DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures under Control

Facility Name:	Bway Corporation
Facility Address:	8200 Broadway Road, Cincinnati, Ohio
Facility EPA ID #:	OHD 004 253 225

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

X	If yes - check here and continue with #2 below.
—	If no - re-evaluate existing data, or
—	If data are not available skip to #6 and enter "IN" (more information
—	needed) status code.

BACKGROUND

The site on which the Facility is located was farmland until Baldwin Piano purchased the land and built a single manufacturing building in 1952. Baldwin Piano manufactured pianos on the Facility until 1958 when it was sold to Heekin Can. Heekin Can cut, coated, printed, and assembled three piece cans on the property and during the 1960s, constructed several additions to the original building. Heekin Can continued to operate its three piece can manufacturing process on the property until it was acquired by the Ball Corporation in March 1993. Ball sold the property to Milton Can, a division of Bway in 1996. Bway continues to manufacture three-piece steel cans at the Facility located at 8200 Broadwell Road, Cincinnati, Ohio. The Facility is located near the Little Miami River in a mixed industrial, commercial and residential area. The facility is comprised of two parcels totaling 77 acres. The primary features of the facility include: the main manufacturing building and warehouse with connected offices, a treated sanitary wastewater storage pond, a sanitary biological treatment plant and land-application spray field, three gravel pit ponds and three railroad spurs. (See Figures 1 and 2)

Bway was directed in the September 2007 Administrative Order to complete activities necessary in identifying and characterizing releases of hazardous waste and or hazardous waste constituents to the environment by defining the nature and extent of contamination of releases of hazardous waste and or hazardous waste constituents at or from the facility. Historically, a total of 23 Solid Waste Management Units (SWMUs) and one Area of Concern (AOC) were initially evaluated

for further investigation stemming from the 1989 Preliminary Assessment/Visual Site Inspection. Upon conducting and completing the "2007 Current Conditions Report" an additional eight areas of interest (AOIs) and two SWMUs were added to the list for the purpose of documenting the current environmental conditions at the Facility. These evaluations resulted in further characterization of ten SWMUs, one AOC and eight Areas of Interest (AOIs) as part of the RFI.

All environmental sampling data including groundwater, surface water, sediments, pore water, and soil gas have been evaluated in accordance with Sampling and Analysis Work Plans submitted between 2008 and 2014 as well as the following documents and reports to conduct this CA 725 analysis: September 2007 Administrative Order on Consent; Current Conditions Report, December, 2007; Quality Assurance and Project Plan (QAPP), September, 2008; RCRA CA 725 Environmental Indicator Report, March 2016; RCRA CA 750 Environmental Indicator Report, March 2016; RCRA CA Ecological Risk Assessment Report, September 2009; Ecological Risk Assessment Revised Report, March 2016; Corrective Measures Proposal, September 2009; Quarterly Progress Reports, 2014- 2015

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater	X			Few metals and TCE exceeded the drinking water criteria (see table 1 below)
Air (indoors) [2]	X			Groundwater with TCE exceeding the indoor air inhalation criteria (see table 1 below)
Surface Soil (e.g., <2 ft.)		X		No exceedance of metals or VOCs in soil above the screening criteria
Surface Water	X			Metals exceeded the SW screening criteria (see table 2 below)
Sediment	X			Metals and SVOCs exceeded the residential and industrial soil direct contact criteria (see table 3 below)
Subsurface. Soil (e.g., >2 ft.)		X		No exceedance of metals or VOCs in soil above the screening criteria
Air (outdoors)		X		Groundwater or soil contaminants do not exceed the ambient air inhalation criteria.

____ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these levels" are not exceeded.

X If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an

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[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

____ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):
1. Current Conditions Report, December, 2007
2. Quality Assurance and Project Plan (QAPP), September, 2008
3. RCRA CA 725 Environmental Indicator Report, March 2016
4. RCRA CA 750 Environmental Indicator Report, March 2016
5. RCRA CA Ecological Risk Assessment Report, September 2009
6. Corrective Measures Proposal, September 2009
7. Quarterly Progress Reports, 2014- 2015
8. Ecological Risk Assessment Revised March 2016, Report

Groundwater:

The facility is located in the Lower Little Miami River watershed which flows in a west/southwest direction to the Ohio River. The uppermost aquifer that underlies the Facility consists of outwash and alluvium deposits along the Little Miami River buried valley. The outwash deposits consist of predominantly sand and/or gravel with discontinuous interbedded layers of finer-grained silt and clay and scattered cobbles and boulders. In the vicinity of the plant, the unconsolidated material consists of 70 feet of sand and gravel underlain by about 30 feet of clay followed by a six foot sand and gravel lens on top of shale bedrock encountered at 102 ft. bgs. Ground water flow in the unconsolidated deposits has been shown to be to the northwest toward the Little Miami River.

Groundwater has been continuously characterized on-site since 2007 by collecting quarterly groundwater monitoring data from three on-site monitoring wells. However, OW-1, OW-2 and OW-3 were the only monitoring wells and were located in the area surrounding SWMU 23. These wells were constructed in 1990 to monitor the slow rate spray application system (SARS) area (SWMU 23). These wells have been periodically monitored since 1990, until quarterly sampling commenced in 2007. The SARS is used for the application of effluent water treated in the Biological Treatment Plant (SWMU 10) and Wet Well (SWMU 21), and then stored in the Storage Pond (SWMU 22). Quarterly groundwater monitoring data was collected from 2007 until 2010, when EPA allowed a temporary suspension of groundwater collection activities. Groundwater monitoring resumed effective January 2014.

In May 2014, Bway was required to install four additional groundwater monitoring wells to better characterize site-wide groundwater conditions. Four new groundwater monitoring wells were installed with two co-located installations for both shallow and deep wells (for a total of

six). For purposes of this CA 725 analysis, historical groundwater conditions from monitoring activities between 2008 and 2010, as well as more recent groundwater conditions from the newly constructed wells were evaluated. The highest detected groundwater concentrations were screened against Federal and or State of Ohio Maximum Contaminant Levels (MCLs), and or Region 9 Tap Water Ingestion Values (TWIs) where no MCLs existed. In addition, detected concentrations at OW -1, OW-2 and OW-3 (the historical three onsite monitoring wells at SWMU 23), were compared against screening levels calculated for evaluating vapor migration to indoor air based on protection of routine workers. The following constituents have exceeded either the drinking water or indoor air inhalation screening criteria.

