CONTOUR INTERVAL 10 FEET

1 0 1 2 MILES

4000 0 4000 8000 FEET

LEGEND:

PROPERTY BOUNDARY (APPROXIMATE)

Source: USGS 7.5 minute series (topographic)
Quadrangle: Whiting, Indiana (2013), Highland, Indiana (2013),
Calumet City, Indiana (2012), Calumet City, Illinois-Indiana (2013).

QUADRANGLE LOCATION

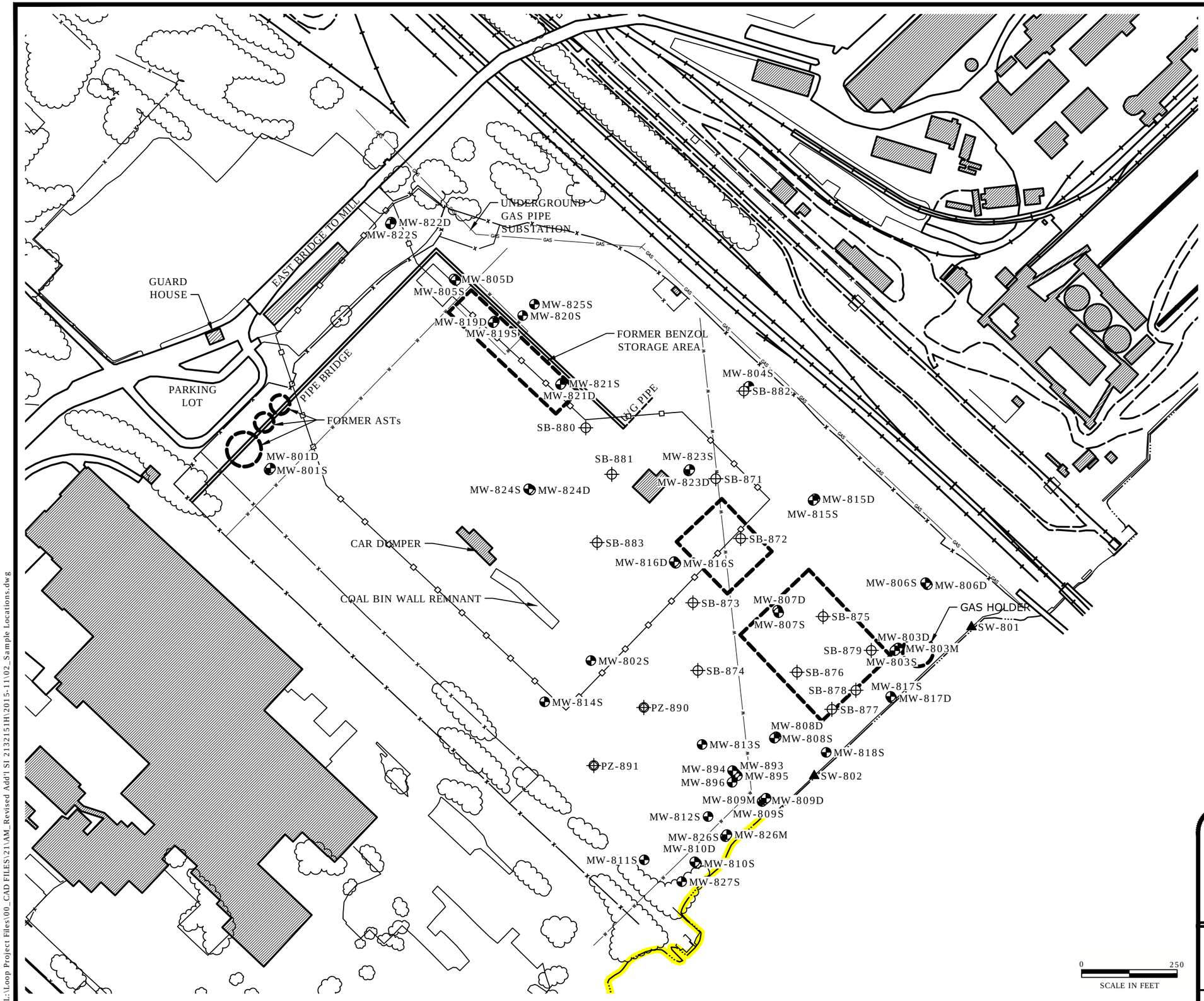
RAMBOLL ENVIRON

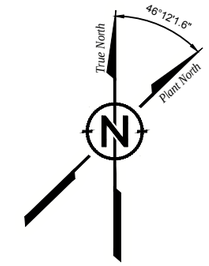
SITE LOCATION MAP
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

FIGURE 1

DRAFTED BY: CKL | DATE: 9/4/15 | 21-32151D

L:\Loop Project Files\00_CAD FILES\21\ArcelorMittal_Coke Plant 2013 21-32151D\2015-09\01_Site Location Map.dwg





LEGEND

- SOIL BORING
- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- PIEZOMETER
  (1" NON SAMPLING WELL)
- SURFACE WATER MEASURING POINTS
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- FENCED-IN PARKING AREA
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O2, NO2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA
- LOCATION OF BREACHED SHEET PILE WALL

NOTE:

SEWER, FIRE WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

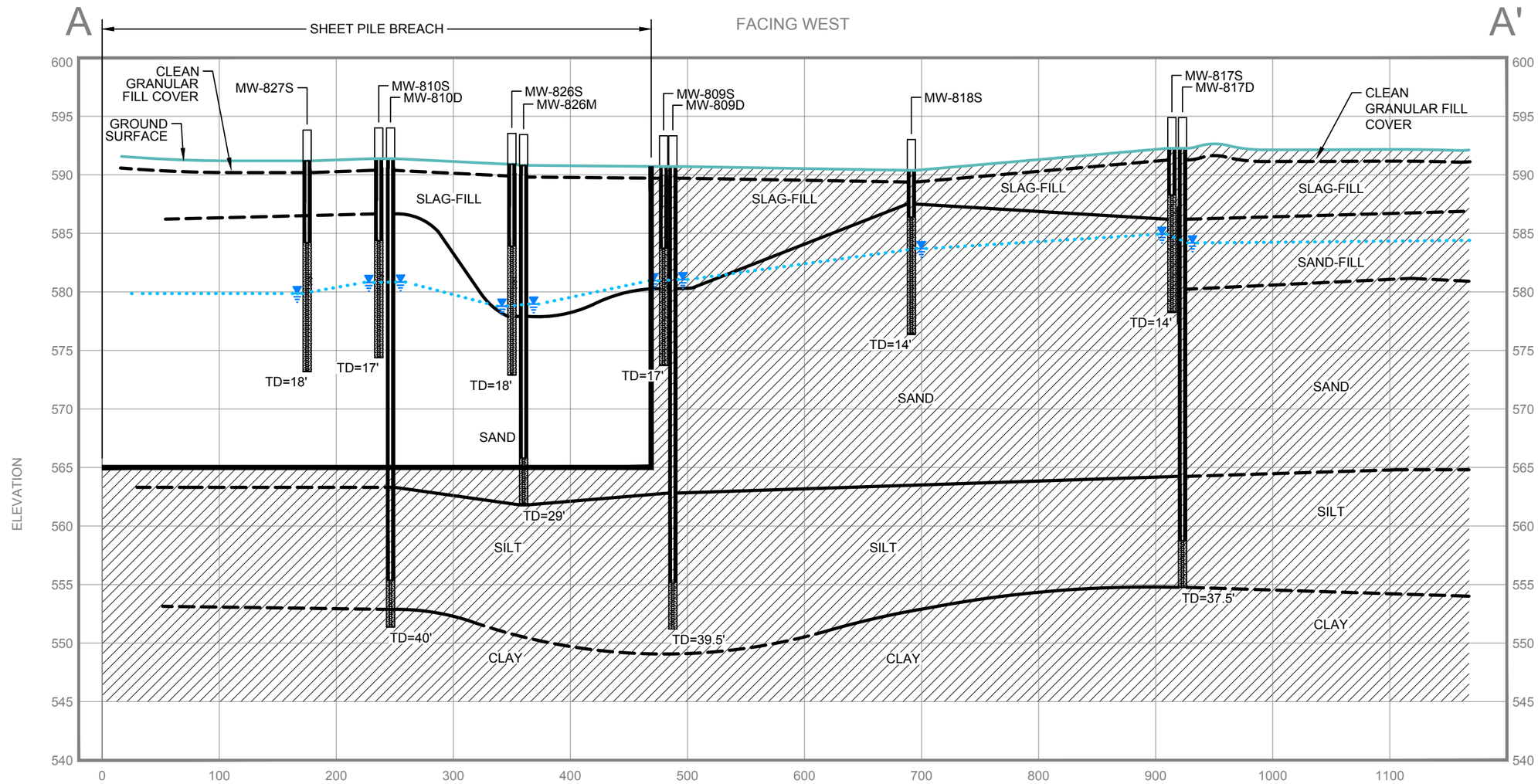
SAMPLE LOCATIONS
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

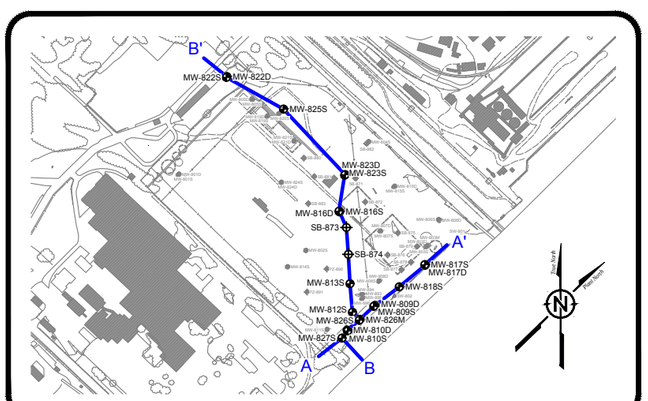
RAMBOLL ENVIRON

FIGURE 2

DRAFTED BY: CKL | DATE: 11/18/15 | 21-32151H

L:\Loop Project Files\00_CAD FILES\21\AM_Revised Add'l SI 2132151H\2015-11\02_Sample Locations.dwg





