Appendix A

EXAMPLE TABLES AND FIGURES

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Table 1 – Compounds Detected in Groundwater Samples Compared to Screening Levels.

Compound	Maximum Concentration Reported in Previous Investigations (µg/L)	Maximum Concentration in January 2004 (µg/L)	MCL (µg/L)
Volatile Organic Compounds			
Benzene	**120**	**10 J**	5
Chlorobenzene	40	12 J	100
1,2-Dichloroethane	**45**	ND	5
1,1-Dichloroethene	**38**	ND	7
1,2-Dichloroethene (total)	**6,400**	**860**	100
Ethylbenzene	**1,600**	ND	700
Tetrachloroethene	**300**	**79**	5
Toluene	120	ND	1,000
1,1,1-Trichloroethane	**260**	ND	200
Trichloroethene	**260**	**50**	5
Vinyl chloride	**2,500**	**1,400**	2
Xylene (total)	5,700	ND	10,000
Semivolatile Organic Compounds			
bis(2-Ethylhexyl)phthalate	**42**	3 J	6
1,2-Dichlorobenzene	37	ND	600
2-Methylnaphthalene	27	ND	none
Naphthalene	16	ND	none
Pesticides			
Heptachlor epoxide	**0.79**	NA	0.2
Toxaphene	**12**	NA	3
Herbicides			
Atrazine	**3.1**	NA	3
Dichlorophenoxyacetic acid (2,4-D)	NR	NA	70
2,4,5-Trichlorophenoxypropionic acid (2,4,5-TP) (Silvex)	**88**	NA	50

Notes:

This table is derived from Consulting Geologist (2000a) and EPA (2004). Concentrations in bold exceed the EPA MCL.
EPA = U.S. Environmental Protection Agency
J = estimated
MCL = EPA maximum contaminant level (EPA 2002a)
µg/L = micrograms per liter
NA = not analyzed
ND = not detected
NR = not reported

Table 1 – Well and Piezometer Construction Details

Well Designation	Well Type	Sampling/ Measurement Frequency	Depth To Top Of Screen (ft.)	Depth To Bottom Of Screen (ft.)	Sump Length (ft.)	Depth To Water (ft.)	Depth To Bottom (ft.)	Installation Date
MCA-Da	Monitor	Annually	72.8	75.3	2.0	26.54	77.3	7/88
MCA-S	Monitor	Not sampled	12.4	22.4	2.0		24.4	7/88
MCB-Da	Monitor	Annually	78.8	81.3	1.5	28.33	82.8	6/89
MCB-M	Monitor	Annually	38.8	41.3	1.5	27.11	42.8	6/89
MCB-S	Monitor	Not sampled	20.1	30.1	1.5		31.6	6/89
MCC-D	Monitor	Not sampled	37.9	40.4	1.5		41.9	6/89
MCC-Da	Monitor	Not sampled	76.9	79.4	1.5		80.9	6/89
MCC-S	Monitor	Not sampled	19.7	29.7	1.5		31.2	6/89
MCD-Da	Monitor	Annually	78.3	80.8	1.5	27.33	82.3	6/89
MCD-M	Monitor	Quarterly	38.8	41.3	1.5	27.93	42.8	6/89
MCD-S	Monitor	Quarterly	19.6	29.6	1.5	28.18	31.1	6/89
MCE-M	Monitor	Not sampled	40.0	42.5	1.5 – 2.5		44.0 – 45.0	12/89
MCE-S	Monitor	Not sampled	15.0	25.0	1.5 – 2.5		26.5 – 27.5	11/89
MCF-M	Monitor	Not sampled	27.5	30.0	1.5 - 2.5		31.5 – 32.5	11/89
MCF-S	Monitor	Not sampled	12.5	22.5	2.5		25.0	11/89
MCG-M*	Monitor	Not sampled	32.5	35.0	1.5 – 2.5	28.91	36.5 – 37.5	12/89
MCI-M*	Monitor	Not sampled	35.1	37.6	1.5 – 2.5	25.44	39.1 – 40.1	12/89
MCI-S	Monitor	Not sampled	12.6	22.6	2.5		25.1	12/89
MW-1M	Monitor	Quarterly	39.6	49.6	2.5	24.10	52.1	9/94
MW-2	Monitor	Not sampled	14.9	24.9	2.0		26.9	7/88
MW-3	Monitor	Not sampled	16.4	26.4	2.5		28.9	11/89
MW-4	Monitor	Not sampled	26.0	28.5	1.5		30.0	7/90
MW-5	Monitor	Not sampled	32.5	35.0	1.5		36.5	7/90
MW-5D	Monitor	Quarterly	51.7	54.2	2.5	27.93	59.7	9/94
MW-5Da	Monitor	Not sampled	61.4	63.9	2.5		66.4	12/96
MW-5Db	Monitor	Quarterly	78.8	81.3	2.5	28.32	83.8	1997 - 1998
MW-6	Monitor	Not sampled	27.0	29.5	1.5		31.0	7/90
MW-6D	Monitor	Annually	46.5	51.5	0.0	27.32	51.5	1999
MW-7	Monitor	Not sampled	26.0	28.5	1.5		30.3	7/90
MW-8	Monitor	Quarterly	19.9	34.9	0.0	26.56	34.9	1/95
MW-10	Monitor	Quarterly	14.2	29.2	0.0	28.24	29.2	1/95
MW-11D	Monitor	Quarterly	40.3	45.3	2.0	28.04	47.3	4/95
MW-11M	Monitor	Quarterly	30.0	35.0	2.0	28.22	37.0	4/95
MW-12D	Monitor	Annually	42.8	47.8	2.2	28.28	50.0	1/95
MW-12M	Monitor	Not sampled	30.5	35.5	2.0		37.5	1/95
MW-13Da	Monitor	Annually	47.3	52.3	0.0	27.15	52.3	1999
MW-14Da	Monitor	Annually	49.3	54.3	0.0	28.00	54.3	1999
OB-1	Piezometer	Quarterly	26.5	29.0	1.5	25.55	30.5	7/90
P1-D	Piezometer	Quarterly	52.5	55.0	0.0	27.27	55.0	1/90
P1-M	Piezometer	Quarterly	39.3	41.8	0.0	26.25	41.8	2/90
RW-1	Recovery	Not sampled	38.8	58.8	0.0		58.8	1/90
RW-2	Recovery	Not sampled	40.2	60.2	0.0		60.2	1/90
RW-3	Recovery	Not sampled	28.7	59.7	0.0		59.7	4/96

Notes:

* Although these wells are not sampled regularly, water levels were measured during the March 2002 sampling event. Depth to water measured in March 2002 sampling event. Depth was measured from the top of the well casing.

Table 1 – Maximum Concentrations of Constituents in Groundwater Collected from Facility Monitoring Wells

Chemical of Concern	Relevant Standard or Criteria (µg/L)	Maximum Concentration Detected (µg/L)	Location of Maximum Concentration	Sampling Date	Other Wells above MCL or PRG (2002-2003)
Cadmium	MCL, 5	**15**	MW-2	Feb-97	
Chloroethane	PRG, 4.6	**16.7**	MW-17M	Apr-03	
1,2-Dichloroethane	MCL, 5	**15.6**	MW-20M	Sep-02	MW-18M
1,1-Dichloroethene	MCL, 7	**486**	MW-20M	Sep-02	MW-8, MW-15M, MW-16, MW-16M, MW-17, MW-17M, MW-18, MW-18M
Lead	Action Level, 15	**130**	MW-5	Jan-92	
Methylene chloride	MCL, 5	**34**	MW-16	Sep-02	MW-15M
Nitrate	MCL, 10,000	**75,000**	MW-2	Feb-95	
Styrene	MCL, 100	5.1	MW-15M	Jan-03	
Tetrachloroethene	MCL, 5	**186**	MW-8	Jul-03	MW-15M, MW-16M, MW-17M, MW-18M, MW-20M
Toluene	MCL, 1,000	657	MW-16	Apr-03	
1,1,1-Trichloroethane	MCL, 200	**328**	MW-8	Jul-03	MW-15M
1,1,2-Trichloroethane	MCL, 5	**11.9**	MW-15M	Jan-03	MW-16
Trichloroethene	MCL, 5	**44.6**	MW-8	Jul-03	MW-15M, MW-20M
1,2,4-Trimethylbenzene	PRG, 12	**96.6**	MW-15M	Jan-03	MW-8, MW-16, MW-20M
1,3,5-Trimethylbenzene	PRG, 12	**28.6**	MW-15M	Jan-03	MW-16
Vinyl chloride	MCL, 2	**8.44**	MW-15M	Apr-03	MW-17M, MW-18M, MW-20M
Xylene, Total	MCL, 10,000	264	MW-15M	Jan-03	

Notes:

Data provided by NDEQ (1998) and Consulting Geologist (2003b).
Concentrations in bold type exceed the EPA MCL or PRG for drinking water.

