SITE INVESTIGATION WORKPLAN
REYNOLDS PROPERTY/FORMER BURKE WASTEWATER TREATMENT PLANT
(BRRTS 02-13-315773)
1401 PACKERS AVENUE
MADISON, WISCONSIN 53704

PREPARED FOR:

MICHAEL SCHMOLLER
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
3911 FISH HATCHERY ROAD
FITCHBURG, WISCONSIN 53711

DAVE NELSEN
POYNETTE DEVELOPMENT, LLC
4605 DOVETAIL DRIVE
MADISON, WISCONSIN 53704

SEPTEMBER 2018

SEYMOUR ENVIRONMENTAL SERVICES, INC.

P.O. Box 398, 2531 Dyreson Road, McFarland, Wisconsin 53558
608-838-9120

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1.0 INTRODUCTION

This work plan describes the approach to conduct additional investigation at 1401 Packers Avenue in Madison, Wisconsin (Figure 1). The property was the location of the Burke Wastewater Treatment Facility. Seymour Environmental Services, Inc. (Seymour) is conducting this investigation in response to elevated metal levels identified in the soil and groundwater at the site during a previous assessment performed in 2002. We believe that additional soil and groundwater investigation will be required to obtain site closure from the Wisconsin Department of Natural Resources (WDNR).

1.1 Site and Consultant Information

Site Location:	Reynolds Property/Former Burke Wastewater Treatment Plant 1401 Packers Avenue Madison, Wisconsin 53704 Dane County NW ¼ of the SE ¼ of Section 31 Township 8 North, Range 10 East
Owner:	Poynette Development, LLC 4605 Dovetail Drive Madison, Wisconsin 53704 Contact: Dave Nelsen (608) 249-2012 X205
Consultant:	Seymour Environmental Services, Inc. 2531 Dyreson Road McFarland, Wisconsin 53558 Contact: Robyn Seymour (608) 838-9120
Driller:	Badger State Drilling 360 Business Park Circle Stoughton, Wisconsin 53589 Contact: Mark Garwick (608) 877-9770
Laboratory: (soil/water)	Pace Analytical 1241 Bellevue Street, Suite 9 Green Bay, Wisconsin 54302 Contact: Dan Milewsky (920) 469-2436

1.2 Description of Surrounding Area

The site is in the northeastern part of the City of Madison. Properties in the area are primarily zoned for commercial activities. The surrounding properties, owners, and current usage are shown on Figure 2.

The subject parcel (PN:0810-314-0097-2) is ~30 acres in area. The site currently is owned by Poynette Development, LLC who acquired the property in early 2017. Prior owners of the property included Reyco Madison, Inc (1984-2017) and Edward and David Reynolds (1981-1984). Before 1981 the property was owned by various public entities and was part of a large municipal service complex that included the Truax Landfill and the Town of Burke wastewater treatment plant (WWTP). The landfill was located to the north of the subject parcel although the landfill design management zone extends across the northern 200 feet of the parcel. Much of the infrastructure associated with the former Town of Burke WWTP was located on the subject parcel, including the transfer station, clarifiers, sludge lagoons, decant ponds, and sludge drying cells (Figure 3). The existing site layout is shown on Figure 4.

1.3 Proposed Redevelopment

A potential purchaser of the site would like to construct structures and roadways/parking areas on the property. We intend to collect enough information to allow the site to obtain closure.

2.0 SUMMARY OF PREVIOUS INVESTIGATION RESULTS

Midwest Environics conducted a Phase I Environmental Assessment in early 2002. Based on the recommendations of the Phase I Resource Engineering Associates (REA) conducted a Phase II Environmental Assessment in 2002 and found metals that exceeded the RCLs and groundwater quality standards. In the summer of 2011 Ivertech, Inc. visited the site while some excavation activities were being conducted and identified buried solid waste. The results are discussed in further detail below.

2.1 Solid Waste Disposal Area

In the late 1970s a solid waste research project was operated at the site by the City of Madison and the University of Wisconsin. Solid waste was placed in the northwest end of the sludge drying swell. The municipal waste was placed on what appeared to be a bituminous paved/plastic liner system.

In 2002 two Geoprobe borings were installed in the area immediately northeast of the sludge drying cells where the municipal waste was held. The borings (B-7 and B-8) were advanced to depth of 12 feet. Soil and groundwater samples were collected at both borings for analysis of volatile organic compounds (VOCs) and select metals. No analytes were present above WDNR action levels in the soil sample from B-7 which was collected at a depth of 4-8 feet. At B-8 a shallow soil sample (0-4 feet) was selected for analysis. No VOCs or PCBs were detected in this soil sample. However, two metals, arsenic and cadmium, were present above the background threshold values (BTV). The concentration of both metals exceeded the groundwater pathway RCL; arsenic also exceeded the direct contact RCL for non-industrial properties. Groundwater samples from each of the borings contained metals above NR140 groundwater quality standards but only trace levels of PVOCs were detected. Chromium was present in the groundwater at each of the borings above the ES. Cadmium and lead were present above the PAL in groundwater at both borings and arsenic exceeded the PAL at B-7. Sampling locations are shown on Figure 5 and analytical results are included in Table 1.

2.2 Wastewater Treatment System

Limited information is available regarding the chemical makeup of the sludge that was generated at the former Burke wastewater treatment plant. The information regarding the chemistry of the sludge post-dates operation of the WWTP. During the early 1990s some sampling was completed during an assessment of the adjacent Truax Landfill and in preparation for decommissioning activities at the WWTP.

During the landfill assessment "sediment" samples were collected from the sludge in the decant pond, sediment in the WWTP stream outfall, and the soils around the drying bed. The sludge sample (TS-12) reportedly contained petroleum hydrocarbons at 4,200 mg/kg and volatile organic compounds methylene chloride, 1,1,1 trichloroethane, trichlorofluoromethane, and toluene. Quantification of the VOC levels was inhibited by matrix interference. The sediment from the stream outfall near Starkweather Creek (TS-11) reportedly contained petroleum hydrocarbons at 5,500 mg/kg and the VOCs methylene chloride, 1,1,1 trichloroethane, ethylbenzene, and toluene. Lead and mercury also were reported to be present in the sample. Three soil samples were collected in the sludge drying bed area (TS-7, TS-8, and TS-9). Several VOCs were reported to be present in the soil samples including petroleum-related compounds and halogenated organics compounds, but matrix affects appear to have limited the quantification of the chemical concentrations.

During the landfill assessment water samples were collected from surface water in a former sludge lagoon and drainage ditch and groundwater in the western part of the property. No contaminants were identified in the water sample collected from one of the sludge lagoons (TS-12). A surface water sample collected from a ditch connecting the sludge lagoons and Starkweather Creek (TW-4) contained total petroleum hydrocarbons at 65 mg/l and tetrachloroethene at 3.2 ug/l. Groundwater at the western part of the site (TG-2) contained lead, chromium, and cadmium. No VOCs were identified in the groundwater at TG-2.

In late 1991 and early 1992 sampling was conducted as part of the WWTP decommissioning. It appears that samples of the sludge located in the decant pond and sludge pond #7 in the southeast corner of the site were collected. These samples were analyzed for metals, and nutrients (ammonia-N, total Kjeldahl nitrogen). Several metals were present above WDNR background threshold values including arsenic, cadmium, copper, lead, and zinc. Several metals were present above the groundwater pathway or direct contact RCLs. Personnel from MMSD reviewed the metal concentration and said they were "typical" for wastewater sludge. Nutrient levels in the sludge samples also were not concerning with ammonia at ~0.01% (~94 mg/kg), and TKN at 1.35 to 1.72% (~15,000 mg/kg).

In March 2002 REA conducted sampling at the site to evaluate the potential environmental concerns for redevelopment of the property. During that work 4 direct push borings were placed in each of the three areas of concern related to the former wastewater treatment facility. These included the sludge drying cells on the western part of the site, the sludge ponds on the northeast part of the site, and the decant ponds on the southeast part of the site. Soil and groundwater samples were collected in each of the areas of concern. Soil samples were analyzed for VOCs, select metals, and/or polychlorinated biphenyls (PCBs). Groundwater samples were analyzed for VOCs and selected metals (arsenic, cadmium, chromium, and lead). In addition to the sampling points installed to evaluate soil and groundwater, four vapor probes were installed around the sludge ponds. The samples for metal analysis at the site were not filtered. Thus, reported metal concentrations are for total metals rather than dissolved metals. Vapor samples from these locations were collected to evaluate the potential for hazardous vapors from the sludge ponds or nearby closed Truax Landfill.

Sludge Drying Beds

In the sludge drying area four borings (B-5 through B-8) were installed. A single soil sample from each boring was selected for laboratory analysis of VOCs and metals. Three of the samples were collected from 4 to 8 feet below grade and the fourth sample was collected from the shallow soils (1-4 feet deep). A groundwater sample also was collected at each point. Groundwater quality standards are for dissolved metals.

No VOCs were detected in the soil samples from the sludge drying area. Two metals were detected above the WDNR background threshold values (BTV), arsenic and cadmium. Both arsenic and cadmium were present slightly above the BTV in shallow soils at B-8. The arsenic level, 10 mg/kg, exceeded both the groundwater pathway and direct contact RCLs. The cadmium concentration at B-8, 1.7 mg/kg, only exceeded the groundwater pathway RCL. Cadmium also was present above the groundwater pathway RCL in the soil from 4-8 feet deep at B-5. Sampling locations and identified soil contamination in the sludge drying area are shown on Figure 5 and analytical data is compiled in Table 1.

Several analytes were identified in the groundwater around the former sludge drying beds. Four VOCs were detected; toluene, trimethylbenzenes, xylenes, and naphthalene. All of these compounds were present at low levels (0.1 to 1.2 ug/l) and substantially below NR140 groundwater quality standards. Metals were present in the groundwater samples from each of the four borings. Two of the metals were detected at levels exceeding the NR140 ESs, chromium and lead. Chromium exceeded the ES at B-7 (970 ug/l) and B-8 (120 ug/l). The two sample locations are toward the northern end of the sludge drying

beds; this is the location where the municipal solid waste currently resides. Lead was present above the ES in the groundwater sample from B-5 which is in the southwest part of the drying beds.

Decant Pond Area

Four borings (B-9 through B-12) were installed around the former decant pond and southern sludge pond #7, located in the southeastern portion of the property. A single soil sample from each boring was selected for laboratory analysis of VOCs and metals. Three of the samples were collected from 4 to 8 feet below grade and the fourth sample was collected from 8 to 12 feet deep. Additionally, 2 shallow samples were analyzed for PCBs. A groundwater sample also was collected at each point. Groundwater samples were analyzed for VOCs and select metals.

No VOCs were detected in the soil samples from the decant pond area. One metal, cadmium, was detected above the WDNR background threshold values (BTV). Cadmium was present in soil from both B-9 and B-10 above the BTV. The concentrations present exceed the groundwater pathway RCL. No PCBs were detected in the soil samples. Sampling locations and identified soil contamination in the sludge drying area are shown on Figure 6 and analytical data is summarized in Table 2.

Several analytes were identified in the groundwater around the former sludge drying beds. Only one VOC was detected; toluene. Toluene was present at low levels (0.13 to 0.21 ug/l) at all of the borings but was substantially below NR140 groundwater quality standards. Metals were present in the groundwater samples from each of the four borings. One metal, chromium, was detected at levels exceeding the NR140 ES. Chromium exceeded the ES at B-10 (260 ug/l), B-11 (130 ug/l), and B-12 (520 ug/l). The chromium level at B-9 (39 ug/l) was below the ES. Boring B-9 is in the southern portion of the decant pond area which appears to be hydraulically downgradient.

Sludge Ponds

Four borings (B-1 through B-4) were installed in the former sludge pond area in the northeast corner of the property. A single soil sample from each boring collected at depths ranging from 6 to 16 feet was selected for laboratory analysis of VOCs and metals. An additional deep sample (16 feet) was collected for VOC analysis at B-1. Two shallow soil samples were analyzed for PCBs. A groundwater sample was collected at two location, B-1 and B-2, for analysis of VOCs and select metals.

