RECORD OF DECISION
WPSC STEVENS POINT MGP SUPERFUND ALTERNATIVE SITE
PORTAGE COUNTY, WISCONSIN

PREPARED BY
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 5
CHICAGO, ILLINOIS
SEPTEMBER 2012

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ATTACHMENTS

LIST OF ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirements
CERCLA	Comprehensive Environmental, Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CL	Cleanup Level
COC	Chemical of Concern
ELCR	Excess Lifetime Cancer Risk
EPC	Exposure Point Concentration
ESD	Explanation of Significant Differences
kg	Kilogram
L	Liter
µg	Microgram
mg	Milligram
MGP	Manufactured Gas Plant
NCP	National Oil and Hazardous Substance Pollution Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
PAH	Polycyclic Aromatic Hydrocarbon
PEC	Probable Effects Concentration
PRP	Potentially Responsible Party
RAO	Remedial Action Objective
RI/FS	Remedial Investigation/ Feasibility Study
ROD	Record of Decision
RSL	May, 2012 EPA Regional Screening Level
TBC	Advisories, Criteria, or Guidance To Be Considered
TEC	Threshold Effects Concentration
EPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compound
WDNR	Wisconsin Department of Natural Resources
WPSC	Wisconsin Public Service Corporation

WPSC STEVENS POINT MGP SUPERFUND ALTERNATIVE SITE
RECORD OF DECISION FACT SHEET
REGION 5

Site

Site name:	WPSC Stevens Point MGP Site
Site Location:	Stevens Point, Portage County, Wisconsin
Identification No.:	WIN000509983
Date listed on NPL:	Not listed on NPL – Superfund Alternative Site

Record of Decision

Date signed:	September 25, 2012
Selected Remedy:	Institutional controls; monitored natural attenuation of groundwater; removal of contaminated sediment from the Wisconsin River and placement of a sand cover over contaminated sediment in Pfiffner Pioneer Park pond
Capital cost:	$1,520,000
Annual O &M cost:	$76,200
Present-worth cost:	$ 2,571,000

Lead Agency	U.S. Environmental Protection Agency
Primary Contact	Leslie Patterson, Remedial Project Manager, (312) 886-4904
Secondary Contact	Kevin Adler, Section Chief, (312) 886-7078

Support Agency	Wisconsin Department of Natural Resources
Primary Contact	Tom Hvizdak, Hydrogeologist/Program Manager, (715) 421-7850

Main PRP	Integrys Business Support, LLC (WPSC)

Waste

Waste Type:	Benzene and Polycyclic Aromatic Hydrocarbons (PAHs)
Waste Origin:	Former Manufactured Gas Plant
Contaminated Media:	Soil, Groundwater and Sediment

PART 1 DECLARATION

1.1 Site Name and Location

WPSC Stevens Point MGP Superfund Alternative Site
Stevens Point, Portage County, Wisconsin
Superfund Identification Number: WIN000509983

1.2 Statement of Basis and Purpose

This Record of Decision (ROD) documents the U.S. Environmental Protection Agency's (EPA's) selection of a remedial action for the Wisconsin Public Service Corporation (WPSC) Stevens Point MGP Superfund Alternative Site (Stevens Point MGP Site or Site). The selected remedy was chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. Section 601, et seq. and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Title 40 of the Code of Federal Regulations (CFR) Part 300. This decision document explains the factual and legal basis for selecting the remedy for the Stevens Point MGP Site. Attachment 1 to this document is an index that identifies the items that comprise the Administrative Record, upon which the selection of the remedy is based.

The Wisconsin Department of Natural Resources (WDNR) was consulted on the proposed remedy, in accordance with CERCLA Section 121(f), 42 U.S.C. Section 9621(f). WDNR concurs with the selected remedy (Attachment 2).

1.3 Assessment of Site

The response action selected in this ROD is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

1.4 Description of Selected Remedy

The selected remedy will be the final remedy for the Stevens Point MGP Site. It addresses polycyclic aromatic hydrocarbon (PAH)-contaminated soil and sediment in the Wisconsin River and the adjacent Pfiffner Pioneer Park pond, and PAH- and volatile organic compound (VOC)-contaminated groundwater, and includes the following components:

1) Institutional Controls (ICs) will be placed on those areas of the Site with contaminated subsurface soil to restrict the properties to non-residential use and prevent exposure to the contaminated soil;
2) Groundwater will achieve clean-up standards through monitored natural attenuation (MNA) and ICs will prohibit consumption of Site-contaminated groundwater;
3) Contaminated sediment that has probable effects on benthic organisms in the Wisconsin River will be dredged;
4) Contaminated sediment in the Pfiffner Pioneer Park pond that has probable effects on benthic organisms will be covered with clean sand with activated carbon.

1.5 Statutory Determination

The selected remedy meets the requirements for remedial actions set forth in CERCLA Section 121, 42 U.S.C. Section 9621. The selected remedy is protective of human health and the environment, complies with federal and state applicable or relevant and appropriate requirements (ARARs), is cost-effective, and it utilizes permanent solutions and technologies to the maximum extent practical.

The remedy does not satisfy the statutory preference for treatment as a principal element because only low-level threat waste exists at the site and it is not practicable to treat this waste.

Because this remedy will result in hazardous substances, pollutants, or contaminants remaining on site above levels that allow for unlimited use and unrestricted exposure, policy reviews will be conducted every five years after initiation of the remedial action to ensure that the remedy is, or will be, protective of human health and the environment.

1.6 ROD Data Certification Checklist

The following information is included in the Decision Summary section of this ROD. Additional information can be found in the Administrative Record file for the Site.

1) Chemicals of concern (COCs) and their respective concentrations (Section 2.5)
2) Baseline risk represented by the COCs (Section 2.7)
3) Cleanup levels (CLs) established for COCs and the basis for these levels (Section 2.8)
4) Manner of addressing source materials constituting principal threat waste (Section 2.11)
5) Current and reasonably anticipated future land use assumptions and current and potential future beneficial uses of groundwater relied upon in the baseline risk assessment (Section 2.6)
6) Estimated capital, annual operation and maintenance (O&M), and total present work costs, discount rate, and the number of years over which the remedy cost estimates are projected (Section 2.10.7)
7) Key factor(s) that led to the selection of the remedy (Section 2.12.1)

1.7 Authorizing Signature

Richard C Karl

Richard C. Karl, Director
Superfund Division
U.S. EPA Region 5

9-25-12
Date

PART 2 DECISION SUMMARY

2.1 Site Name, Location, and Description

The Stevens Point MGP Site encompasses approximately three acres in the city of Stevens Point, Portage County, Wisconsin (Figure 1). The Site includes the location of the former WPSC manufactured gas plant (MGP) facility, which is now a one and one-half acre grass-covered lot. The WPSC property is bounded by Crosby Avenue to the west; a city parking lot to the south and east; and by residential properties, West Street and an apartment building to the north. City-owned Pfiffner Pioneer Park is to the west of the property across Crosby Avenue and on the Wisconsin River, which is about 300 feet west of the former MGP facility (Figure 2). The entire 3-acre site includes the WPSC property, and portions of the park, the municipal parking lot, and the Wisconsin River. Groundwater, soil and sediment at the Site are contaminated with benzene (a VOC) and several PAHs, all of which are associated with the former MGP facility operations.

2.2 Site History and Enforcement Activities

2.2.1 Site History

MGPs are facilities that used coal, oil, and other feedstock materials to produce gas for cooking, lighting, and heating. WPSC operated the Stevens Point MGP from the 1890s to the late 1940s or early 1950s, using the carbureted water/gas method to produce gas primarily from oil. The plant ceased production in the late 1940s to early 1950s when piped natural gas became readily available to the Stevens Point area. The former MGP process structures were located on the west side of the MGP facility, while the east side was used for storage and disposal of MGP process wastes and other materials. A slough that served as a storm water outfall to the Wisconsin River was formerly located along the south property boundary. However, between 1981 and 1985 the city filled the slough as part of a storm sewer reconstruction project. WPSC became a subsidiary of Integrys Energy Group, LLC (Integrys) in 2007.

