

Ground Water Sampling

The three ground water samples were collected on 30 and 31 January 1996 from three locations within the VOC plume. A direct sampling device known as a Hydropunch II was used to collect the samples (i.e., wells were not constructed), consistent with the 17 January 1996 Work Plan. Using a Mobile B-61 drilling rig equipped for hollow-stem auger drilling, a borehole was advanced to the water table. Drilling was performed by Aquifer Drilling and Testing, Inc. of Albany, New York. Once the water table was encountered, the Hydropunch II device was lowered through the hollow-stem augers and pushed beyond the bottom of the augers approximately eight feet below the water table, to correspond to the screened interval of nearby monitoring wells. Then the four foot long Hydropunch II screen was opened and ground water was allowed to enter the Hydropunch II device.

ERM

Two samples were collected downgradient of Building 3 dry wells near soil gas sampling points #688 and #692 (see Figure 7). The third was collected downgradient of the former Area D-1 burn pit near soil gas sampling point #138 (see Figure 8). The depths of the ground water samples are as follows:

B3-HP1	38-42 feet
B3-HP2	43-47 feet
D1-HP	39-43 feet

The ground water samples were collected with clean, disposable 3/4 inch diameter Teflon bailers lowered within the Hydropunch II device. At each sampling location, the first bailer of ground water retrieved from the Hydropunch II was poured into one 40 ml VOC vial pre-preserved with hydrochloric acid (HCl). The pH of the single vial was checked with pH paper to ensure that the pH was less than 2. After confirming the pH was less than 2, the second bailer of water was poured into three 40 ml vials pre-preserved with the same amount of HCl as the initial vial tested with pH paper. The vials were filled to ensure there were no air bubbles, then immediately placed in a cooler on ice.

The samples were shipped under chain of custody documentation via overnight courier to Inchcape Testing Services in Colchester, Vermont for VOC analysis with an expedited turnaround time (2 weeks).

Consistent with EPA-approved Work Plans, all sampling and equipment decontamination procedures followed the protocols utilized during the

RI and documented in the POP. A duplicate sample was collected and analyzed at Building 3 (B3-HP2, labeled DUPE BB), and an MS/MSD was collected and analyzed at Area D-1. The analytical results are discussed below.

ERM

Analytical Results of Cesspool Soil and Ground Water Samples

Cesspool Soil Samples

Table 1 shows physical characteristics of the 13 cesspool soil samples. A visual analysis of the 13 soil samples indicated they were generally moist to wet, orange-brown fine to medium sand with a trace of silt.

Each of the 13 cesspool soil samples was analyzed for VOCs. The validated analytical results for carbon tetrachloride and trichloroethene (TCE) show not detected (ND) in each sample (see Table 2). The validated results for the entire VOC analysis are shown in Attachment 1.

Ground Water Samples

Each of the 3 ground water samples was analyzed for VOCs. The validated analytical results for carbon tetrachloride and TCE combined are 46 ppb or less for each sample (see Table 3). The validated results for the entire VOC analysis are shown in Attachment 2.

Summary and Conclusions

The ND results from the 13 cesspool soil samples indicate that the cesspools at the Site are not a significant source of carbon tetrachloride or TCE to the ground water.

The maximum combined carbon tetrachloride and TCE concentration of 46 ppb in the 3 ground water samples indicates that these samples are not elevated above the combined carbon tetrachloride and TCE levels detected in the nearby monitoring wells during the RI (i.e., M-19 at Building 3 and M-35S near the burn pit at Area D-1).

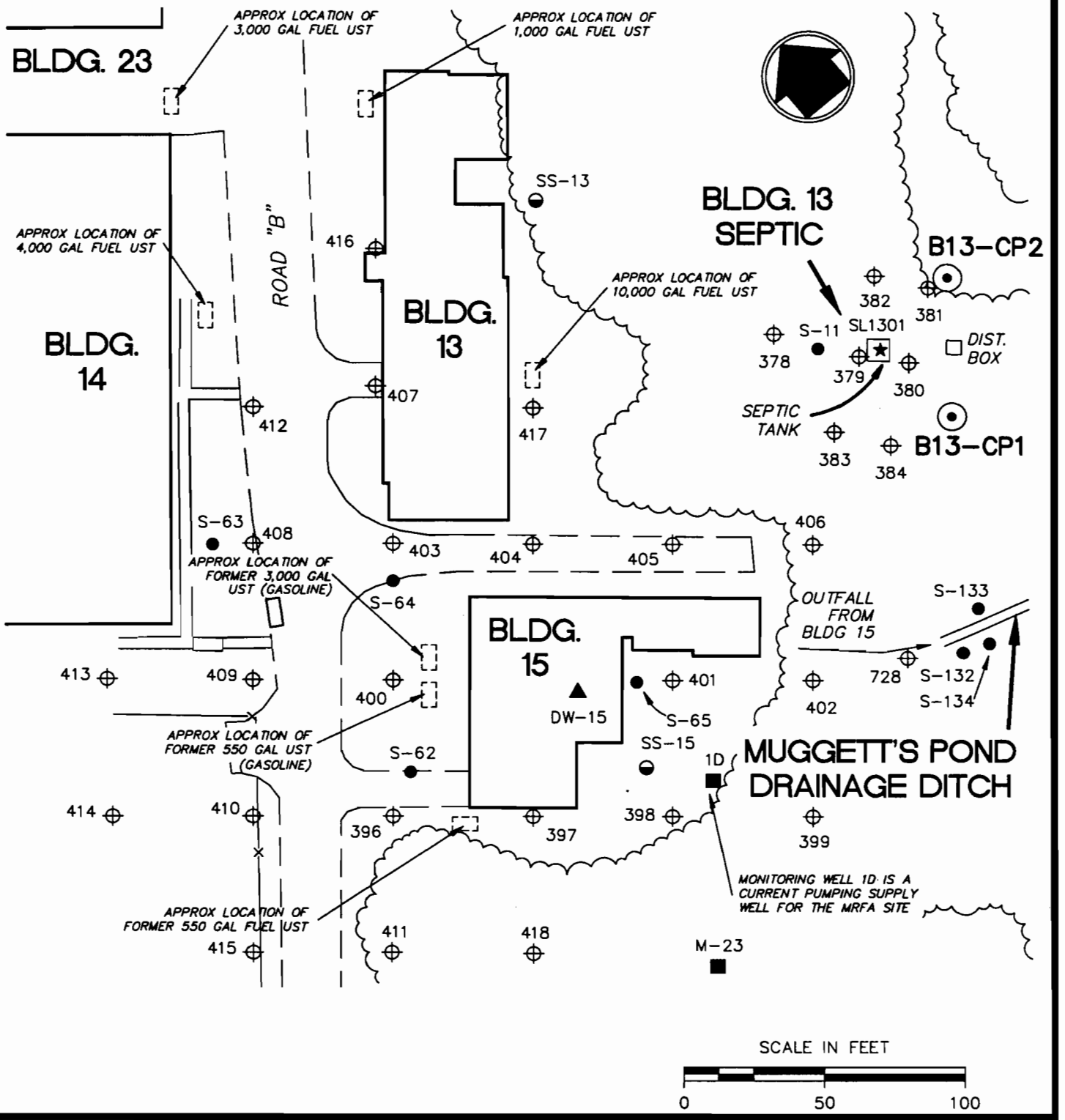
If you have any questions regarding these results, please do not hesitate to contact me.