No VOCs or PCBs were detected in the soil samples from the sludge pond area. All four metals analyzed were detected above the WDNR background threshold values (BTV) in the soil sample collected from a depth of 8 feet at B-3. Boring B-3 is located near the northwest corner of the sludge pond. At the remaining location cadmium was the only compound present above the BTV. Except for B-3 the cadmium concentrations were consistent (less than 3 mg/kg) and were below the groundwater pathway RCLs. Sampling locations and identified soil contamination in the sludge pond area are shown on Figure 7 and analytical data is presented in Table 3.

Several analytes were identified in the groundwater around the former sludge ponds. Several VOCs were detected including; benzene, toluene, trimethylbenzenes, xylenes, naphthalene, chlorobenzene, and 1,2 dichlorobenzene. All these compounds were present at low levels (less than 1.5 ug/l). Only one VOC, benzene, was present above NR140 groundwater quality standards. The benzene concentration at B-3 exceeded the PAL. Metals were present in the two groundwater samples. Two of the metals were detected at levels exceeding the NR140 ESs, arsenic and chromium. The groundwater sample from B-1 contained arsenic at 17 ug/l and chromium at 120 ug/l. The groundwater sample from B-2 contained arsenic at 14 ug/l and chromium at 440 ug/l.

Soil gas vapor samples were collected at six locations around the former sludge ponds. The vapor samples were analyzed for methane, carbon dioxide, oxygen, and lower explosive limit (LEL) in the field using a landfill gas monitor (Landtec Gem-500). Vapor samples were analyzed on two occasions in April 2002. No indications of explosive vapor generation from degradation of organics were noted. Methane was not detected at any of the location. Oxygen levels in the soil vapors were typical (~20.5%) and carbon dioxide was not detected in 5 of the sampling locations. At one point, GP-17, a slightly depressed oxygen concentration was noted, and low levels of carbon dioxide were present. Sampling location GP-17 and GP-18B are part of the landfill monitoring network. These points are not shown on REA maps but GP-17 was described as "on the subject property' and GP-18B is just northeast of the subject property. Vapor analytical data is summarized in Table 4.

2.3 Former Dane County Truax Landfill

A former solid waste landfill is located immediately to the north of the subject parcel. The Truax Landfill was an open burning dump in the 1930's and a landfill for the U.S. Army and the City of Madison from 1942-1972.

The former Truax Landfill has a system of monitoring points which extend from the landfill including groundwater monitoring wells, landfill gas probes, and gas extraction wells. Three groundwater monitoring locations are present on the subject parcel (MW-10, TG-2 and a well nest MW-5 near the south property line). A fourth monitoring, MW-6) well is located slightly to the south of the property.

Sampling data at the nearby wells performed as part of the former Truax Landfill monitoring provide valuable information regarding flow and groundwater quality. Data has been collected for over 25 years at these points. In general, the groundwater monitoring data shows limited impacts around the former Burke WWTP site. Because of this the sampling requirements in the nearby monitoring wells have been reduced. Pertinent data is discussed below.

Groundwater level data collected from the four water table monitoring wells located nearby to the subject parcel were used to evaluate the groundwater flow direction. The data indicate that shallow groundwater flow in the area is toward the southwest. The highest groundwater levels are consistently present at MW-10 which is in the northeast corner of the subject property. The average water-table elevation in this area is ~850 ft. msl. The water table elevation drops to the south and west. The lowest average groundwater levels were noted at TG-2, ~846.8 ft. msl. Based on the typical water table data the flow at the site is S56°W with a hydraulic gradient of 0.003 ft/ft (Figure 8). The chromium contamination in groundwater is shown on Figure 9.

Groundwater quality data from the nearby Truax wells show minimal impairment to the water-table aquifer. Since 2000 the only analytes have been identified in groundwater samples exceeding the ES are metals from the nearby water table wells (MW-5, MW-6, MW-10, and TG-2).

3.0 OUTSTANDING ENVIRONMENTAL CONCERNS

The data collected indicate that the operation and/or decommissioning of the former Burke wastewater treatment plant may have resulted in elevated levels of metals at the property.

Several items appear to be outstanding environmental concerns:

1) The presence of approximately 2000 cubic yards of buried municipal waste.
2) The presence of metals above WDNR standards in soils around the former wastewater treatment handling areas.
3) The presence of apparently elevated metals in the groundwater.

4.0 CURRENT STATUS AND PROPOSED SITE INVESTIGATION ACTIVITIES

4.1 Former City of Madison Landfill Research Project

Current Status

In the summer of 2011 the property owner removed the concrete walls of the former sludge drying beds. The structures were visible but mostly buried at depths ranging from 6 to 8 feet. The excavation contractor identified what appeared to be buried solid waste.

Ivertech was contacted and in August 2011 went to the site to oversee the installation of test pits. Field observations determined that the waste appeared to be municipal waste with no signs of hazardous material. The waste appeared to be well stabilized with no garbage, limited paper, no odor and was comprised mostly of soil, glass and plastic and was 4-6 feet deep.

Ivertech estimated that the waste was estimated to be approximately 2000 cubic yards. At the direction of the WDNR Ivertech collected two soil samples beneath the waste and a "liner system" and analyzed them for VOCs. There were no detects in either sample.

Proposed Activities

The municipal waste will be taken to a solid waste landfill. After removal of the solid waste is completes soil samples will be collected from beneath the waste fill area and analyzed for VOCs.

4.2 Former Wastewater Treatment Facilities

Current Status

Since the site is currently an open site and will require additional information to obtain site closure. Sampling conducted at the site identified limited soil and groundwater at the site which exceeds WDNR standards. Soil was sampled for VOCs, select metals, and PCBs. Only metals were identified in the soils at levels exceeding the RCLs. Groundwater samples were analyzed for VOCs and select metals. No VOCs were identified in the groundwater above the NR140 ESs in the samples collected from the Geoprobe™ borings installed during the site investigation or in the monitoring wells installed for the Truax Landfill. Several metals have been identified in the groundwater at the property at levels exceeding the ESs. As mentioned earlier, groundwater samples analyzed for metals during the REA phase II were unfiltered.

Information regarding the history of the site indicates that of fill was deposited at the property during the decommissioning of the former wastewater treatment plant. The presence of the fill materials was confirmed during the 2002 site assessment.

Proposed Activities

1) Collect additional soil samples in the areas of identified contamination to delimit the extent of metals contamination exceeding WDNR standards.

   Several additional boring will be installed in the three areas of concern previously identified. The borings will be extended to a depth of 12 to 16 feet or until groundwater is encountered. Soil samples will be described in the field and screened for organic vapors using a photo ionization detector equipped with a 10.6 eV lamp. Based on field observation and organic vapor screening soil samples will be selected for laboratory analysis. At each boring two soil samples will be selected for metal analysis; one from the shallow, direct-contact soil and one from the horizon where impacts have been identified previously. Additionally, if any soil samples exhibit

organic vapor levels above 20 vppm they will be analyzed for VOCs. Proposed locations are shown on Figure 10.

2) Install four water-table monitoring wells on the subject parcel.

Previous work at the site indicates that groundwater around the site may contain elevated levels of several heavy metals. However, data collected from the Truax landfill monitoring network show limited metal impacts on the groundwater. Because of this discrepancy, a single monitoring well will be installed in each of the three areas of concern and one well will be installed near the center of the property. In the former handling areas, the well will be installed near the location where the highest metal concentrations were noted during the 2002 sampling.

3) Develop the monitoring wells and survey well elevation and locations

The newly-installed wells will be properly developed. Water generated during development will be containerized in DOT-approved 55-gallon drums and stored on site pending laboratory results. The purge water will be disposed of properly after analytical results from sampling are available. Based on the previous work at the site we believe disposal of the water at the Madison Metropolitan Sewerage Department will be appropriate. Wells will be surveyed into the existing Truax Landfill monitoring network.

4) Collect groundwater level data and samples from the monitoring wells.

Water level data will be collected at the new monitoring wells and the water level data will be used to evaluate groundwater flow potential at the site. A groundwater sample will be collected from each of the monitoring wells. Prior to sampling the wells will be purged according to the methods outline in WDNR Sampling guidance. Well will be purged and sampled using disposable polyethylene bailers. Purge water will be containerized along with the water from well development. Groundwater samples will be collected from the wells for analysis of arsenic, barium, cadmium, chromium, lead and manganese.

5.0 QUALITY ASSURANCE PLAN

All sampling equipment will be decontaminated between samples by washing in a solution of ALCONOX and water and rinsing with clean water. We will label all samples with the sample identification, date, and time of collection. Appropriate chain of custody forms provided by the laboratory will be prepared. Samples will be stored on ice with the appropriate preservative, as indicated in the Tables. Pace Analytical will perform the requested analyses on the samples.

Sample preservation and analytical methods are compiled in the following table.

Soil Sample Containers, Preservation, and Analytical Methods
Former Burke Wastewater Plant - Madison, WI

Parameter	Container	Preservation	Analytical Method
METALs	(1) 100-ml amber glass jar / Teflon septa	4 °C	SW-846 6010

Groundwater Sample Containers, Preservation, and Analytical Methods Former Burke Wastewater Plant - Madison, WI			
Parameter	Container	Preservation	Analytical Method
VOCs	(3) 40-ml VOA vials	HCl, 4 °C	SW-846 8260 B (GC/MS)
METALs	(1) 250 ml plastic bottles	HNO_3, 4 °C	SW-846 6010

The photo ionization meter will be calibrated before use with a known concentration of isobutylene.

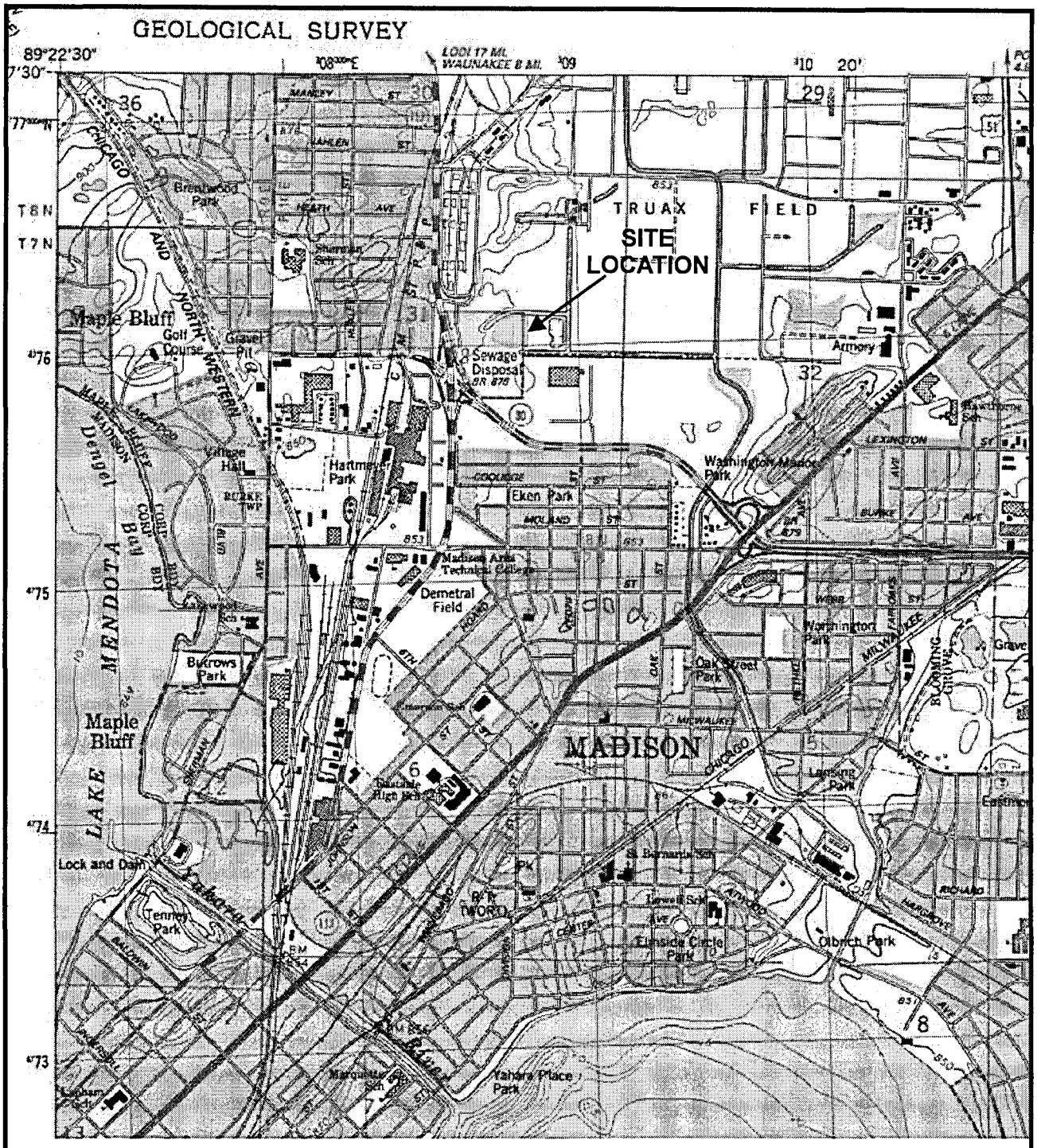
Questions about this work plan should be directed to Robyn Seymour at (608) 838-9120.