2.2.2 Previous Investigations and Enforcement Actions

WPSC has undertaken site investigation and remediation activities at the Stevens Point MGP Site since the mid-1980s. Investigations completed under WDNR oversight by WPSC prior to 1998 focused on locating the former MGP structures, identifying contaminant source areas, and conducting an initial groundwater assessment. Investigative work included placing soil borings, excavating test pits, taking surface soil and surface water samples, and taking groundwater samples from monitoring wells.

In 1998, WPSC performed a number of response actions under the oversight of the WDNR. More than 16,000 tons of contaminated soil and debris were excavated from the site between February and June 1998. Areas targeted for removal were the former MGP operations area and vicinity where potential sources of coal tar and/or other MGP residuals were identified by previous investigative work. Soil and debris were either thermally treated or disposed of off-site. Former underground structures or remnants of structures with visible evidence of MGP residuals in the surrounding soil and debris were removed, the site was backfilled and the surface was restored.

Additional investigations were conducted in 1999 and 2002 under WDNR oversight to evaluate the other portions of the site to assess the overall effect of the initial cleanup actions. Supplemental site investigation activities focused on the former slough, Wisconsin River sediment, groundwater monitoring, and issues related to groundwater infiltration into a storm sewer.

In 2006, WPSC entered into a multi-site agreement with EPA to conduct a Superfund remedial investigation and feasibility study (RI/FS) at six Wisconsin MGP sites, including the Stevens Point MGP Site, although these sites were not on the National Priorities List (NPL). Under EPA oversight, WPSC collected additional soil, groundwater, sediment, and surface and storm water data at the Stevens Point MGP site between June 2007 and January 2008. These activities focused on off-property soil quality, groundwater interaction with the perforated storm sewer, the potential for contaminant source areas in the vicinity of the pond and the Wisconsin River, the distribution of MGP-residuals in sediment and surface water, and potential for vapor migration. In October 2008, WPSC installed monitoring wells to define the down-gradient extent of the groundwater contaminant plume. Additional monitoring wells were installed in January 2011 and grab samples collected for the same purpose. Also in January 2011, samples of soil and soil gas were collected to assess the potential for vapor intrusion into buildings adjacent to the site.

2.3 Community Participation

The RI and the FS reports describe the nature and extent of the sediment, groundwater and soil contamination at the Site and evaluate remedial alternatives to address the contamination. EPA's preferred remedy and the basis for that preference were identified in the Proposed Plan that EPA issued on July 2, 2012. These documents were made available to the public in the information repositories: Portage County Public Library, 1001 Main Street in Stevens Point, and at the EPA Records Center on the 7th floor of the Region 5 offices at 77 W. Jackson Blvd, Chicago, Illinois, 60604.

A notice of the commencement of the public comment period, a description of the preferred remedy, EPA contact information, and the availability of the above-referenced documents was published in the *Stevens Point Journal*, a local newspaper, on June 27, 2012. The comment period ran from July 2, 2012 to August 3, 2012. EPA offered to hold a public meeting in Stevens Point to present the Proposed Plan and take comments, but no requests for a public meeting were received.

2.4 Scope and Role of Response Action

The selected remedy addresses the entire site and will be the final remedy for the Stevens Point MGP Site.

2.5 Site Characteristics

The RI/FS was completed in April 2012 and used all available sampling data for the Site. The RI Report identified the types, quantities and locations of contaminants at the site, and actual or potential site risks, and the FS developed ways to address the contamination problems. The RI determined that:

- The media of concern include subsurface soil, groundwater, and sediment in the Pfiffner Pioneer Park pond and in an adjacent portion of the Wisconsin River.

- There are no source materials at the Site that pose a principal threat to human health and the environment. Although contaminated sediments are likely a source of contamination for pond water, the pond water only significantly exceeded ecological screening levels for two PAHs, which are metabolized by fish. In addition, the size and water depth of the pond limit its availability as aquatic habitat, so the pond water does not pose a principal threat.

- Surface soils in the park contained levels of benzo[a]pyrene (a PAH) and arsenic that exceeded EPA's May 2012 Regional Screening Levels (RSLs) for residential use. Surface soils exceeded commercial worker RSLs for arsenic only, but levels are below background concentrations in the area.

- Subsurface soils at the site contain trace MGP residuals and have elevated concentrations of PAHs to about 15 feet below ground surface (Figure 3). Benzene, arsenic, lead, and 10 PAHs (benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenzo[a,h]anthracene, fluoranthene, indeno[1,2,3-cd]pyrene, naphthalene, and pyrene), were identified above residential RSLs. All of these contaminants except fluoranthene and pyrene were also detected above commercial worker RSLs.

- A groundwater plume consisting of volatile and semi-volatile organic compounds extends from the site eastward several hundred feet (Figure 4). The contaminants that exceed groundwater screening levels are benzene and 11 PAHs: benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenzo[a,h]anthracene, fluoranthene, indeno[1,2,3-cd]pyrene, 2-methylnaphthalene, naphthalene, and pyrene. Iron levels also slightly exceed the screening levels. The contaminants that exceed either the Maximum Contaminant Levels (MCLs) under the Safe Drinking Water Act or the WDNR 140 Groundwater Enforcement Standards (GESs) are benzene, iron and six PAHs: benzo[a]pyrene, benzo[b]fluoranthene, chrysene, fluoranthene, naphthalene, and pyrene.

- Sediment and underlying sand in the Wisconsin River exceed residential risk-based concentrations (RBCs) for five PAHs: benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, dibenzo[a,h]anthracene, and indeno[1,2,3-cd]pyrene. River sediment PAH concentrations in approximately a 0.4 acre area are likely to be toxic to benthic organisms, while an additional 0.9 acres of sediment have PAH levels that may have toxic effects on some benthic organisms (Figure 5).

- Sediment in the Pfiffner Pioneer Park pond exceeded residential risk-based concentrations (RBCs) for arsenic and six PAHs: benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, dibenzo[a,h]anthracene, and indeno[1,2,3-cd]pyrene. The PAH concentrations in the pond sediment are likely to be toxic to benthic invertebrates (Figure 5).

- Soil vapor sampling showed generally low levels of benzene and naphthalene and an apparent surface source of the contaminants unrelated to the former MGP plant.

2.6 Current and Potential Future Site and Resource Uses

Land use around the Site includes single and multifamily housing, commercial, and recreational areas (Figure 2). The former MGP facility and WPSC property are zoned "Commercial," areas that border Water Street and Crosby Avenue to the east and south are zoned "Central Business," and Pfiffner Pioneer Park is zoned "Conservancy." Private wells at the Site are no longer in use, and the city of Stevens Point's municipal wells are located more than 2.5 miles east of the Site.

In 2008 the city presented a redevelopment plan that includes using the WPSC property to expand the city park and reconfigure roadways. Therefore, commercial and conservancy uses of the site are expected to continue.

2.7 Summary of Site Risks

As part of the 2011 RI, WPSC conducted a Baseline Risk Assessment (BLRA) for the Stevens Point MGP Site. The BLRA evaluated the potential for both human health and ecological risks associated with the Site if no remedial actions were to be taken. The media of potential concern include surface and subsurface soil and groundwater in the upland areas where the former MGP processes were located, as well as surface water and sediment in the Wisconsin River and the Pfiffner Pioneer Park decorative pond.

2.7.1 Human Health Risk Assessment

The human health risk assessment (HHRA) component of the BLRA evaluated two current land uses and exposure pathways, which include outdoor workers and recreational users of the park, river, and pond. It also considered two hypothetical future land-use scenarios for the upland area—residential use and industrial/commercial use. Residences are located near the site, but due to the location of the Site in a downtown commercial area and next to the municipal park, as well as the current zoning (commercial and conservancy), EPA does not consider residential use of the site to be reasonably anticipated in the future.

In assessing the risks to humans, RSLs were used for residential and industrial/commercial worker screening levels. RSLs incorporate generic, yet conservative, assumptions, and are based on a target excess lifetime cancer risk (ELCR) of 10^{-6} , or one additional instance of cancer per one million persons exposed over a lifetime, and a noncancer hazard index (HI) quotient of one (1). The HI is a way of expressing the potential for noncarcinogenic health effects that may occur due to exposure to a dose of a chemical. A HI greater than one (1) indicates potentially adverse health effects may occur if someone is exposed to contaminants at the Site. The target carcinogenic risk is at the low end of EPA's target ELCR range of 10^{-6} to 10^{-4}. Soil screening levels are not established for recreational use, so the BLRA used residential exposure values for the recreational scenarios, ensuring a conservative overestimate of potential health risks. Commercial/industrial worker exposure values were used for both the outdoor worker and commercial/industrial worker scenarios.