EPA U.S. Environmental Protection Agency
MCL EPA maximum contaminant level (EPA 2002a)
µg/L Micrograms per liter
NDEQ Nebraska Department of Environmental Quality
PRG EPA Region 9 preliminary remediation goal (EPA 2002b)

Table 1 – Subsurface Soil VOC Detections – Monitoring Well Installation, August 2002

Boring or Monitoring Well	Maximum Concentration (mg/kg)	Depth (ft bgs)
B-2	2.9	48
B-3	1.3	46
MW-15	1,551	6
MW-15M	355	23
MW-16	3.2	13
MW-16M	153	16
MW-17M	347	23
MW-18	1.4	6
MW-18M	41.4	37
MW-20M	9.0	53

Notes:

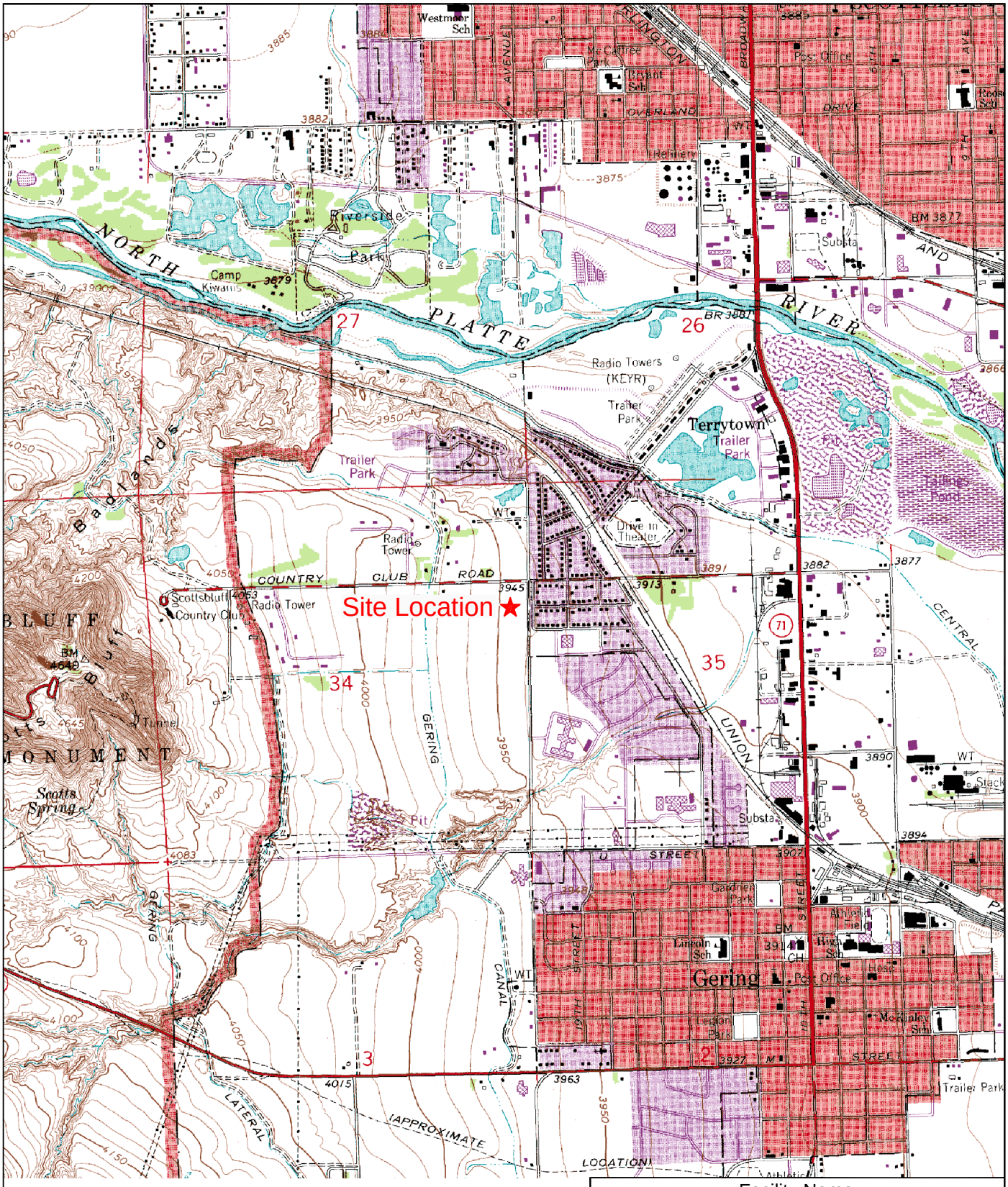
VOC Volatile organic compounds
ft bgs Feet below ground surface

Table 1 – Constituents Detected in Subsurface Soil

Metal	Concentration (mg/kg)	Sample Number	Depth (ft bgs)
Antimony	51.6	B-3	2.5 - 4.33
Arsenic	**704.3**	B-3	2.5 - 4.33
Arsenic	**15.4**	B-2	5.5 - 7.5
Arsenic	**14**	B-2	7.5 - 9.5
Arsenic	*11.7*	B-3	0.5 - 2.5
Cadmium	10.3	B-3	2.5 - 4.33
Copper	431	B-3	2.5 - 4.33
Lead	**9,630**	B-3	2.5 - 4.33
Lead	**6,919**	B-2	2.5 - 4.33
Lead	**590**	B-2	5.5 - 7.5
Lead	**1,633**	B-3	5.0 - 7.0
Zinc	240	B-3	2.5 - 4.33

Notes:

Concentrations in bold exceed industrial soil target concentrations. Concentrations in italics exceed residential soil target concentrations.
ft bgs = feet below ground surface
mg/kg = milligrams per kilogram



Source: USGS Scottsbluff N, NE 7.5 Minute Topo Quad, 1963, PR 1976
USGS Scottsbluff S, NE 7.5 Minute Topo Quad, 1963, PR 1976