Sincerely,
Seymour Environmental Services, Inc.

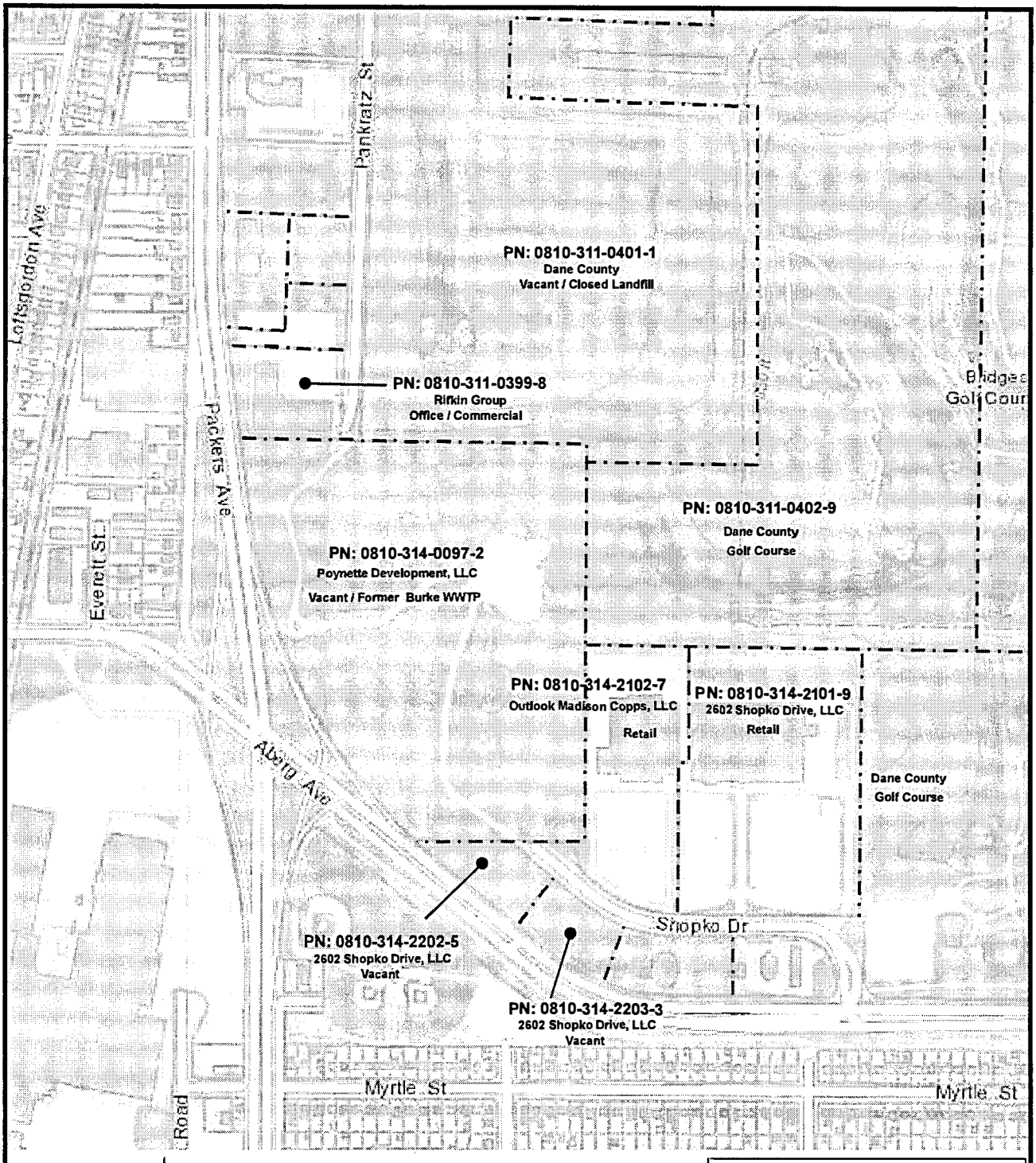
Robyn Seymour

Robyn Seymour

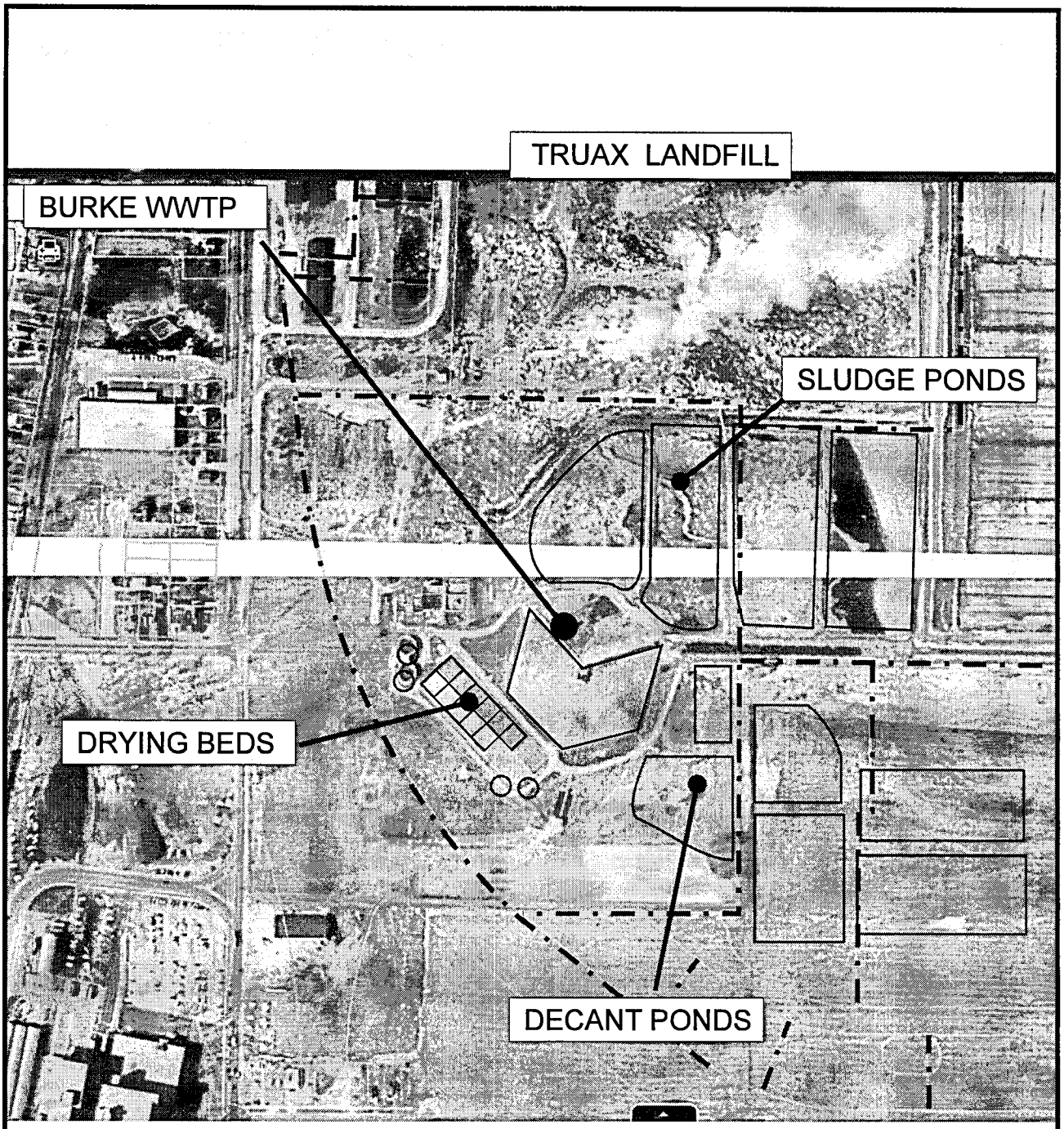
FIGURES



SEYMOUR ENVIRONMENTAL SERVICES, INC.	LOCATION MAP Burke Wastewater Tretament Plant 1401 Packers Avenue Madison, Wisconsin	FIGURE 1



SEYMOUR ENVIRONMENTAL SERVICES, INC.	SURROUNDING AREA Burke Wastewater Treatment Plant 1401 Packers Avenue Madison, Wisconsin	FIGURE 2



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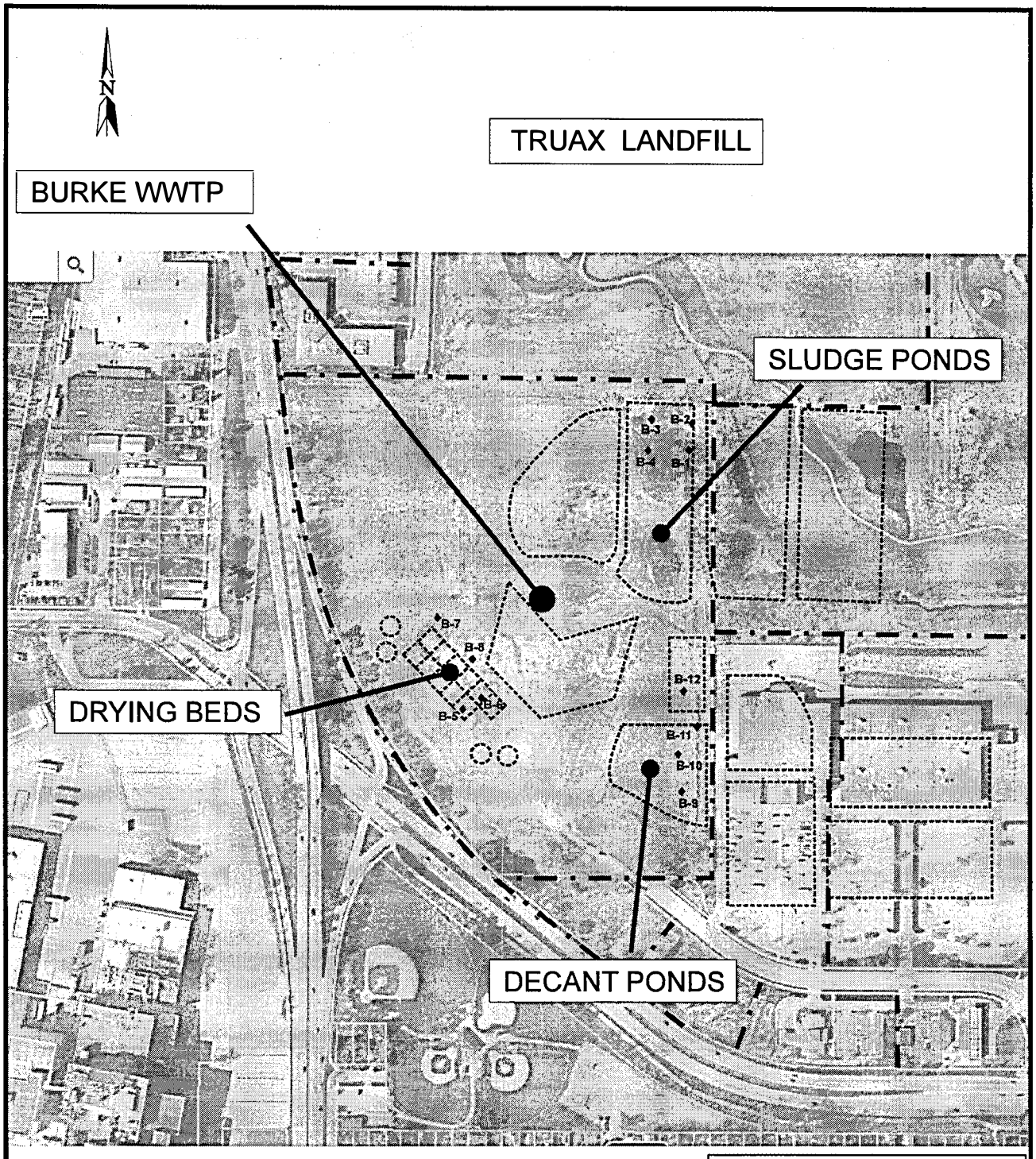
HISTORIC SITE LAYOUT
Burke Wastewater Treatment Plant
1401 Packers Avenue
Madison, Wisconsin