Sincerely,

William J. Miller, III

ERM

cc. Hal Brodie, NYSERDA
Don Hooker, DOD



LEGEND

⊙ B13-CP1	CESSPOOL SAMPLING LOCATION & ID#
⊕ 384	SOIL GAS SAMPLING LOCATION & ID#
● S-65	SOIL BORING LOCATION & ID#
◒ SS-13	SURFACE SOIL SAMPLE LOCATION & ID#
▲ DW-15	DRY WELL SAMPLING LOCATION & ID#
★ SL1301	SEPTIC TANK SAMPLING LOCATION & ID#
■ 1D	MONITORING WELL PAIR LOCATION & ID#

SAMPLING LOCATIONS FOR BUILDINGS 13 AND 15

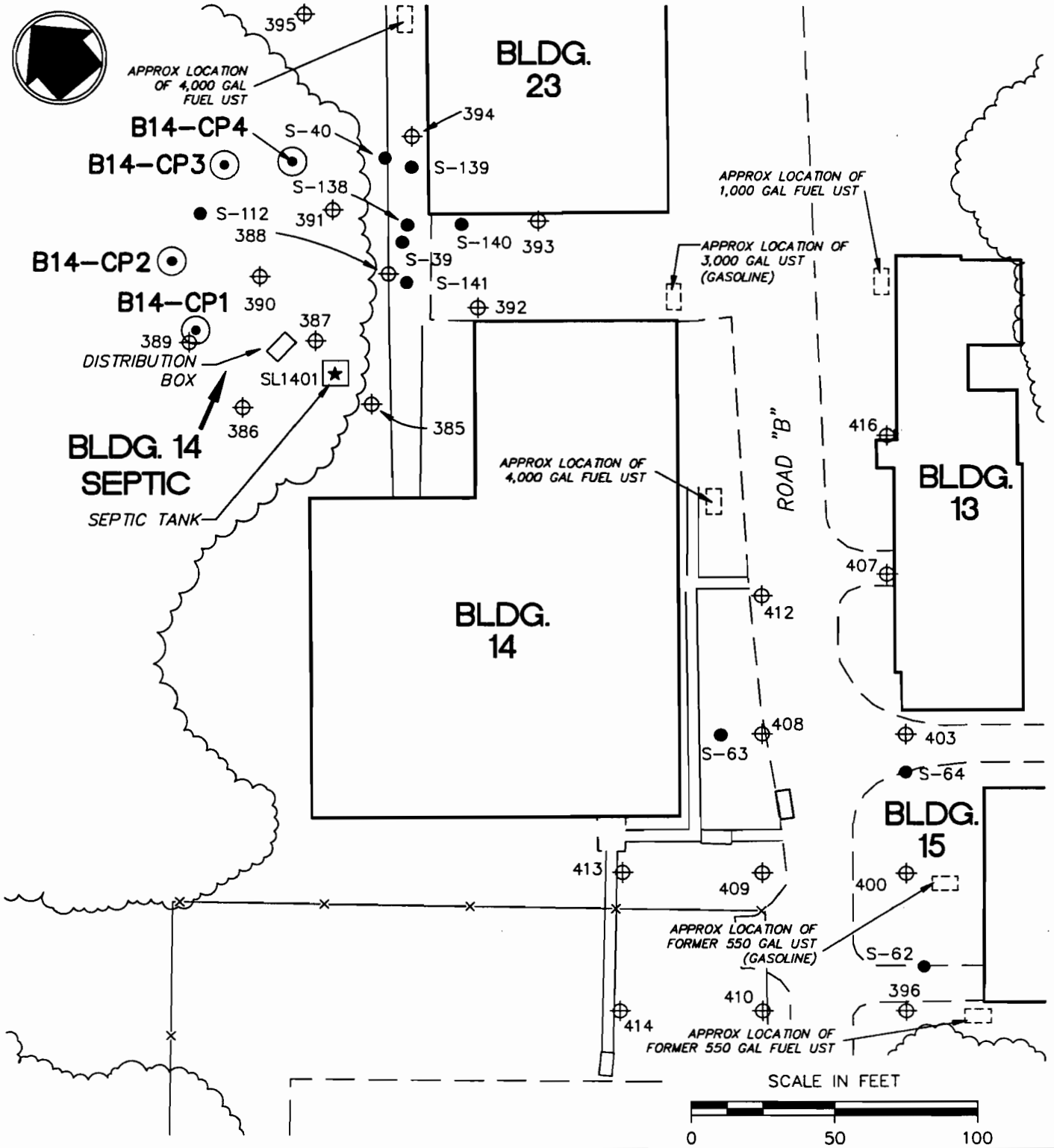
PREPARED FOR

MALTA ROCKET FUEL AREA SITE

ERM-Northeast
Environmental Resources Management
501 NEW KARNER ROAD - SUITE 7, ALBANY, N.Y. 12205
ERM Tel: (518)452-4291 Fax: (518)452-4295

SCALE	FIGURE
1" = 50'	1
DATE 2/96	

PROJECT # 380.17405 - CAD FILE 094DWG



LEGEND

B14-CP1 ⊙	CESSPOOL SAMPLING LOCATION & ID#
409 ⊕	SOIL GAS SAMPLING LOCATION & ID#
S-63 ●	SOIL BORING LOCATION & ID#
SL1401 ★	SEPTIC TANK SAMPLING LOCATION AND ID#