Surface soil concentrations of arsenic exceed residential and commercial RSLs, but represent background levels for the area. Benzo[a]pyrene also slightly exceeds residential RSLs in Site surface soil, but the exposure of a recreational user is much lower than that of a resident, so the cumulative ELCR associated with exposure to surface soils is less than 10^{-6}.

Subsurface soils contain MGP-related contaminants above the residential and commercial RSLs, but under current land use, there is no exposure to these soils. However, future residential and construction scenarios could involve exposure to subsurface soils if they were excavated for the construction of building foundations, basements, or utilities. The levels of several PAHs in small, discontinuous areas in the former slough would be associated with a 10^{-3} residential use and 10^{-4} commercial use cumulative ELCR risk. Residential exposure to subsurface soil would therefore exceed the target ELCR range of 10^{-6} to 10^{-4}, but the zoning of this area as conservancy and its use as a city park make residential use of the property unlikely in the future.

Outside of the former slough, on the property owned by WPSC (shown outlined in red on Figure 2), subsurface soil samples were taken in 1998. Many of these samples were taken from the walls of the excavation pits, and they show that, in some locations, subsurface soil posing a potential cumulative ELCR of 10^{-3} to10^{-1} for the residential scenario and 10^{-4} to 10^{-2} for the commercial scenario was not excavated. These levels of residential and construction ELCR would be unacceptable if human exposure were to occur, but there is currently no human exposure to this subsurface soil. The highly contaminated soil is found more than ten feet below the ground surface, so it would not be disturbed by future utility work or many construction activities. In addition, the soils associated with the elevated ELCRs are not representative of the property as a whole; lower levels of PAHs were found in most sample locations on the property, including the excavated areas where clean fill was placed.

Exposure to contaminated groundwater may occur if it were to be used for drinking water or if chemical vapors volatize from the groundwater and migrate into building spaces. The groundwater exceeds drinking water standards for several contaminants, and is unsuitable for consumption. Currently there are no known users of the groundwater for drinking water or any other purpose in proximity to the site, so there is no current human health risk.

Soil vapor samples were collected next to buildings adjacent to the site during January 2011 and March 2011 (Figure 4) and analyzed for benzene and naphthalene. The benzene level at approximately one-third of the sample locations exceeded residential screening levels for shallow soil gas, but most exceedances were by less than a factor of two. There was one location at which benzene in the shallow gas was approximately twice the commercial/industrial soil gas screening level. There were no exceedances of deep soil gas screening levels. Naphthalene was not detected and at most could be three times the residential shallow screening level, but does not exceed the deep soil gas or any commercial/industrial levels. In addition, the majority of the sample locations had shallow soil gas concentrations essentially equal to or greater deep soil gas concentrations, indicating that the contaminated groundwater is not the major source. These lines of evidence suggest that MGP-related groundwater contamination is unlikely to be a source of benzene or naphthalene vapor intrusion.

Although the rocky shoreline of the Wisconsin River minimizes human exposure to contaminated surface water and river sediments, these pathways were examined. Standards for surface water and sediment do not exist, so risk was evaluated using drinking water and residential soil standards as proxies. Water samples from both the river and the pond exceed drinking water standards, but the reasonable maximum exposure to the surface waters would be far less than the level assumed in those standards, and the risk falls below the 10^{-6} ELCR threshold. The contaminated area of the river is not large enough to cause significant or detectable bioaccumulation of metals in fish, and PAHs do not bioaccumulate in fish, so Site contaminants do not pose a health risk through human consumption of fish. One sample of river sediment exceeds residential soil RSLs, but the reasonable level of exposure to the sediment from wading in the river is far less than for a residential scenario. However, pond sediments contain levels of PAHs that pose a somewhat higher risk. Using the residential screening values as a semi-quantitative comparison, it is estimated that an individual could contact the pond sediment approximately 20 days per year over a 30-year period without exceeding an ELCR of 10^{-4}. At one day of exposure per year for 30 years, the ELCR would be 5×10^{-6}, which is within EPA's target risk range.

2.7.2 Ecological Risk Assessment

The screening-level ecological risk assessment (SLERA) focused on the aquatic habitat at the Site because it does not contain terrestrial habitat that would require ecological evaluation. Screening levels for surface water and sediment were determined from a hierarchy of criteria of sediment ecological benchmarks approved by EPA and WDNR. The hierarchy follows:

1. MacDonald, D.D., C.G. Ingersoll, and T.A. Berger, 2000, *Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems*, Arch. Environ. Contam. Toxicol., 39:20-31.

2. Di Toro, D.M. and J.A. McGrath, 2000, *Technical basis for narcotic chemicals and polycyclic aromatic hydrocarbon criteria: II. Mixtures and sediments*, Environ. Toxicol. Chem., 19: 1971-1982.

3. WDNR, 2003, *Consensus-Based Sediment Quality Guidelines: Recommendations for Use & Application*, Contaminated Sediment Standing Team, WT-732-2003.

Two areas of potential concern were identified for river or pond sediments. These include the "probable effects concentration" (PEC) area, which is the area where the concentrations of contaminants are likely to cause an adverse or toxic effect on benthic invertebrates, and the "threshold effects concentration" (TEC) area, which is the area where the concentration of contaminants may cause an adverse or toxic effect on benthic invertebrates. The PEC was exceeded for total PAHs, xylenes, and several metals in the sediments of the entire pond and within approximately 0.4 acre in the river. These areas are likely to be toxic to benthic invertebrates. An additional 0.9 acre in the river exceeds the TEC level, although the river sediment is discontinuous and contains little fine-grained deposits.

Pond water samples exceeded several water quality concentrations for benz[a]anthracene, benzo[a]pyrene, and lead, which could have toxic effects on aquatic species such as fish and aquatic invertebrates, and therefore pond water is a medium of concern. A composite sample of Wisconsin River water collected along a transect across the river near the pond exceeded the ecological screening threshold for silver. All other metals and PAHs were below screening levels. The measured silver concentration, 0.15 µg/L, was on the order of the screening value, 0.12 µg/L; accounting for the dilution that may have occurred from compositing the sample, the maximum possible concentration is 0.45 µg/L. Because no exceedances were found in downstream water samples, and based on finding a minor and localized exceedance in the area near the pond, river water is not considered to be a medium of concern.

2.7.3 Summary

Under current conditions, the Site does not appear to pose health concerns to human receptors based on potential exposures to contaminated soil, surface water, or sediment. However, under hypothetical future uses, exposure to groundwater and subsurface soil present unacceptable risks. In addition, pond sediment and a localized area of river sediment is toxic to benthic organisms. Tables 1, 2, and 3 summarize the maximum detected levels of contaminants by medium, and compare detected levels to the exposure point concentration (EPC), the concentration determined to be protective of current and future potential exposure pathways.

It is EPA's current judgment that the selected remedy identified in this ROD is necessary to protect public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

Because the current and future use of the Site is commercial and conservancy, EPCs for soil are the RSLs for industrial/commercial use (Table 1). MCLs are used as EPCs for those contaminants with MCLs; if MCLs were not available, GESs were used, and tap water RSLs were used if GESs were not available (Table 2). The EPCs for the contaminants in the sediment are the PECs (Table 3).

Table 1: Levels of Contaminants of Concern in Soil
Scenario Timeframe: Future
Exposure: Industrial/commercial ingestion/dermal contact or inhalation

Chemical of Concern	Maximum Concentration Detected, mg/kg	Frequency of Detection*	Exposure Point Concentration (EPC) mg/kg	EPC Source
Benzene	5.6	25/108	5.4	RSL
Benzo[a]anthracene	1.27	84/119	2.1	RSL
Benzo[a]pyrene	7.64	88/119	0.21	RSL
Benzo[b]fluoranthene	2.11	83/119	2.1	RSL
Benzo[k]fluoranthene	1.37	87/119	21	RSL
Chrysene	1.47	88/119	210	RSL
Dibenz[a,h]anthracene	8.41	67/119	0.21	RSL
Indeno[1,2,3-cd]pyrene	12.2	80/119	2.1	RSL
Naphthalene	0.26	82/119	18	RSL
Lead	1,700	58/77	800	RSL

*Frequency of detection (number of samples in which analyte is detected/number of samples analyzed) is reported for subsurface samples.