Table 1: On-site Groundwater Data Evaluation

Groundwater Well ID	Constituent	Maximum Result	Drinking water criteria	Indoor air inhalation**
OW-6D	Arsenic	**13**	10	N/A
OW-3	Iron	**26,400**	11,000	N/A
OW-3	Manganese	**3,200**	880	N/A
OW-3	TCE	**46**	5	22
OW-3	Thallium	**16.2**	2	N/A

*All results in ug/L
** Non residential indoor air inhalation criteria derived from EPA vapor intrusion screening level (VISL) calculator.
N/A- Not applicable

Soil: As part of the RFI characterization, Bway completed soil contaminant source characterization at a total of eleven SWMUs, AOCs and AOIs. These areas consisted of six outdoor former drum storage areas, four former underground storage tank areas (SWMUs 10, 11, 12, 13 and 15, AOC A, AOI D, E, and G) and an area along the process wastewater sewer line. Soil samples were analyzed for Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), and Target Analyte List (TAL) metals. Collected samples were screened against risk-based screening levels calculated using the methodologies and conservative exposure factors for deriving Regional Screening Levels (RSLs) for both residential and industrial land use at a target cancer risk level (TCRL) of 10E-05 and a target hazard quotient (HQ) of 1 for non-carcinogenic constituents. Soil sampling results revealed that there were no soil samples exceeding direct contact screening criteria for any soil sample. (See Figure 3 for Environmental Media Sampling Locations)

Surface Water: Six surface water samples have been collected from the closed quarry pond owned by Martin Marietta, this location was associated with outfall AOI B; three samples each from two closed quarry ponds from AOI C and three samples at SWMU 22; analyzed for VOCs,

SVOCs, PAHs, total and dissolved metals. Surface water data were compared to the same drinking water criteria used to assess groundwater. This approach is very conservative because neither on-site nor off-site surface water is used as an actual drinking water source. Exceedances of drinking water criteria were observed at four of six sampling locations at AOI B; two locations in AOI C and one location at SWMU 22. Table 2 lists the maximum metals concentrations in surface water with an exceedance of drinking water criteria.

Table 2: Surface Water Data Evaluation

Contaminant	Maximum level	Drinking water criteria
Antimony	**10**	6
Mercury	**2.2**	2
Thallium	**5.8**	2

All results in ug/L

Sediment: Co-located sediment samples were collected at the same locations as surface water locations. Sediment pore water samples were co-located with the samples locations from AOI B. The maximum detected concentrations of sediment has been compared to the most conservative risk-based screening values of the following: Risk-based screening levels calculated using the methodologies and conservative exposure factors for deriving the Regional Screening Levels (RSLs) for both residential and industrial land use at a target cancer risk level (TCRL) of 10E-05 and a target hazard quotient (HQ) of 1 for non-carcinogenic constituents. Sediment sampling results were compared to screening levels for residential and routine worker direct contact with soil. Constituents were reported above these screening levels in four locations at AOI B, four locations at AOI C, and three locations at SWMU 22. Exceedances are listed in the Table 3 below.

Table 3: Sediment Data Evaluation

Contaminant	Maximum level	Industrial Direct Contact criteria	Residential Direct Contact Criteria
Aluminum	**90,200**	92000	76000
Arsenic	**13.2**	16	3.9
Iron	**25,100**	31,000	23,000
Benzo pyrene	**3.2**	2.1	0.62
Di-benzanthracene	**0.69**	2.1	0.62

Levels in mg/Kg.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

Contaminated Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food
Groundwater	No	No	No	**Yes**		No	No
Air (indoors)	No	**Yes**	No	No		No	No
~~Soil (surface, e.g., <2 ft.)~~		-	-	-	-	-	-
Surface Water	No ___	**Yes**	No	No	**Yes**	No	No
Sediment	No___	-___	No		**Yes**		No
~~Soil (subsurface e.g., >2 ft.)~~	-	-	-	-	-	-	-
~~Air (outdoors)~~	-	-	-	-	-	-	-

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.

2. Enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

___ ____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

	X	If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.
If - skip to #6	___	unknown (for any "Contaminated" Media - Human Receptor combination) and enter "IN" status code.

Rationale and Reference(s):

Groundwater: Groundwater is not currently used as a potable or non-potable water supply at the Site. The depth to ground water at the site is approximately 50 feet or greater below ground surface and below the depth of the deepest utilities, which precludes potential exposures to maintenance workers. Potable water is obtained from the City of Cincinnati municipal system. Historical records indicated that in 1955, one residential groundwater well was located approximately one mile down gradient of the site. As of September 2015, the residence has been demolished and the area is now a quarry. There are no active potable wells downgradient of the site. In addition, the off-site downgradient pore water piezometer sampling results indicate that groundwater contamination is not migrating from the Site. Though, a current exposure pathway to contamination via use of groundwater as a potable water supply does not currently exist at or around the Site, it is possible that construction workers may be exposed to groundwater during excavation activities.

Indoor air: TCE was found at a highest concentration of 46 ppb at monitoring well OW-3 upgradient to the site and downgradient to the adjoining Senco Products facility whom reportedly are utilizing halogenated solvents for degreasing metal components. TCE exceeded the indoor air vapor inhalation criteria. Buildings are present on-site and industrial workers are potentially exposed to indoor air contaminated with TCE volatilizing from groundwater.

Surface Water and Sediment: Incidental ingestion, dermal contact and inhalation of vapors from swimming is possible with the Trespasser receptor population. Groundwater and former as well as current storm sewer water discharges from the facility to the adjacent quarry pond. Access to the quarry pond is controlled through fencing and physical constraints, however unauthorized use by trespassers is possible. The pond is not used for potable or non-potable purposes. In addition, workers may infrequently come in contact with surface water.