FIGURE
3



LEGEND

B-1 ● - Direct Push Boring (REA-2002)

0 400' 800'

1 INCH = 400 FEET
SCALE IS APPROXIMATE

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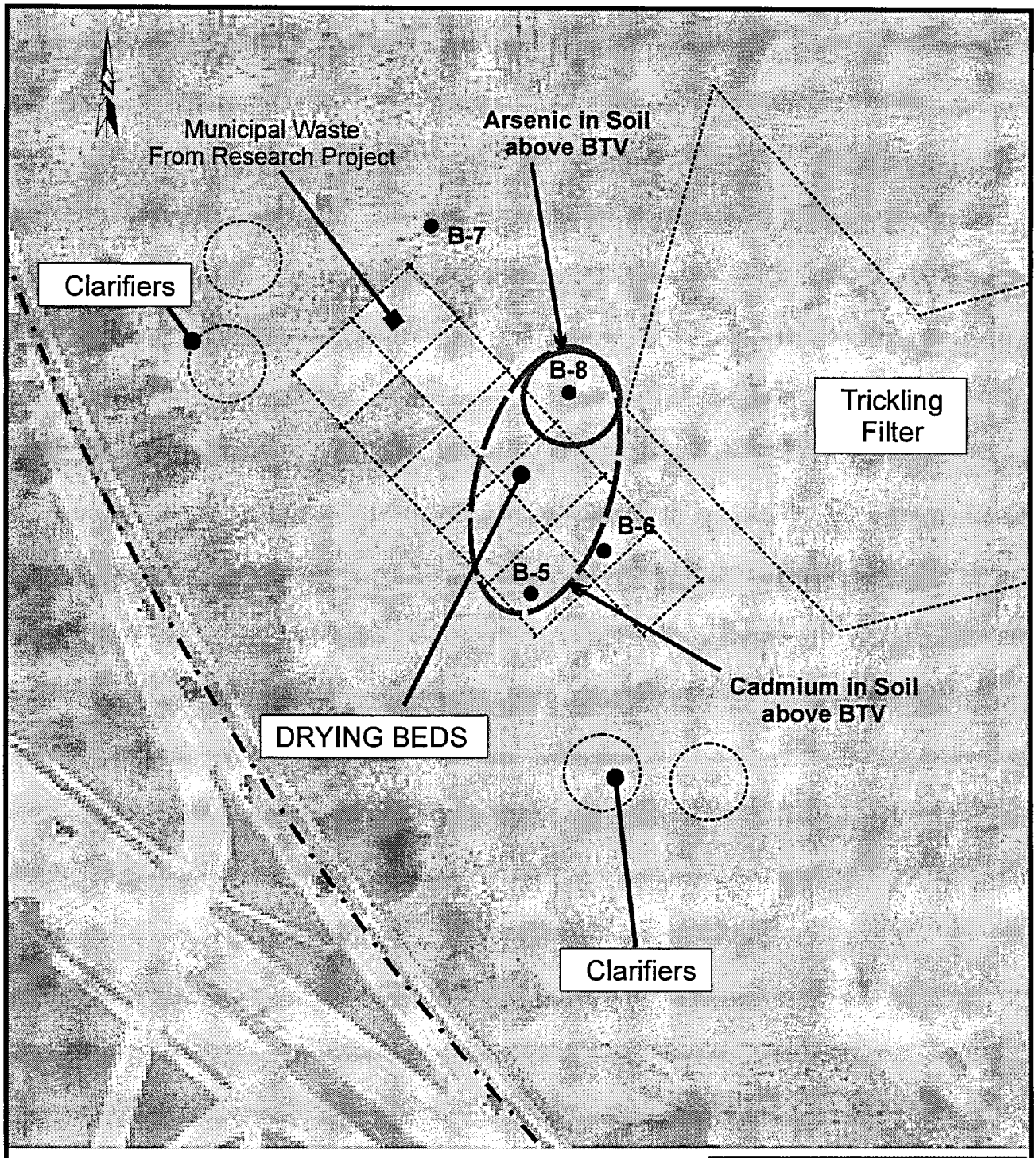
DATE: 08/29/2018
PREPARED: MDF APPROVED:
SOURCE:
Dane County Public Mapping - 2017 Aerial
REA Basemap 2002

SEYMOUR ENVIRONMENTAL SERVICES, INC.

EXISTING SITE LAYOUT
Burke Wastewater Treatment Plant
1401 Packers Avenue
Madison, Wisconsin

FIGURE
4



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B-1 ● - Direct Push Boring

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1 INCH = 100 FEET
SCALE IS APPROXIMATE

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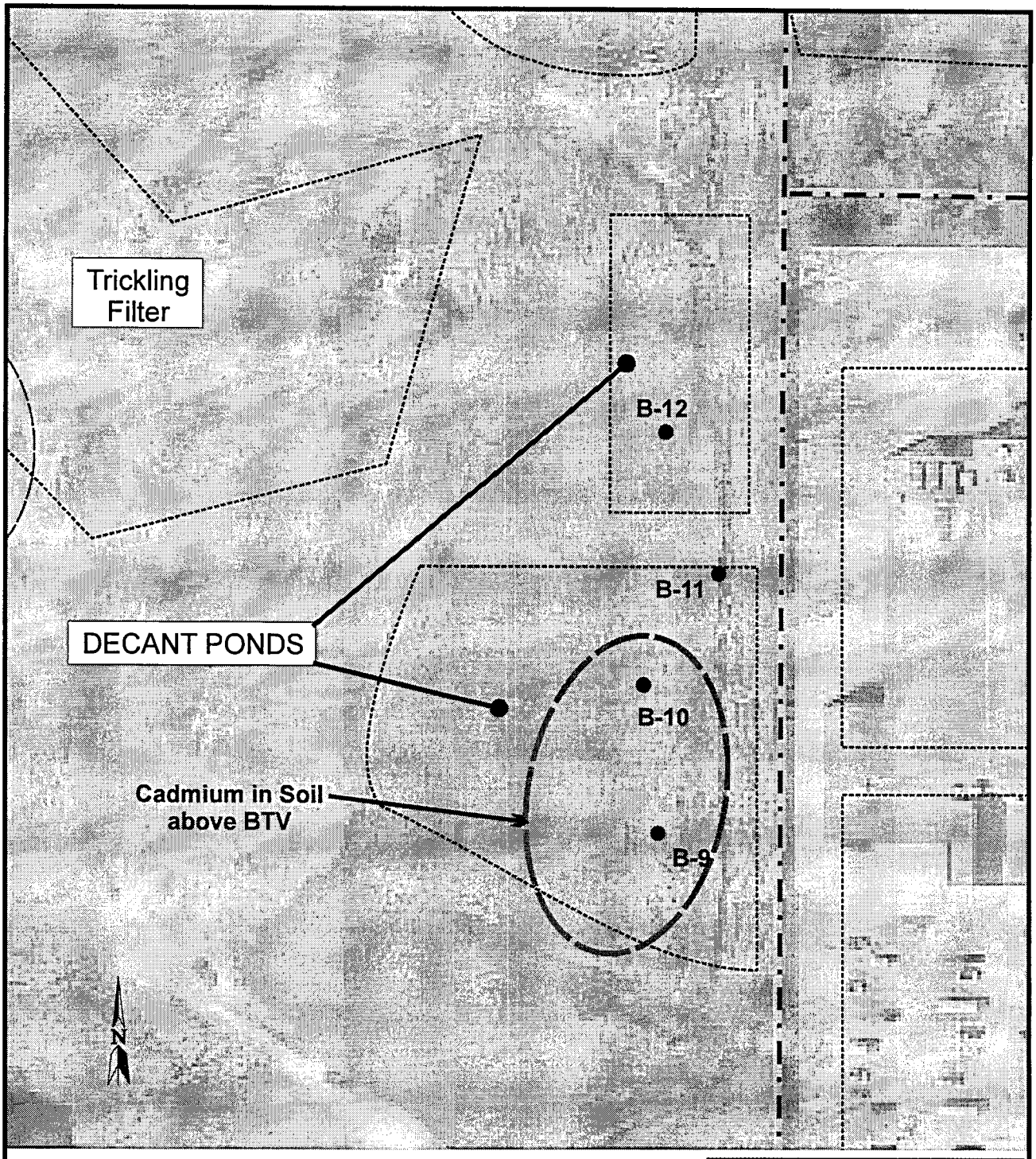
DATE: 08/29/2018
PREPARED: MDF APPROVED:
SOURCE:
Dane County Public Mapping - 2017 Aerial
REA Basemap 2002

SEYMOUR ENVIRONMENTAL SERVICES, INC.

SAMPLING DATA - DRYING BED AREA
Burke Wastewater Treatment Plant
1401 Packers Avenue
Madison, Wisconsin

FIGURE
5



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B-1 ● - Direct Push Boring

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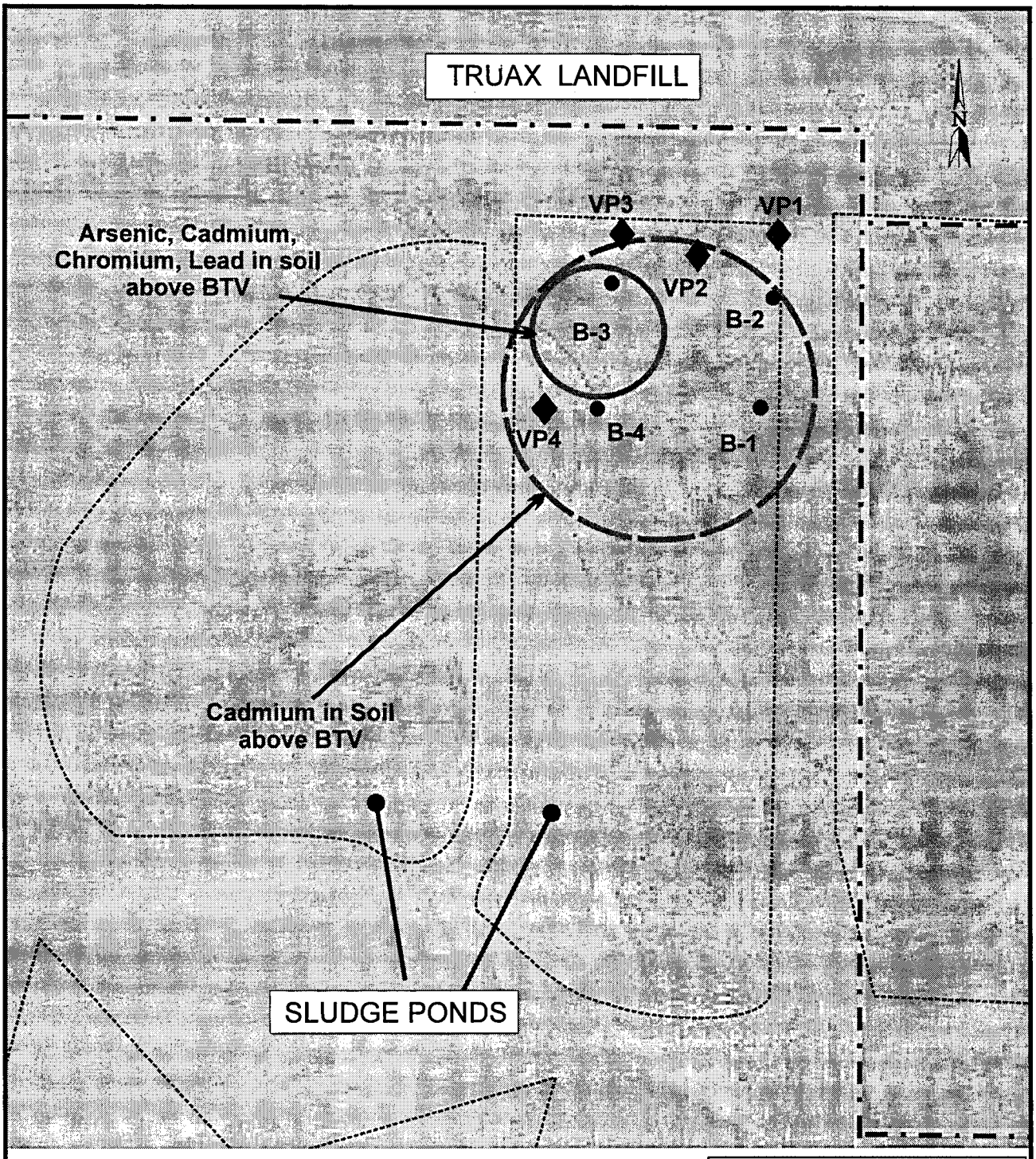
DATE: 08/29/2018
PREPARED: MDF APPROVED:
SOURCE:
Dane County Public Mapping - 2017 Aerial
REA Basemap 2002

SEYMOUR ENVIRONMENTAL SERVICES, INC.