CROSS SECTION INDEX

LEGEND

	GROUNDWATER ELEVATION (JULY 2013)
	LITHOLOGICAL CONTACT (DASHED WHERE INFERRED)
SLAG-FILL	GRANULAR, SAND-SIZED, BLACK, VERY DENSE TO EXTREMELY DENSE
SAND	FINE TO COARSE, LAYERED (FINING UPWARD), GREY, MEDIUM DENSE TO DENSE
CLAY	GREY, FIRM TO STIFF, PLASTIC
SILT	COARSE, OCCASIONAL 2-9" LAYERS OF SAND (FINE OR COARSE), GREY, DENSE
DEEP WELLS	3' SCREEN
MID-DEPTH WELLS	5' SCREEN
SHALLOW WELLS	10' SCREEN
	SHEET PILE BARRIER

APPROX. VERTICAL SCALE (ft.) 0 10

APPROX. HORIZONTAL SCALE (ft.) 0 100

CROSS SECTION A - A'

FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL ENVIRON

FIGURE 4

DRAFTED BY: CKL | DATE: 11/18/15 | 21-32151H

L:\Loop Project Files\00_CAD FILES\21\AM_Revised Add'l SI 2132151H\2015-11\04-05_Cross Section AB.dwg

B

FACING SOUTHWEST

B'

SHEET PILE BREACH

MW-827S
MW-810D
MW-810S
MW-826S
MW-826M
MW-812S
MW-813S
SB-874
SB-873
MW-816S
MW-816D
MW-823D
MW-823S
CLEAN GRANULAR FILL COVER
GROUND SURFACE
MW-825S
MW-822D
MW-822S
ASPHALT

SLAG-FILL
CONCRETE
SLAG-FILL
SLAG-FILL
SLAG-FILL
SLAG-FILL

TD=8'
TD=8'
TD=14'
TD=15'
TD=14'
TD=15'
TD=17'
TD=18'
TD=18'
TD=16'
TD=16'

INDIANA HARBOR CANAL

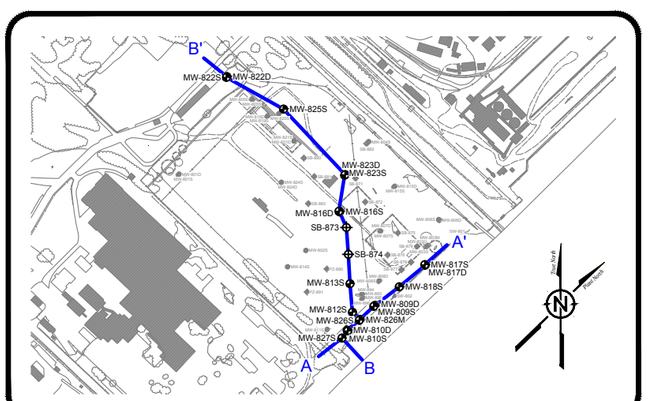
SAND
SAND
SAND
SAND
SAND

RIP-RAP
SHEET PILE
TD=29'
BOTTOM OF CANAL
TD=40'
SILT
SILT
TD=42'
TD=41'
TD=39'
TD=UNKNOWN
CLAY
CLAY
CLAY
CLAY

ELEVATION

600 595 590 585 580 575 570 565 560 555 550 545 540

0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300



CROSS SECTION INDEX

LEGEND

	GROUNDWATER ELEVATION (JULY 2013)
	LITHOLOGICAL CONTACT (DASHED WHERE INFERRED)
SLAG-FILL	GRANULAR, SAND-SIZED, BLACK, VERY DENSE TO EXTREMELY DENSE
SAND	FINE TO COARSE, LAYERED (FINING UPWARD), GREY, MEDIUM DENSE TO DENSE
CLAY	GREY, FIRM TO STIFF, PLASTIC
SILT	COARSE, OCCASIONAL 2-9" LAYERS OF SAND (FINE OR COARSE), GREY, DENSE
DEEP WELLS	3' SCREEN
MID-DEPTH WELLS	5' SCREEN
SHALLOW WELLS	10' SCREEN

APPROX. VERTICAL SCALE (ft.) 0 10

APPROX. HORIZONTAL SCALE (ft.) 0 200

CROSS SECTION B - B'

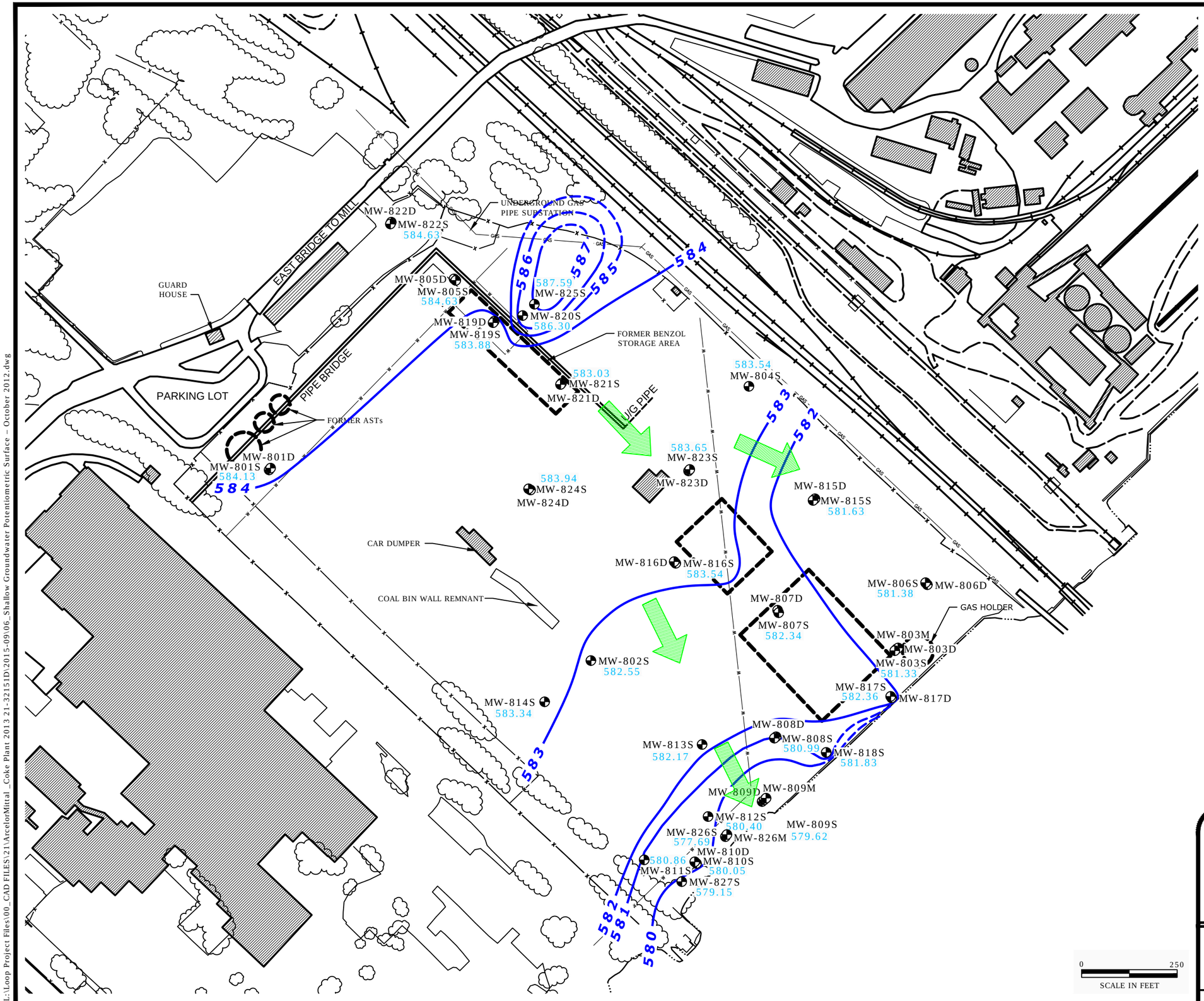
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL ENVIRON

FIGURE 5

DRAFTED BY: CKL | DATE: 11/18/15 | 21-32151H

L:\Loop Project Files\00_CAD FILES\21\AM_Revised Add'l SI 2132151H\2015-11\04-05_Cross Section AB.dwg



LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- 581.38 GROUNDWATER ELEVATION
- GROUNDWATER FLOW DIRECTION
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O2, NO2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA

NOTE:

SEWER, FIRE WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

SHALLOW GROUNDWATER POTENTIOMETRIC SURFACE (OCTOBER 2012)