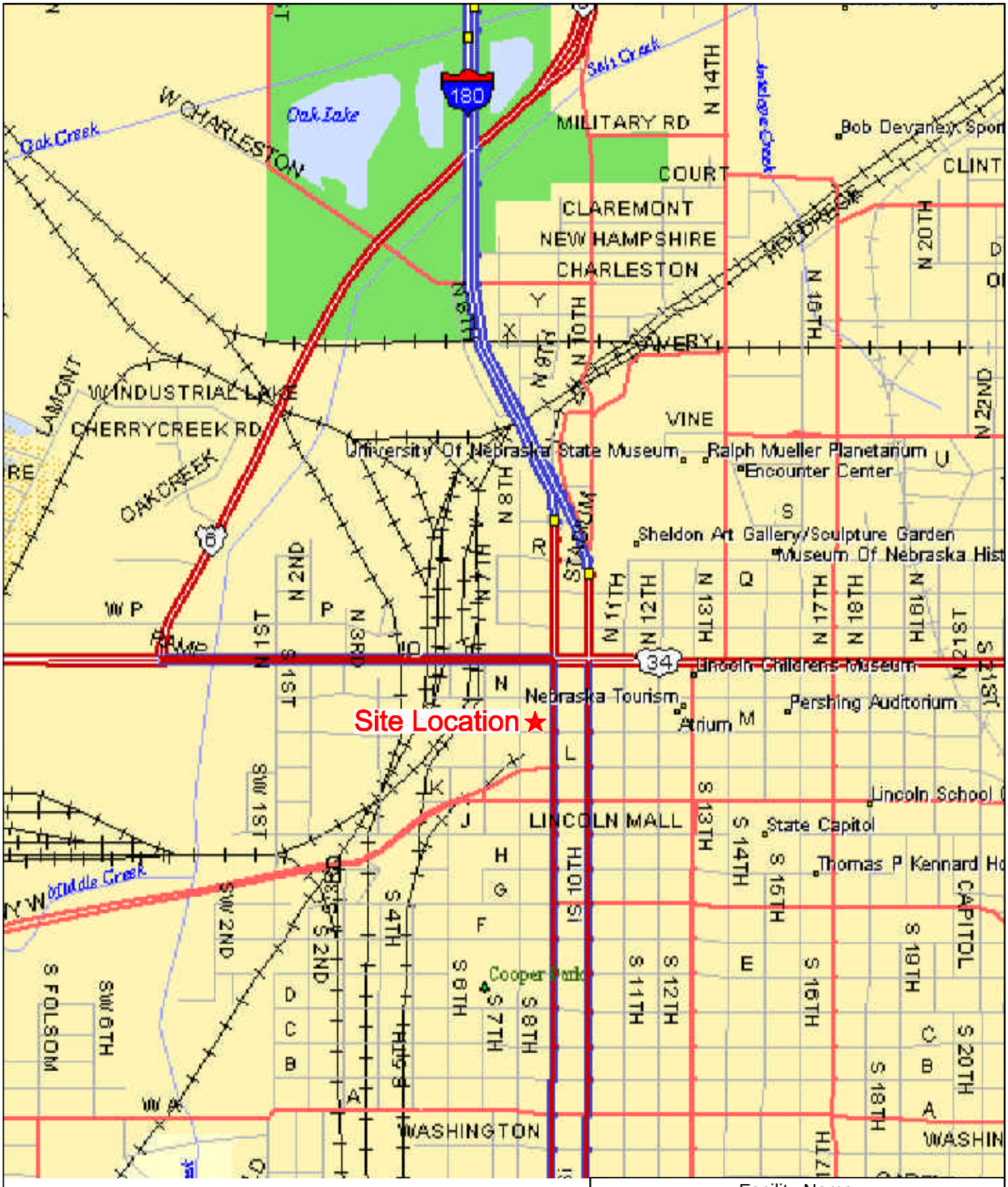
File Path

Facility Name
Address
City, State Zip Code

Figure #
Site Topographic Map

ABC Company, Inc.

Date: XX/XX/XX | Drawn By: Your Name | Project No: ######



Facility Name
Address
City, State Zip Code

Figure #
Site Location Map

ABC Company, Inc.

Source:

Date: XX/XX/XX | Drawn By: Jim Bob Furapples | Project No: G9011.L.00.0000.00

File Path

N

Not to Scale

Facility Name
Address
City, State Zip Code

Figure #
Historical Aerial Photo

ABC Company, Inc.

Source: E Data Resources, Aerial Photo, 1958

Date: XX/XX/XX Drawn By: Your Name Project No: ######

File Path

N

Not to Scale

Facility Name
Address
City, State Zip Code

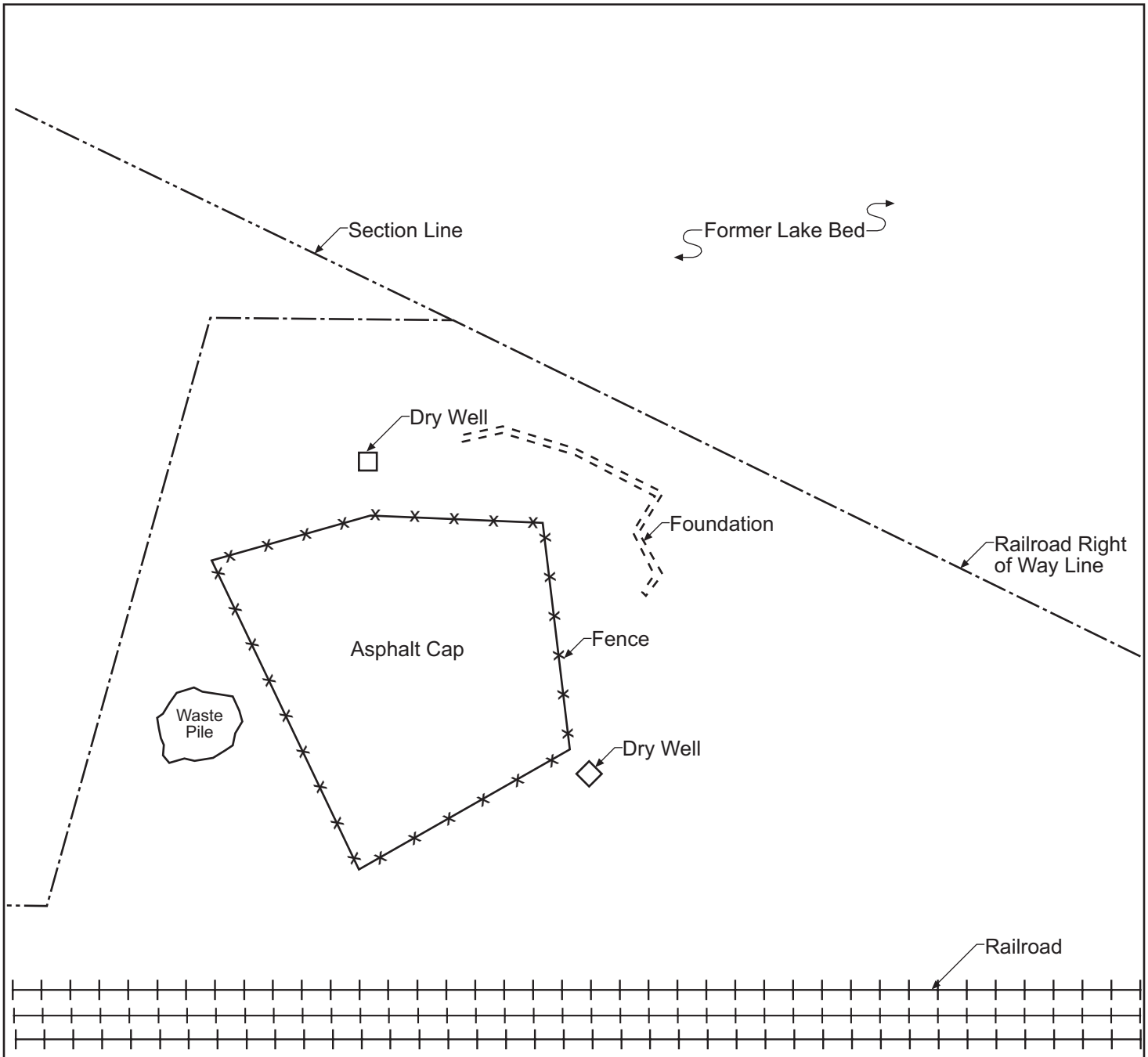
Figure #
Most Recent Aerial Photo

ABC Company, Inc.