Table 2: Levels of Contaminants of Concern in Groundwater
Scenario Timeframe: Future
Exposure: Ingestion

Chemical of Concern	Maximum Concentration Detected, µg/L	Frequency of Detection	EPC µg/L	EPC Source
Benzene	190	84/164	5	MCL
Benzo[a]anthracene	130	26/164	0.029	RSL
Benzo[a]pyrene	130	22/164	0.2	MCL
Benzo[b]fluoranthene	67	25/164	0.2	GES
Benzo[k]fluoranthene	130	20/164	0.29	RSL
Chrysene	100	24/164	0.2	GES
Dibenz[a,h]anthracene	3.9	6/164	0.0029	RSL
Fluoranthene	440	80/164	400	GES
Indeno[1,2,3-cd]pyrene	55	14/164	0.029	RSL
Naphthalene	4,500	139/164	100	GES
Pyrene	290	84/164	250	GES
Iron	40,000	80/92	300	GES

Table 3: Levels of Contaminants of Concern in Sediment
Scenario Timeframe: Present
Exposure: Contact to benthic organisms

Chemical of Concern	Maximum Concentration Detected	Frequency of Detection	PEC* µg/kg	PEC Source	TEC** µg/kg	TEC Source
Xylenes (total)	790	11/28	465	DiToro & McGrath, 2000	25	WDNR, 2003
Total PAHs	17,990,000	11/26	22,800	MacDonald et al, 2000	1,610	MacDonald et al, 2000
Lead	350,000	12/12	128,000	MacDonald et al, 2000	35,800	MacDonald et al, 2000
Mercury	1600	13/14	1,060	MacDonald et al, 2000	180	MacDonald et al, 2000

*Probable Effects Concentration
** Threshold Effects Concentration

2.8 Remedial Action Objectives and Cleanup Levels

EPA developed the following Remedial Action Objectives (RAOs) to protect the public and the environment from potential current and future health risks from contaminated groundwater, soil and sediment at the Stevens Point MGP Site:

1) Prevent human exposure, including dermal contact, incidental ingestion, and inhalation as a result of soil disturbance, to subsurface soil containing levels of MGP-related

contaminants that exceed the target ELCR range of 10^{-6} to 10^{-4} or a HI quotient greater than one (1) for outdoor construction workers;

2) Prevent human exposure, including dermal contact, ingestion, and inhalation (as a result of vapor intrusion) to groundwater containing levels of MGP-related contaminants that exceed federal MCLs or state GESs;

3) Restore groundwater quality to achieve MCLs or the WDNR 140 GESs;

4) Prevent or reduce the exposure of benthic organisms in the Wisconsin River sediment to levels of MGP-related contaminants that are above the PEC; and

5) Prevent or reduce the exposure of benthic organisms in Pfiffner Pioneer Park pond to levels of MGP-related contaminants that are above the PEC.

The RAOs for this site are non-numerical. Therefore, a set of CLs have been established to provide further guidance in cleaning up the Site for the protection of human health and the environment (Table 4). The CLs equal the EPC (for soil and groundwater) and PEC (for sediment) values listed in Tables 1, 2, and 3.

Table 4: Summary of Cleanup Levels

Contaminant	Soil mg/kg	Groundwater µg/L	Pond and River Sediment mg/kg
Benzene	5.4	5	-
Xylenes (total)	-	-	0.465
Benzo[a]anthracene	2.1	0.029	-
Benzo[a]pyrene	0.21	0.2	-
Benzo[b]fluoranthene	2.1	0.029	-
Benzo[k]fluoranthene	21	0.29	-
Chrysene	210	2.9	-
Dibenz[a,h]anthracene	0.21	0.0029	-
Fluoranthene	-	630	-
Indeno[1,2,3-cd]pyrene	2.1	0.029	-
Naphthalene	18	0.14	-
Total PAHs	-	-	22.8
Pyrene	-	87	-
Iron	800	15	-
Lead	-	-	128
Mercury	-	-	1.06

2.9 Description of Alternatives

CERCLA Section 122(b)(1), 42 U.S.C Section 9621(b)(1), mandates that remedial actions must be protective of human health and the environment, cost-effective, comply with ARARs and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions that employ, as a principal element, treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants, and contaminants. A detailed description of the remedial alternatives for addressing the Site contamination can be found in the FS Report. The alternatives were developed and evaluated based on the environmental media in which contamination was found.

The construction time for each alternative reflects only the time required to construct or implement the remedy and does not include the time required to negotiate the remedy design and performance with the potentially responsible party (PRP) or procure contracts for design and construction.

NO ACTION ALTERNATIVES

Alternatives S1/G1/R1/P1: No Action
Estimated Capital Cost: $0
Estimated Annual O&M Cost: $0
Estimated Present Worth Cost: $0
Estimated Construction/Implementation Timeframe: None
Estimated time to Achieve RAOs: Does not achieve RAOs

Under these alternatives EPA would take no action at the site to prevent exposure to the groundwater, soil and sediment contamination. There is no cost associated with these alternatives. These alternatives are developed and retained as baseline scenarios to which the other alternatives may be compared.

SOIL ALTERNATIVES

Alternative S2: ICs and Maintenance of Clean Soil Cover and Cap
Estimated Capital Cost: $28,800
Estimated Annual O&M Cost: $12,300
Estimated Total Present Worth Cost: $169,000
Estimated Construction/Implementation Timeframe: 2 months
Estimated time to Achieve RAOs: 2 months

Approximately 5.4 acres, including 2.4 acres owned by the city of Stevens Point, would be subject to ICs that notify present and future property owners of the presence of contaminated subsurface soil (Figure 3). Future development, construction, or utility work that involves subsurface activities would need to develop a soil management plan, and unauthorized excavations would be prevented. The property owned by WPSC would be restricted to conservancy and non-residential use. The existing cover of clean soil, and a parking lot that acts as a "cap" over the contaminated soil, would be monitored and maintained. EPA would conduct five-year reviews at the site to ensure the continued protectiveness of the remedy.

Alternative S3: Soil Excavation and ICs
Estimated Capital Cost: $2,960,000
Estimated Annual O&M Cost: $12,300

Estimated Total Present Worth Cost: $3,100,000
Estimated Construction/Implementation Timeframe: 3 months
Estimated time to Achieve RAOs: 3 months

In addition to the ICs described above, this alternative would remove soil from approximately 0.4 acres in the vicinity of the former slough (northeast of the pond) to a depth of approximately 16 feet (Figure 3). The deeper soil containing MGP residuals would be removed to an approved landfill off-site. The excavated area would be restored to grade with both imported soil and removed soil that is suitable for reuse, and the original grass or asphalt cover would be reestablished. Because some contaminated subsurface soil would remain above UU/UE on the WPSC property, EPA would conduct five-year reviews at the site to ensure the continued protectiveness of the remedy.

GROUNDWATER ALTERNATIVES

Alternative G2: ICs
Estimated Capital Cost: $35,000
Estimated Annual O&M Cost: $2,700
Estimated Total Present Worth Cost: $77,000
Estimated Construction/Implementation Timeframe: None
Estimated time to Achieve RAOs: Does not achieve RAO-3

This alternative would use only ICs, such as restrictive covenants or ordinances, to prohibit consumption or other use of contaminated groundwater. EPA would conduct a five-year review at the site to ensure the continued protectiveness of the remedy.

Alternative G3: Monitored Natural Attenuation and ICs
Estimated Capital Cost: $72,500
Estimated Annual O&M Cost: $60,000
Estimated Total Present Worth Cost: $991,000
Estimated Construction/Implementation Timeframe: None
Estimated time to Achieve RAOs: 40-100+ years

In addition to the groundwater ICs described above, this alternative would use monitored natural attenuation (MNA), which relies on natural processes to break down, dilute, or disperse groundwater contaminants to achieve groundwater clean-up standards. A network of monitoring wells would be sampled regularly to monitor progress toward the standards and ensure that the contaminant plume is stable and will reach CLs in a reasonable timeframe. EPA would conduct five-year reviews at the site to ensure the continued protectiveness of the remedy, until groundwater CGs are achieved.