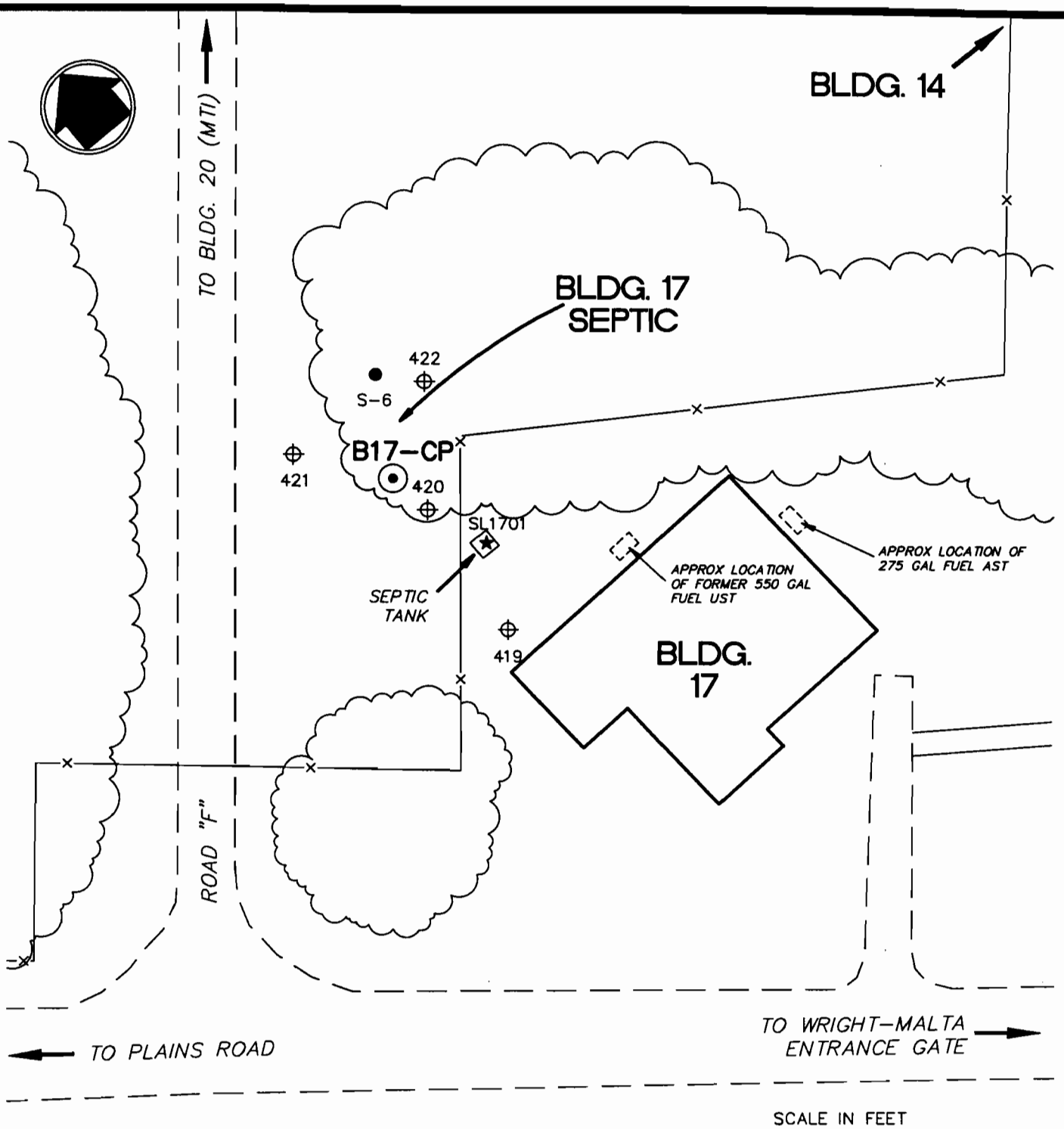
SAMPLING LOCATIONS FOR BUILDING 14

PREPARED FOR
MALTA ROCKET FUEL AREA SITE

ERM-Northeast
Environmental Resources Management
501 NEW KARNER ROAD - SUITE 7, ALBANY, N.Y. 12205
Tel: (518)452-4291 Fax: (518)452-4295

SCALE	FIGURE
1" = 50'	2
DATE 2/96	

PROJECT # 380.17405 - CAD FLE 042.DWG



LEGEND

- ⊙ **B17-CP** *CESSPOOL SAMPLING LOCATION & ID#*
- ⊕ 421 *SOIL GAS SAMPLING LOCATION & ID#*
- ● S-6 *SOIL BORING LOCATION & ID#*
- ★ SL1701 *SEPTIC TANK SAMPLING LOCATION & ID#*

SAMPLING LOCATIONS
FOR
BUILDING 17

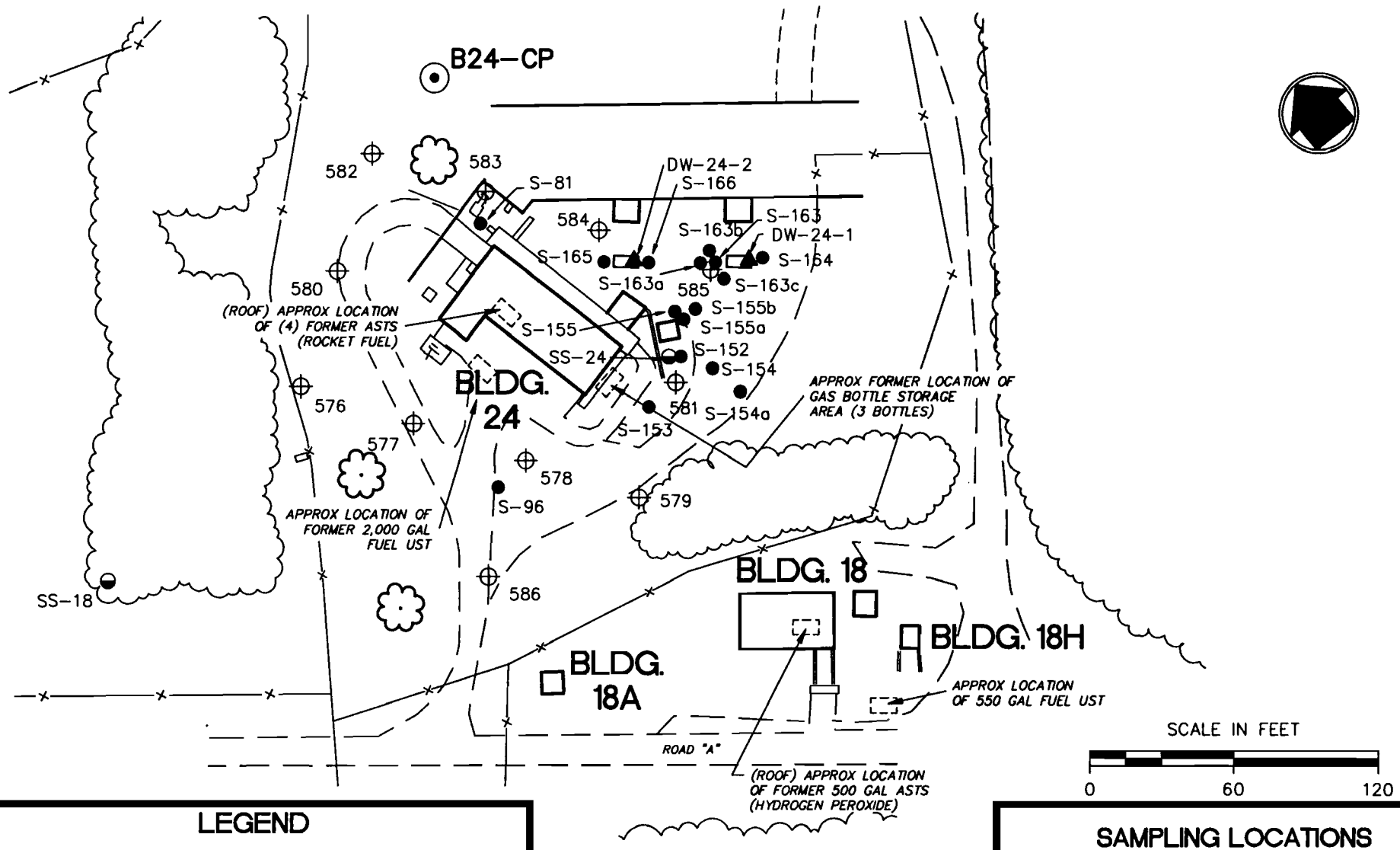
PREPARED FOR
MALTA ROCKET FUEL AREA SITE

ERM-Northeast
Environmental Resources Management
601 NEW KARNER ROAD - SUITE 7, ALBANY, N.Y. 12205
Tel: (518)452-4291 Fax: (518)452-4295

SCALE	FIGURE
1" = 30'	3
DATE 2/96	

PROJECT # 380.17405 - CAD FILE 095.DWG

PROJECT # 380.174.05 - CAD FILE 032.DWG



LEGEND

- ⊙ **B24-CP** *CESSPOOL SAMPLING LOCATION & ID#*
- ⊕ 580 *SOIL GAS SAMPLING LOCATION & ID#*
- ● S-96 *SOIL BORING LOCATION & ID#*
- ▲ DW-24-1 *DRY WELL SAMPLING LOCATION & ID#*
- ◒ SS-24 *SURFACE SOIL SAMPLE LOCATION & ID#*