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[3] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

___ _____ If no (exposures cannot be reasonably expected to be significant (i.e., "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

___ __X___ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

___ _____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

Groundwater: Following the exceedance observed in monitoring well OW-3, six new wells were installed in the northwest area of the site along the property boundary. The locations of these wells were strategically constructed so as to capture any contaminants that may be migrating off-site as well as contaminants that may be moving underneath the site. Groundwater monitoring took place for one year on a quarterly basis for these new wells and during this time interval, only one exceedance of arsenic (As) was detected on September 17, 2014, and again on March 9, 2015 in one well, OW-6D. Concentrations of arsenic was found at 13 ug/L on both occasions slightly exceeding the drinking water criteria. OW-6D is a deep well located approximately 70ft. bgs with a 10 ft. screen in the sand and gravel aquifer material. None of the other newly constructed and installed wells OW-4, OW-5, OW-6, OW-7 and OW-7D had

[3] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

detections of any of the historically detected constituents found between 2008 and 2010, i.e., antimony, lead, mercury, chromium, iron manganese, or TCE. The risk associated with construction worker exposure to groundwater is considered to be insignificant due to the depth to groundwater and low levels of detected arsenic in groundwater. Figure 4 illustrates the groundwater samples locations for the newly constructed wells since September 2014.

Indoor air: Although TCE exceeded the indoor air volatilization criterion in OW-3, the contamination is confined only to this well and not found in any of the down gradient on-site wells. There are no buildings around OW-3. Further, the groundwater table is located approximately 50 – 70 feet below ground surface and flows generally to the northwest towards an inactive Quarry. Therefore, indoor air inhalation is not a significant pathway for workers on-site.

Surface Water and Sediment: The on-site and off-site surface water and sediment locations are depicted on Figure 3. The on-site surface water and sediment locations consist of the historical debris area (AOI C) and the wastewater storage pond (within SWMU 22); the off-site location consists of the quarry pond (AOI B). Potential exposures to workers in the on-site locations are not reasonably expected due to the remote location of the historical debris area and the absence of worker contact with the wastewater storage pond. Consumption of fish is not of significance as these water bodies are not used for recreational swimming or sport fishing. There are no current industrial activities within the off-site quarry pond and recreational use of the pond is prohibited. Therefore potential exposure to onsite and off-site surface water and sediment locations is limited to trespassers and may be significant.

5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

___ **X** If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

___ If no (there are current exposures that can be reasonably expected to be "unacceptable") - continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

___ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s):

Surface Water and Sediment: For assessing site-specific risk associated with trespasser exposure to surface water and sediment, the highest concentration of each chemical detected at each area was conservatively used in the risk calculations. The cumulative cancer risk and non-cancer hazard index (HI) estimates for a trespasser based on exposure to both sediment and surface water are provided in Table 4. The cumulative cancer risk and HI estimates for each area are well below USEPA's limits of 10E-4 and 1, respectively. Based on these estimates, no unacceptable exposure of trespassers to surface water or sediment is expected in on-site or off-site areas.

Table 4: Site- specific risk evaluation for surface water and sediment contact

	Adolescent Trespasser Contact		**Adult Trespasser Contact**	
Area	**Cancer Risk**	**HI**	**Cancer Risk**	**HI**
AOI B	1E-06	1E-01	3E-06	1E-01
AOI C	3E-07	1E-02	1E-06	1E-02
SWMU 22	3E-07	8E-02	6E-07	8E-02

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

___ X YE - Yes, "Current Human Exposures under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the **Bway Corporation**, facility,
EPA ID # OHD 004253_225,
Located at 8200 Broadwell Road Cincinnati, Ohio
Under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

___ NO - "Current Human Exposures" are NOT "Under Control."

___ IN - More information is needed to make a determination.

Completed by	(signature)		Date	9/22/2016
	(print)	Juan Thomas		
	(title)	Environmental Scientist		

Supervisor	(signature)		Date	10/6/16
	(print)	Gregory Rudloff		
	(title)	Acting Section Chief, RRB CA2		
	(EPA Region or State)	EPA Region 5		

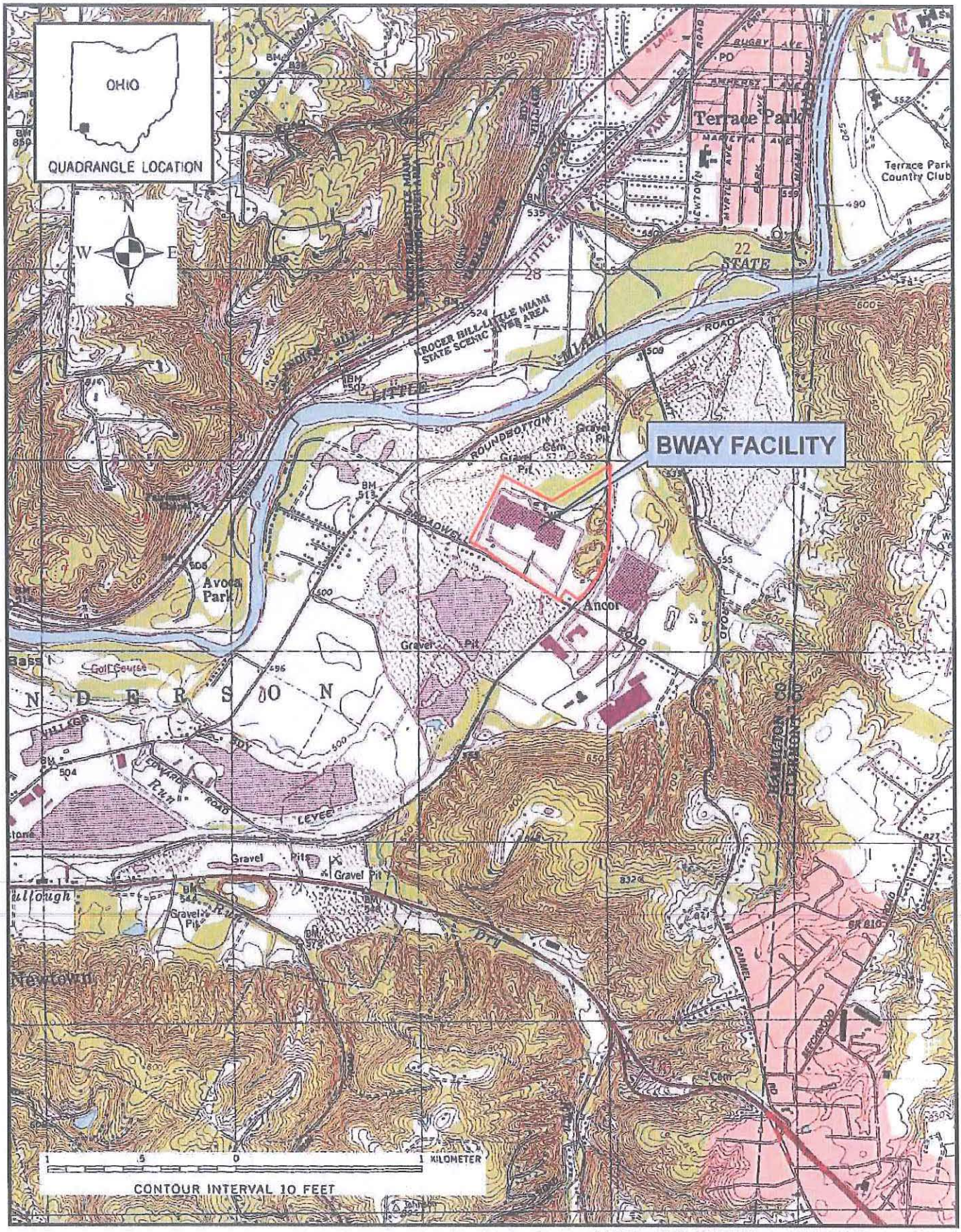
Locations where References may be found:
U.S EPA Region 5 7th Floor Records Center 77 W Jackson Blvd Chicago, IL 60604