Alternative G4: Groundwater Extraction and Ex-situ Treatment and ICs
Estimated Capital Cost: $601,000
Estimated Annual O&M Cost: $218,000
Estimated Total Present Worth Cost: $3,950,000
Estimated Construction/Implementation Timeframe: 3 months
Estimated time to Achieve RAOs: 40-100 years

In addition to the groundwater ICs described in Alternatives G2 and G3, this alternative would install two extraction wells, approximately 30 feet deep, that would pump contaminated groundwater out of the aquifer at a total rate of approximately 50 gallons per minute. Groundwater extraction conveyance piping and treatment facilities including a filter system and activated carbon or air stripper, would be constructed to treat the contaminated groundwater. The treated water would be discharged to the municipal wastewater treatment plant via the city's sanitary sewer system. EPA would conduct five-year reviews at the site to ensure the continued protectiveness of the remedy until groundwater CGs are achieved.

RIVER SEDIMENT ALTERNATIVES

Alternative R2a: Sand Cover over River Sediment Exceeding the PEC
Estimated Capital Cost: $438,000
Estimated Annual cost: $2,700
Estimated Total Present Worth cost: $480,000
Estimated Construction/Implementation Timeframe: 1-2 weeks
Estimated time to Achieve RAOs: 1-2 weeks

This alternative would cover the Wisconsin River sediment that exceeds the PEC within the top six inches with a minimum of six inches of sand. EPA would conduct five-year reviews at the site to ensure the continued protectiveness of the remedy.

Alternative R2b: Sand Cover over River Sediment Exceeding the TEC
Estimated Capital Cost: $696,000
Estimated Annual cost: $2,700
Estimated Total Present Worth cost: $738,000
Estimated Construction/Implementation Timeframe: 3-4 weeks
Estimated time to Achieve RAOs: 3-4 weeks

This alternative would cover the Wisconsin River sediment that exceeds the TEC within the top six inches with a minimum of six inches of sand. EPA would conduct five-year reviews at the site to ensure the continued protectiveness of the remedy.

Alternative R3a: Sand Cover and Armor Layer over River Sediment Exceeding the PEC
Estimated Capital Cost: $477,000
Estimated Annual cost: $2,700
Estimated Total Present Worth cost: $519,000
Estimated Construction/Implementation Timeframe: 1-2 weeks
Estimated time to Achieve RAOs: 1-2 weeks

A 6-inch layer of sand and a protective layer of material such as 3-inch clean stone would cover sediment that exceeds the PEC. EPA would conduct five-year reviews at the site to ensure the continued protectiveness of the remedy.

Alternative R3b: Sand Cover and Armor Layer over River Sediment Exceeding the TEC
Estimated Capital Cost: $821,000
Estimated Annual cost: $3,000
Estimated Total Present Worth cost: $863,000

Estimated Construction/Implementation Timeframe: 3-4 weeks
Estimated time to Achieve RAOs: 3-4 weeks

A 6-inch layer of sand and a protective layer of material such as 3-inch clean stone would cover sediment that exceeds the TEC. EPA would conduct five-year reviews at the site to ensure the continued protectiveness of the remedy.

Alternative R4a: Dredge River Sediment Exceeding the PEC and Place a Sand Cover over the Dredged Area and River Sediment Exceeding the TEC
Estimated Capital Cost: $1,461,000
Estimated Annual cost: $0
Estimated Total Present Worth cost: $1,461,000
Estimated Construction/Implementation Timeframe: 5-6 weeks
Estimated time to Achieve RAOs: 5-6 weeks

Sediment that exceeds the PEC, totaling approximately 2,080 tons, would be mechanically dredged in the wet and disposed off-site in an approved landfill. A minimum 6-inch layer of sand to manage dredging residuals and prevent benthic exposure to marginally contaminated sediment would cover the dredged surface and the sediment that exceeds the TEC. No monitoring, maintenance or five year reviews would be required after completion of the dredging.

Alternative R4b: Dredge River Sediment Exceeding the TEC and Place a Sand Cover over the Dredged Area
Estimated Capital Cost: $2,294, 000
Estimated Annual cost: $0
Estimated Total Present Worth cost: $2,294,000
Estimated Construction/Implementation Timeframe: 7-8 weeks
Estimated time to Achieve RAOs: 7-8 weeks

Sediment that exceeds the TEC, totaling approximately 5,710 tons, would be mechanically dredged in the wet and disposed off-site in an approved landfill. A minimum 6-inch layer of sand to manage dredging residuals would cover the dredged surface. No monitoring, maintenance or five year reviews would be required after completion of the dredging.

Alternative R4c: Dredge River Sediment Exceeding the PEC and Place a Sand Cover only over the Dredged Area
Estimated Capital Cost: $1,221, 000
Estimated Annual cost: $0
Estimated Total Present Worth cost: $1,221,000
Estimated Construction/Implementation Timeframe: 5-6 weeks
Estimated time to Achieve RAOs: 5-6 weeks

Sediment that exceeds the PEC, totaling approximately 2,080 tons, would be mechanically dredged in the wet and disposed off-site in an approved landfill. A minimum 6-inch layer of sand to manage dredging residuals would cover the dredged surface. No monitoring, maintenance or five year reviews would be required after completion of the dredging.

POND SEDIMENT ALTERNATIVES

Alternative P2: Six-inch Sand Cap on Pond Sediments
Estimated Capital Cost: $182,000
Estimated Annual O&M Cost: $9,600
Estimated Total Present Worth Cost: $258,000
Estimated Construction/Implementation Timeframe: 3 days
Estimated time to Achieve RAOs: 3 days

This alternative would place a six-inch layer of sand over the existing pond sediment to reduce benthic exposure to contaminated sediment. EPA would conduct five-year reviews at the site to ensure the continued protectiveness of the remedy.

Alternative P3: Six-inch Sand Cap with Activated Carbon on Pond Sediments
Estimated Capital Cost: $198,000
Estimated Annual O&M Cost: $9,600
Estimated Total Present Worth Cost: $274,000
Estimated Construction/Implementation Timeframe: 3 days
Estimated time to Achieve RAOs: 3 days

In addition to the six-inch sand layer proposed in Alternative P2, activated carbon would be added to the sand layer to absorb organic contaminants. EPA would conduct a five-year review at the site to ensure the continued protectiveness of the remedy.

Alternative P4: Dredging of Pond Sediments and Placement of Sand Layer
Estimated Capital Cost: $661,000
Estimated Annual O&M Cost: $0
Estimated Total Present Worth Cost: $661,000
Estimated Construction/Implementation Timeframe: 1 month
Estimated time to Achieve RAOs: 1 month

This alternative would remove up to 3.5 feet and 1,860 tons of sediment in the Pond and dispose of the sediment off-site in an approved landfill. A 6-inch sand layer would cover the pond bottom. No monitoring, maintenance or five year reviews would be required after completion of the dredging.

2.10 Comparative Analysis of Alternatives

Section 121(b)(1) of CERCLA presents several factors that at a minimum EPA is required to consider in its assessment of alternatives. Building upon these specific statutory mandates, the NCP articulates nine evaluation criteria to be used in assessing in the individual remedial alternatives. The purpose of this evaluation is to promote consistent identification of the relative advantages and disadvantages of each alternative, thereby guiding selection of remedies offering the most effective and efficient means of achieving site CLs. While all nine criteria are important, they are weighed differently in the decision-making process depending on whether they evaluate protection of human health and the environment, or compliance with federal and state requirements, standards, criteria, and limitations (threshold criteria); consider technical or economic merits (primary balancing criteria); or involve the evaluation on non-EPA reviewers that may influence a EPA decision (modifying criteria).

The evaluation criteria are described below.