13S/13D

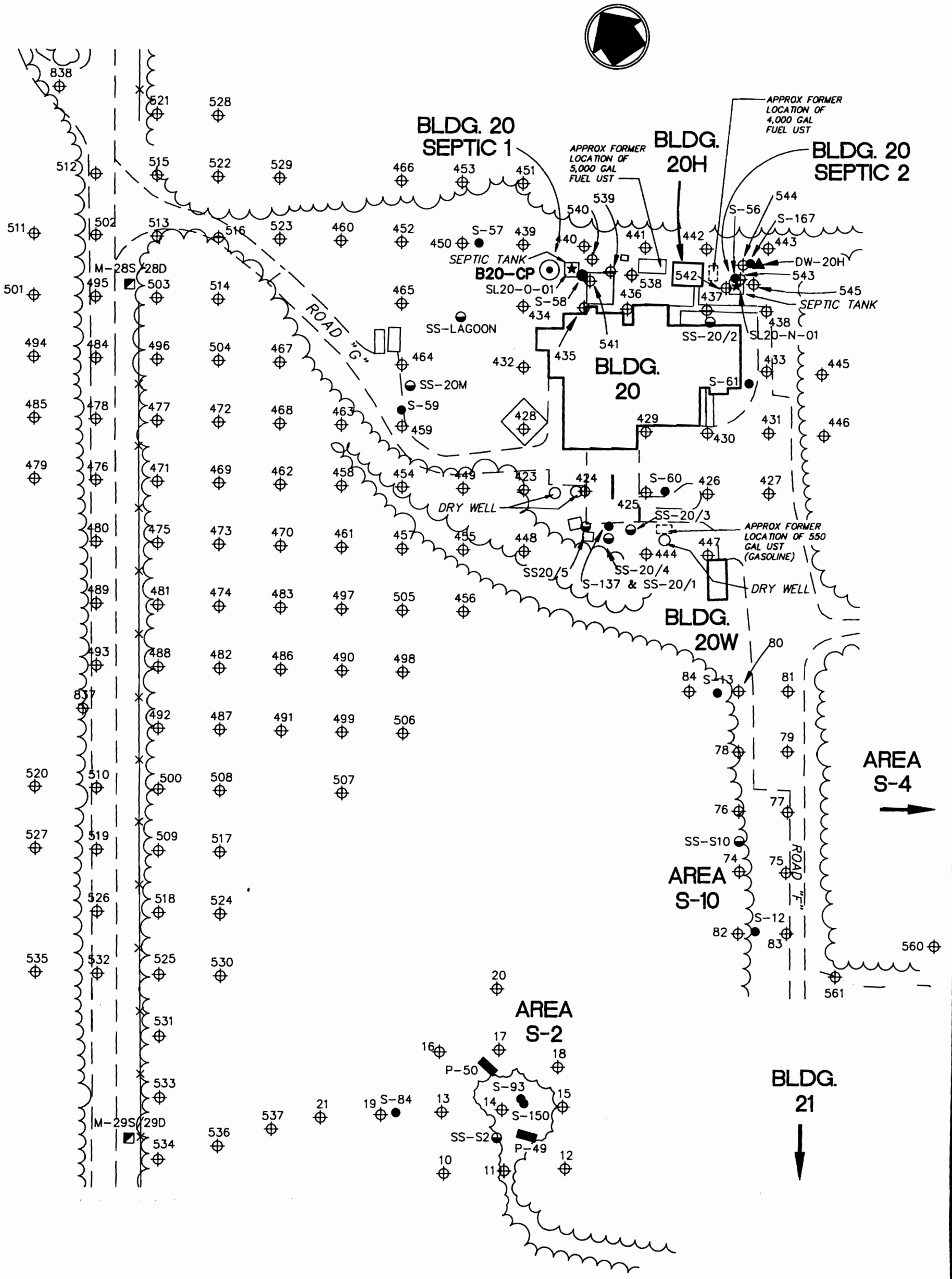
SAMPLING LOCATIONS FOR BUILDINGS 18 AND 24

PREPARED FOR

MALTA ROCKET FUEL AREA SITE

ERM-Northeast
Environmental Resources Management
501 NEW KARNER ROAD - SUITE 7, ALBANY, N.Y. 12205
Tel: (518)452-4291 Fax: (518)452-4295

SCALE	FIGURE
1" = 60'	4
DATE	
2/96	



LEGEND

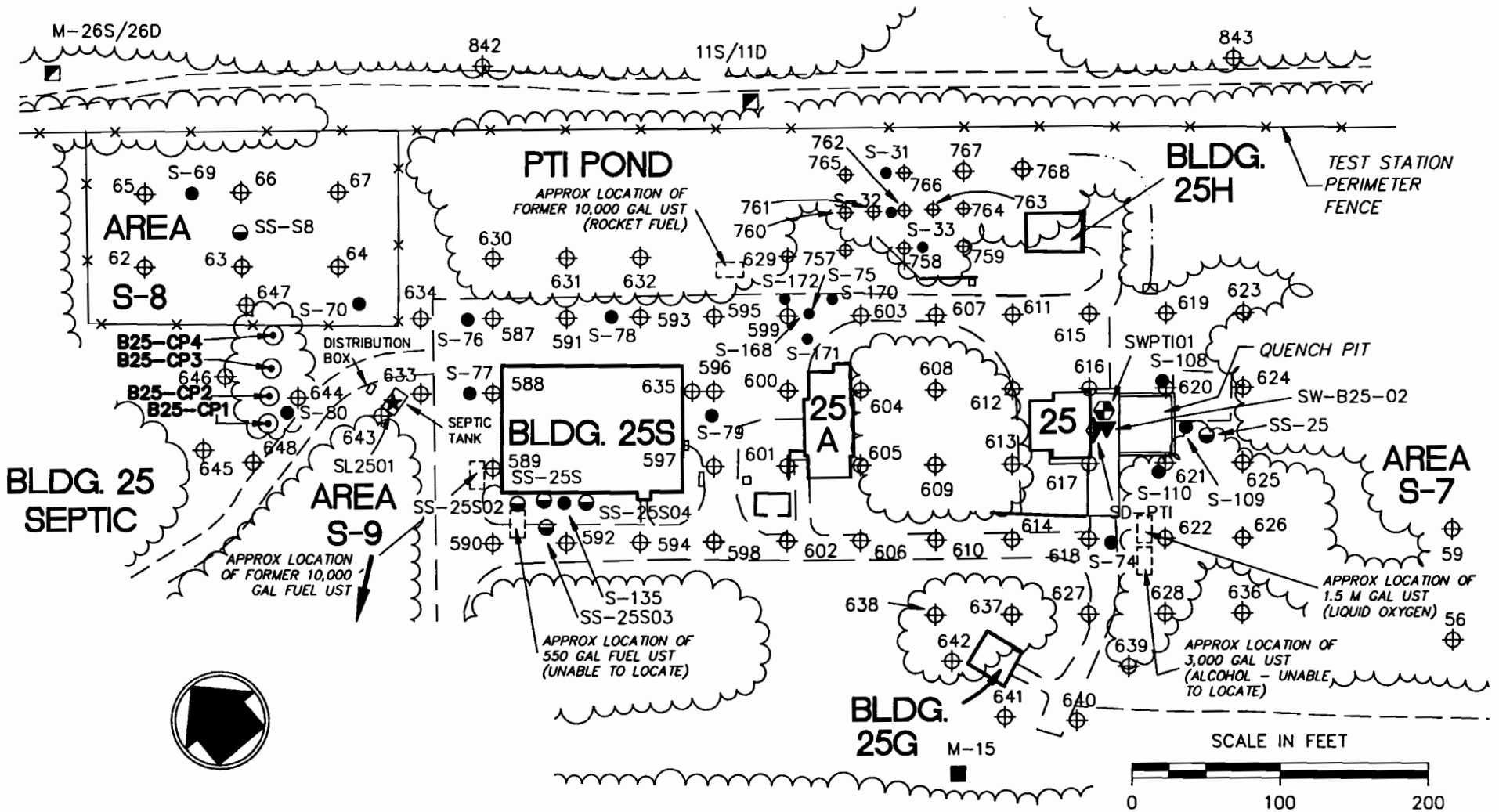
B20-CP	CESSPOOL SAMPLING LOCATION & ID#
507	SOIL GAS SAMPLING LOCATION & ID#
S-60	SOIL BORING LOCATION & ID#
SS-20M	SURFACE SOIL SAMPLE LOCATION & ID#
DW-20H	DRY WELL SAMPLING LOCATION & ID#
SL20-N-01	SEPTIC TANK SAMPLE LOCATION & ID#
M-28S/28D	MONITORING WELL PAIR LOCATION & ID#
P-49	TEST PIT LOCATION & ID#