SAMPLING DATA- DECANT POND AREA
Burke Wastewater Treatment Plant
1401 Packers Avenue
Madison, Wisconsin

FIGURE
6



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B-1 ● - Direct Push Boring

VP-1 ♦ - Soil Vapor Probe

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1 INCH = 400 FEET
SCALE IS APPROXIMATE

FILE/PATH: D:\ PROJECTS\RUEDEBUSCH\ BurkeWWTP-layout.cdr

DATE: 08/29/2018

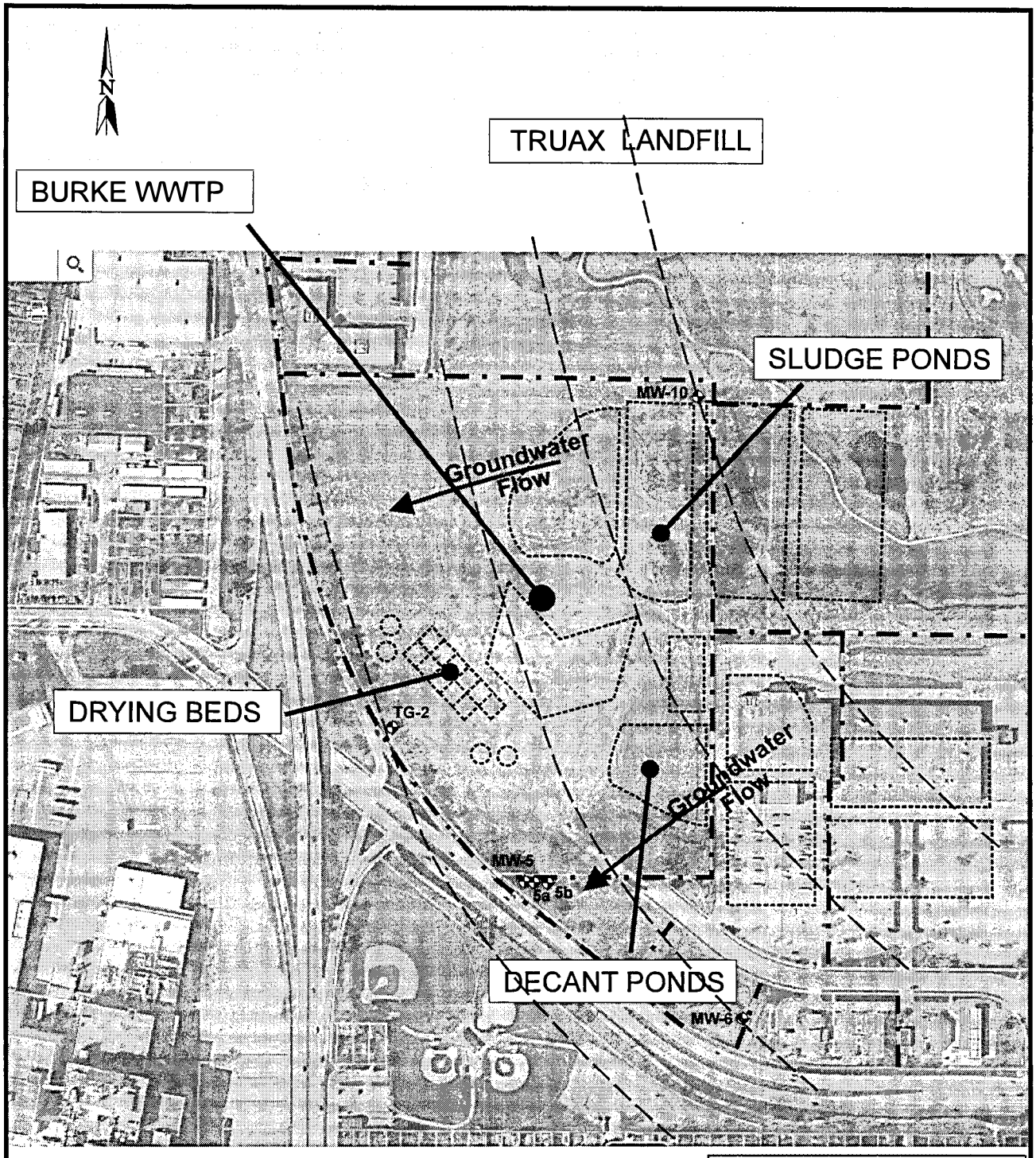
PREPARED: MDF APPROVED:

SOURCE:
Dane County Public Mapping - 2017 Aerial
REA Basemap 2002

SEYMOUR ENVIRONMENTAL SERVICES, INC.

SAMPLING DATA - SLUDGE POND AREA
Burke Wastewater Treatment Plant
1401 Packers Avenue
Madison, Wisconsin

FIGURE 7



LEGEND

MW-6 ◆ - Monitoring Well (Former Truax Landfill)

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1 INCH = 400 FEET
SCALE IS APPROXIMATE

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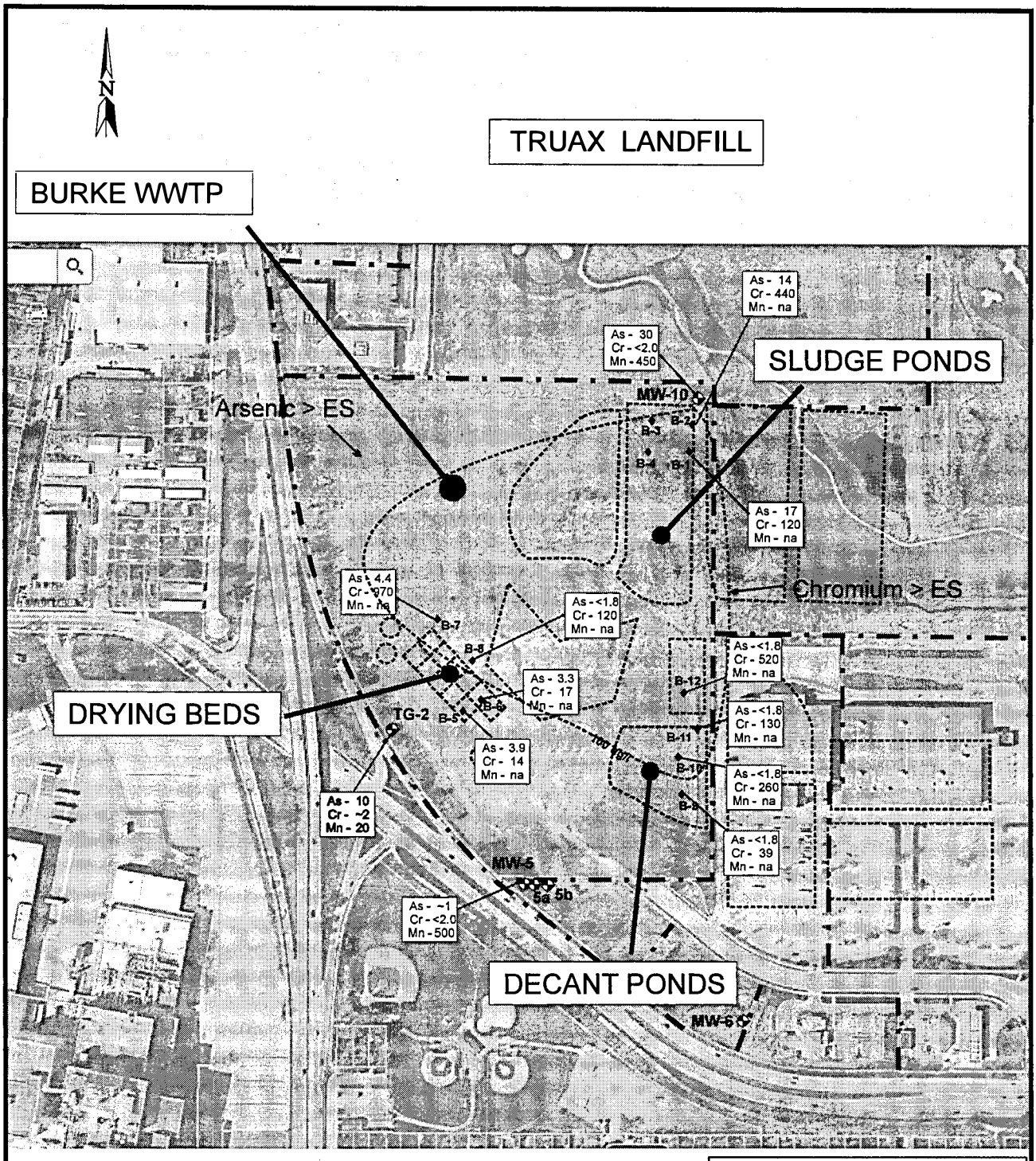
DATE: 08/29/2018
PREPARED: MDF APPROVED:
SOURCE: Dane County Public Mapping - 2017 Aerial
REA Basemap 2002

SEYMOUR ENVIRONMENTAL SERVICES, INC.