Contact telephone and e-mail numbers

(name)	Juan Thomas
(phone #)	312-886-6010
(e-mail)	Thomas.juan@epa.gov

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

Figure 1 - Facility Location Map



PROJECT: BWAY - RCRA Corrective Action	FIGURE NO.: 1	DATE: 12/17/08	The Payne Firm, Inc. Environmental Consultants Cincinnati, OH / Cleveland, OH Chicago, IL / Troy, NY
TITLE: BWAY Facility Location	DRAWN BY: JAG	REQUESTED BY: KDK	
	PROJECT NO.: 654.13.07		

REFERENCE: United States Geologic Survey (USGS) 7.5 Minute Quadrangle Map for Madeira, Ohio and Williamsville, Ohio (revised, 1999).

Figure 2 - Facility Layout and Features

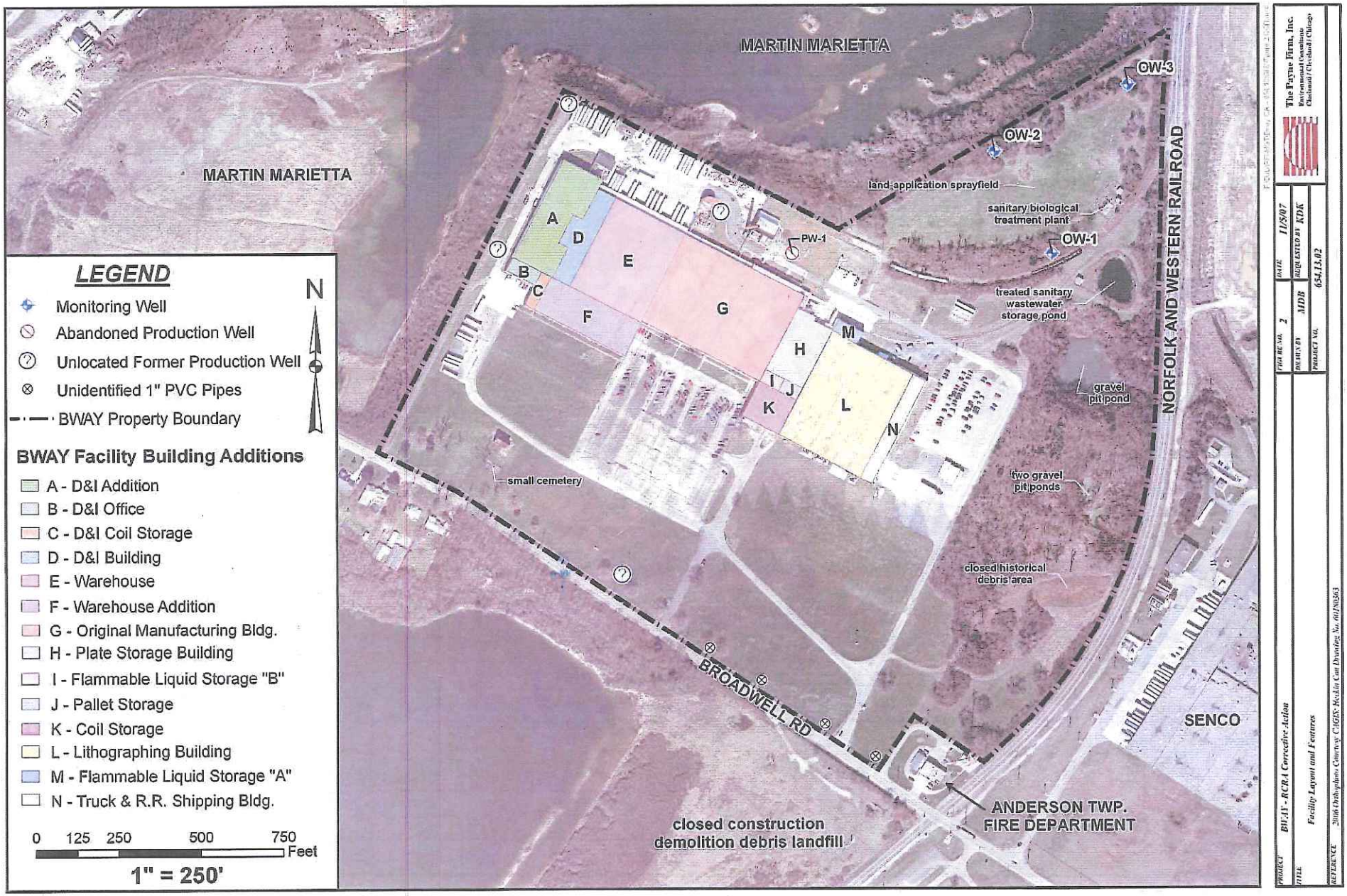


Figure 3 - Environmental Media Sampling Locations

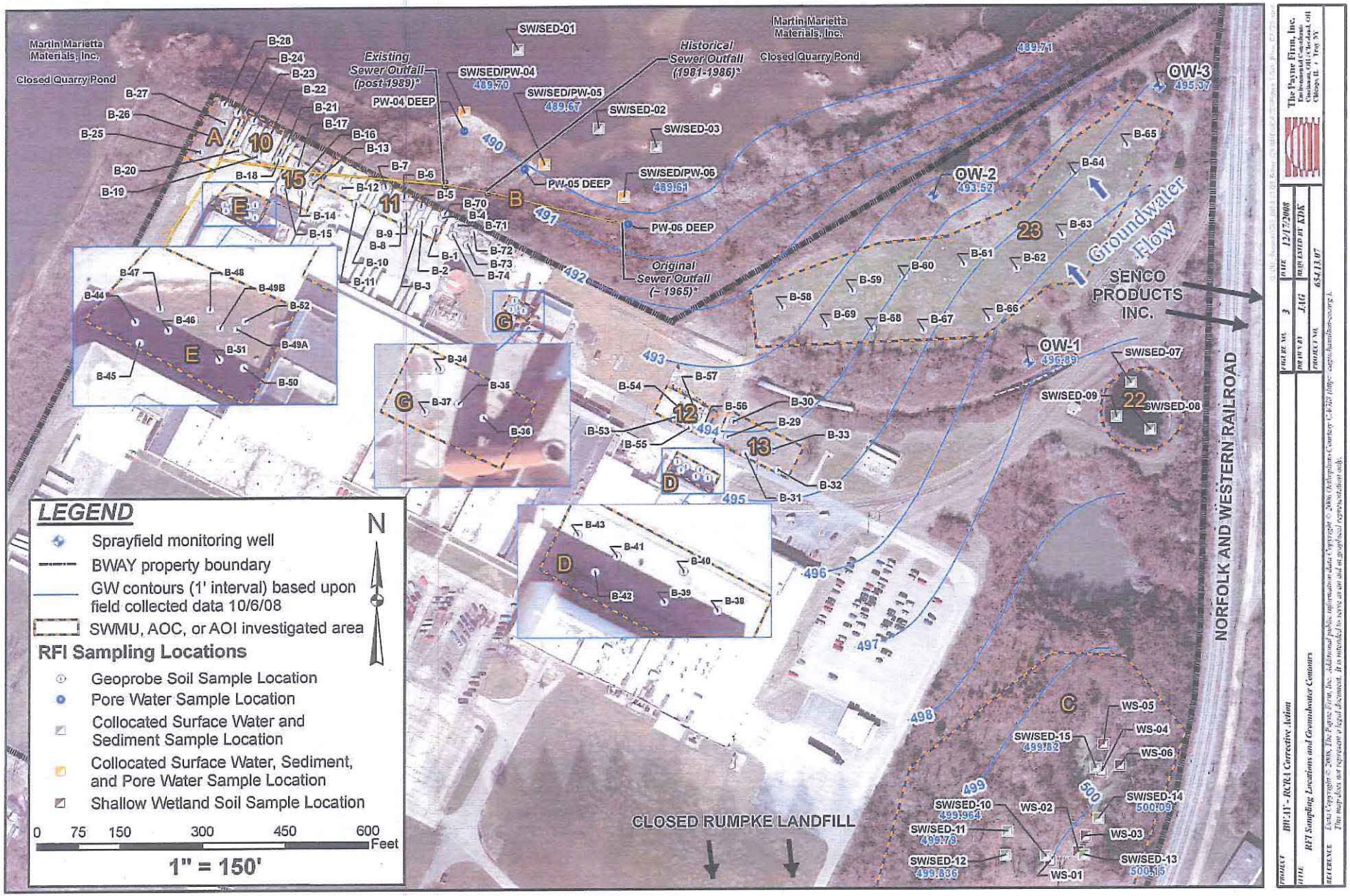
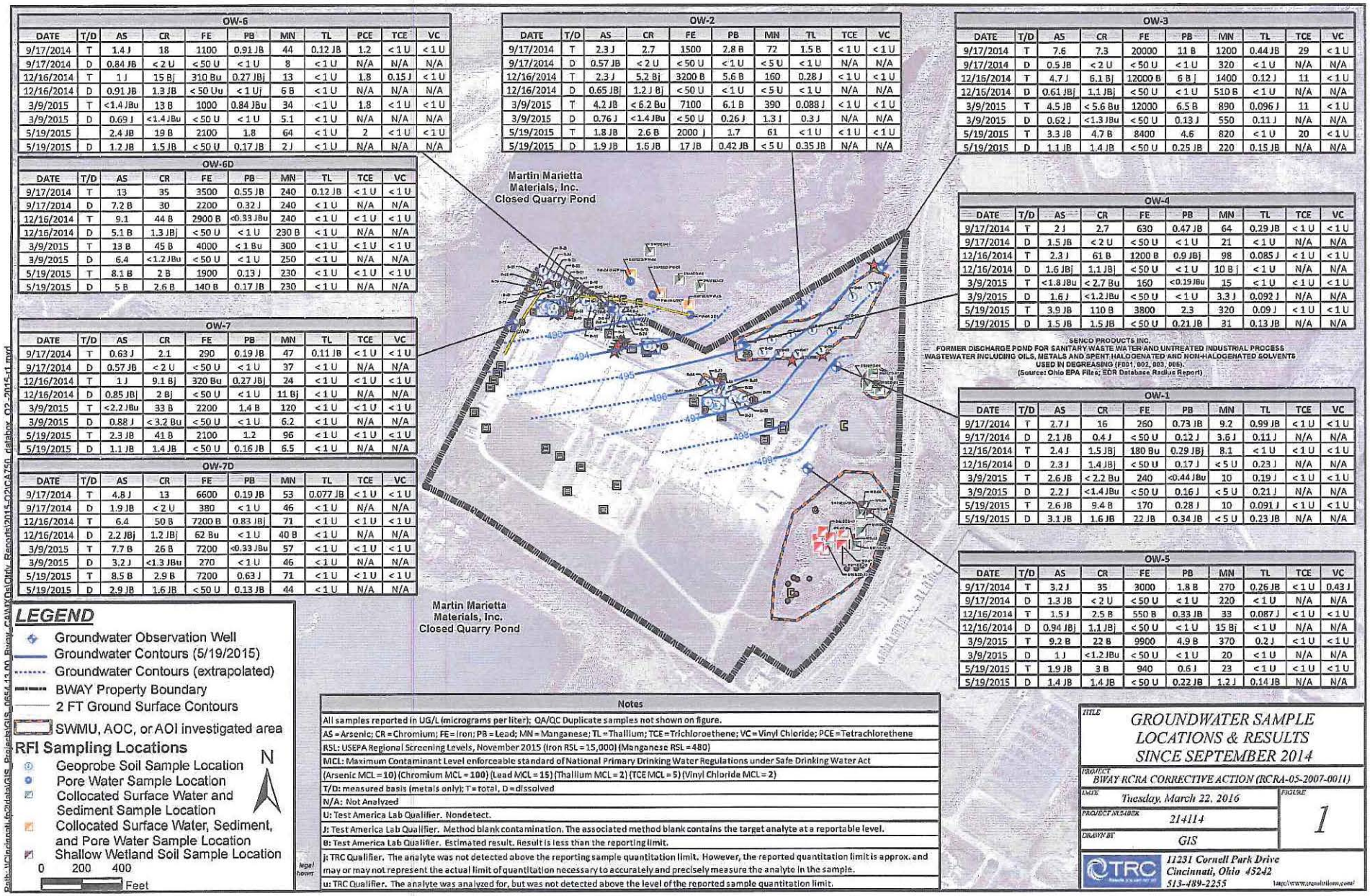