1. Overall protection of human health and the environment refers to whether a remedy provides adequate protection and describes how risks posed through each exposure pathway (based on a reasonable maximum exposure scenario) are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.
2. Compliance with ARARs refers to whether a remedy would meet all of the applicable or relevant and appropriate requirements of other federal and state environmental statutes and requirements or provide grounds for a waiver.
3. Long-term effectiveness refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup levels have been met. It also addresses the magnitude and effectiveness of the measures that may be required to manage the risk posed by treatment residuals and/or untreated wastes.
4. Reduction of toxicity, mobility, or volume through treatment is the anticipated performance of the treatment technologies, with respect to these parameters, a remedy may employ.
5. Short-term effectiveness refers to the period needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period until cleanup levels are achieved.
6. Implementability is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.
7. Cost includes estimated capital and O&M costs, five-year review costs and net present-worth costs.
8. State acceptance indicates if, based on its review of the RI and the FS, and Proposed Plan, the State concurs with the preferred remedy.
9. Community acceptance is assessed in the ROD and refers to the public's general response to the alternatives described in the Proposed Plan, the RI and the FS.

2.10.1 Overall Protection of Human Health and the Environment

Alternatives S1, G1, R1 and P1 would not provide any protection of human health and the environment. These "no action" alternatives do not reduce the human health risks of exposure to contaminated soils or groundwater, or the ecological risks to benthic organisms of exposure to contaminated sediment in the Wisconsin River or the pond. Therefore, these four alternatives are eliminated from further consideration under the remaining eight criteria.

All other alternatives provide overall protection of human health and the environment by eliminating, reducing, or controlling risk through treatment, engineering controls, and/or ICs. Alternatives S2, S3, G2 and G3 use ICs to prevent exposure to contaminated soil or groundwater. Alternatives R2a/b, R3a/b, P2 and P3 use a cap on contaminated sediment in the River or Pond to control exposure of benthic organisms to the contaminants. Alternative S3 would remove contaminated soil and dispose of it in an approved landfill, and Alternatives R4a/b/c and P4 would remove contaminated sediment from the river or the pond. Alternative G4 would pump and treat contaminated groundwater to reduce contaminant levels to MCLs or GESs.

2.10.2 Compliance with ARARs

All remaining alternatives except G2 would meet their respective soil, groundwater, or sediment ARARs from Federal and State laws. Alternative G2 does not monitor, and therefore does not ensure attainment, of Safe Drinking Water Act MCLs or WDNR GESs. Therefore, this alternative is eliminated from further consideration under the remaining seven criteria.

2.10.3 Long-Term Effectiveness and Permanence

Alternatives S2 and S3 would prevent exposure to contaminated soils through ICs, but the ICs would need to be continually enforced and reviewed for effectiveness. Alternative S3 would permanently reduce the risks of exposure to soil contaminants by excavating highly contaminated soil and placing it in an approved off-site landfill.

Alternatives G3 and G4 would both prevent exposure to contaminated groundwater through ICs, but the ICs would need to be continually enforced and reviewed for effectiveness. Alternative G3 is likely to reduce contaminant concentrations in the groundwater, although the timeframe needed to reach CLs is uncertain and would at least be many decades. It is possible that Alternative G3 may not be effective at achieving all of the groundwater CLs within a reasonable timeframe if some site contaminants are resistant to natural attenuation. Alternative G4 would permanently remove groundwater contaminants from the site, but computer modeling shows a virtually equal length of time required for both pump-and-treat and MNA to attain RAO-3. Alternative G4 is subject to the potential "rebound" of contaminant concentrations, and would create treatment residuals, although these residuals could be reliably managed and pose little risk.

Alternative R2a/b may not be effective in the long-term because water currents and bioturbation of sediments may bring contaminated sediment back to the surface. Alternative R3a/b is somewhat more likely to maintain protectiveness over time because the armor layer would prevent disturbances of the sediment. Alternatives R2a/b and R3a/b do not address the possibility of ebullition, the release of petroleum-related contaminants from river sediment by the bubbling of methane generated by bacterial decay of organic matter. However, ebullition has not been observed at the site and river sediments are low in the organic matter required for ebullition to occur, so the likelihood of ebullition is low. Concentrations of contaminants are likely to slowly decrease over time through natural processes in both R2a/b and R3a/b. Alternatives R4a/b/c are the most effective in the long term because all contaminated sediment above the PEC (R4a/c) or TEC (R4b) is permanently removed, and residual contamination would naturally decrease over time. Wet dredging is expected to be effective because there is minimal free oil or oil-wetted sediment present. In addition, it would be difficult to key a sheet pile wall into the river bottom due to its rocky nature.

The clean sand layer proposed in Alternative P2 may be somewhat effective at preventing benthic organisms from being exposed to the contaminants in the underlying pond sediment. However, bioturbation of the clean sand cap may cause mixing with the contaminated sediments and lead to ongoing exposure. This is also true for Alternative P3, but the inclusion of activated carbon in the sand layer would sequester PAHs, reducing their mobility and leading to greater long-term protection. Concentrations of contaminants in the pond sediment would slowly decrease over time through natural processes under both P2 and P3. Alternative P4 would permanently prevent exposure to contaminated pond sediment because the contaminated sediment would be removed from the site.

2.10.4 Reduction of Toxicity, Mobility, or Volume through Treatment

Previous remedial actions at the site have significantly reduced the toxicity, mobility and volume of affected media, and natural processes would likely cause further reductions over time. With the exception of Alternative G4, none of the alternatives proposed complete treatment.

None of the remedial alternatives for soil address the toxicity or volume of soil contaminants. Alternative S2 would reduce the mobility of soil contaminants by maintaining the existing parking lot and clean surficial soil cover. Alternative S3 would reduce the mobility of soil contaminants because the highly contaminated soil would be removed and placed in an approved landfill. However, the soil would not be treated prior to disposal, so in both these cases the *mobility reduction is achieved via containment and not treatment.*

Alternative G3 would use the natural processes of degradation, dilution, and dispersion to reduce the toxicity and volume of contaminants, and would monitor the groundwater plume to ensure that it is stable. Alternative G4 would use treatment to reduce the toxicity and volume of contaminants in groundwater, because they would be concentrated within the treatment residuals and properly disposed of off-site, and would also monitor the stability of the plume.

None of the remedial alternatives for river sediment reduce the toxicity or volume of contaminants through treatment. Alternatives R2a/b would provide some protection from the potential for contaminated sediment to be transported downstream, and therefore reduce the mobility of the contaminants through containment, but the layer of clean sediment would still be subject to bioturbation. Alternatives R3a/b would be more effective at reducing the mobility of contaminated sediment via containment because the armor layer capping the sediment would prevent it from being disturbed by river currents or benthic organisms. Alternatives 4a/b/c would be the most effective at reducing the mobility of contaminated sediment because sediment would be removed and disposed in an approved landfill. The mobility reductions realized, however, would be from containment, not treatment.

Alternative P2 may reduce the mobility of the contaminants in the pond sediment by covering them with a layer of clean sediment, but the clean layer would be subject to bioturbation. The carbon included in the sand layer in Alternative P3 would limit the mobility of the contaminants to a greater extent than sand alone and serve as some treatment. Alternative P4 would reduce mobility of contaminants by dredging the contaminated sediment and placing it in an approved off-site landfill, but the contaminated sediment would not be treated prior to disposal.

2.10.5 Short-Term Effectiveness

Alternative S2 presents no short-term risks, and exposure prevention is achieved quickly through ICs (See Table 3 for a summary of the construction/implementation timeframes for each alternative). Alternative S3 may cause some minor short-term risks, such as fugitive VOC emissions from the excavation of soil containing MGP residuals, which would last approximately three months.

Alternatives G3 and G4 both present no short-term risks, and prevention of exposure to contaminated groundwater is achieved quickly through ICs.

Alternatives R2a/b and R3a/b would disrupt the existing benthic community and water quality in the Wisconsin River during the 1-2 weeks of sand or sand/armor placement. However, a clean sediment layer would be expected to be recolonized by benthos. Alternative 4a/b/c would remove any existing benthic community, and would increase truck traffic and the possibility of human exposure to volatile organic emissions. However, the clean sediment layer would be expected to be recolonized by benthos and risks to human health in the short-term are manageable.