TYPICAL GROUNDWATR FLOW (TRUAX 2002)
Burke Wastewater Treatment Plant
1401 Packers Avenue
Madison, Wisconsin

FIGURE 8



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MW-6 ◆ - Monitoring Well (Former Truax Landfill)

0 400' 800'

1 INCH = 400 FEET
SCALE IS APPROXIMATE

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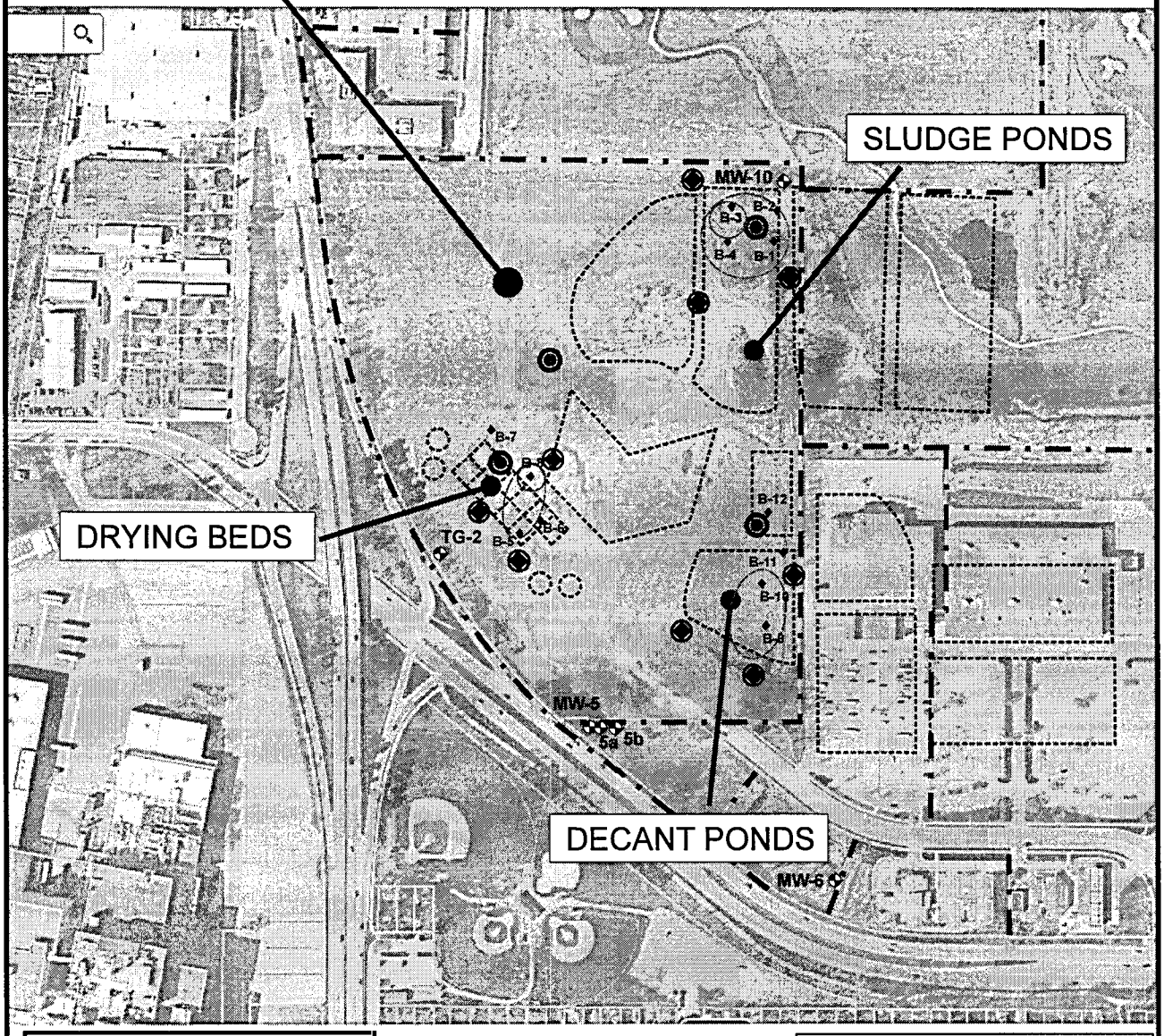
DATE: 08/29/2018
PREPARED: MDF APPROVED:
SOURCE:
Dane County Public Mapping - 2017 Aerial
REA Basemap 2002

SEYMOUR ENVIRONMENTAL SERVICES, INC.

GROUNDWATER QUALITY-CHROMIUM
Burke Wastewater Treatment Plant
1401 Packers Avenue
Madison, Wisconsin

FIGURE 9



LEGEND

B-1 ◆ - Boring (REA - March 2002)

MW-6 ◆ - Monitoring Well (Former Truax Landfill)

0 400' 800'

1 INCH = 400 FEET
SCALE IS APPROXIMATE

FILE/PATH: D:\ PROJECTS\RUEDEBUSCH\ BurkeWWTP-layout.cdr
DATE: 08/29/2018
PREPARED: MDF APPROVED:
SOURCE:
Dane County Public Mapping - 2017 Aerial
REA Basemap 2002

SEYMOUR ENVIRONMENTAL SERVICES, INC.

PROPOSED SAMPLING LOCATIONS
Burke Wastewater Treatment Plant
1401 Packers Avenue
Madison, Wisconsin

FIGURE 10

TABLES

TABLE 1
SUMMARY OF ANALYTICAL DATA FROM DRYING CELL/SOLID WASTE AREA (03/01/2002)
Burke Wastewater Treatment Plant - 1401 Packers Avenue
Madison, WI

Media	Soil							Groundwater					
Sample I.D.	B-5	B-6	B-6	B-7	B-8	GW Pathway	Direct Contact	B-5	B-6	B-7	B-8	NR140	NR140
Depth (ft)	4-8	0-4	4-8	4-8	0-4	RCLs	RCLs	--	--	--	--	ES	PAL
Select VOCs													
Benzene	<27	na	<30	<28	<28	5.1	1490	<0.10	<0.10	<0.10	<0.10	5	0.5
1,2 Dichloroethane	<27	na	<30	<28	<28	2.8	608	nd	nd	nd	nd	5	0.5
Ethylbenzene	<27	na	<30	<28	<28	1570	7470	<0.25	<0.25	<0.25	<0.25	700	140
Methyl-tert-butyl ether	<27	na	<30	<28	<28	27	59,400					60	12
Toluene	<27	na	<30	<28	<28	1107	818,000	0.58	0.37	0.31	0.32	800	160
1,3,5 Trimethylbenzenes	<27	na	<30	<28	<28	--	182,000	--	--	--	--	ns	ns
1,2,4 Trimethylbenzenes	<27	na	<30	<28	<28	--	219,000	--	--	--	--	ns	ns
Total Trimethylbenzenes	<54	na	<60	<56	<56	1379	--	0.67	0.11	<0.20	<0.20	480	96
Total Xylenes	<38	na	<43	<40	<40	3940	258,000	1.2	0.59	<0.25	<0.25	2000	400
Naphthalene	<27	na	<30	<28	<28	658.7	5150	0.74	<0.25	<0.25	<0.25	100	10
Chlorobenzene	<27	na	<30	<28	<28	--	370,000	<0.25	<0.25	<0.25	<0.25	ns	ns
1,2 Dichlorobenzene	<27	na	<30	<28	<28	1168	376,000	<0.25	<0.25	<0.25	<0.25	600	60
Metals													
Arsenic	<1.0	na	2.3	<1.1	**10**	0.584	0.614	3.9	3.3	4.4	<1.8	10	1
Barium	na	na	na	na	na	164.8	15,300	na	na	na	na	2000	400
Cadmium	**1.3**	na	<1.2	<1.1	**1.7**	0.752	70	1.4	0.21	3.4	1.0	5	0.5
Chromium	2.2	na	9.4	8.1	3.3	360,000	100,000	14	17	**970**	**120**	100	10
Lead	<4.4	na	10	7.3	**27**	27	400	**17**	4.9	12	2.8	15	1.5
Mercury	na	na	na	na	na	0.208	3.13	na	na	na	na	2	0.2
Selenium	na	na	na	na	na	0.52	391	na	na	na	na	50	10
Silver	na	na	na	na	na	0.8497	391	na	na	na	na	50	10
Total PCBs (mg/kg)	na	<2.24	na	na	<1.96	0.0094	0.234	na	na	na	na	0.03	0.0.03

- PVOCs reported in ug/kg (soil) and ug/l (gw)
- Metals reported in mg/kg (soil) and ug/l (gw)
- na = not analyzed
- ns = no standard established
- Groundwater Pathway RCL (exceedances bold)
- Direct Contact RCL (exceedances underlined)
- Direct Contact RCLs listed are for non-industrial properties
- Soil standards from R&R Calculator using Wisconsin defaults
- ES = Enforcement Standard (exceedances bold)
- PAL =Preventative Action Limit (exceedances bold)

TABLE 2
SUMMARY OF ANALYTICAL DATA FROM DECANT POND AREA (03/01/2002)
Burke Wastewater Treatment Plant - 1401 Packers Avenue
Madison, WI

Media	Soil								Groundwater					
Sample I.D.	B-9	B-9	B-10	B-11	B-12	B-12	GW Pathway	Direct Contact	B-9	B-10	B-11	B-12	NR140	NR140
Depth (ft)	0-4	4-8	4-8	4-8	0-4	8-12	RCLs	RCLs	--	--	--	--	ES	PAL
Select VOCs														
Benzene	na	<28	<28	<29	na	<28	5.1	1490	<0.10	<0.10	<0.10	<0.10	5	0.5
1,2 Dichloroethane	na	<28	<28	<29	na	<28	2.8	608	nd	nd	nd	nd	5	0.5
Ethylbenzene	na	<28	<28	<29	na	<28	1570	7470	<0.25	<0.25	<0.25	<0.25	700	140
Methyl-tert-butyl ether	na	<28	<28	<29	na	<28	27	59,400					60	12
Toluene	na	<28	<28	<29	na	<28	1107	818,000	0.21	0.18	0.13	0.14	800	160
1,3,5 Trimethylbenzenes	na	<28	<28	<29	na	<28	--	182,000	--	--	--	--	ns	ns
1,2,4 Trimethylbenzenes	na	<28	<28	<29	na	<28	--	219,000	--	--	--	--	ns	ns
Total Trimethylbenzenes	na	<56	<56	<58	na	<56	1379	--	<0.20	<0.20	<0.20	<0.20	480	96
Total Xylenes	na	<40	<40	<41	na	<40	3940	258,000	<0.25	<0.25	0.29	<0.25	2000	400
Naphthalene	na	<28	<28	<29	na	<28	658.7	5150	<0.25	<0.25	<0.25	<0.25	100	10
Chlorobenzene	na	<28	<28	<29	na	<28	--	370,000	<0.25	<0.25	<0.25	<0.25	ns	ns
1,2 Dichlorobenzene	na	<28	<28	<29	na	<28	1168	376,000	<0.25	<0.25	<0.25	<0.25	600	60
Metals														
Arsenic	na	1.1	2.8	<1.1	na	<1.1	0.584	0.614	<1.8	<1.8	<1.8	<1.8	10	1
Barium	na	na	na	na	na	na	164.8	15,300	na	na	na	na	2000	400
Cadmium	na	**1.7**	**1.8**	<1.2	na	<1.1	0.752	70	0.37	0.37	0.54	1.3	5	0.5
Chromium	na	2.4	4.1	2.9	na	<1.1	360,000	100,000	39	**260**	**130**	**520**	100	10
Lead	na	<4.4	18	<4.6	na	<4.5	27	400	<1.2	<1.2	1.3	<1.2	**15**	1.5
Mercury	na	na	na	na	na	na	0.208	3.13	na	na	na	na	2	0.2
Selenium	na	na	na	na	na	na	0.52	391	na	na	na	na	50	10
Silver	na	na	na	na	na	na	0.8497	391	na	na	na	na	50	10
Total PCBs (mg/kg)	<1.89	na	na	na	<1.89	na	0.0094	0.234	na	na	na	na	0.03	0.0.03

- PVOCs reported in ug/kg (soil) and ug/l (gw)
- Metals reported in mg/kg (soil) and ug/l (gw)
- na = not analyzed
- ns = no standard established
- Groundwater Pathway RCL (exceedances bold)
- Direct Contact RCL (exceedances underlined)
- Direct Contact RCLs listed are for non-industrial properties
- Soil standards from R&R Calculator using Wisconsin defaults
- ES = Enforcement Standard (exceedances bold)
- PAL =Preventative Action Limit (exceedances bold)

TABLE 3
SUMMARY OF ANALYTICAL DATA FROM SLUDGE POND AREA (03/01/2002)
Burke Wastewater Treatment Plant - 1401 Packers Avenue
Madison, WI