Source: E Data Resources, Aerial Photo, 1994

Date: XX/XX/XX Drawn By: Your Name Project No: ######

File Path



N

0 30 60

Scale in Feet

Facility Name
Address
City, State Zip Code

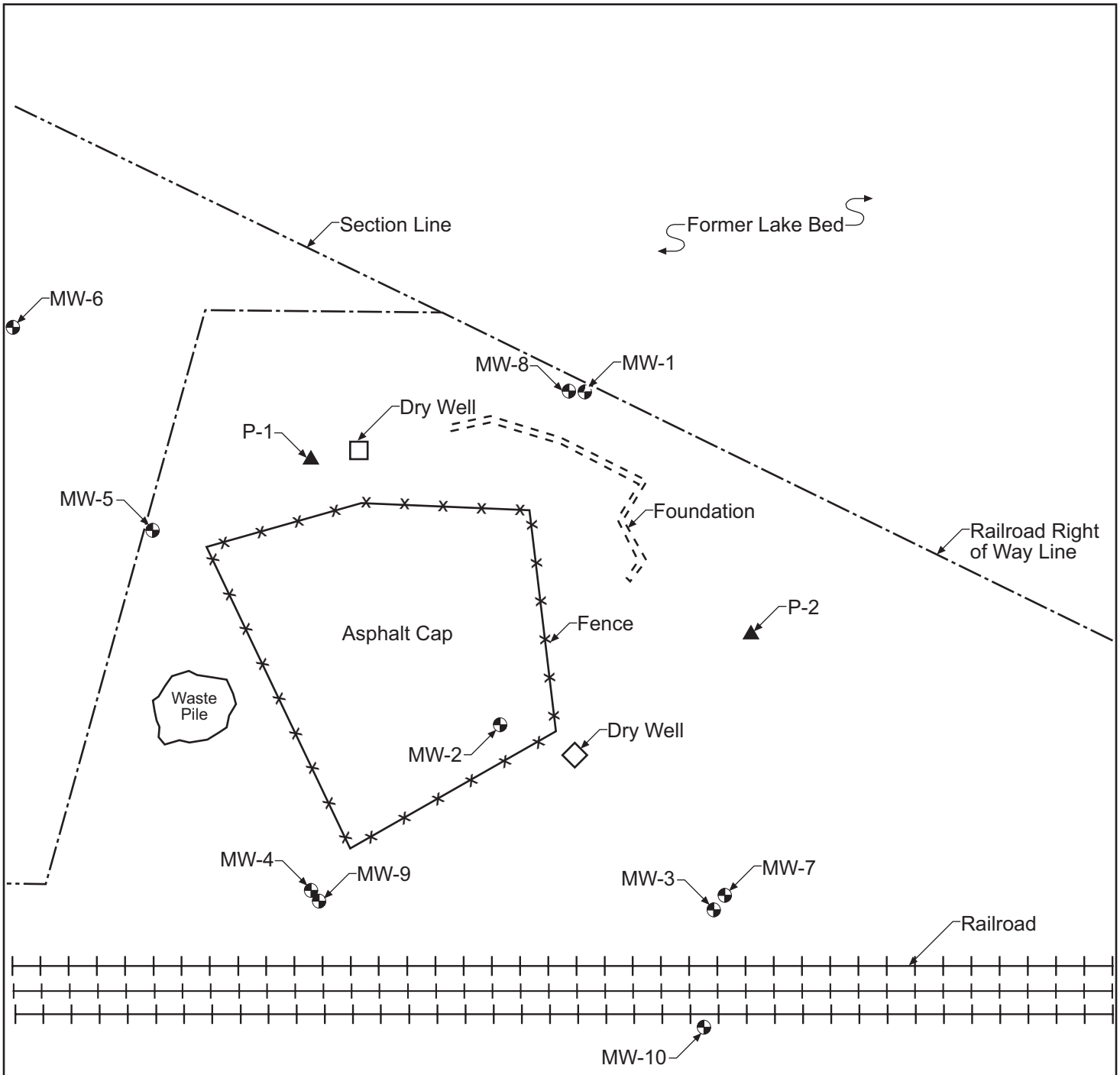
Figure #
Site Layout Map

ABC Company, Inc.

Date: XX/XX/XX Drawn By: Your Name Project No: ######

Base Map Source: Modified from XYZ Company, 2001

File Path



Legend
- Monitoring well location
- Piezometer location

N

0 30 60

Scale in Feet

Base Map Source: Modified from XYZ Company, 2001

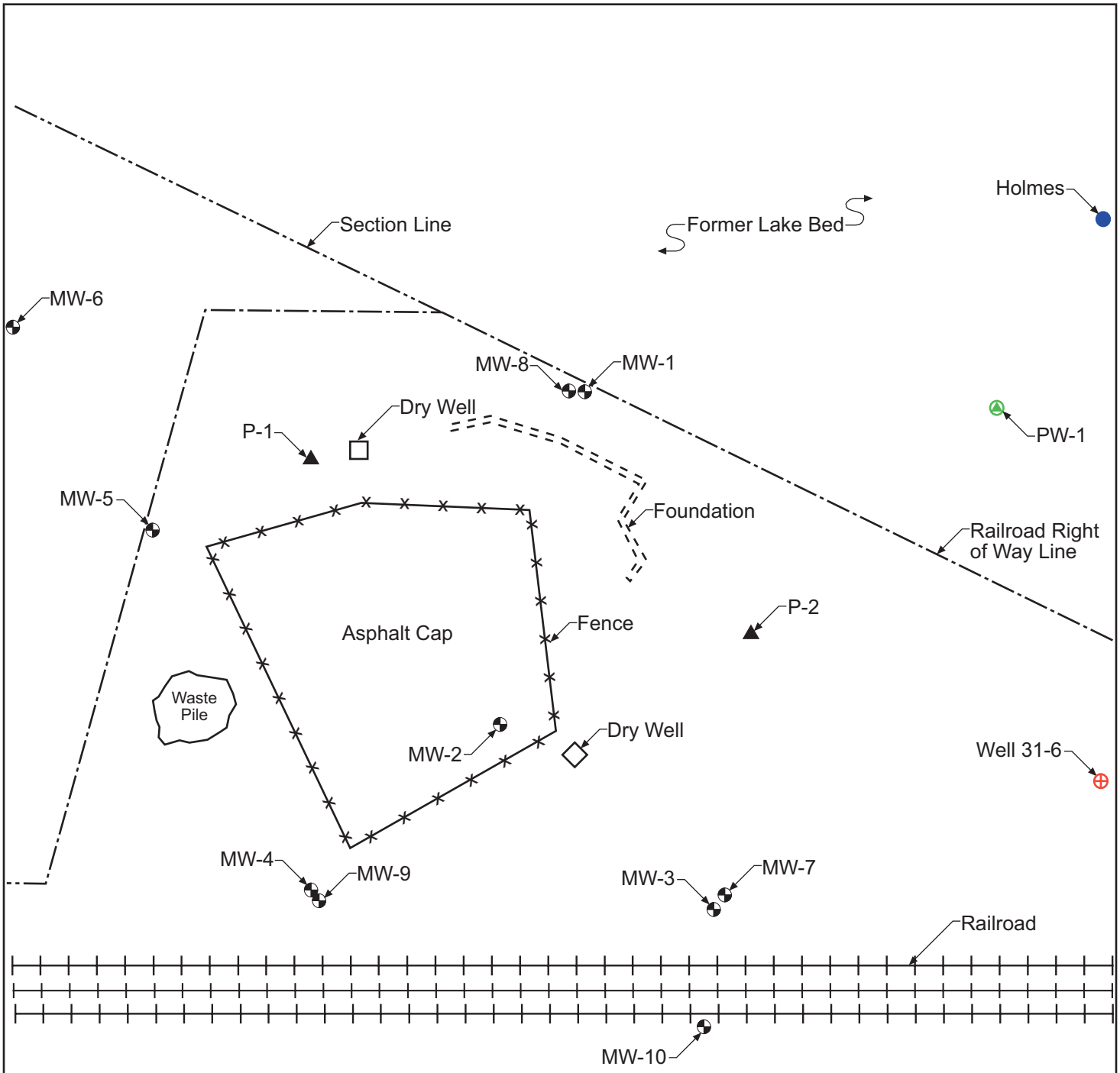
Facility Name
Address
City, State Zip Code

Figure #
Monitoring Well Locations

ABC Company, Inc.