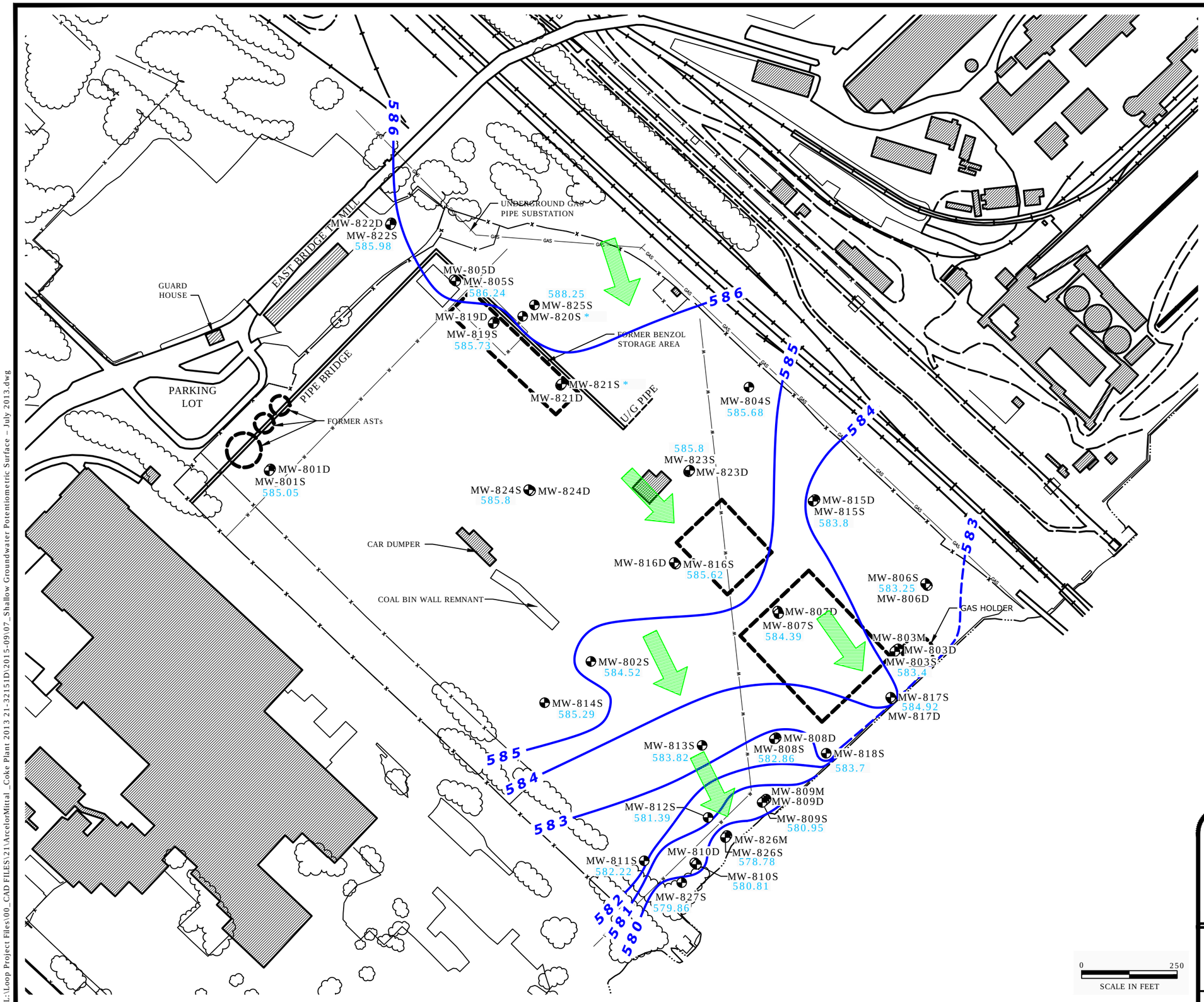
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

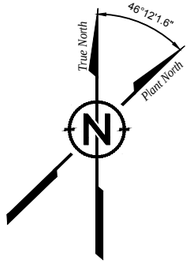
RAMBOLL ENVIRON

FIGURE 6

DRAFTED BY: CKL | DATE: 9/4/15 | 21-32151D

L:\Loop Project Files\00_CAD FILES\21\ArcelorMittal _Coke Plant 2013 21-32151D\2015-09\06_Shallow Groundwater Potentiometric Surface – October 2012.dwg





LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- 581.38 GROUNDWATER ELEVATION
- GROUNDWATER FLOW DIRECTION
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O2, NO2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA

NOTE:

* WELLS CONTAINING FIRE PRODUCT EXCLUDED FROM MONITORING

SEWER, FIRE WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

SHALLOW GROUNDWATER POTENTIOMETRIC SURFACE (JULY 2013)

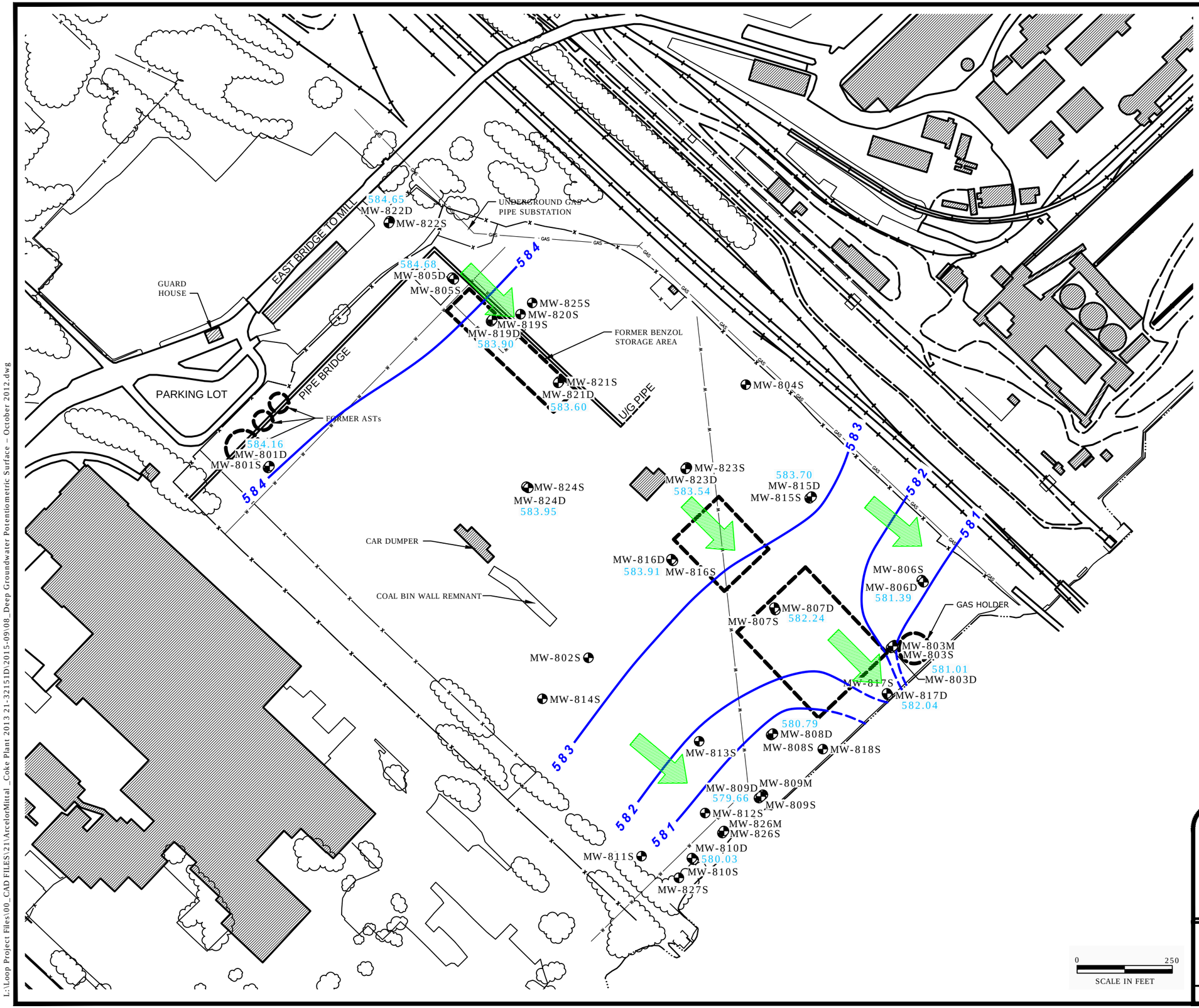
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

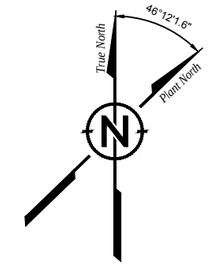
RAMBOLL ENVIRON

FIGURE 7

DRAFTED BY: CKL | DATE: 9/4/15 | 21-32151D

L:\Loop Project Files\00_CAD FILES\21\ArcelorMittal_Coke Plant 2013 21-32151D\2015-09\07_Shallow Groundwater Potentiometric Surface – July 2013.dwg





LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- 581.38 GROUNDWATER ELEVATION
- GROUNDWATER FLOW DIRECTION
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O2, NO2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA

NOTE:

SEWER, FIRE WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

DEEP GROUNDWATER POTENTIOMETRIC SURFACE (OCTOBER 2012)

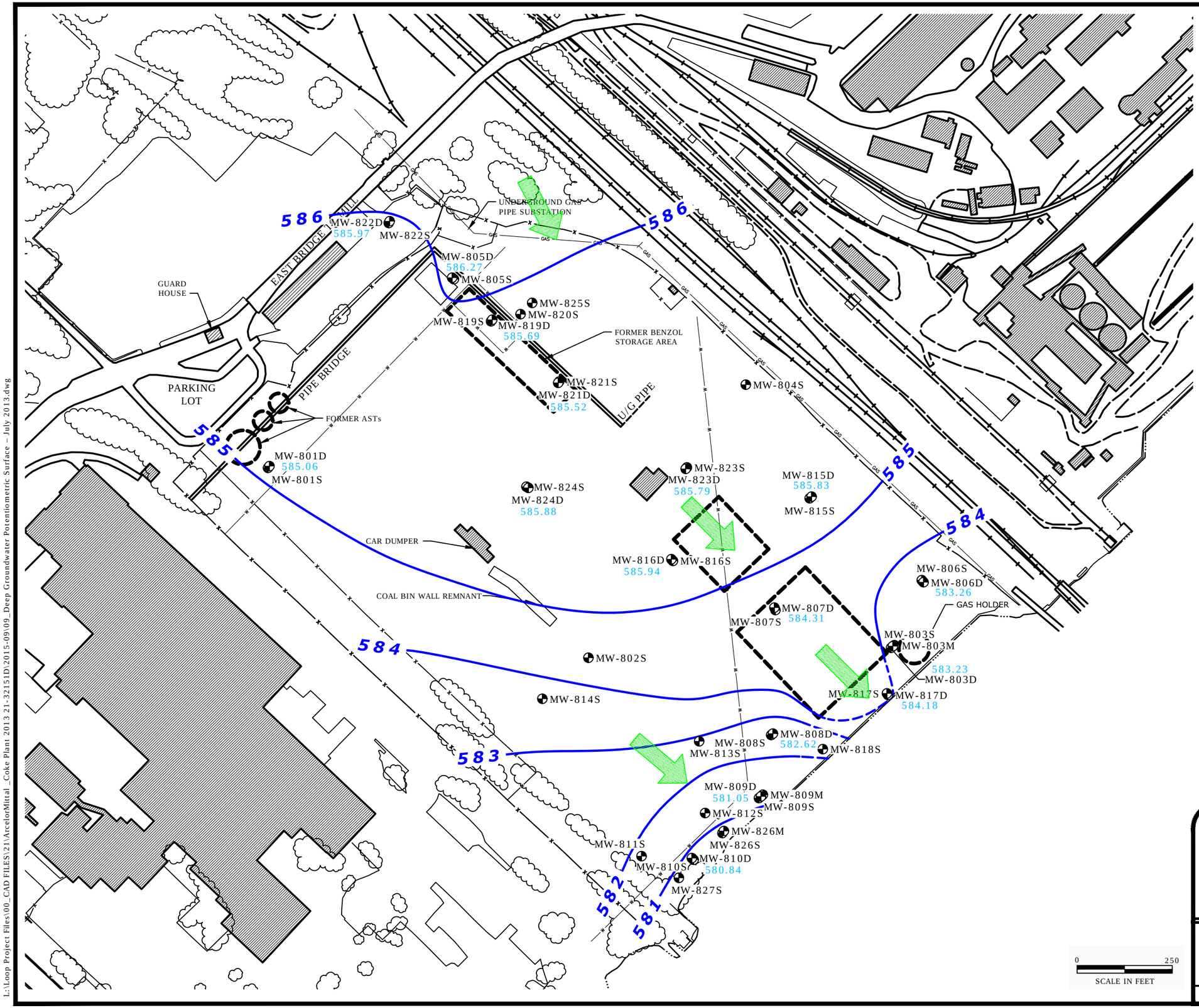
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