Media	Soil									Groundwater					
Sample I.D.	B-1	B-1	B-2	B-3	B-3	B-4	B-4	GW Pathway	Direct Contact	B-1	B-2	B-3	B-4	NR140	NR140
Depth (ft)	6-7	16	15-16	1	8	4	10	RCLs	RCLs	--	--	--	--	ES	PAL
Select VOCs															
Benzene	<29	<28	<28	na	<36	na	<29	5.1	1490	0.21	0.22	0.54	0.36	5	0.5
1,2 Dichloroethane	<29	<28	<28	na	<36	na	<29	2.8	608	nd	nd	nd	nd	5	0.5
Ethylbenzene	<29	<28	<28	na	<36	na	<29	1570	7470	<0.25	<0.25	<0.50	<0.50	700	140
Methyl-tert-butyl ether	<29	<28	<28	na	<36	na	<29	27	59,400					60	12
Toluene	<29	<28	<28	na	<36	na	<29	1107	818,000	0.28	0.52	0.24	0.60	800	160
1,3,5 Trimethylbenzenes	<29	<28	<28	na	<36	na	<29	--	182,000	--	--	--	--	ns	ns
1,2,4 Trimethylbenzenes	<29	<28	<28	na	<36	na	<29	--	219,000	--	--	--	--	ns	ns
Total Trimethylbenzenes	<58	<56	<56	na	<72	na	<58	1379	--	0.14	<0.20	<0.40	<0.40	480	96
Total Xylenes	<41	<40	<40	na	<51	na	<41	3940	258,000	0.59	0.63	<0.50	0.72	2000	400
Naphthalene	<29	<28	<28	na	<36	na	<29	658.7	5150	<0.25	<0.25	<0.50	1.5	100	10
Chlorobenzene	<29	<28	<28	na	<36	na	<29	--	370,000	0.63	<0.25	<0.50	<0.50	ns	ns
1,2 Dichlorobenzene	<29	<28	<28	na	<36	na	<29	1168	376,000	0.34	<0.25	<0.50	<0.50	600	60
Metals															
Arsenic	2.7	na	3.1	na	29	na	2.6	0.584	0.614	**17**	**14**	na	na	10	1
Barium	na	na	na	na	na	na	na	164.8	15,300	na	na	na	na	2000	400
Cadmium	**1.6**	na	**1.2**	na	**19**	na	**2.6**	0.752	70	0.12	0.18	na	na	5	0.5
Chromium	3.5	na	1.2	na	61	na	4.5	360,000	100,000	**120**	**440**	na	na	100	10
Lead	33	na	9.5	na	2270	na	na	27	400	1.2	8.8	na	na	15	1.5
Mercury	na	na	na	na	na	na	na	0.208	3.13	na	na	na	na	2	0.2
Selenium	na	na	na	na	na	na	na	0.52	391	na	na	na	na	50	10
Silver	na	na	na	na	na	na	na	0.8497	391	na	na	na	na	50	10
Total PCBs (mg/kg)	na	na	na	<2.45	na	<2.03	na	0.0094	0.234	na	na	na	na	0.03	0.0.03

- PVOCs reported in ug/kg (soil) and ug/l (gw)
- Metals reported in mg/kg (soil) and ug/l (gw)
- na = not analyzed
- ns = no standard established
- Groundwater Pathway RCL (exceedances bold)
- Direct Contact RCL (exceedances underlined)
- Direct Contact RCLs listed are for non-industrial properties
- Soil standards from R&R Calculator using Wisconsin defaults
- ES = Enforcement Standard (exceedances bold)
- PAL =Preventative Action Limit (exceedances bold)

TABLE 4
SUMMARY OF SOIL GAS MONITORING DATA (March 2002)
Burke Wastewater Treatment Plant - 1401 Packers Avenue
Madison, WI

Sample Location	VP-1		VP-2		VP-3		VP-4		GP-17		GP-18R	
Date	4/4/2002	4/9/2002	4/4/2002	4/9/2002	4/4/2002	4/9/2002	4/4/2002	4/9/2002	4/4/2002	4/9/2002	4/4/2002	4/9/2002
Methane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	na	0.0	na	0.0
Carbon Dioxide	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	na	3.0	na	0.0
Oxygen	20.6	20.8	20.6	20.7	20.6	20.7	20.6	20.7	na	15.2	na	20.9
LEL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	na	0.0	na	0.0

- All results are reported in % vapor

TABLE 5
SUMMARY OF GROUNDWATER MONITORING DATA FROM TRUAX LANDFILL (MW-5)
Burke Wastewater Treatment Plant - 1401 Packers Avenue
Madison, WI

Date	Spec. Conductivity (umohs/cm)	pH (Standard units)	Groundwater Elevation	Arsenic	Barium	Cadmium	Chromium	Lead	Acetone	Carbon Disulfide	Chloromethane	Dichloro difluoromethane	Manganese	Nitrate (mg/l)
4/3/2000	1170	6.36	844.66	<6.8	75	<0.50	na	<2.8	--		--	--	**940**	68
6/22/2000	1170	6.92	849.29	4.3	82	<0.36	na	<2.2	--		--	--	**630**	71
9/28/2000	994	5.85	846.31	<3.7	64	<0.36	na	<2.2	nd		nd	nd	**670**	73
12/19/2000	1293	6.56	845.65	<3.7	67	<0.36	na	<2.2	--		--	--	**970**	96
3/12/2001	1169	6.75	847.46	<3.7	59	<0.36	na	<2.2	--		--	--	**500**	59
9/24/2001		6.60	847.96	<4.4	77	<0.51	na	6.3	nd		nd	nd	**430**	56
3/19/2002	1065	6.54	847.49	<4.4	55	<0.51	na	4.9	--		--	--	**400**	91
9/25/2002	710	6.68	845.60	<1.8	49	<0.042	na	<1.2	nd		nd	nd	32	89
3/11/2003	1228	7.09	845.18	<1.8	39	0.17	na	<1.2	--		--	--	65	63
9/26/2003	1099	6.85	845.70	<3.5	69	0.25	na	<1.4	nd		nd	nd	**470**	50
3/11/2004	1131	6.95	848.70	<3.5	68	0.22	na	<1.4	--		--	--	**480**	53
9/30/2004	1144	6.64	847.33	<0.79	82	0.2	na	<1.4	nd		nd	nd	**850**	59
3/16/2005	1018	6.63	848.22	<0.79	61	0.23	na	<0.44	--		--	--	**440**	44
9/21/2005	1038	6.66	845.87	<0.79	56	0.31	na	<1.4	nd		nd	nd	**570**	43
3/21/2006	910	7.60	847.93	<0.79	47	0.23	na	<1.4	--		--	--	**380**	42
9/11/2006	767	6.98	848.08	<1.0	47	0.14	na	<1.4	nd		nd	nd	160	22
3/13/2007	810	6.80	850.52	<1.0	43	0.22	na	<1.4	--		--	--	27	32
9/18/2007	641	7.47	848.31	<1.0	40	<0.14	na	<1.4	nd		nd	nd	**330**	30
3/19/2008	815						na							
9/5/2008		7.15	847.20	0.73	66.2	<0.20	na	<0.3	--		--	--	**818**	16
9/7/2009	651	6.86	846.86	0.89	40.3	<0.20	na	<0.3	--		--	--	**370**	2.93
9/30/2010	431	7.25	848.05	<0.6	63.7	<0.20	na	<0.3	--	--	--	--	**424**	11
9/30/2011	670	7.05	847.48	0.92	55.8	0.21	na	<0.3	--	--	--	--	145	15
9/12/2012	690	7.37	846.28	<4.7	49.7	<0.33	na	<0.3	--	--	--	--	72.6	20.3
9/26/2013	373	7.33	847.80	<4.4	53.3	0.69	na	<1.2	--	--	--	--	**782**	0.11
9/24/2014	579	7.16	847.85	<7.2	61.8	<0.60	na	<3.0	--	--	--	--	**1430**	0.096
9/25/2015	503	7.53	848.56	<7.2	37.2	<0.60	na	<3.0	--	--	--	--	**364**	2.3
9/2/2016	3530	7.41	849.96	<7.2	55.2	<0.60	na	<4.3	--	--	--	--	**424**	0.79
9/11/2017	406.2	7.10	848.13	<5.4	53.3	<1.3	na	<4.3	--	--	--	--	**700**	--
NR 140 ES				10	2000	5	100	15	9000	1000	30	1000	300	10
NR 140 PAL				1	400	0.5	10	1.5	1800	200	3	200	60	2

- Results reported in ug/l except as noted
-- = not analyzed
- nd = not detected
- ns = no standard established
- ES = Enforcement Standard (exceedances bold)
- PAL =Preventative Action Limit

TABLE 5
SUMMARY OF GROUNDWATER MONITORING DATA FROM TRUAX LANDFILL (MW-6)
Burke Wastewater Treatment Plant - 1401 Packers Avenue
Madison, WI

Date	Spec. Conductivity (umohs/cm)	pH (Standard units)	Groundwater Elevation	Arsenic	Barium	Cadmium	Chromium	Lead	Acetone	Carbon Disulfide	Chloromethane	Dichloro difluoromethane	Manganese	Nitrate (mg/l)
4/3/2000			845.08	--	--	--	--	--	--	--	--	--	--	--
6/22/2000			848.72	--	--	--	--	--	--	--	--	--	--	--
9/28/2000	1185	6.98	846.14	**10**	99	<0.36	<0.36	<2.2	nd	nd	nd	nd	**780**	0.065
12/19/2000			845.40	--	--	--	--	--	--	--	--	--	--	--
3/12/2001			848.00	--	--	--	--	--	--	--	--	--	--	--
9/24/2001		6.84	848.78	<4.4	91	0.53	0.53	<2.1	nd	nd	nd	nd	**640**	0.045
3/19/2002			847.60	--	--	--	--	--	--	--	--	--	--	--
9/25/2002	695	6.67	845.10	3	140	<0.042	<0.042	<1.2	nd	nd	nd	nd	**830**	<0.024
3/11/2003			844.97	--	--	--	--	--	--	--	--	--	--	--
9/26/2003	1252	6.94	845.48	3.9	70	0.21	0.21	<1.4	nd	nd	nd	nd	**530**	0.047
3/11/2004			848.99	--	--	--	--	--	--	--	--	--	--	--
9/30/2004	1048	6.64	846.83	5.1	110	<0.14	<0.14	<1.4	nd	nd	nd	nd	**920**	<0.024
3/16/2005			847.99	--	--	--	--	--	--	--	--	--	--	--
9/21/2005	1173	7.04	844.97	4.8	160	0.32	0.32	<1.4	nd	nd	nd	nd	**960**	0.073
3/21/2006			848.54	--	--	--	--	--	--	--	--	--	--	--
9/11/2006	1473	6.23	847.82	4.2	140	<0.14	<0.14	<1.4	nd	nd	nd	nd	**1000**	<0.1
3/13/2007				--	--	--	--	--	--	--	--	--	--	--
9/18/2007	1191	7.17	847.91	1.1	150	<0.14	<0.14	<1.4	nd	nd	nd	nd	**1000**	<0.1
3/19/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9/5/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9/7/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9/30/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9/30/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9/12/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9/26/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9/24/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9/25/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9/11/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NR 140 ES				10	2000	5	100	15	9000	1000	30	1000	300	10
NR 140 PAL				1	400	0.5	10	1.5	1800	200	3	200	60	2

- Results reported in ug/l except as noted
-- = not analyzed
- nd = not detected
- ns = no standard established
- ES = Enforcement Standard (exceedances bold)
- PAL =Preventative Action Limit

TABLE 5
SUMMARY OF GROUNDWATER MONITORING DATA FROM TRUAX LANDFILL (TG-2)
Burke Wastewater Treatment Plant - 1401 Packers Avenue
Madison, WI