Figure 4 - Groundwater Sampling Locations Since September 2014 (Includes New Wells)



OW-6

DATE	T/D	AS	CR	FE	PB	MN	TL	PCE	TCE	VC
9/17/2014	T	1.4 J	18	1100	0.91 JB	44	0.12 JB	1.2	< 1 U	< 1 U
9/17/2014	D	0.84 JB	< 2 U	< 50 U	< 1 U	8	< 1 U	N/A	N/A	N/A
12/16/2014	T	1 J	15 Bj	310 Bu	0.27 JBj	13	< 1 U	1.8	0.15 J	< 1 U
12/16/2014	D	0.91 JB	1.3 JB	< 50 Uu	< 1 Uj	6 B	< 1 U	N/A	N/A	N/A
3/9/2015	T	<1.4 JBu	13 B	1000	0.84 JBu	34	< 1 U	1.8	< 1 U	< 1 U
3/9/2015	D	0.69 J	<1.4 JBu	< 50 U	< 1 U	5.1	< 1 U	N/A	N/A	N/A
5/19/2015		2.4 JB	19 B	2100	1.8	64	< 1 U	2	< 1 U	< 1 U
5/19/2015	D	1.2 JB	1.5 JB	< 50 U	0.17 JB	2 J	< 1 U	N/A	N/A	N/A

OW-2

DATE	T/D	AS	CR	FE	PB	MN	TL	TCE	VC
9/17/2014	T	2.3 J	2.7	1500	2.8 B	72	1.5 B	< 1 U	< 1 U
9/17/2014	D	0.57 JB	< 2 U	< 50 U	< 1 U	< 5 U	< 1 U	N/A	N/A
12/16/2014	T	2.3 J	5.2 Bj	3200 B	5.6 B	160	0.28 J	< 1 U	< 1 U
12/16/2014	D	0.65 JBj	1.2 J Bj	< 50 U	< 1 U	< 5 U	< 1 U	N/A	N/A
3/9/2015	T	4.2 JB	< 6.2 Bu	7100	6.1 B	390	0.088 J	< 1 U	< 1 U
3/9/2015	D	0.76 J	<1.4 JBu	< 50 U	0.26 J	1.3 J	0.3 J	N/A	N/A
5/19/2015	T	1.8 JB	2.6 B	2000 J	1.7	61	< 1 U	< 1 U	< 1 U
5/19/2015	D	1.9 JB	1.6 JB	17 JB	0.42 JB	< 5 U	0.35 JB	N/A	N/A

OW-3

DATE	T/D	AS	CR	FE	PB	MN	TL	TCE	VC
9/17/2014	T	7.6	7.3	20000	11 B	1200	0.44 JB	29	< 1 U
9/17/2014	D	0.5 JB	< 2 U	< 50 U	< 1 U	320	< 1 U	N/A	N/A
12/16/2014	T	4.7 J	6.1 Bj	12000 B	6 B j	1400	0.12 J	11	< 1 U
12/16/2014	D	0.61 JBj	1.1 JBj	< 50 U	< 1 U	510 B	< 1 U	N/A	N/A
3/9/2015	T	4.5 JB	< 5.6 Bu	12000	6.5 B	890	0.096 J	11	< 1 U
3/9/2015	D	0.62 J	<1.3 JBu	< 50 U	0.13 J	550	0.11 J	N/A	N/A
5/19/2015	T	3.3 JB	4.7 B	8400	4.6	820	< 1 U	20	< 1 U
5/19/2015	D	1.1 JB	1.4 JB	< 50 U	0.25 JB	220	0.15 JB	N/A	N/A

OW-6D

DATE	T/D	AS	CR	FE	PB	MN	TL	TCE	VC
9/17/2014	T	13	35	3500	0.55 JB	240	0.12 JB	< 1 U	< 1 U
9/17/2014	D	7.2 B	30	2200	0.32 J	240	< 1 U	N/A	N/A
12/16/2014	T	9.1	44 B	2900 B	<0.33 JBu	240	< 1 U	< 1 U	< 1 U
12/16/2014	D	5.1 B	1.3 JBj	< 50 U	< 1 U	230 B	< 1 U	N/A	N/A
3/9/2015	T	13 B	45 B	4000	< 1 Bu	300	< 1 U	< 1 U	< 1 U
3/9/2015	D	6.4	<1.2 JBu	< 50 U	< 1 U	250	< 1 U	N/A	N/A
5/19/2015	T	8.1 B	2 B	1900	0.13 J	230	< 1 U	< 1 U	< 1 U
5/19/2015	D	5 B	2.6 B	140 B	0.17 JB	230	< 1 U	N/A	N/A