Alternatives P2 and P3 would disrupt the existing benthic community in the pond sediment over the short term, and Alternative P4 would eliminate the benthic community in the short term. However, Alternatives P2, P3, and P4 all result in a clean top sediment layer that would be expected to be recolonized by benthos.

2.10.6 Implementability

The degree of implementability for all the alternatives is high. There are no difficulties in implementing Alternatives S2, G3, G4, P2 and P3, and all services are readily available. The alternatives that involve excavation or dredging, Alternatives S3, R4/a/b/c, and P4, would require a greater degree of coordination with local entities due to the disturbance that these activities would cause in public areas. Alternatives R2a/b and R3a/b may be somewhat difficult to implement due to the current in the Wisconsin River. Areas in the river where sediment is mixed with larger rocks may increase the difficulty of implementing Alternative R4a/b/c.

2.10.7 Cost

Table 5 summarizes the capital, annual operating and maintenance, and present worth costs for each alternative. The uncertainty associated with these costs is +50% and -30%. The no-action alternatives, Alternatives S1, G1, R1, and P1, have no costs associated with them. Each of the other alternatives have the cost of five-year reviews, estimated at $15,000 per review for 30 years and $42,000 present worth cost, factored into their annual and present worth costs. However, when the media-specific alternatives are assembled into a site-wide alternative, the cost of five-year-reviews is factored in only once for all four media.

2.10.8 State Acceptance

WNDR concurs with the selected remedy (See Attachment 2).

2.10.9 Community Acceptance

EPA received one public comment on the Proposed Plan, and a response to the comment is included in the Responsiveness Summary (Part III).

2.11 Principal Threat Wastes

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (NCP Section 300.430 (a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund site. A source material that includes or contains hazardous substances, pollutants or contaminants that 1) act as a reservoir for the migration of contamination of groundwater, surface water or air, or 2) act as a source for direct exposure. Principal threat wastes are those source materials considered to be highly toxic and highly mobile that generally cannot be reliably contained or would present a significant risk to human health and the environment should exposure occur.

Table 5: Comparison of Costs and Timeframes of the Remedial Alternatives

	Component	Capital Cost	Annual O&M Cost	Total Present Worth Cost	Construction/ Implementation Timeframe	Time to Completion
Soil						
S1	No action	$0	$0	$0	None	N/A
S2*	ICs	$28,800	$12,600	$169,000	2 months	2 months
S3	Excavation and ICs	$2,960,000	$24,600	$3,100,000	3 months	3 months
Groundwater						
G1	No action	$0	$0	$0	None	N/A
G2	ICs	$35,000	$3,000	$77,000	2 months	Hundreds of years
G3*	MNA and ICs	$72,500	$60,000	$991,000	2 months	40-115 years
G4	Extraction and Treatment, and ICs	$601,000	$218,000	$3,950,000	3 months	40-110 years
River Sediment						
R1	No action	$0	$0	$0	None	N/A
R2a	Sand cover – PEC	$438,000	$3,000	$480,000	1-2 weeks	1-2 weeks
R2b	Sand cover – TEC	$696,000	$3,000	$738,000	3-4 weeks	3-4 weeks
R3a	Sand cover/armor – PEC	$477,000	$3,000	$519,000	1-2 weeks	1-2 weeks
R3b	Sand cover/armor – TEC	$821,000	$3,000	$863,000	3-4 weeks	3-4 weeks
R4a	Dredging – PEC, Sand cover – TEC	$1,461,000	$0	$1,461,000	5-6 weeks	5-6 weeks
R4b	Dredging – TEC	$2,294,000	$0	$2,294,000	7-8 weeks	7-8 weeks
R4c*	Dredging – PEC	$1,221,000	$0	$1,221,000	5-6 weeks	5-6 weeks
Pond Sediment						
P1	No action	$0	$0	$0	None	N/A
P2	Sand cover	$182,000	$9,900	$258,000	3 days	3 days
P3*	Sand cover/activated carbon	$198,000	$9,900	$273,000	3 days	3 days
P4	Removal and placement of clean sand	$661,000	$0	$661,000	1 month	1 month

*Selected components of the remedy.

EPA has determined that there is no principal threat waste at the Site. The contaminated soil and sediments are low-level threat wastes because they are moderately contaminated and the contaminants are not mobile. The selected remedy will not use treatment to address the sediment or soil because it is not cost-effective and therefore impracticable.

2.12 Selected Remedy

2.12.1 Summary of Rationale for the Selected Remedy

EPA selects Remedial Alternatives S2, G3, R4c, and P3 to address the soil, groundwater, and sediment media at the Site.

The selected remedy best satisfies EPA's nine criteria for remedy selection. Alternative S2 for soil prevents current and future exposure to contamination, allows for future planned reuse of the Site, and is more cost-effective with fewer short-term impacts than S3. Alternative G3 provides virtually the same effectiveness as G4, but at lower cost. Alternatives R4c and P3 are the most cost-effective methods of preventing exposure of benthos to contaminant levels above the PEC.

The selected remedy would be protective of human health and the environment, would provide long-term effectiveness, would achieve ARARs in a reasonable time frame and would be the most cost-effective among the alternatives with respect to the evaluation criteria. EPA, with the concurrence of WDNR, has determined that the Site has no principal threats to be treated, and that the selected remedy will utilize permanent solutions to the maximum extent practicable.

2.12.2 Description of Remedial Components

<u>Soil – Alternative S2</u>

Approximately 5.4 acres will be subject to institutional controls to address soil above the CLs (Figure 3). The ICs will restrict soil disturbance in areas with soil concentrations above industrial/commercial land use. If the Site is to be developed or future construction or utility workers perform subsurface activities (e.g., utility construction or repairs), a soil management plan will be required to ensure the subsurface soil is properly managed (e.g., not brought to the surface where direct contact may occur). Soil ICs will also include restricting unauthorized excavations to limit potential direct contact (authorized excavations will require a health and safety plan and soil management plan). ICs may also be used to require future buildings to include vapor intrusion mitigation barriers or prevent residential buildings from being built on the former MGP property currently owned by WPSC.

This remedial option includes maintaining the existing parking lot and soil that was placed over the areas previously cleaned up to minimize direct contact with soil in the top four feet of soil that is above the CLs. To ensure the effectiveness of this direct contact barrier, a maintenance plan will be developed which includes annual inspections and repairs.

<u>Groundwater – Alternative G3</u>

Institutional controls for groundwater will be used to restrict the use of groundwater as a drinking water source until the drinking water standards are met and thereby address RAO-2.

Institutional controls for groundwater will be implemented in the areas shown on Figure 4 where the groundwater plume is generally located (approximately 7 acres).

Monitored natural attenuation will be used to demonstrate movement towards the drinking water standards, thereby meeting RAO-3 in an estimated 38 to 114 years (beginning in 2011). Multiple lines of evidence indicate that natural attenuation processes are active at the site, and that MNA will be effective over the long-term at reducing the volume of contaminants in groundwater, including:

- Much source material was removed during the 1998 soil removal, and the remaining contaminated soil does not appear to be acting as a source for ongoing groundwater contamination because GW contamination is not increasing;
- The extent of the groundwater plume has been defined and appears to be stable;
- With the groundwater velocity of 40 to 140 feet per year, the leading edge of the benzene and naphthalene plume would have traveled a minimum of three to four times farther than its observed location if attenuation processes were not actively restricting plume expansion; and
- Groundwater data collected since 2000 indicate stable or decreasing concentrations of benzene and naphthalene at all monitoring locations since 2005; between 2000 and 2004, two monitoring locations had increasing trends that have since stabilized.

Groundwater monitoring will be conducted to ensure that:

- The groundwater plume continues to be stable;
- Levels of groundwater COCs decrease over time;
- Natural attenuation mechanisms (such as biodegradation, dispersion, and dilution) continue to work.

The selection of MNA includes the provision for a contingent remedy in case the groundwater contamination does not appear to be decreasing or begins to threaten additional groundwater downgradient from the plume as defined at the time of this ROD. The contingency component of the MNA alternative would be implemented if it were determined that the spatial extent of the groundwater contamination was increasing downgradient (that is, if a statistical analysis of the groundwater concentrations show an increasing trend), or if the groundwater contamination became a threat to a water supply well. This contingency remedy would be an active remedy that would lead to the restoration of the downgradient groundwater to beneficial use, and might consist of groundwater extraction and treatment as described in Alternative G4 of this ROD, a containment barrier, in-situ treatment, ex-situ treatment, or some other means of addressing the contamination in an active manner. If this provision becomes necessary, EPA would document the selection and implementation of a contingent remedy in a ROD Amendment.