Date: XX/XX/XX Drawn By: Your Name Project No: ######

File Path



Legend

- Monitoring well location
- Piezometer location
- Municipal well location
- Production well location
- Private residential well location

0 30 60

Scale in Feet

Base Map Source: Modified from XYZ Company, 2001

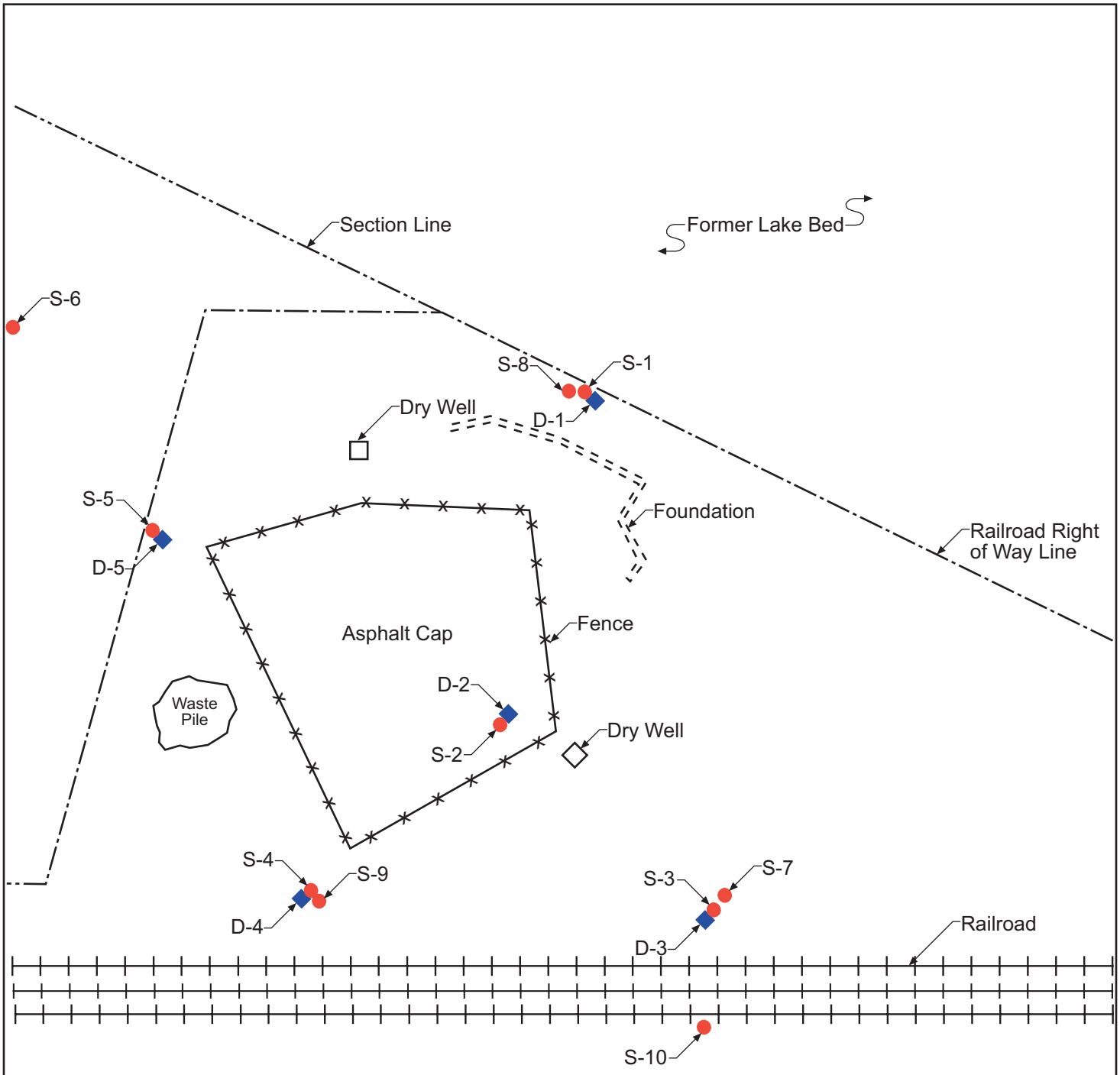
File Path

Facility Name
Address
City, State Zip Code

Figure #
Well Location Map

ABC Company, Inc.

Date: XX/XX/XX Drawn By: Your Name Project No: ######



Legend
- Shallow soil sample location
- Deep soil sample location

0 30 60
Scale in Feet

Base Map Source: Modified from XYZ Company, 2001

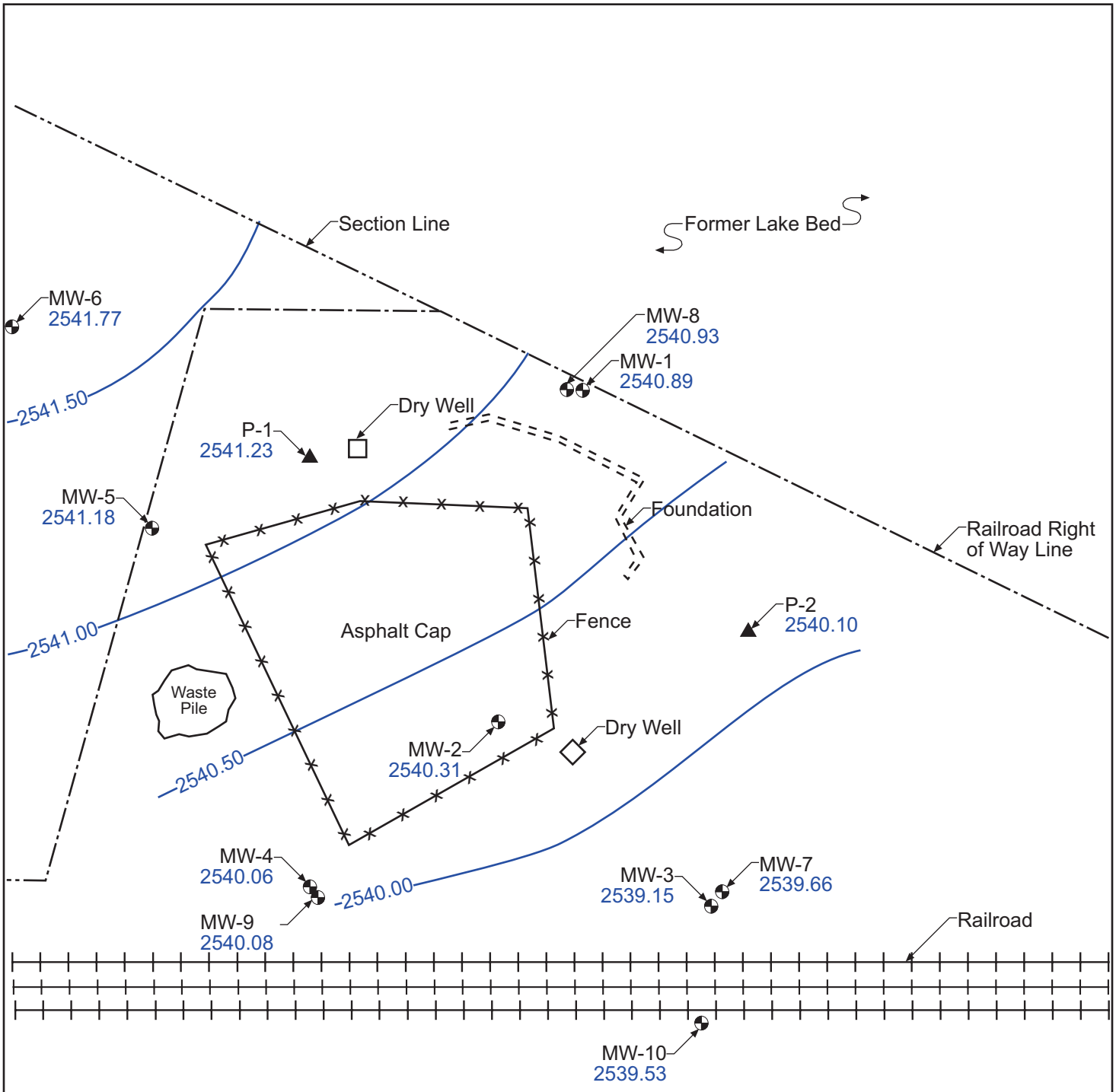
File Path

Facility Name
Address
City, State Zip Code

Figure #
Soil Sampling Locations

ABC Company, Inc.