OW-4

DATE	T/D	AS	CR	FE	PB	MN	TL	TCE	VC
9/17/2014	T	2 J	2.7	630	0.47 JB	64	0.29 JB	< 1 U	< 1 U
9/17/2014	D	1.5 JB	< 2 U	< 50 U	< 1 U	21	< 1 U	N/A	N/A
12/16/2014	T	2.3 J	61 B	1200 B	0.9 JBj	98	0.085 J	< 1 U	< 1 U
12/16/2014	D	1.6 JBj	1.1 JBj	< 50 U	< 1 U	10 B j	< 1 U	N/A	N/A
3/9/2015	T	<1.8 JBu	< 2.7 Bu	160	<0.19 JBu	15	< 1 U	< 1 U	< 1 U
3/9/2015	D	1.6 J	<1.2 JBu	< 50 U	< 1 U	3.3 J	0.092 J	N/A	N/A
5/19/2015	T	3.9 JB	110 B	3800	2.3	320	0.09 J	< 1 U	< 1 U
5/19/2015	D	1.5 JB	1.5 JB	< 50 U	0.21 JB	31	0.13 JB	N/A	N/A

OW-7

DATE	T/D	AS	CR	FE	PB	MN	TL	TCE	VC
9/17/2014	T	0.63 J	2.1	290	0.19 JB	47	0.11 JB	< 1 U	< 1 U
9/17/2014	D	0.57 JB	< 2 U	< 50 U	< 1 U	37	< 1 U	N/A	N/A
12/16/2014	T	1 J	9.1 Bj	320 Bu	0.27 JBj	24	< 1 U	< 1 U	< 1 U
12/16/2014	D	0.85 JBj	2 Bj	< 50 U	< 1 U	11 Bj	< 1 U	N/A	N/A
3/9/2015	T	<2.2 JBu	33 B	2200	1.4 B	120	< 1 U	< 1 U	< 1 U
3/9/2015	D	0.88 J	< 3.2 Bu	< 50 U	< 1 U	6.2	< 1 U	N/A	N/A
5/19/2015	T	2.3 JB	41 B	2100	1.2	96	< 1 U	< 1 U	< 1 U
5/19/2015	D	1.1 JB	1.4 JB	< 50 U	0.16 JB	6.5	< 1 U	N/A	N/A

OW-1

DATE	T/D	AS	CR	FE	PB	MN	TL	TCE	VC
9/17/2014	T	2.7 J	16	260	0.73 JB	9.2	0.99 JB	< 1 U	< 1 U
9/17/2014	D	2.1 JB	0.4 J	< 50 U	0.12 J	3.6 J	0.11 J	N/A	N/A
12/16/2014	T	2.4 J	1.5 JBj	180 Bu	0.29 JBj	8.1	< 1 U	< 1 U	< 1 U
12/16/2014	D	2.3 J	1.4 JBj	< 50 U	0.17 J	< 5 U	0.23 J	N/A	N/A
3/9/2015	T	2.6 JB	< 2.2 Bu	240	<0.44 JBu	10	0.19 J	< 1 U	< 1 U
3/9/2015	D	2.2 J	<1.4 JBu	< 50 U	0.16 J	< 5 U	0.21 J	N/A	N/A
5/19/2015	T	2.6 JB	9.4 B	170	0.28 J	10	0.091 J	< 1 U	< 1 U
5/19/2015	D	3.1 JB	1.6 JB	22 JB	0.34 JB	< 5 U	0.23 JB	N/A	N/A

OW-7D

DATE	T/D	AS	CR	FE	PB	MN	TL	TCE	VC
9/17/2014	T	4.8 J	13	6600	0.19 JB	53	0.077 JB	< 1 U	< 1 U
9/17/2014	D	1.9 JB	< 2 U	380	< 1 U	46	< 1 U	N/A	N/A
12/16/2014	T	6.4	50 B	7200 B	0.83 JBj	71	< 1 U	< 1 U	< 1 U
12/16/2014	D	2.2 JBj	1.2 JBj	62 Bu	< 1 U	40 B	< 1 U	N/A	N/A
3/9/2015	T	7.7 B	26 B	7200	<0.33 JBu	57	< 1 U	< 1 U	< 1 U
3/9/2015	D	3.2 J	<1.3 JBu	270	< 1 U	46	< 1 U	N/A	N/A
5/19/2015	T	8.5 B	2.9 B	7200	0.63 J	71	< 1 U	< 1 U	< 1 U
5/19/2015	D	2.9 JB	1.6 JB	< 50 U	0.13 JB	44	< 1 U	N/A	N/A

OW-5

DATE	T/D	AS	CR	FE	PB	MN	TL	TCE	VC
9/17/2014	T	3.2 J	35	3000	1.8 B	270	0.26 JB	< 1 U	0.43 J
9/17/2014	D	1.3 JB	< 2 U	< 50 U	< 1 U	220	< 1 U	N/A	N/A
12/16/2014	T	1.5 J	2.5 B	550 B	0.33 JB	33	0.087 J	< 1 U	< 1 U
12/16/2014	D	0.94 JBj	1.1 JBj	< 50 U	< 1 U	15 Bj	< 1 U	N/A	N/A
3/9/2015	T	9.2 B	22 B	9900	4.9 B	370	0.2 J	< 1 U	< 1 U
3/9/2015	D	1 J	<1.2 JBu	< 50 U	< 1 U	20	< 1 U	N/A	N/A
5/19/2015	T	1.9 JB	3 B	940	0.6 J	23	< 1 U	< 1 U	< 1 U
5/19/2015	D	1.4 JB	1.4 JB	< 50 U	0.22 JB	1.2 J	0.14 JB	N/A	N/A

Notes

All samples reported in UG/L (micrograms per liter); QA/QC Duplicate samples not shown on figure.

AS = Arsenic; CR = Chromium; FE = Iron; PB = Lead; MN = Manganese; TL = Thallium; TCE = Trichloroethene; VC = Vinyl Chloride; PCE = Tetrachlorethene

RSL: USEPA Regional Screening Levels, November 2015 (Iron RSL = 15,000) (Manganese RSL = 480)

MCL: Maximum Contaminant Level enforceable standard of National Primary Drinking Water Regulations under Safe Drinking Water Act

(Arsenic MCL = 10) (Chromium MCL = 100) (Lead MCL = 15) (Thallium MCL = 2) (TCE MCL = 5) (Vinyl Chloride MCL = 2)

T/D: measured basis (metals only); T = total, D = dissolved

N/A: Not Analyzed

U: Test America Lab Qualifier. Nondetect.