Date	Spec. Conductivity (umohs/cm)	pH (Standard units)	Groundwater Elevation	Arsenic	Barium	Cadmium	Chromium	Lead	Toluene	Carbon Disulfide	Chloromethane	Dichloro difluoromethane	Manganese	Nitrate (mg/l)
4/3/2000	980	6.62	843.83	<6.8	110	<0.50	--	<2.8	--	--	--	--	1.1	3
6/22/2000	946	7.07	847.76	6.7	100	<0.36	--	3.5	--	--	--	--	84	2
9/28/2000	854	7.01	845.94	3.9	90	<0.36	--	<2.2	<0.40		<0.44	<0.61	15	0.9
12/19/2000	783	7.11	845.22	<3.7	88	<0.36	--	<2.2	--	--	--	--	1.3	1.2
3/12/2001	851	6.96	846.36	<3.7	80	<0.36	--	<2.2	--	--	--	--	0.96	0.91
9/24/2001		6.8	846.82	<4.4	75	<0.51	--	<2.1	<0.40		<0.44	<0.61	5.1	0.44
3/19/2002	823	7.19	846.68	<4.4	86	<0.51	--	<2.1	--	--	--	--	0.49	2.4
9/25/2002	141	6.96	845.58	<1.8	79	<0.042	--	<1.2	0.12		<0.25	<0.25	1.4	1.5
3/11/2003	868	7.2	845.09	<1.8	55	0.16	--	<1.2	--	--	--	--	<0.96	1.1
9/26/2003	926	6.9	845.57	<3.5	76	<0.14	--	<1.4	<0.25		<0.25	<0.5	3.0	1.1
3/11/2004	856	6.97	847.68	<3.5	81	<0.14	--	<1.4	--	--	--	--	<0.96	1.3
9/30/2004	1120	6.47	847.49	1	89	<0.14	--	<1.4	0.24		<0.2	<0.5	1.0	3
3/16/2005	956	6.81	848.01	<0.79	82	<0.14	--	<0:44	--	--	--	--	2.1	1.8
9/21/2005	1156	6.58	846.33	<0.79	120	<0.14	--	<1.4	<0.20		<0.2	<0.5	<0.96	2.5
3/21/2006	900	7.6	847.59	<0.79	99	<0.14	--	<1.4	--	--	--	--	<0.96	1.5
9/11/2006	1087	6.87	847.72	<1.0	110	<0.14	--	<1.4	<0.20		<0.2	<0.5	6.2	1.8
3/13/2007	820	7.7	849.27	<1.0	85	<0.14	--	<1.4	--	--	--	--	3.3	1.1
9/18/2007	786	7.36	848.67	<1.0	86	<0.14	--	<1.4	0.25		0.32	<0.5	<0.96	2
3/19/2008							--		--	--	--	--	na	
9/5/2008	1221	6.84	848.06	<0.6	223	<0.2	--	<0.3	--	--	--	--	1.8	1.02
9/7/2009	1242	7.01	847.59	<0.6	198	<0.2	--	<0.3	--	--	--	--	7.9	0.8
9/30/2010	839	7.18	848.60	<0.6	167	<0.2	--	<0.3	--	--	--	--	13.4	1.35
9/30/2011	1147	7.11	847.70	<0.6	197	<0.2	--	<0.3	--	--	--	--	13.6	1.02
9/12/2012	583	7.18	846.97	<4.7	157	<0.33	--	2.9	--	--	--	--	16.3	3.6
9/26/2013	776	7.09	848.19	**14.8**	156	1.2	--	<1.2	--	--	--	--	6.0	4.5
9/24/2014	680	7.18	848.34	8.1	128	<0.60	--	<3.0	--	--	--	--	4.6	3.7
9/25/2015	1175	7.56	848.44	<7.2	158	<0.60	--	<3.0	--	--	--	--	12.5	3.5
9/2/2016	1676	9.41	849.79	<5.4	108	<1.3	--	<4.3	nd	<0.61	5.9	<0.22	12.1	0.29
9/11/2017	996	7.13	848.72	<5.4	151	<1.3	--	<4.3	--	--	--	--	34.9	1.2
NR 140 ES				10	2000	5	100	15	9000	1000	30	1000	300	10
NR 140 PAL				1	400	0.5	10	1.5	1800	200	3	200	60	2

- Results reported in ug/l except as noted
-- = not analyzed
- nd = not detected
- ns = no standard established
- ES = Enforcement Standard (exceedances bold)
- PAL =Preventative Action Limit

TABLE 5
SUMMARY OF GROUNDWATER MONITORING DATA FROM TRUAX LANDFILL (MW-10)
Burke Wastewater Treatment Plant - 1401 Packers Avenue
Madison, WI

Date	Spec. Conductivity (umohs/cm)	pH (Standard units)	Groundwater Elevation	Arsenic	Barium	Cadmium	Chromium	Lead	Acetone	Carbon Disulfide	Chloromethane	Dichloro difluoromethane	Manganese	Nitrate (mg/l)
4/3/2000	3050	6.47	849.02	<34	130	<0.50	--	<2.8	--	--	--		**820**	1.3
6/22/2000	2020	6.96	850.28	<3.7	130	2.3	--	<2.2	--	--	--		**470**	0.55
9/28/2000	3180	6.93	849.44	**51**	150	0.91	--	4.0	--	nd	nd	<0.61	**800**	0.045
12/19/2000	--	--					--	<2.2	--				na	
3/12/2001	--	--	849.77				--	<2.2	--				na	
9/24/2001	2720	7.04	850.07	6.6	130	<0.51	--	<2.1	--	nd	nd	<0.61	**700**	<0.014
3/19/2002	1920	7.01	850.53	7.1	110	<0.51	--	5.2	--	--	--		**740**	2.8
9/25/2002	807	6.67	849.91	**21**	190	<0.042	--	1.6	--	nd	nd	<0.25	**770**	0.17
3/11/2003	2710	7.16	849.45	**37**	160	0.16	--	<1.2	--	--	--		**810**	<0.024
9/26/2003	3300	6.95	849.30	**18**	150	0.45	--	<1.4	--	nd	nd	<0.5	**900**	0.098
3/11/2004	1993	7.07	851.17	**12**	120	1	--	<1.4	--	--	--		**800**	0.12
9/30/2004	2560	6.98	851.06	**35**	140	<0.14	--	<1.4	--	nd	nd	<0.5	**980**	0.083
3/16/2005	1960	7.04	851.14	**22**	140	0.16	--	<0.44	--	--	--		**1100**	0.26
9/21/2005	2151	7.05	850.53	**14**	170	<0.14	--	<1.4	--	nd	nd	<0.5	**870**	<0.024
3/21/2006	1980	7.2	850.91	**23**	160	<0.14	--	<1.4	--	--	--		**770**	<0.1
9/11/2006	2390	6.43	851.22	**44**	170	<0.14	--	<1.4	--	nd	nd	<0.5	**890**	0.11
3/13/2007	2000	7	851.98	**29**	170	<0.14	--	<1.4	--	--	--		**890**	<0.1
9/18/2007	1850	7.09	852.41	**37**	160	<0.14	--	<1.4	--	nd	nd	<0.5	**1100**	<0.1
3/19/2008	1817	7.1	852.75				--		--				**1720**	
9/5/2008	1775	6.93	852.69	**28.2**	161	<0.2	--	<0.3	<6.5	nd	nd	0.43	**952**	<0.1
9/7/2009	1820	6.87	852.04	**34.1**	148	<0.2	--	<0.3	<6.5	nd	nd	<0.3	**726**	0.14
9/30/2010	835	7.21	852.46	**35.4**	188	<0.2	--	<0.3	<6.5	nd	nd	0.34	**549**	0.11
9/30/2011	1915	7.22	851.97	**28.8**	229	<0.2	--	<0.3	<6.5	<1.0	<0.40	<0.30	**487**	<0.1
9/12/2012	2400	7.25	851.38	**21.7**	309	<0.33	--	<0.3	<5.0	<0.66	<0.24	<0.99	**459**	<0.12
9/26/2013	1331	7.27	852.70	**21.6**	319	<0.38	--	2.2	3.6	<0.71	0.56	<0.40	**440**	<0.055
9/24/2014	222	7.12	852.65	**26.5**	303	<0.60	--	<3.0	3.4	<0.61	<0.50	<0.20	**471**	<0.095
9/25/2015	1961	7.17	851.82	**32.4**	310	<0.60	--	<3.0	<3.0	<0.61	<0.50	<0.22	**510**	<0.095
9/2/2016	1398	7.44	852.69	**30.2**	278	<0.60	--	<4.3	3.6	<0.61	<0.50	<0.22	**458**	<0.095
9/11/2017	1573	7.37	853.09	**31.5**	273	<1.3	--	<4.3	7.1	0.79	<0.50	<0.22	**455**	<0.095
NR 140 ES				10	2000	5	100	15	9000	1000	30	1000	300	10
NR 140 PAL				1	400	0.5	10	1.5	1800	200	3	200	60	2

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TABLE 5
SUMMARY OF GROUNDWATER MONITORING DATA FROM TRUAX LANDFILL (MW-5A)
Burke Wastewater Treatment Plant - 1401 Packers Avenue
Madison, WI

Date	Spec. Conductivity (umohs/cm)	pH (Standard units)	Groundwater Elevation	Arsenic	Barium	Cadmium	Chromium	Lead	Acetone	Benzene	Chloromethane	Dichloro difluoromethane	Manganese	Nitrate (mg/l)
4/3/2000	340	7.3	844.33	**38**	29	<0.50	--	<2.8	--	--	--	--	12	<0.037
6/22/2000	365	7.67	847.94	**39**	28	<0.36	--	<2.2	--	--	--	--	11	<0.037
9/28/2000	551	7.24	845.86	**24**	37	0.51	--	6.4	--	<0.44	<0.44	<0.61	23	1.4
12/19/2000	420	7.3	845.18	**37**	33	<0.36	--	<2.2	--	--	--	--	22	<0.015
3/12/2001	392	7.55	846.84	**37**	28	<0.36	--	<2.2	--	--	--	--	13	<0.015
9/24/2001	na	7.39	847.17	**37**	36	<0.51	--	<2.1	--	<0.44	<0.44	<0.61	21	<0.014
3/19/2002	426	7.58	846.83	**41**	35	<0.51	--	<2.1	--	--	--	--	21	<0.014
9/25/2002	197	7.49	845.33	**39**	31	<0.042	--	1.6	--	<0.10	<0.25	<0.25	10	<0.024
3/11/2003	350	8.06	845.11	**38**	23	0.083	--	<1.2	--	--	--	--	8	<0.024
9/26/2003	389	8.15	845.68	**42**	23	<0.14	--	<1.2	--	<0.25	<0.25	<0.50	7.7	<0.024
3/11/2004	358	7.89	848.02	**38**	30	0.18	--	<1.4	--	--	--	--	14	<0.024
9/30/2004	386	7.53	847.39	**21**	100	<0.14	--	<1.4	--	0.98	<0.20	<0.50	72	0.13
3/16/2005	342	7.72	848.20	**18**	58	<0.14	--	<1.4	--	--	--	--	36	0.048
9/21/2005	432	7.02	845.87	**34**	26	<0.14	--	<0.44	--	<0.20	<0.20	<0.50	8	<0.024
3/21/2006	550	7.9	847.88	**31**	48	<0.14	--	<1.4	--	--	--	--	28	<0.1
9/11/2006	495	7.53	848.23	**37**	40	<0.14	--	<1.4	--	<0.20	<0.20	<0.50	19	0.21
3/13/2007	360	7.2	849.44	**45**	26	<0.14	--	<1.4	--	--	--	--	11	<0.1
9/18/2007	353	8.29	848.48	**39**	28	<0.14	--	<1.4	--	<0.20	<0.20	<0.50	20	0.27
3/19/2008	331	8.18	849.86	**40.1**	30.5	<0.2	--	<0.3	--	--	--	--	11.4	0.3
9/5/2008	351	8.17	847.77	**37.3**	27.9	<0.2	--	<0.3	<6.5	<0.20	<0.40	<0.30	13.6	<0.1
9/7/2009	360	7.88	847.34	**37.8**	27.5	<0.2	--	<0.3	<6.5	<0.20	<0.40	<0.30	18.8	<0.1
9/30/2010	350	8.1	848.53	**34.8**	36.5	<0.2	--	<0.3	<6.5	<0.20	<0.40	<0.30	23.3	<0.1
9/30/2011	392	8	847.66	**38.7**	25.8	<0.20	--	<0.3	<6.5	nd	<0.4	<0.3	9.7	<0.1
9/12/2012	378	8.36	846.38	**37.8**	26.2	<0.33	--	<1.7	<0.50	nd	0.41	<0.99	8.4	<0.12
9/26/2013	360	8.34	848.11	**36.5**	26.5	<0.38	--	<1.2	<2.6	nd	<0.39	<0.40	12.4	<0.055
9/24/2014	389	8.33	848.16	**36.3**	25.8	<0.60	--	<3.0	<3.0	nd	1.6	<0.20	21	<0.095
9/25/2015	419	7.93	848.48	**35.2**	41.1	<0.60	--	<3.0	<3.0	nd	<0.50	<0.22	19.8	0.14
9/2/2016	317	8.42	849.28	**39.3**	25.5	<0.60	--	<3.0	<3.0	nd	<0.50	<0.22	7.4	0.17
9/11/2017	352.5	8.29	848.47	**41**	29	<1.3	--	<4.3	<3.0	nd	<0.50	<0.22	12	<0.095
NR 140 ES				10	2000	5	100	15	9000	1000	30	1000	300	10
NR 140 PAL				1	400	0.5	10	1.5	1800	200	3	200	60	2

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