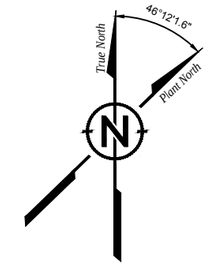
RAMBOLL ENVIRON

FIGURE 8

DRAFTED BY: CKL | DATE: 9/4/15 | 21-32151D

L:\Loop Project Files\00_CAD FILES\21\ArcelorMittal _Coke Plant 2013 21-32151D\2015-09\08_Deep Groundwater Potentiometric Surface – October 2012.dwg





LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- 581.38 GROUNDWATER ELEVATION
- GROUNDWATER FLOW DIRECTION
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O2, NO2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA

NOTE:

SEWER, FIRE WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

DEEP GROUNDWATER POTENTIOMETRIC SURFACE (JULY 2013)

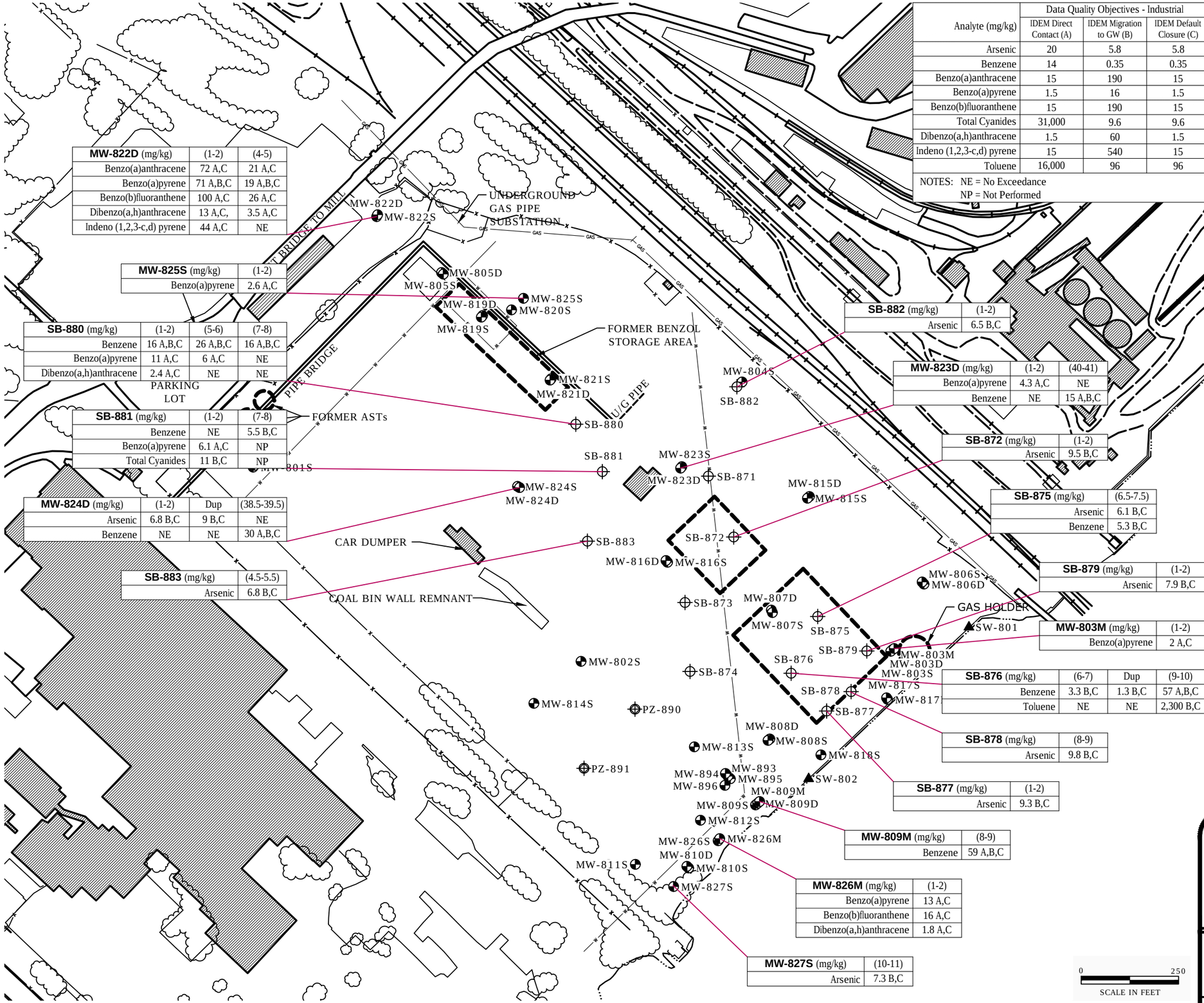
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL ENVIRON

FIGURE 9

DRAFTED BY: CKL | DATE: 9/4/15 | 21-32151D

L:\Loop Project Files\00_CAD FILES\21\ArcelorMittal_Coke Plant 2013 21-32151D\2015-09\09_Deep Groundwater Potentiometric Surface – July 2013.dwg



MW-822D (mg/kg)	(1-2)	(4-5)
Benzo(a)anthracene	72 A,C	21 A,C
Benzo(a)pyrene	71 A,B,C	19 A,B,C
Benzo(b)fluoranthene	100 A,C	26 A,C
Dibenzo(a,h)anthracene	13 A,C,	3.5 A,C
Indeno (1,2,3-c,d) pyrene	44 A,C	NE

MW-825S (mg/kg)	(1-2)
Benzo(a)pyrene	2.6 A,C

SB-880 (mg/kg)	(1-2)	(5-6)	(7-8)
Benzene	16 A,B,C	26 A,B,C	16 A,B,C
Benzo(a)pyrene	11 A,C	6 A,C	NE
Dibenzo(a,h)anthracene	2.4 A,C	NE	NE

SB-881 (mg/kg)	(1-2)	(7-8)
Benzene	NE	5.5 B,C
Benzo(a)pyrene	6.1 A,C	NP
Total Cyanides	11 B,C	NP

MW-824D (mg/kg)	(1-2)	Dup	(38.5-39.5)
Arsenic	6.8 B,C	9 B,C	NE
Benzene	NE	NE	30 A,B,C

SB-883 (mg/kg)	(4.5-5.5)
Arsenic	6.8 B,C

SB-882 (mg/kg)	(1-2)
Arsenic	6.5 B,C

MW-823D (mg/kg)	(1-2)	(40-41)
Benzo(a)pyrene	4.3 A,C	NE
Benzene	NE	15 A,B,C

SB-872 (mg/kg)	(1-2)
Arsenic	9.5 B,C

SB-875 (mg/kg)	(6.5-7.5)
Arsenic	6.1 B,C
Benzene	5.3 B,C

SB-879 (mg/kg)	(1-2)
Arsenic	7.9 B,C

MW-803M (mg/kg)	(1-2)
Benzo(a)pyrene	2 A,C

SB-876 (mg/kg)	(6-7)	Dup	(9-10)
Benzene	3.3 B,C	1.3 B,C	57 A,B,C
Toluene	NE	NE	2,300 B,C

SB-878 (mg/kg)	(8-9)
Arsenic	9.8 B,C

SB-877 (mg/kg)	(1-2)
Arsenic	9.3 B,C

MW-809M (mg/kg)	(8-9)
Benzene	59 A,B,C

MW-826M (mg/kg)	(1-2)
Benzo(a)pyrene	13 A,C
Benzo(b)fluoranthene	16 A,C
Dibenzo(a,h)anthracene	1.8 A,C

MW-827S (mg/kg)	(10-11)
Arsenic	7.3 B,C

Analyte (mg/kg)	Data Quality Objectives - Industrial		
	IDEM Direct Contact (A)	IDEM Migration to GW (B)	IDEM Default Closure (C)
Arsenic	20	5.8	5.8
Benzene	14	0.35	0.35
Benzo(a)anthracene	15	190	15
Benzo(a)pyrene	1.5	16	1.5
Benzo(b)fluoranthene	15	190	15
Total Cyanides	31,000	9.6	9.6
Dibenzo(a,h)anthracene	1.5	60	1.5
Indeno (1,2,3-c,d) pyrene	15	540	15
Toluene	16,000	96	96

NOTES: NE = No Exceedance
NP = Not Performed

46°12'1.6"
True North
Plant North
N

LEGEND

- SOIL BORING
- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- PIEZOMETER
  (1" NON SAMPLING WELL)
- SURFACE WATER MEASURING POINTS
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O_2, NO_2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA

NOTE:

SEWER, FIRE WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

DATA QUALITY OBJECTIVE EXCEEDANCES IN SOIL

FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL ENVIRON

FIGURE 10

DRAFTED BY: CKL | DATE: 9/4/15 | 21-32151D

L:\Loop Project Files\00_CAD FILES\21\ArcelorMittal _Coke Plant 2013 21-32151D\2015-09\10_Data Quality Objective Exceedances in Soil.dwg