SAMPLING LOCATIONS FOR BUILDING 20

PREPARED FOR
MALTA ROCKET FUEL AREA SITE

ERM-Northeast
Environmental Resources Management
501 NEW KARNER ROAD - SUITE 7, ALBANY, N.Y. 12205
Tel: (518)452-4291 Fax: (518)452-4295

SCALE 1" = 80'
DATE 2/96
FIGURE 5



LEGEND

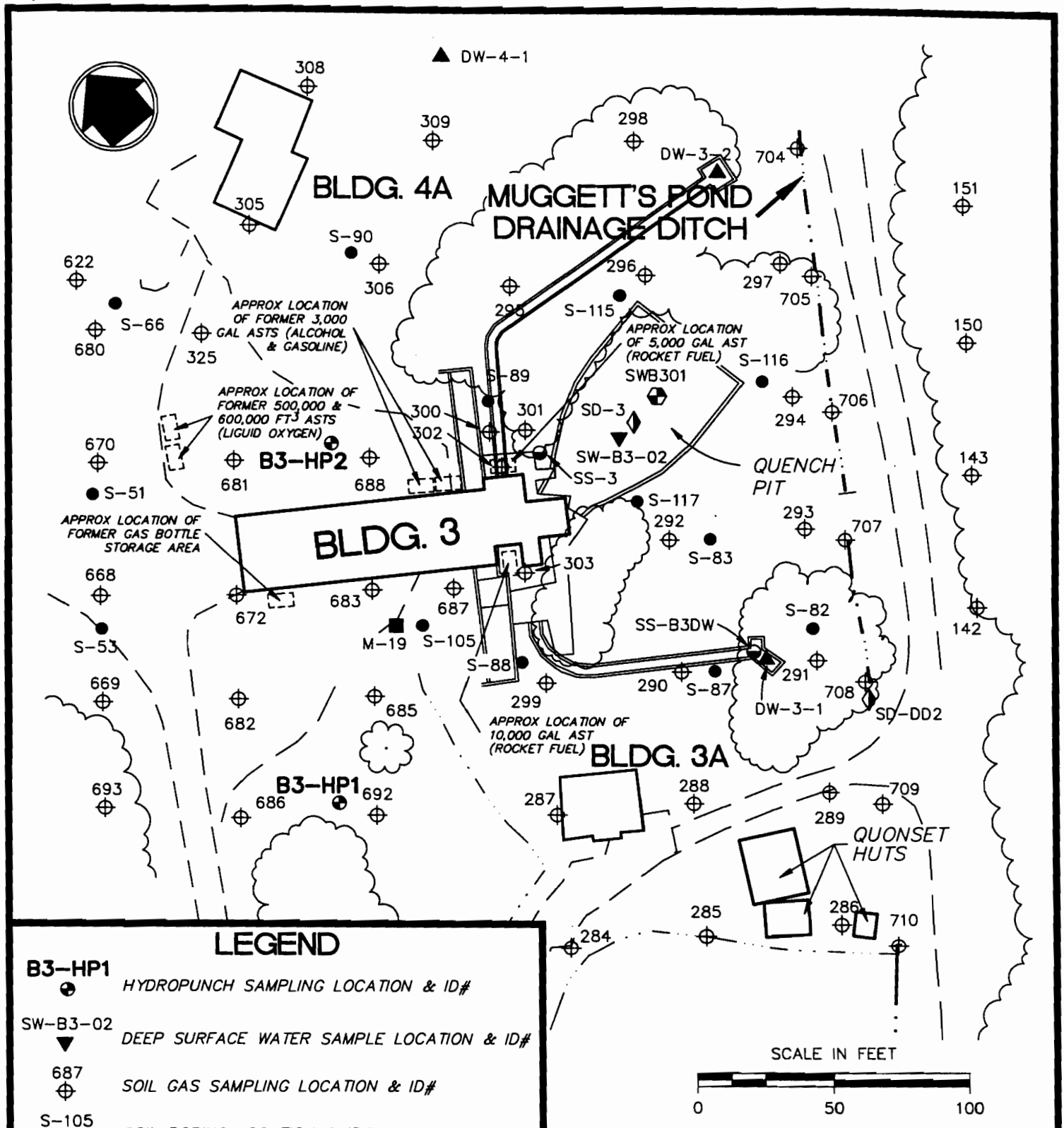
- B25-CP1 — CESSPOOL SAMPLING LOCATION & ID#
- 630 — SOIL GAS SAMPLING LOCATION & ID#
- SW-B25-02 — DEEP SURFACE WATER SAMPLE LOCATION & ID#
- S-77 — SOIL BORING LOCATION & ID#
- SS-25 — SURFACE SOIL SAMPLE LOCATION & ID#
- SD-25 — SEDIMENT SAMPLE LOCATION & ID#
- SWPTI01 — SURFACE WATER SAMPLE LOCATION & ID#
- SL2501 — SEPTIC TANK SAMPLE LOCATION & ID#
- 11S/11D — MONITORING WELL PAIR LOCATION & ID#
- M-15 — MONITORING WELL LOCATION & ID#

SAMPLING LOCATIONS FOR BUILDING 25

PREPARED FOR
MALTA ROCKET FUEL AREA SITE

ERM-Northeast
Environmental Resources Management
501 NEW KARNER ROAD - SUITE 7, ALBANY, N.Y. 12205
Tel: (518)452-4291 Fax: (518)452-4295

SCALE 1" = 100'
DATE 2/96
FIGURE 6



LEGEND

B3-HP1	HYDROPUNCH SAMPLING LOCATION & ID#
SW-B3-02	DEEP SURFACE WATER SAMPLE LOCATION & ID#
687	SOIL GAS SAMPLING LOCATION & ID#
S-105	SOIL BORING LOCATION & ID#
SS-3	SURFACE SOIL SAMPLE LOCATION & ID#
SD-DD2	SEDIMENT SAMPLE LOCATION & ID#
DW-3-1	DRY WELL SAMPLING LOCATION & ID#
SWB301	SURFACE WATER SAMPLE LOCATION & ID#
M-19	MONITORING WELL LOCATION & ID#