Date: XX/XX/XX Drawn By: Your Name Project No: ######



Legend

- Monitoring well location
- Piezometer location
- Approximate potentiometric surface contour
- 2540.50 Groundwater elevation(feet above mean sea level)

N

0 30 60

Scale in Feet

Base Map Source: Modified from XYZ Company, 2001

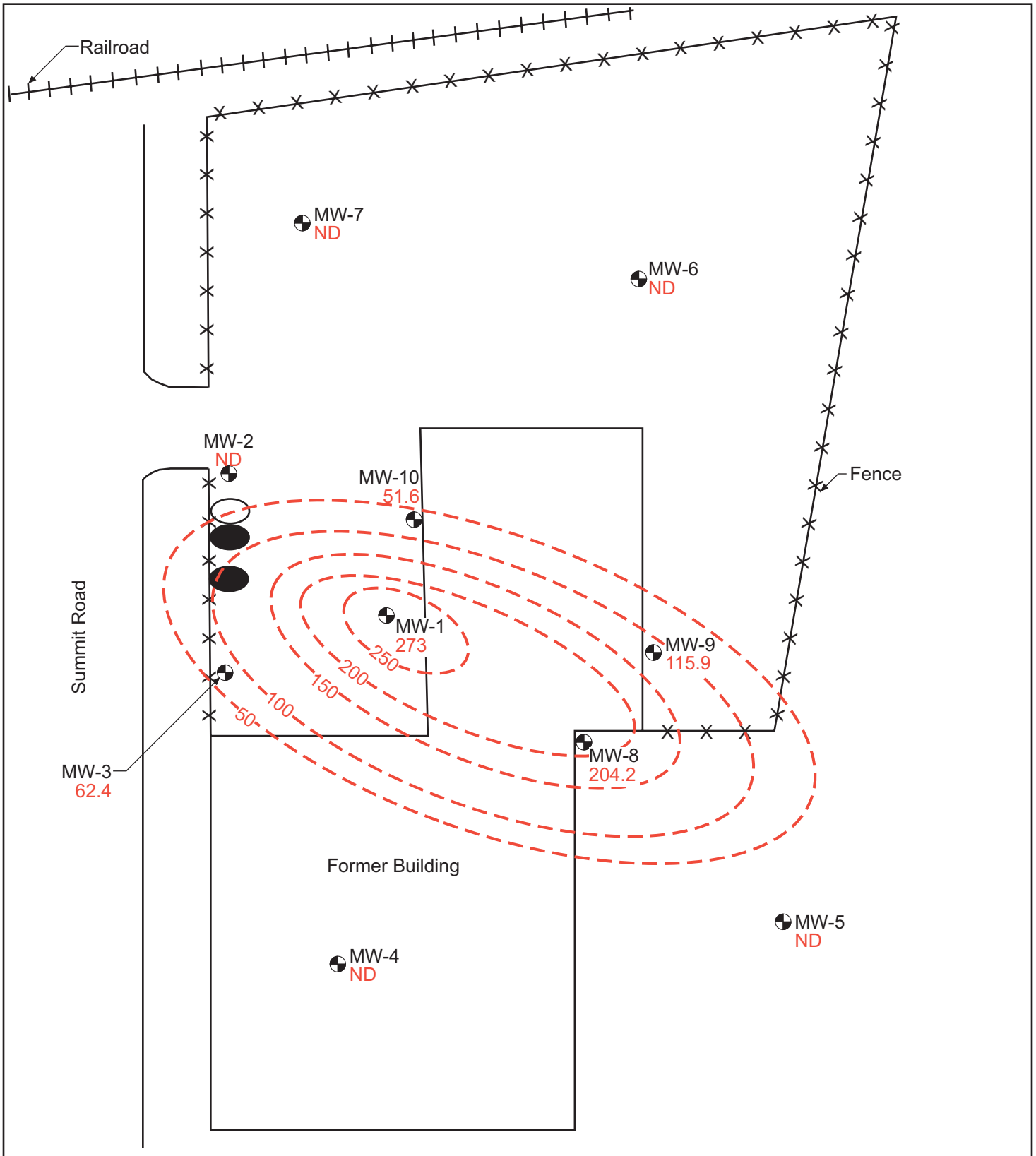
File Path

Facility Name
Address
City, State Zip Code

Figure #
Groundwater Potentiometric Map

ABC Company, Inc.

Date: XX/XX/XX Drawn By: Your Name Project No: ######



Legend

- Former UST
- Former AST
- Monitoring well
- MW-4 Monitoring well ID
- ND Not detected
- — — Approximate benzene isocontour
- 999 Benzene concentration

Not to Scale

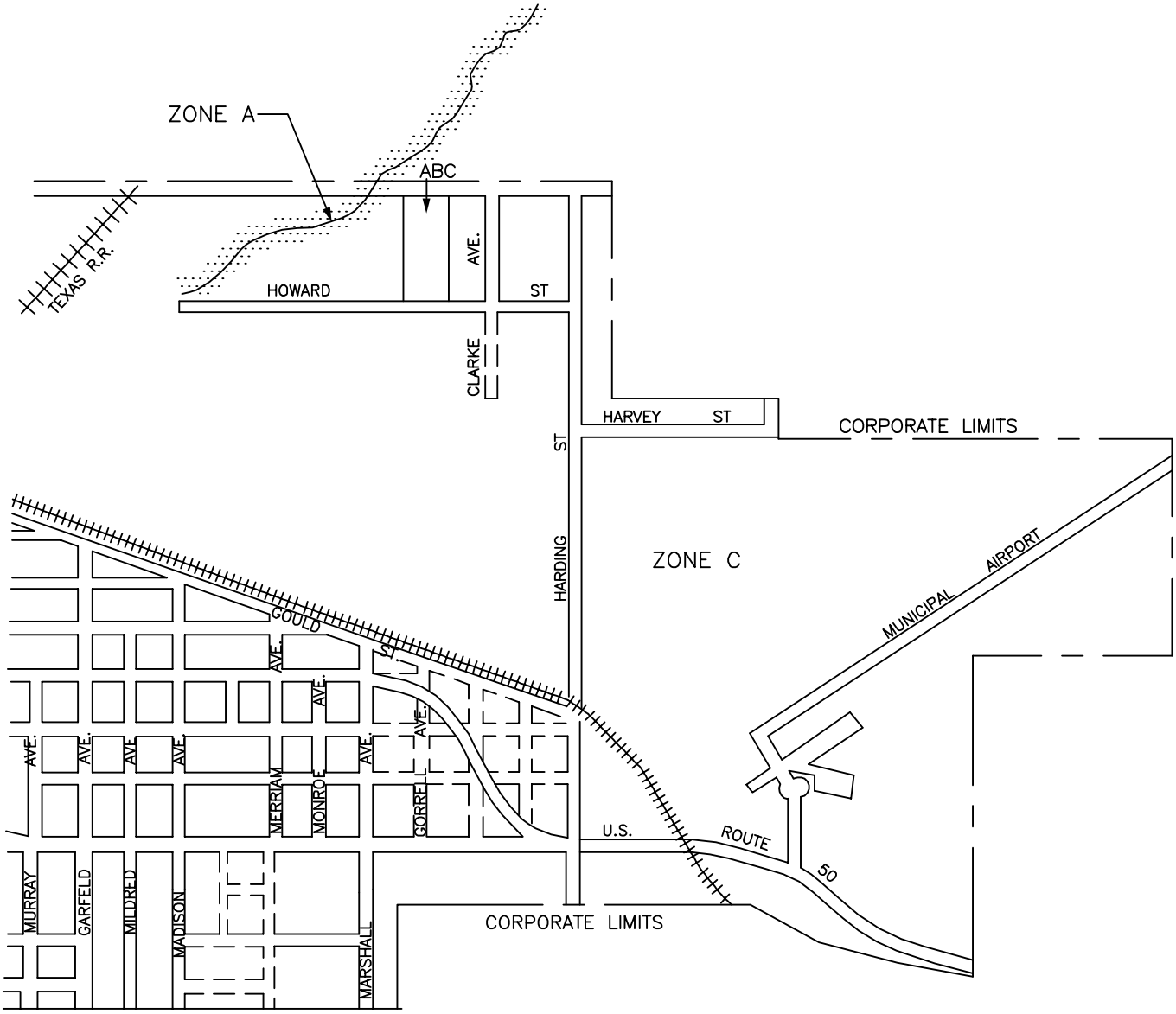
Facility Name
Address
City, State Zip Code

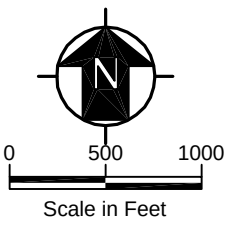
Figure #
Contaminant Plume
Isoconcentration Map

ABC Company, Inc.