J: Test America Lab Qualifier. Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B: Test America Lab Qualifier. Estimated result. Result is less than the reporting limit.

j: TRC Qualifier. The analyte was not detected above the reporting sample quantitation limit. However, the reported quantitation limit is approx. and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

u: TRC Qualifier. The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

TITLE: *GROUNDWATER SAMPLE LOCATIONS & RESULTS SINCE SEPTEMBER 2014*

PROJECT: *BWAY RCRA CORRECTIVE ACTION (RCRA-05-2007-0011)*

DATE: *Tuesday, March 22, 2016*

FIGURE: *1*

PROJECT NUMBER: *214114*

DRAWN BY: *GIS*

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Figure 5 - Locations of SWMUs, AOCs, and AOIs

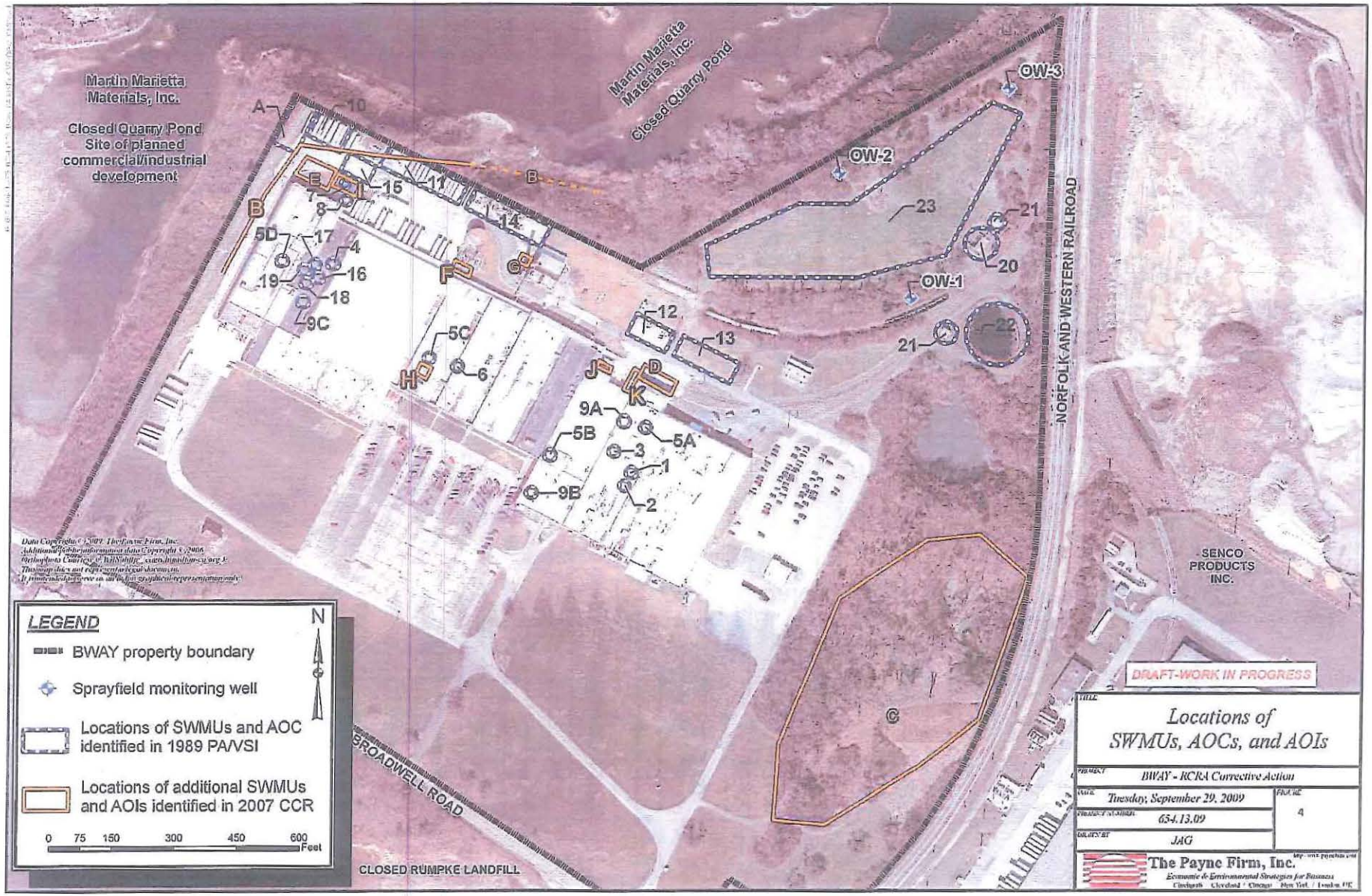

Table 5 – Description of SWUs, AOCs and AOIs

SWMUS, AOCs and AOI	Description
SWMU 1	Vapor collection system
SWMU 2	Volatile vapor incinerators (3)
SWMU 3	Scraper coating buckets
SWMU 4	Waste coating buckets (2)
SWMU 5	Satellite waste accumulation collection areas
SWMU 6	Satellite scrap metal collection areas
SWMU 7	Scrap metal bailers
SWMU 8	Scrap metal storage area
SWMU 9	Safety-Kleen units (3)
SWMU 10	#1 empty product drum storage area
SWMU 11	#1 drummed hazardous waste storage area
SWMU 12	#2 empty product drum storage area
SWMU 13	#2 drummed hazardous waste storage area
SWMU 14	Scrap yard
SWMU 15	Former drummed chrome-sludge storage area
SWMU 16	Acid bath sump
SWMU 17	Acid waste storage tanks
SWMU 18	Neutralization bath
SWMU 19	Former chrome-waste storage tank
SWMU 20	Biological treatment plant
SWMU 21	Wet well
SWMU 22	Storage pond
SWMU 23	Land application treatment area
AOC A	Drummed product storage area
AOI B	Former process wastewater discharge line
AOI C	Historical debris area
AOI D	Former Plant 9 underground storage tanks (5)
AOI E	Former D&I underground storage tanks (5)
AOI F	Former gasoline underground storage tank
AOI G	Former fuel oil underground storage tank
AOI H	Former compound room underground storage tanks
AOI I	Former scrap building underground storage tank
SWMU J	Current tin scrap bailer
SWMU K	Current empty product drum storage area