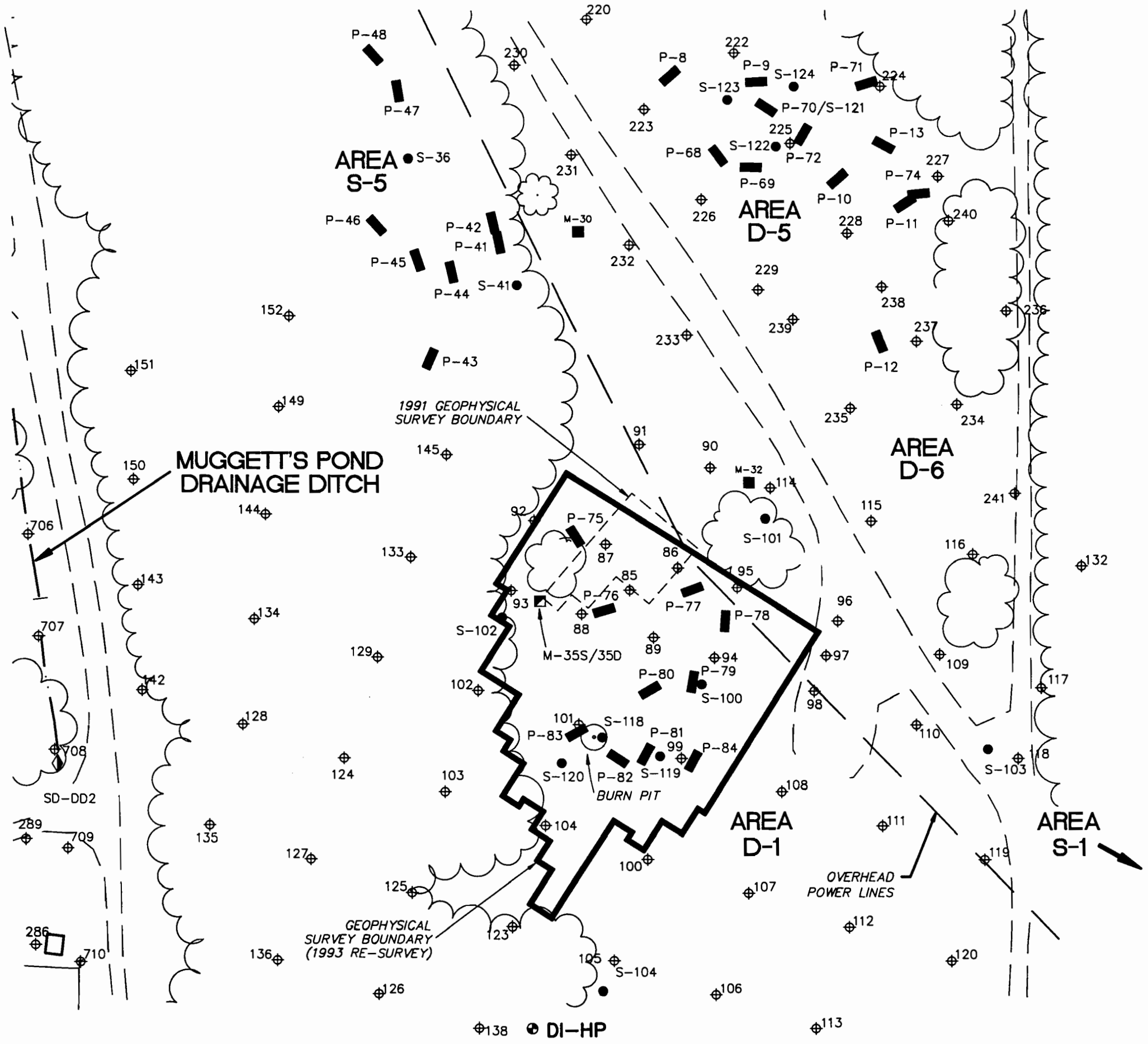
SAMPLING LOCATIONS
FOR
BUILDING 3

PREPARED FOR
MALTA ROCKET FUEL AREA SITE

ERM-Northeast
Environmental Resources Management
ERM
501 NEW KARNER ROAD - SUITE 7, ALBANY, N.Y. 12205
Tel: (518)452-4291 Fax: (518)452-4295

SCALE	FIGURE
1" = 50'	7
DATE	
2/96	

PROJECT # 380174.05 - CAD FILE 027.DWG



LEGEND

DI-HP	HYDROPUNCH SAMPLING LOCATION & ID#
220	SOIL GAS SAMPLING LOCATION & ID#
S-101	SOIL BORING LOCATION & ID#
SD-DD2	SEDIMENT SAMPLE LOCATION & ID#
P-81	TEST PIT LOCATION & ID#
M-30	MONITORING WELL LOCATION & ID#
M-35S/35D	MONITORING WELL PAIR LOCATION & ID#

SCALE IN FEET

0 50 100

SAMPLING LOCATIONS FOR AREA D-1

PREPARED FOR
MALTA ROCKET FUEL AREA SITE

ERM-Northeast
Environmental Resources Management
501 NEW KARNER ROAD - SUITE 7, ALBANY, N.Y. 12205
Tel: (518)452-4291 Fax: (518)452-4295

SCALE 1" = 50'
DATE 2/96
FIGURE 8

PROJECT # 3801740S - CAD FILE 026.DWG

TABLE 1
CESSPOOL SOIL SAMPLE DESCRIPTIONS
MALTA ROCKET FUEL AREA SITE

Building	Cesspool Label	Depth Sampled	Soil Description	Odor	Comments
Building 13	B13-CP1	13.9'	moist, orange-brown fine-medium Sand	slight sewer	collected duplicate (DUPE AA)
	B13-CP2	13.9'	moist, orange-brown fine-medium Sand	slight sewer	
Building 14	B14-CP1	13'	wet, orange-brown fine Sand, trace Silt	sewer	6 inches sludge on bottom of cesspool
	B14-CP2	13'	moist, orange-brown fine Sand, trace Silt	none	
	B14-CP3	13'	moist, orange-brown fine Sand, trace Silt	none	
	B14-CP4	13'	wet, orange-brown fine Sand, trace Silt	sewer	6 feet of liquid in cesspool
Building 17	B17-CP	12.75'	moist, orange-brown fine Sand, trace Silt	none	collected MS/MSD
Building 20	B20-CP	15.8'	moist, orange-brown fine Sand, trace Silt	none	
Building 24	B24-CP	9.2'	moist, orange-brown fine-medium Sand	none	
Building 25	B25-CP1	15'	moist, orange-brown fine Sand, trace Silt	none	
	B25-CP2	15'	moist, orange-brown fine Sand, little Silt	none	
	B25-CP3	15'	moist, orange-brown fine Sand, trace Silt	none	
	B25-CP4	15'	moist, orange-brown fine Sand, little Silt	none	