Date: XX/XX/XX Drawn By: Your Name Project No: ######

File Path





Source: Modified from FEMA 1985

Facility Name
Address
City, State Zip Code

Figure #
Flood Plain Map

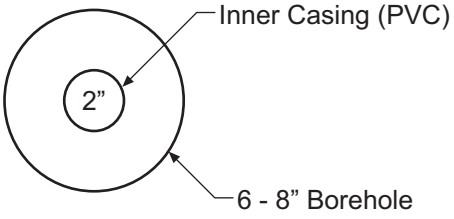
ABC Company, Inc.

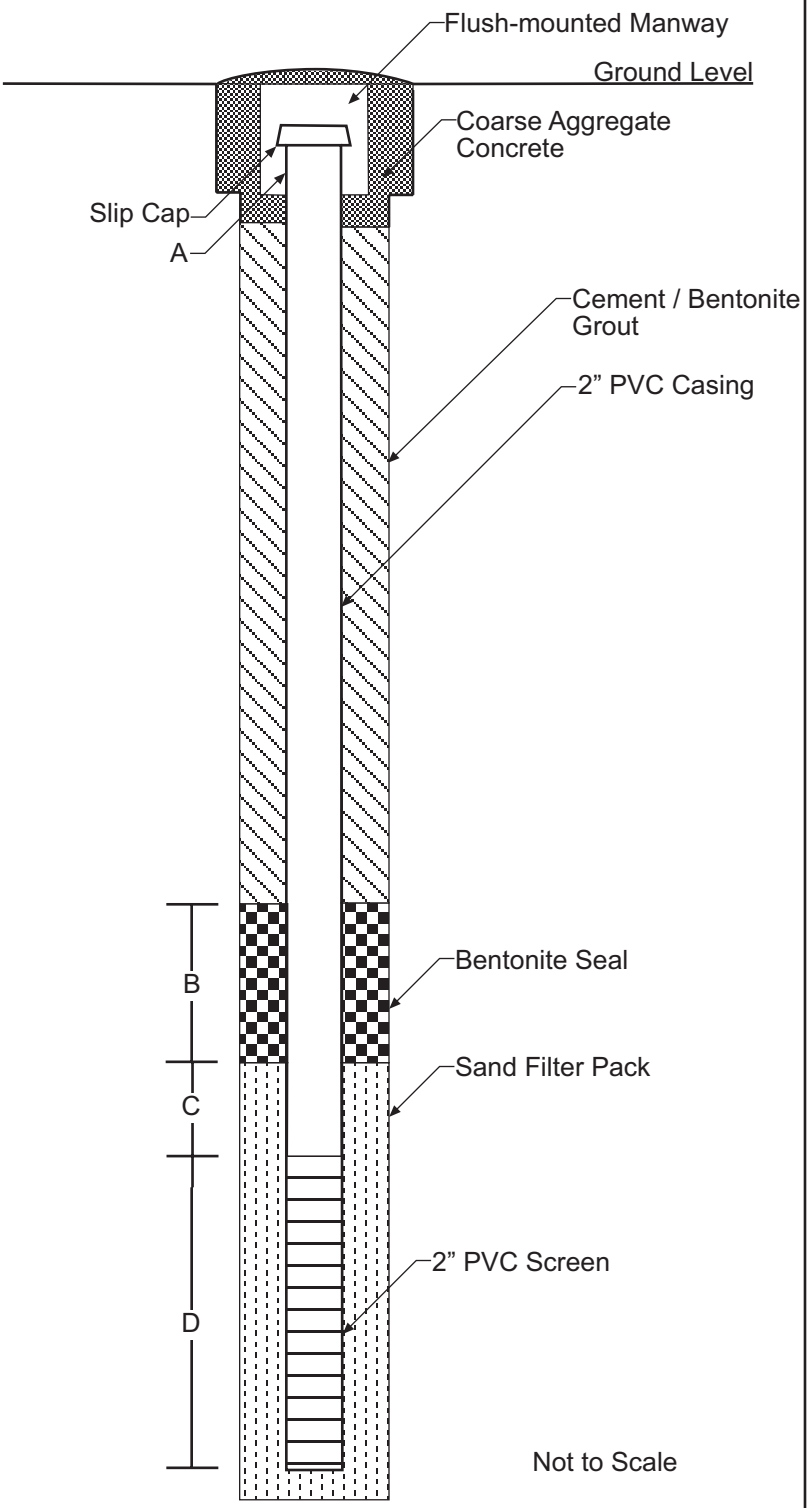
Date: XX/XX/XX | Drawn By: Your Name | Project No: ######

File Path

Well Construction Detail

Plan View





Construction Data

Casing Length: Site Specific
Casing Diameter: 2 in.
Casing Material: Schedule 40 PVC
Screen Size: 0.010 in.
Sand Size: 10-20
Screen Material: Schedule 40 PVC Continuous Wrap

A. Casing Elevation: 0 - 6 in. Below Grade
B. Bentonite Thickness: 3 ft.
C. Sand Depth Above Screen: 2 ft.
D. Screen Length: 10 ft.

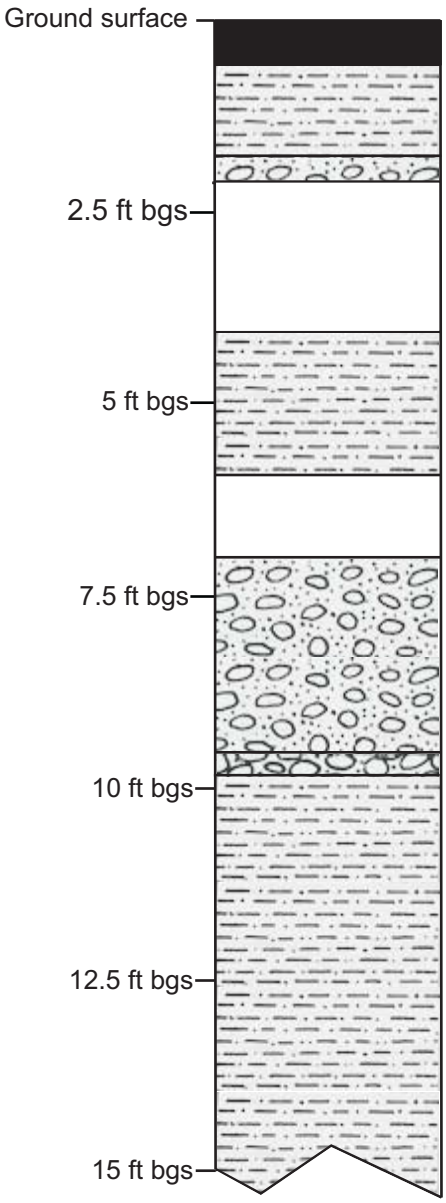
Facility Name
Address
City, State Zip Code

Figure #
Monitoring Well Construction Detail

ABC Company, Inc.