Analyte (mg/L)	Data Quality Objectives - Industrial			
	IDEM MCL (A)	IDEM Industrial (B)	IDEM Default Closure (C)	IDEM Groundwater Solubility (D)
2,4-Dimethylphenol	-	2.0	2.0	7,900
Antimony	0.006	0.041	0.041	-
Arsenic	0.01	0.0019	0.01	-
Benzene	0.005	0.052	0.052	-
Benzo(a)pyrene	0.0002	0.00039	0.00039	0.0016
Ethylbenzene	0.7	10	10	170
Indeno (1,2,3-c,d) pyrene	-	-	-	0.00002
Methylene Chloride	0.005	0.38	0.38	13,000
Naphthalene	-	2.0	2.0	31
Pentachlorophenol	0.001	0.024	0.024	2,000
Phenol	-	31	31	83,000
Selenium	0.05	0.51	0.51	-
Thallium	0.002	0.0072	0.0072	-
Toluene	1.0	8.2	8.2	530

NOTE: NE = No Exceedance

MW-822S (mg/L)	10/31/12	7/16/13
Arsenic	0.0033 J B	0.0033 J B

MW-805S (mg/L)	10/31/12	7/17/13
Arsenic	0.013 A,B,C	0.013 A,B,C
Benzene	1.1 A,B,C	0.62 A,B,C
Indeno (1,2,3-c,d) pyrene	NE	0.000023 D

MW-819S (mg/L)	11/2/12	7/17/13
Arsenic	0.0058 J B	0.0054 J B
Benzene	26 A,B,C	11 A,B,C
Ethylbenzene	1.3 A	0.99 A
Toluene	15 A,B,C	6.6 A
Indeno (1,2,3-c,d) pyrene	0.00003 D	0.000027 D

MW-825S (mg/L)	11/1/12	7/15/13	Dup
Antimony	0.0061 A	NE	NE
Arsenic	0.0096 J B	0.0029 J B	0.0022 J B
Benzene	0.024 A	0.047 A	0.046 A
Thallium	0.0042 J A	NE	NE
Pentachlorophenol	0.029 J A,B,C	0.029 J A,B,C	0.026 J A,B,C

MW-820S (mg/L)	11/2/12	7/18/13
Arsenic	0.062 A,B,C	0.027 A,B,C
Benzene	7 A,B,C	1.7 A,B,C
Benzo(a)pyrene	NE	0.00048 J A,B,C
Indeno (1,2,3-c,d) pyrene	0.000088 D	NE
Methylene Chloride	0.56 J A,B,C	0.018 J A
Naphthalene	2.8 B,C	2.9 B,C

MW-821S (mg/L)	11/2/12	7/18/13
Arsenic	0.0077 J B	0.0042 J B
Benzene	19 A,B,C	5.5 A,B,C
Benzo(a)pyrene	0.00026 A	NE
Indeno (1,2,3-c,d) pyrene	0.00013 D	NE
Methylene Chloride	0.047 J A	0.016 J A
Toluene	3.6 A	NE

MW-824S (mg/L)	7/15/13
Benzene	1.4 A,B,C
Indeno (1,2,3-c,d) pyrene	0.000029 D

MW-801S (mg/L)	10/29/12	7/16/13
Arsenic	0.011 A,B,C	0.0091 J B
Benzene	0.015 A	0.018 A
Pentachlorophenol	0.0016 J A	NE

MW-804S (mg/L)	10/29/12	7/16/13
Arsenic	0.012 A,B,C	0.0061 J B
Thallium	NE	0.0036 J A

MW-816S (mg/L)	11/1/12	7/16/13
Arsenic	0.057 A,B,C	0.03 A,B,C
Benzene	0.039 A	0.034 A

MW-823S (mg/L)	11/1/12	7/16/13	Dup
Arsenic	0.0094 J B	NE	NE
Benzene	1.9 A,B,C	0.033 A	0.051 A
Indeno (1,2,3-c,d) pyrene	0.000029 D	NE	NE

MW-807S (mg/L)	11/1/12	7/16/13	Dup
Arsenic	0.0024 J B	0.0046 J B	0.0034 J B
Benzene	NE	0.039 A	0.036 A

MW-815S (mg/L)	10/29/12
Arsenic	0.015 A,B,C
Thallium	0.0054 A

MW-802S (mg/L)	7/16/13
Benzene	0.10 A,B,C

MW-806S (mg/L)	10/31/12	7/16/13
Arsenic	0.027 A,B,C	0.025 A,B,C

MW-814S (mg/L)	10/29/12	7/16/13
Arsenic	0.0072 J B	NE
Benzene	NE	0.0065 A

MW-803S (mg/L)	10/31/12	7/17/13
Arsenic	0.0046 J B	NE
Benzene	2.8 A,B,C	2.4 A,B,C
Thallium	0.0032 J A	NE

MW-813S (mg/L)	7/15/13
Indeno (1,2,3-c,d) pyrene	0.000032 D

MW-809S (mg/L)	7/15/13
Arsenic	0.0036 J B
Indeno (1,2,3-c,d) pyrene	0.000047 D
Thallium	0.0024 J A

MW-817S (mg/L)	11/1/12	7/17/13
Arsenic	0.0022 J B	0.0036 J B
Benzene	0.21 A,B,C	0.075 A,B,C
Benzo(a)pyrene	0.00086 A,B,C	0.00086 A,B,C
Indeno (1,2,3-c,d) pyrene	0.00036 D	0.00045 D

MW-812S (mg/L)	10/31/12	7/16/13
Arsenic	0.027 A,B,C	0.03 A,B,C

MW-818S (mg/L)	11/1/12	7/17/13
Arsenic	0.021 A,B,C	0.015 A,B,C
Benzene	0.028 A	0.0077 A
Indeno (1,2,3-c,d) pyrene	0.000026 D	0.000048 D

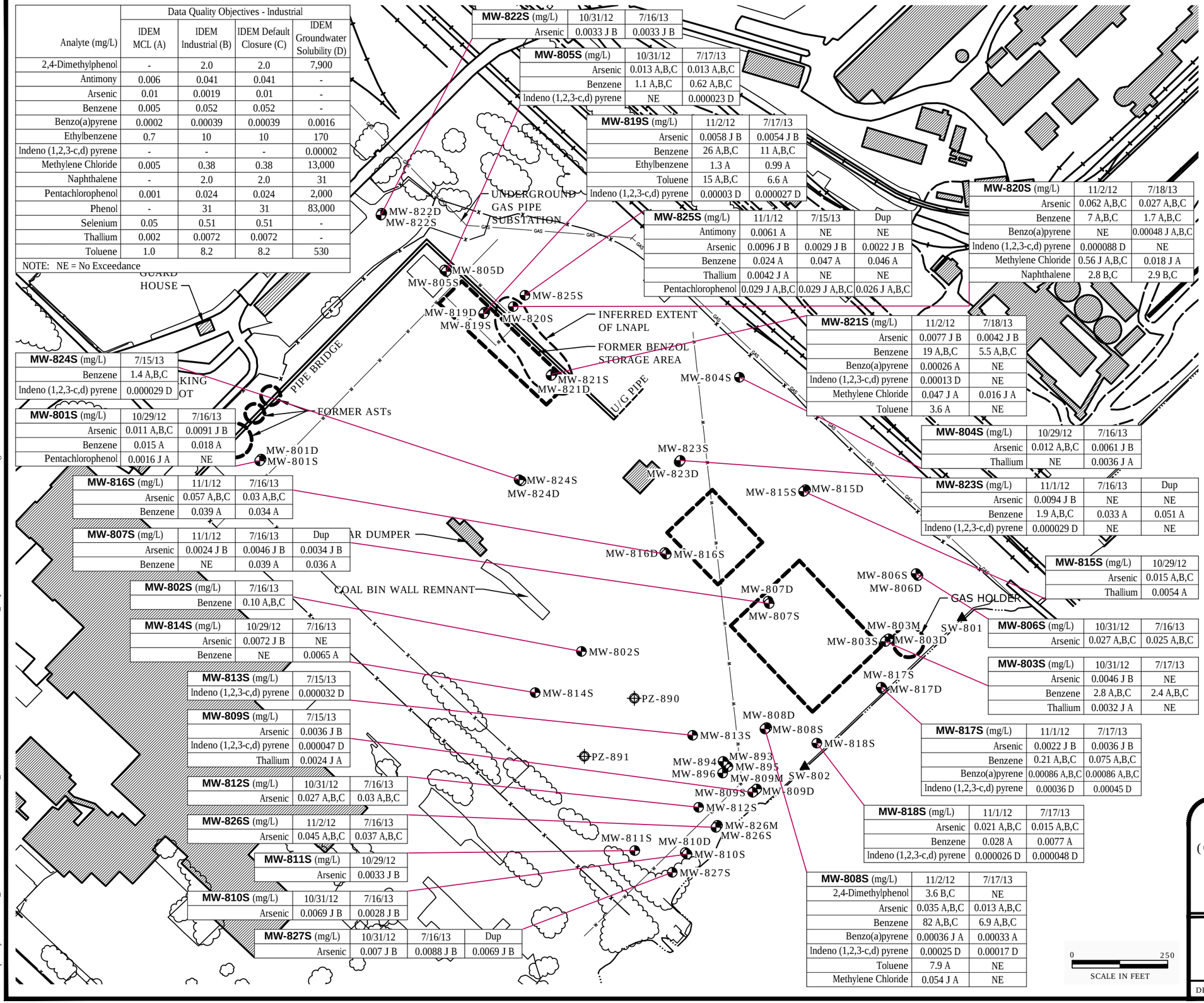
MW-826S (mg/L)	11/2/12	7/16/13
Arsenic	0.045 A,B,C	0.037 A,B,C

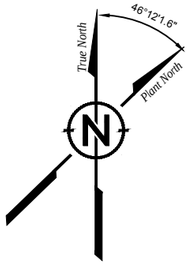
MW-811S (mg/L)	10/29/12
Arsenic	0.0033 J B

MW-810S (mg/L)	10/31/12	7/16/13
Arsenic	0.0069 J B	0.0028 J B

MW-827S (mg/L)	10/31/12	7/16/13	Dup
Arsenic	0.007 J B	0.0088 J B	0.0069 J B

MW-808S (mg/L)	11/2/12	7/17/13
2,4-Dimethylphenol	3.6 B,C	NE
Arsenic	0.035 A,B,C	0.013 A,B,C
Benzene	82 A,B,C	6.9 A,B,C
Benzo(a)pyrene	0.00036 J A	0.00033 A
Indeno (1,2,3-c,d) pyrene	0.00025 D	0.00017 D
Toluene	7.9 A	NE
Methylene Chloride	0.054 J A	NE





LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- PIEZOMETER (1" NON SAMPLING WELL)
- SURFACE WATER MEASURING POINTS
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O_2, NO_2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA

NOTE:

SEWER, FIRE WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

J = ESTIMATED CONCENTRATION BETWEEN METHOD DETECTION LIMIT AND REPORTING LIMIT

DATA QUALITY OBJECTIVE EXCEEDANCES
IN SHALLOW GROUNDWATER
(OCTOBER/NOVEMBER 2012 AND JULY 2013)
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL ENVIRON

FIGURE 11

DRAFTED BY: CKL | DATE: 9/4/15 | 21-32151D

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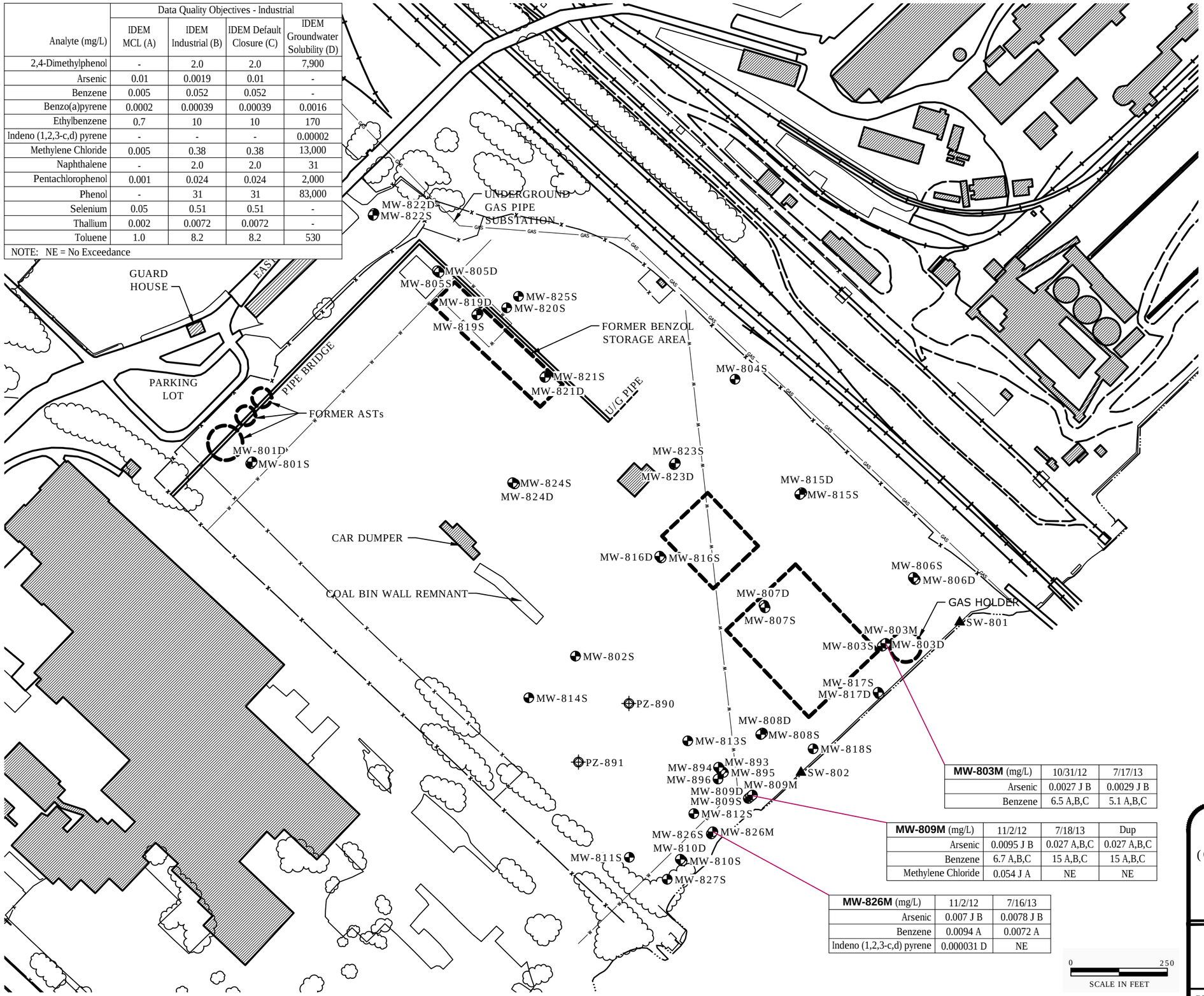
Analyte (mg/L)	Data Quality Objectives - Industrial			
	IDEM MCL (A)	IDEM Industrial (B)	IDEM Default Closure (C)	IDEM Groundwater Solubility (D)
2,4-Dimethylphenol	-	2.0	2.0	7,900
Arsenic	0.01	0.0019	0.01	-
Benzene	0.005	0.052	0.052	-
Benzo(a)pyrene	0.0002	0.00039	0.00039	0.0016
Ethylbenzene	0.7	10	10	170
Indeno (1,2,3-c,d) pyrene	-	-	-	0.00002
Methylene Chloride	0.005	0.38	0.38	13,000
Naphthalene	-	2.0	2.0	31
Pentachlorophenol	0.001	0.024	0.024	2,000
Phenol	-	31	31	83,000
Selenium	0.05	0.51	0.51	-
Thallium	0.002	0.0072	0.0072	-
Toluene	1.0	8.2	8.2	530

NOTE: NE = No Exceedance



MW-803M (mg/L)	10/31/12	7/17/13
Arsenic	0.0027 J B	0.0029 J B
Benzene	6.5 A,B,C	5.1 A,B,C

MW-809M (mg/L)	11/2/12	7/18/13	Dup
Arsenic	0.0095 J B	0.027 A,B,C	0.027 A,B,C
Benzene	6.7 A,B,C	15 A,B,C	15 A,B,C
Methylene Chloride	0.054 J A	NE	NE

MW-826M (mg/L)	11/2/12	7/16/13
Arsenic	0.007 J B	0.0078 J B
Benzene	0.0094 A	0.0072 A
Indeno (1,2,3-c,d) pyrene	0.000031 D	NE

LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- PIEZOMETER (1" NON SAMPLING WELL)
- SURFACE WATER MEASURING POINTS
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O_2, NO_2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA

NOTE:

SEWER, FIRE WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

J = ESTIMATED CONCENTRATION BETWEEN METHOD DETECTION LIMIT AND REPORTING LIMIT

DATA QUALITY OBJECTIVE EXCEEDANCES IN INTERMEDIATE GROUNDWATER (OCTOBER/NOVEMBER 2012 AND JULY 2013)
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL ENVIRON

FIGURE 12

DRAFTED BY: CKL | DATE: 9/4/15 | 21-32151D

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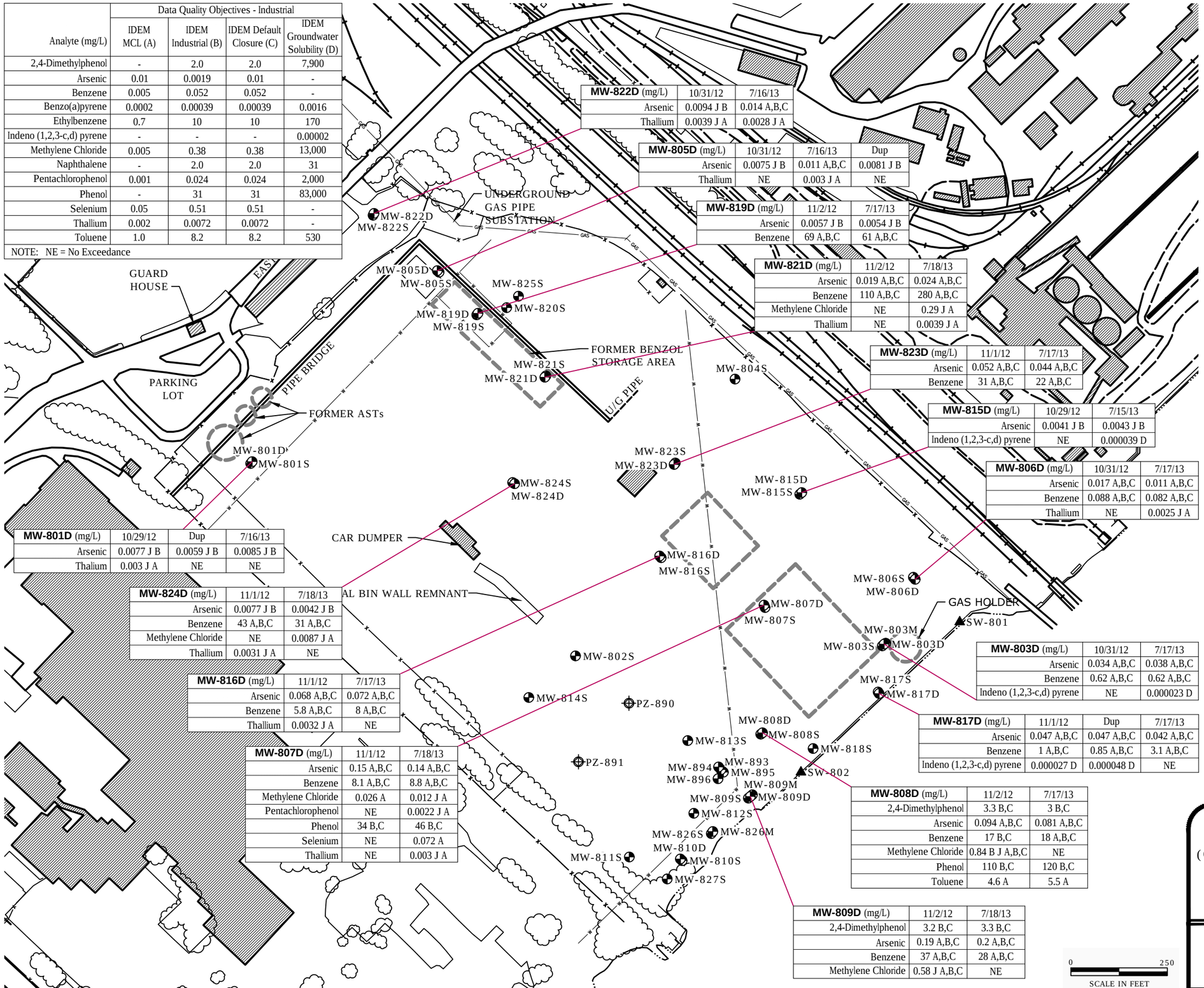
Analyte (mg/L)	Data Quality Objectives - Industrial			
	IDEM MCL (A)	IDEM Industrial (B)	IDEM Default Closure (C)	IDEM Groundwater Solubility (D)
2,4-Dimethylphenol	-	2.0	2.0	7,900
Arsenic	0.01	0.0019	0.01	-
Benzene	0.005	0.052	0.052	-
Benzo(a)pyrene	0.0002	0.00039	0.00039	0.0016
Ethylbenzene	0.7	10	10	170
Indeno (1,2,3-c,d) pyrene	-	-	-	0.00002
Methylene Chloride	0.005	0.38	0.38	13,000
Naphthalene	-	2.0	2.0	31
Pentachlorophenol	0.001	0.024	0.024	2,000
Phenol	-	31	31	83,000
Selenium	0.05	0.51	0.51	-
Thallium	0.002	0.0072	0.0072	-
Toluene	1.0	8.2	8.2	530