TABLE 2
CESSPOOL SOIL ANALYTICAL RESULTS
CARBON TETRACHLORIDE AND TCE
MALTA ROCKET FUEL AREA SITE

Target Volatile Organic Compounds	Comparison Number[A]	Bldg. 13 B13-CP1		Bldg. 13 DUPE-AA*		Bldg. 13 B13-CP2		Bldg. 14 B14-CP1		Bldg. 14 B14-CP2		Bldg. 14 B14-CP3		Bldg. 14 B14-CP4	
Carbon Tetrachloride		5	U	7	U	6	U	7	U	6	U	6	U	17	U
TCE		5	U	7	U	6	U	7	U	6	U	6	U	17	U
Total	50,000	0		0		0		0		0		0		0	

Target Volatile Organic Compounds	Comparison Number[A]	Bldg. 17 B17-CP		Bldg. 20 B20-CP		Bldg. 24 B24-CP		Bldg. 25 B25-CP1		Bldg. 25 B25-CP2		Bldg. 25 B25-CP3		Bldg. 25 B25-CP4	
Carbon Tetrachloride		5	U	6	U	6	U	5	U	5	U	5	U	6	U
TCE		5	U	6	U	6	U	5	U	5	U	5	U	6	U
Total	50,000	0		0		0		0		0		0		0	

Notes:

1. All concentrations are in micrograms per kilogram (ug/kg = parts per billion (ppb)).
2. * = DUPE-AA is a duplicate of B13-CP1.
3. U = Analyte was not detected.
4. A = Comparison numbers are taken from the 2 January 1996 letter from USEPA to NYSDEC.

TABLE 3
HYDROPUNCH GROUND WATER ANALYTICAL RESULTS
CARBON TETRACHLORIDE AND TCE
MALTA ROCKET FUEL AREA SITE

Target Volatile Organic Compounds	Comparison Number For Bldg. 3 Dry Wells[A]	Bldg. 3 B3-HP1	Bldg. 3 B3-HP2	Bldg. 3 DUPE-BB**	Comparison Number For Area D-1 Burn Pit[A]	Area D-1 D1-HP
Carbon Tetrachloride		3	1 U	1 U		17
TCE		1	1 U	1 U		29 J
Total	5,000	4	0	0	1,020	46

Notes:

1. All concentrations are in micrograms per liter (ug/l = parts per billion (ppb)).
2. * = DUPE-BB is a duplicate of D1-HP.
3. U = Analyte was not detected.
4. J = Semi-quantitative value due to QA/QC data validation requirements.
5. A = Comparison numbers are taken from the 2 January 1996 letter from USEPA to NYSDEC.

ATTACHMENT 1

SUMMARY OF CESSPOOL SOIL

ANALYTICAL RESULTS

ATTACHMENT 1
CESSPOOL SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS
MALTA ROCKET FUEL AREA SITE

Target Volatile Organic Compounds*	Bldg. 13 B13-CP1		Bldg. 13 DUPE-AA**		Bldg. 13 B13-CP2		Bldg. 14 B14-CP1		Bldg. 14 B14-CP2		Bldg. 14 B14-CP3		Bldg. 14 B14-CP4		Bldg. 17 B17-CP		Bldg. 20 B20-CP	
Acetone	11	J	29	J	75	J	40	U	23	U	11	U	490	J	18	U	16	U
2-Butanone	11	U	14	U	13		6	J	11	U	11	U	36		11	U	13	U
Chloroform	5	U	7	U	6	U	7	U	6	U	6	U	17	U	5	U	6	U
1,4-Dichlorobenzene	5	U	7	U	16		16		6	U	6	U	12	J	5	U	6	U
Ethylbenzene	5	U	7	U	1	J	7	U	6	U	6	U	17	U	5	U	6	U
Toluene	5	U	7	U	10	U	7	U	6	U	6	U	17	U	5	U	6	U
Xylene (total)	5	U	7	U	6	U	7	U	6	U	6	U	17	U	5	U	6	U
Volatile Organic TICs																		
Benzene, 1,2,3-trimethyl	NF		NF		NF		8	NJ	NF		NF		NF		NF		NF	
Benzene, 1,2,4-trimethyl	NF		NF		NF		14	NJ	NF		NF		NF		NF		NF	
Benzene, 1,3,5-trimethyl	NF		NF		NF		8	NJ	NF		NF		NF		NF		NF	
Camphene	16	NJ	NF		NF		NF		NF		NF		NF		NF		NF	
.alpha.-Pinene	20	NJ	NF		NF		NF		NF		NF		NF		NF		NF	
.beta.-Pinene	12	NJ	NF		NF		NF		NF		NF		NF		NF		NF	
Unknown Aliphatic Compounds	5	J	6	J	64	ZJ	6	J	NF		NF		NF		NF		NF	
Unknown Alkanes	NF		NF		241	ZJ	NF		NF		NF		NF		NF		NF	
Unknown C4-Alkylbenzene	NF		NF		50	ZJ	NF		NF		NF		NF		NF		NF	
Unknown Cyclohexanes	NF		NF		132	ZJ	NF		NF		NF		NF		NF		NF	
Unknown Ethylmethyl Benzene	NF		NF		NF		10	J	NF		NF		NF		NF		NF	
Unknown Hydrocarbons	NF		NF		80	J	NF		NF		NF		NF		NF		NF	
Assorted Unknowns	NF		NF		107	ZJ	NF		NF		NF		NF		NF		NF	
Total VOCs	64		35		779		68		0		0		538		0		0	

Notes:

1. All concentrations are in micrograms per kilogram (ug/kg = parts per billion (ppb)) except equipment and trip blanks which are in ug/l (ppb).
2. * = Only compounds that were detected in one or more samples are listed.
3. ** = DUPE-AA is a duplicate of B13-CP1.
4. U = Analyte was not detected.
5. J = Semi-quantitative value due to QA/QC data validation requirements.
6. N = Compound was identified with a Chemical Abstracts Services (CAS) number.
7. NF = Compound not found on TIC list.
8. Z = Suspected laboratory contaminant.

ATTACHMENT 1
CESSPOOL SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS
MALTA ROCKET FUEL AREA SITE

Target Volatile Organic Compounds*	Bldg. 24 B24-CP		Bldg. 25 B25-CP1		Bldg. 25 B25-CP2		Bldg. 25 B25-CP3		Bldg. 25 B25-CP4		Equipment Blank FB1013196		Equipment Blank FB1020196		Trip Blank TB1013196		Trip Blank TB1020196	
Acetone	14	U	24	U	22	U	23	U	20	U	5	U	5	U	5	U	5	U
2-Butanone	12	U	11	U	11	U	11	U	13	U	5	U	5	U	5	U	5	U
Chloroform	6	U	5	U	6	U	5	U	6	U	1		1		1	U	1	U
1,4-Dichlorobenzene	6	U	5	U	6	U	5	U	6	U	1	U	1	U	1	U	1	U
Ethylbenzene	6	U	5	U	6	U	5	U	6	U	1	U	1	U	1	U	1	U
Toluene	6	U	5	U	6	U	5	U	5	U	1		1		1	U	1	U
Xylene (total)	6	U	5	U	6	U	5	U	6	U	1		1		1	U	1	U
Volatile Organic TICs																		
Benzene, 1,2,3-trimethyl	NF		NF		NF		NF		NF		NF		NF		NF		NF	
Benzene, 1,2,4-trimethyl	NF		NF		NF		NF		NF		NF		NF		NF		NF	
Benzene, 1,3,5-trimethyl	NF		NF		NF		NF		NF		NF		NF		NF		NF	
Camphene	NF		NF		NF		NF		NF		NF		NF		NF		NF	
.alpha.-Pinene	NF		NF		NF		NF		NF		NF		NF		NF		NF	
.beta.-Pinene	NF		NF		NF		NF		NF		NF		NF		NF		NF	
Unknown Aliphatic Compounds	NF		NF		NF		NF		NF		NF		NF		NF		NF	
Unknown Alkanes	NF		NF		NF		NF		NF		NF		NF		NF		NF	
Unknown C4-Alkylbenzene	NF		NF		NF		NF		NF		NF		NF		NF		NF	
Unknown Cyclohexanes	NF		NF		NF		NF		NF		NF		NF		NF		NF	
Unknown Ethylmethyl Benzene	NF		NF		NF		NF		NF		NF		NF		NF		NF	
Unknown Hydrocarbons	NF		NF		NF		NF		NF		NF		NF		NF		NF	
Assorted Unknowns	NF		NF		NF		NF		NF		NF		NF		NF		NF	
Total VOCs	0		0		0		0		0		3		3		0		0	