Date: ##/##/## Drawn By: Your Name Project No: ######

File Path



0’-0.5’ Black to brown organic rich silt, rootlets

0.5’-1.8’ Gray to brown silty clay, damp, and minor organics

1.8’-2.0’ Unconsolidated tar ash, gravel, and sands

2.0’-4.0’ Missing

4.0’-6.0’ Brown silty clays and minor organics

6.0’-7.0’ Missing

7.0’-9.5’ Unconsolidated tar ash, gravels, sands, and silts

9.5’-9.8’ Gray indurate fill gravels

9.8’-15’ Black to dark brown organic rich silts and silty clay, damp

Note: bgs abbreviation for below ground surface

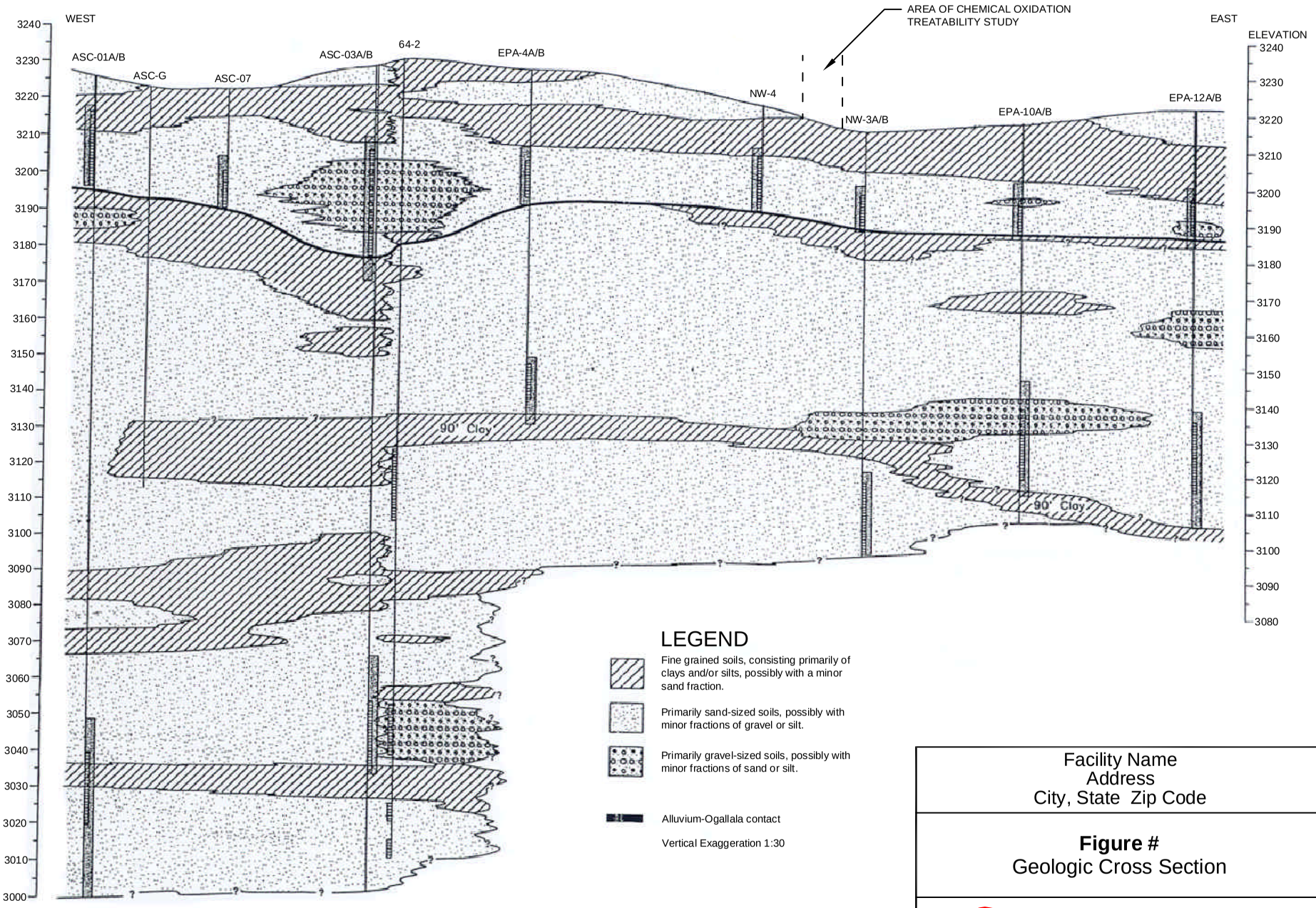
File Path

Facility Name
Address
City, State Zip Code

Figure #
Generalized Stratigraphic Column

ABC Company, Inc.

Date: XX/XX/XX Drawn By: Your Name Project No: ######



Source:

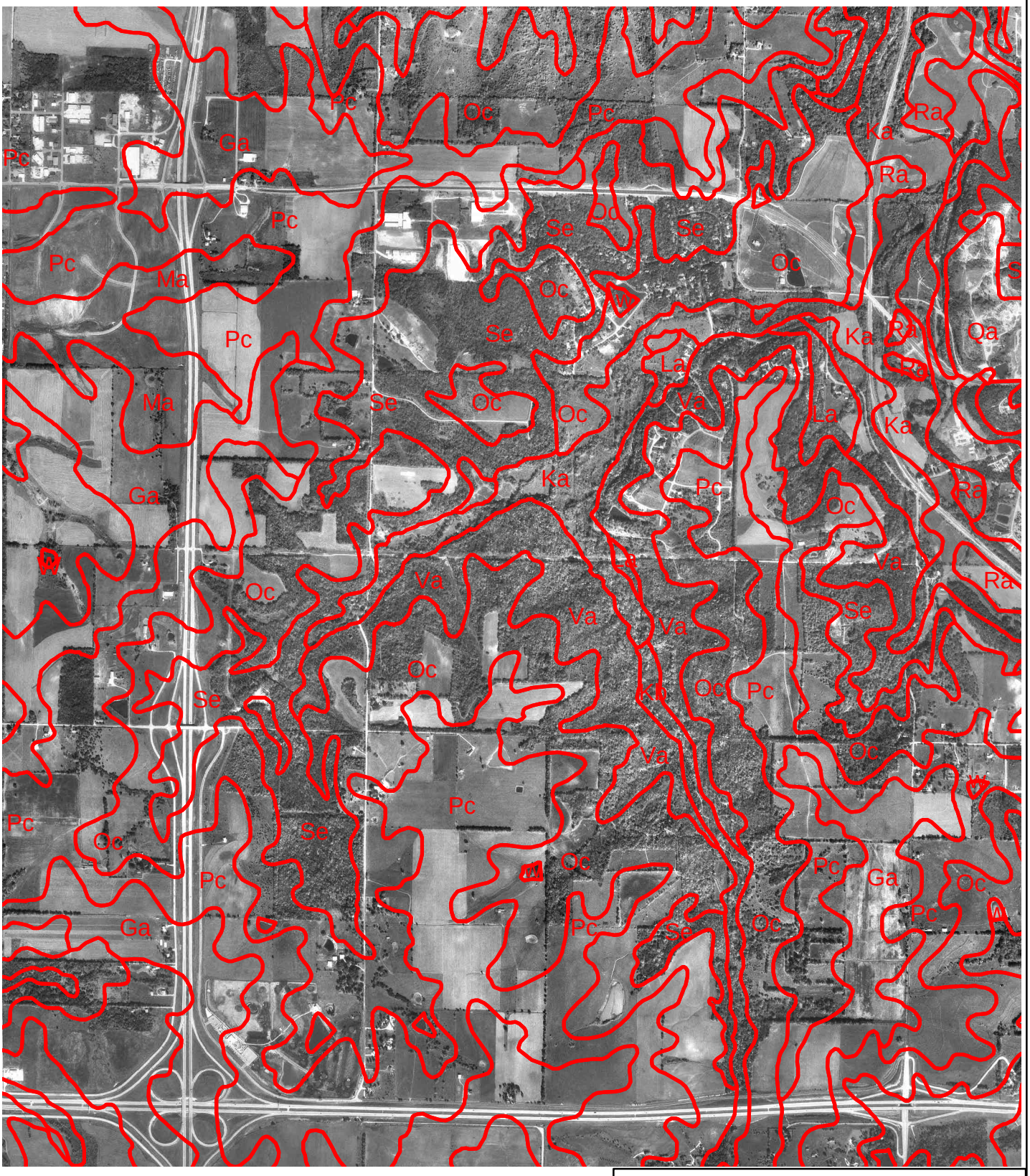
File Path

Facility Name
Address
City, State Zip Code

Figure #
Geologic Cross Section

ABC Company, Inc.

Date: XX/XX/XX | Drawn By: Your Name | Project No: ######



Legend

- Oc Oska-Martin Silty Clay Loam
- Va Vinland-Rock Outcrop Complex
- Pc Polo Silt Loam
- Ma Martin Silty Clay Loam
- Ka Kennebec Silt Loam
- La Ladoqg Silt Loam

N

2000 0 2000 Feet

Source:

File Path

Facility Name
Address
City, State Zip Code

Figure #
Soil Survey

ABC Company, Inc.

Date: 6/19/02 Drawn By: Colin Willits Project No: P1628.03

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