NOTE: NE = No Exceedance



MW-822D (mg/L)	10/31/12	7/16/13
Arsenic	0.0094 J B	0.014 A,B,C
Thallium	0.0039 J A	0.0028 J A

MW-805D (mg/L)	10/31/12	7/16/13	Dup
Arsenic	0.0075 J B	0.011 A,B,C	0.0081 J B
Thallium	NE	0.003 J A	NE

MW-819D (mg/L)	11/2/12	7/17/13
Arsenic	0.0057 J B	0.0054 J B
Benzene	69 A,B,C	61 A,B,C

MW-821D (mg/L)	11/2/12	7/18/13
Arsenic	0.019 A,B,C	0.024 A,B,C
Benzene	110 A,B,C	280 A,B,C
Methylene Chloride	NE	0.29 J A
Thallium	NE	0.0039 J A

MW-823D (mg/L)	11/1/12	7/17/13
Arsenic	0.052 A,B,C	0.044 A,B,C
Benzene	31 A,B,C	22 A,B,C

MW-815D (mg/L)	10/29/12	7/15/13
Arsenic	0.0041 J B	0.0043 J B
Indeno (1,2,3-c,d) pyrene	NE	0.000039 D

MW-806D (mg/L)	10/31/12	7/17/13
Arsenic	0.017 A,B,C	0.011 A,B,C
Benzene	0.088 A,B,C	0.082 A,B,C
Thallium	NE	0.0025 J A

MW-801D (mg/L)	10/29/12	Dup	7/16/13
Arsenic	0.0077 J B	0.0059 J B	0.0085 J B
Thalium	0.003 J A	NE	NE

MW-824D (mg/L)	11/1/12	7/18/13
Arsenic	0.0077 J B	0.0042 J B
Benzene	43 A,B,C	31 A,B,C
Methylene Chloride	NE	0.0087 J A
Thallium	0.0031 J A	NE

MW-816D (mg/L)	11/1/12	7/17/13
Arsenic	0.068 A,B,C	0.072 A,B,C
Benzene	5.8 A,B,C	8 A,B,C
Thallium	0.0032 J A	NE

MW-807D (mg/L)	11/1/12	7/18/13
Arsenic	0.15 A,B,C	0.14 A,B,C
Benzene	8.1 A,B,C	8.8 A,B,C
Methylene Chloride	0.026 A	0.012 J A
Pentachlorophenol	NE	0.0022 J A
Phenol	34 B,C	46 B,C
Selenium	NE	0.072 A
Thallium	NE	0.003 J A

MW-803D (mg/L)	10/31/12	7/17/13
Arsenic	0.034 A,B,C	0.038 A,B,C
Benzene	0.62 A,B,C	0.62 A,B,C
Indeno (1,2,3-c,d) pyrene	NE	0.000023 D

MW-817D (mg/L)	11/1/12	Dup	7/17/13
Arsenic	0.047 A,B,C	0.047 A,B,C	0.042 A,B,C
Benzene	1 A,B,C	0.85 A,B,C	3.1 A,B,C
Indeno (1,2,3-c,d) pyrene	0.000027 D	0.000048 D	NE

MW-808D (mg/L)	11/2/12	7/17/13
2,4-Dimethylphenol	3.3 B,C	3 B,C
Arsenic	0.094 A,B,C	0.081 A,B,C
Benzene	17 B,C	18 A,B,C
Methylene Chloride	0.84 B J A,B,C	NE
Phenol	110 B,C	120 B,C
Toluene	4.6 A	5.5 A

MW-809D (mg/L)	11/2/12	7/18/13
2,4-Dimethylphenol	3.2 B,C	3.3 B,C
Arsenic	0.19 A,B,C	0.2 A,B,C
Benzene	37 A,B,C	28 A,B,C
Methylene Chloride	0.58 J A,B,C	NE

LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- PIEZOMETER
  (1" NON SAMPLING WELL)
- SURFACE WATER MEASURING POINTS
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES (O_2, NO_2, ETC.)
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA

NOTE:

SEWER, FIRE WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

J = ESTIMATED CONCENTRATION BETWEEN METHOD DETECTION LIMIT AND REPORTING LIMIT

B = ANALYTE DETECTED IN LABORATORY METHOD BLANK

DATA QUALITY OBJECTIVE EXCEEDANCES IN DEEP GROUNDWATER
(OCTOBER/NOVEMBER 2012 AND JULY 2013)
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL ENVIRON

FIGURE 13

DRAFTED BY: CKL | DATE: 9/4/15 | 21-32151D

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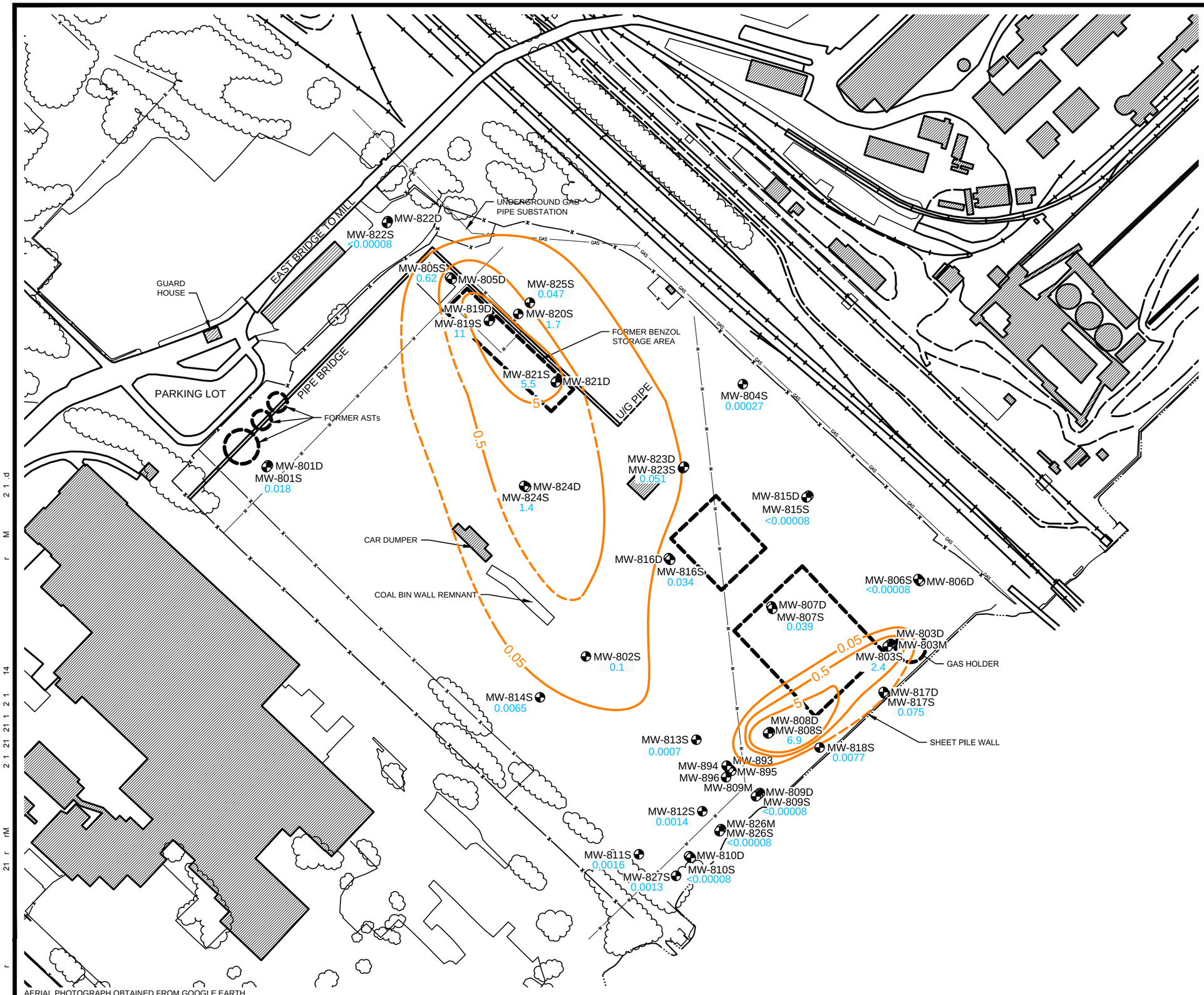
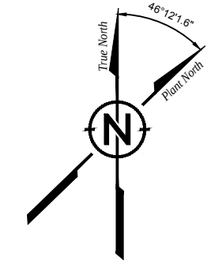




LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA
- BENZENE ISOCONCENTRATION (DASHED WHERE INFERRED)
- 5.1 BENZENE CONCENTRATION (mg/L)

NOTE:

SEWER, FIRE WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

IDEM DEFAULT CLOSURE LEVEL FOR BENZENE = 0.052 mg/L

APPROX. SCALE (ft.)
0 250

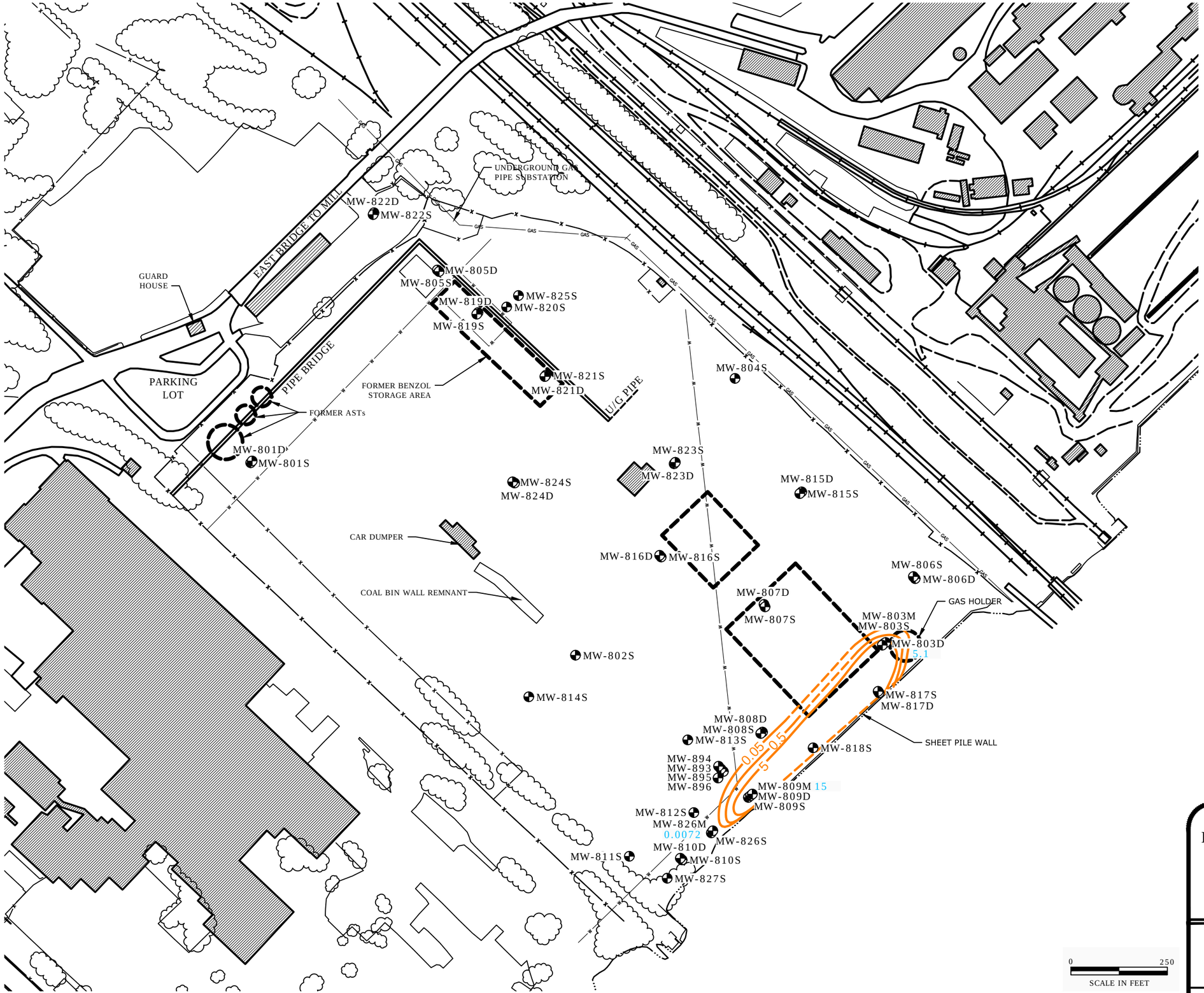
BENZENE ISOCONCENTRATIONS IN SHALLOW GROUNDWATER (JULY 2013)

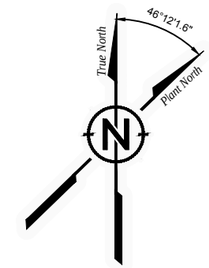
FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL ENVIRON

FIGURE 14

DRAFTED BY: CKL | DATE: 7/24/15 | 21-32151D





LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA
- BENZENE ISOCONCENTRATION (DASHED WHERE INFERRED)
- 5.1 BENZENE CONCENTRATION (mg/L)

NOTE:

SEWER, FIRE WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

IDEM DEFAULT CLOSURE LEVEL FOR BENZENE = 0.052 mg/L

BENZENE ISOCONCENTRATIONS IN INTERMEDIATE GROUNDWATER (JULY 2013)

FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL ENVIRON

FIGURE 15

DRAFTED BY: CKL | DATE: 9/4/15 | 21-32151D

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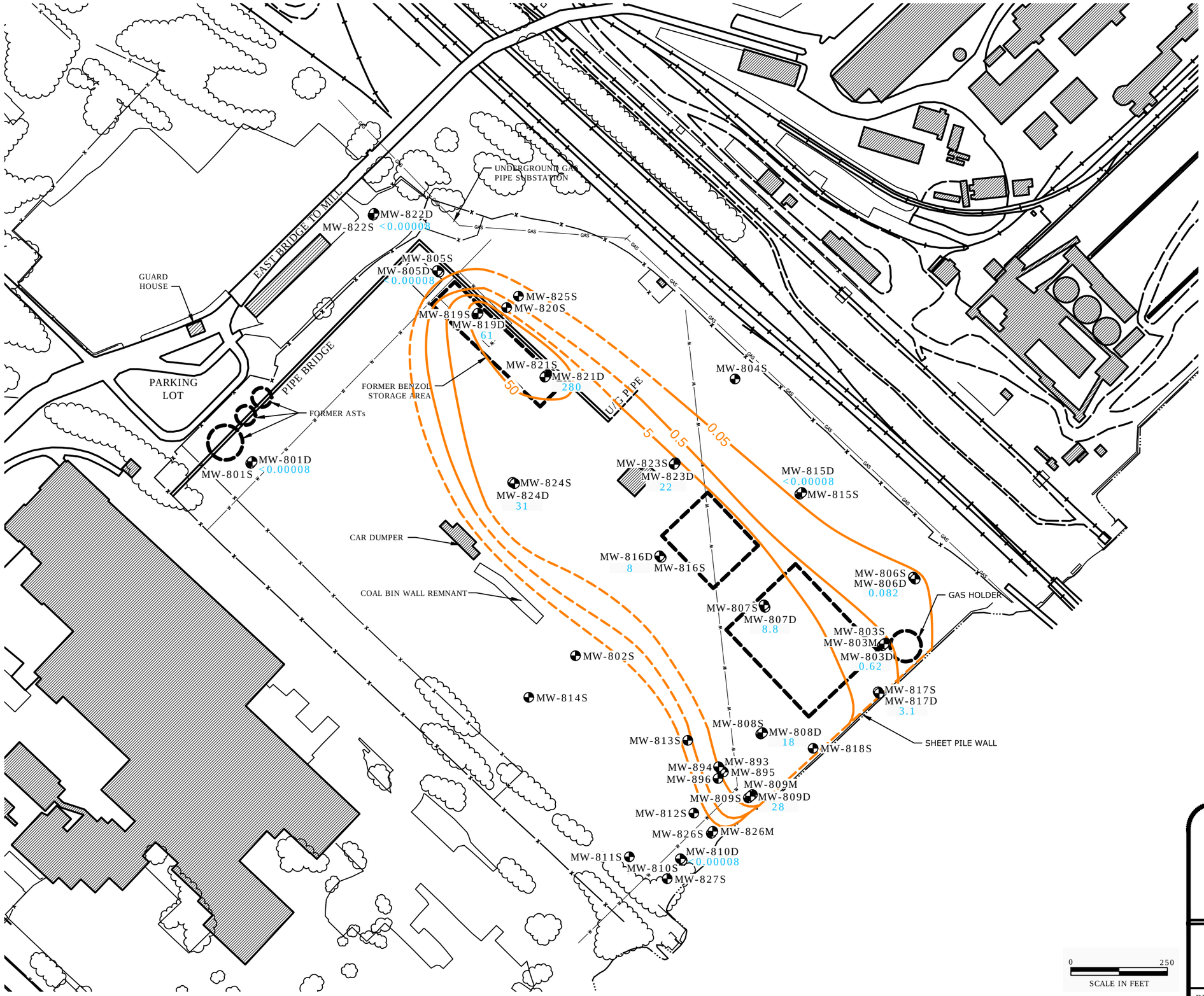

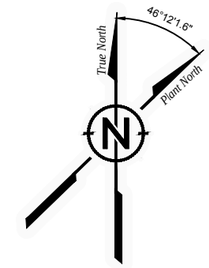

LEGEND

- MONITORING WELL
  'S' DENOTES WATER TABLE WELL
  'M' DENOTES INTERMEDIATE WELL
  'D' DENOTES DEEP WELL
- FENCE
- FENCE - APPROXIMATED PROPERTY BOUNDARY
- UNDERGROUND WATER MAIN
- UNDERGROUND GAS LINES
- OVERHEAD PIPE BRIDGE
- BUILDING
- CONCRETE PAD
- FORMER AMMONIA AND/OR PHENOL STORAGE AREA
- BENZENE ISOCONCENTRATION (DASHED WHERE INFERRED)
- 5.1 BENZENE CONCENTRATION (mg/L)

NOTE:

SEWER, FIRE WATER AND OTHER SUBSURFACE UTILITIES ARE PRESENT. LOCATIONS ARE CLEARED ON A CASE BY CASE BASIS.

LOCATION OF HISTORIC FACILITIES IS APPROXIMATE.

IDEM DEFAULT CLOSURE LEVEL FOR BENZENE = 0.052 mg/L

BENZENE ISOCONCENTRATIONS IN DEEP GROUNDWATER (JULY 2013)

FORMER COKE PLANT
TECUMSEH REDEVELOPMENT, INC.
EAST CHICAGO, INDIANA

RAMBOLL ENVIRON

FIGURE 16

DRAFTED BY: CKL | DATE: 9/4/15 | 21-32151D

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