Notes:

1. All concentrations are in micrograms per kilogram (ug/kg = parts per billion (ppb)) except equipment and trip blanks which are in ug/l (ppb).
2. * = Only compounds that were detected in one or more samples are listed.
3. ** = DUPE-AA is a duplicate of B13-CP1.
4. U = Analyte was not detected.
5. J = Semi-quantitative value due to QA/QC data validation requirements.
6. N = Compound was identified with a Chemical Abstracts Services (CAS) number.
7. NF = Compound not found on TIC list.
8. Z = Suspected laboratory contaminant.

ATTACHMENT 2

SUMMARY OF GROUND WATER

ANALYTICAL RESULTS

ATTACHMENT 2
HYDROPUNCH GROUND WATER ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS
MALTA ROCKET FUEL AREA SITE

Target Volatile Organic Compounds*	Jan-96 Area D-1 D1-HP		Jan-96 Bldg. 3 B3-HP1		Jan-96 Bldg. 3 B3-HP2		Jan-96 Bldg. 3 DUPE-BB**		Trip Blank TB1013096		Trip Blank TB1013196	
Acetone	1	U	2	J	5	U	5	U	5	U	5	U
Carbon Tetrachloride	17		3		1	U	1	U	1	U	1	U
Chloroform	1	J	0.6	J	1	U	1	U	1	U	1	U
Tetrachloroethene	4		1	U	1	U	1	U	1	U	1	U
1,1,1-Trichloroethane	2		1	U	1	U	1	U	1	U	1	U
Trichloroethene	29	J	1		1	U	1	U	1	U	1	U

Notes:

1. All concentrations are in micrograms per liter (ug/l = parts per billion (ppb)).
2. * = Only compounds that were detected in one or more samples are listed. Tentatively Identified Compounds (TICs) were
3. ** = DUPE-BB is a duplicate of B3-HP2.
4. U = Analyte was not detected.
5. J = Semi-quantitative value due to QA/QC data validation requirements.
6. D = Result is from secondary dilution analysis.
7. R = Analysis rejected.

ATTACHMENT 3

DATA VALIDATION REPORT

DATA VALIDATION OF GROUND WATER
AND SOIL SAMPLE ANALYSES
MALTA ROCKET FUEL AREA SITE
ERM-NORTHEAST PROJECT NUMBER 380.174
INCHCAPE TESTING, INC. CASE NO. EWMS, SDG NO. 56476

ERM

Deliverables

The above referenced Data Summary Package and Sample Data Package contain all required deliverables as stipulated under the USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) OLC01 for Target Compound List (TCL) Volatile Organic Compound (VOC) in ground water and CLP-equivalent deliverables for target VOCs in soil samples analyzed by USEPA Method 8260 (Test Methods for Evaluating Solid Waste, SW-846, Third Edition, with revisions). The data have been validated according to the protocols and QC requirements of the USEPA National Functional Guidelines for Organic Data Review (February 1994 revision), the USEPA, Region II CLP Volatile Organic Checklist (SOP No. HW-6, revision #8) and the reviewer's professional judgment.

This validation report pertains to the following samples:

Samples		*QC Samples*
D1HP01	B25CP101	TB1013096
B3HP101	B25CP201	TB1013196
B3HP201	B25CP301	TB1020196
B14CP101	B25CP401	FB1013196
B14CP201	B24CP01	FB1020196
B14CP301	B13CP101	DUPEAA (B13CP101 Field Duplicate)
B14CP401	B13CP201	DUPEBB (B3HP201 Field Duplicate)
B17CP01	B20CP01	D1HP101 MS/MSD
		B17CP01 MS/MSD

The following items/criteria were reviewed for this report:

- Quantitation/detection limits
- Holding times
- GC/MS tuning and performance
- Initial and continuing calibration data
- Procedural blank data
- Field and trip blank data
- Internal standard areas, retention times, summary and data
- Surrogate recoveries, summary and data
- MS/MSD recoveries, summary and data
- Chromatograms and mass spectra
- Data system printouts
- Qualitative and quantitative compound identification
- Case narrative and deliverables compliance

The items listed above were technically and contractually in compliance with USEPA protocols with the exceptions discussed in the text below. The data have been validated according to the procedures outlined above and qualified accordingly.

- The following table lists blanks, blank contaminants and concentrations and associated samples. Detected acetone and toluene are negated in a sample if the sample concentration is less than or equal to ten times the highest associated blank concentration. For any other compound, sample concentrations are negated if they are less than five times the highest associated blank. The TIC limonene is rejected in all samples in which it was detected.

Blank ID	Compound (concentration in µg/l or µg/kg)	Associated Samples
VBLKX6	acetone (4J) limonene @ 21.93 (14JN)	all soils **except** B13CP101, B13CP201, B14CP401 and DUPEAA
FB1013196	chloroform (1J) toluene (1J) total xylenes (1J)	all soil samples obtained on 1/31/96
FB1020196	chloroform (1J) toluene (1J) total xylenes (1J)	all soil samples obtained on 2/1/96

- The following table lists compounds that exceeded 30% percent difference (%D) between the initial calibration

average response factor and the continuing calibration (c) response factor for OLC01 calibrations or 20% percent difference for 8260 calibrations. Associated field samples are also listed. Positive results for these compounds in associated samples are considered estimated and flagged "J." All non-detect results for the compound of interest in the appropriate sample are flagged "UJ."

Calibration/ Instrument	Compound	Deficiency	Associated Samples
2/1/96 (0859)/L	2-hexanone	%D = 33.5	B3HP101, D1HP01, TB1013096
2/6/96 (1407)/O	acetone	%D = 22.2	B13CP101, B13CP201, B14CP401, DUPEAA

- D1HP01 MS/MSD exhibited low recovery for TCE in both the MS and MSD (57% in both, QC limits = 60% - 140%). The TCE concentration detected in the unspiked aliquot of this sample may be biased slightly low and is therefore flagged "J" and considered estimated.

- Lab fortified blank LFBOFAD exhibited acetone with a recovery above the acceptable upper QC limit (152%; QC limits = 60% - 140%), indicating potential high bias in acetone results in samples associated with this lab fortified blank. Since none of the associated samples contained acetone, no qualification of the sample data is necessary.

Package Summary

The sample data are valid and useable with qualifications as noted in this review.

Signed: _____ Dated: 27 February 96
Douglas A. Wolf, P.G.
Data Validation Manager