Wisconsin River Sediment – Alternative R4c

Sediment that exceeds the PEC, totaling approximately 2,080 tons, will be dredged in a localized area of the Wisconsin River from 1 to 5 feet below mudline (Figure 5). Dredging will be by mechanical methods in the wet, using silt curtains and oil booms to manage suspended sediment and the presence of free product or liquids such as NAPL. Dredging will be followed by a minimum 6-inch sand layer to manage dredging residuals. Dredged sediment would be stabilized on site with amendments, if required, and loaded for off-site disposal at an approved landfill. Contact water generated during dredging/dewatering activities will be treated on site and then discharged to the Wisconsin River.

Pond Sediment – Alternative P3

Pond sediment remedial option P3 consists of placing a 6-inch sand cap with activated carbon on the sediment of Pfiffner Pioneer Park pond.

Because the alternative would result in contaminants remaining on-site above health-based levels, CERCLA requires the Stevens Point MGP Site cleanup action to be reviewed every five years. Also, provisions would be made for periodic reviews and certifications of the institutional and engineering controls.

Further Description and “If” Clauses

In accordance with EPA Region 5 Greener Cleanup Policy and in order to maximize the net environmental benefits, EPA would evaluate the maximum use of sustainable technologies and practices, as appropriate, during design, construction, and operation of the selected remedy.

2.12.3 Summary of Estimated Remedial Costs

A detailed cost estimate is provided in Table 6. The information in the cost estimate summary table is based on the best available information regarding the anticipated scope of the remedial alternative. Changes in the cost elements are likely to occur as a result of new information and data collected during the engineering pre-design and design of the selected remedy.

Table 6: Cost Estimate of Remedy

Soil – Alternative S2*			
Capital Costs		**Annual Operation and Maintenance Costs**	
ICs/Soil Maintenance Plan	$18,000	Engineered Barrier Maintenance and Monitoring (Asphalt)	$4,609
Legal Description	$5,000	Engineered Barrier Maintenance and Monitoring (Earthen)	$3,139
Subtotal: Capital costs	**$23,000**	**Subtotal: Annual O&M Costs (not including Five Year Reviews)**	**$7,700**
25% Contingency	$5,800	25% Contingency	$1,900
TOTAL: CAPITAL COSTS	**$28,800**	**TOTAL: ANNUAL O&M COSTS**	**$9,600**
		Present Worth Value of Annual O&M Costs over 30 years, 5% Rate of Return	$98,600
TOTAL COSTS OF SOIL REMEDY COMPONENT			**$127,000**

Table 6: Cost Estimate of Remedy, continued

Groundwater – Alternative G3			
Capital Costs		**Annual Operation and Maintenance Costs**	
Groundwater Monitoring Plan	$30,000	Project O&M Labor, Travel, Equipment	$35,000
ICs	$23,000	Analytical Costs – Spring	$3,700
Legal Description	$5,000	Analytical Costs – Fall	$6,900
Subtotal: Capital costs	**$58,000**	**Subtotal: Annual O&M Costs (not including Five Year Reviews)**	**$45,600**
25% Contingency	$14,500	25% Contingency	$11,400
TOTAL: CAPITAL COSTS	**$72,500**	**TOTAL: ANNUAL O&M COSTS**	**$57,000**
		Present Worth Value of Annual O&M Costs over 30 years, 5% Rate of Return	$876,000
TOTAL COSTS OF GROUNDWATER REMEDY COMPONENT			**$949,000**

River Sediment – Alternative R4c			
Capital Costs		**Annual Operation and Maintenance Costs**	
Consulting	$160,000		$0
Mobilization/demobilization	$300,000		
Site Preparation	$127,600		
Dredging	$283,400		
Restoration	$16,500		
Quality Control	$89,400		
Subtotal: Capital costs	**$976,900**	**Subtotal: Annual O&M Costs**	**$0**
25% Contingency	$244,200	25% Contingency	$0
TOTAL: CAPITAL COSTS	**$1,221,000**		
		Present Worth Value of Annual O&M Costs over 30 years, 5% Rate of Return	$0
TOTAL COSTS OF RIVER SEDIMENT REMEDY COMPONENT			**$1,221,000**

Pond Sediment – Alternative P3			
Capital Costs		**Annual Operation and Maintenance Costs**	
Consulting	$60,000	Cap Monitoring	$5,500
Mobilization/Demobilization	$34,000		
Site Preparation	$19,900		
Cover	$32,300		
Restoration	$6,200		
Quality Control	$5,600		
Subtotal: Capital costs	**$158,000**	**Subtotal: Annual O&M Costs (not including Five Year Reviews)**	**$5,500**
25% Contingency	$39,500	25% Contingency	$1,400
TOTAL: CAPITAL COSTS	**$197,500**	**TOTAL: ANNUAL O&M COSTS**	**$6,900**
		Present Worth Value of Annual O&M Costs over 30 years, 5% Rate of Return	$34,000
TOTAL COSTS OF POND SEDIMENT REMEDY COMPONENT			**$232,000**

Table 6: Cost Estimate of Remedy, continued

All media			
Medium	**Capital Costs**	**Annual Operation and Maintenance Costs**	**Present Worth Value of Annual O&M Costs over 30 years, 5% Rate of Return**
Soil	$28,800	$9,600	$98,600
Groundwater	$72,500	$57,000	$876,000
River Sediment	$1,221,000	$0	$0
Pond Sediment	$197,500	$6,900	$34,000
Five Year Reviews	$0	$2,700	$42,000
Subtotal	**$1,520,000**	**$76,000**	**$1,051,000**
TOTAL COSTS OF REMEDY			**$2,571,000**

Any major cost changes may be documented in the form of a memorandum in the Administrative Record file, an Explanation of Significant Differences (ESD) or a ROD amendment. This is an order-of-magnitude engineering cost estimate that is expected to be within +50% to -30% of the actual project costs.

2.12.1 Expected Outcome(s) of the Selected Remedy

The existing clean soil and asphalt covers on contaminated soil currently prevent human exposure to Site-related contaminants. Future potential exposures will be prevented within two months by implementing ICs that restrict the land use to industrial/commercial or conservation.

These remedial components are compatible with redevelopment of the site property and surrounding impacted areas to commercial or public park use; however, if construction or utility work occurs, excavation or regrading of contaminated subsurface soil will be conducted under a soil management plan.

The contaminated groundwater will not be suitable for consumption for several decades. However, the plume will shrink over time and will not impact additional groundwater resources. The ICs restricting use of contaminated groundwater will prevent human exposure until CLs are attained.

Removing contaminated sediment above the PEC from the Wisconsin River will create conditions in which a healthy benthic community can develop and thrive. Although sediment above the TEC will be left in place, the benthic community as a whole will not be affected by contamination at that level.

The clean sand layer with activated carbon in the pond will be able to support a healthy benthic community. Activities that disturb the sediment are unlikely, and the activated carbon will adsorb organic contaminants.

2.13 Statutory Determinations

Under CERCLA Section 121 and the NCP, the lead agency must select remedies that are protective of the human health and the environment, attain federal and state requirements that are applicable or relevant and appropriate for this remedial action (or invoke an appropriate waiver), are cost-effective, and utilize permanent solutions and alternative treatment technologies (or resource recovery technologies) to the extent practicable. In addition, CERCLA includes a preference for remedies that employ treatment that permanently and significantly reduces the volume, toxicity, or mobility of hazardous wastes as a principal element and a bias against off-site disposal of untreated wastes.

2.13.1 Protection of Human Health and the Environment

The selected remedy meets this criterion by using institutional and engineering controls to prevent human exposure to contaminated soil and groundwater above the target ELCR range of 10^{-4} to 10^{-6}. The selected remedy protects the environment by dredging contaminated sediment from the river and providing a clean sediment layer in the pond to support healthy benthic communities in the river and the pond.

2.13.2 Compliance with Applicable or Relevant and Appropriate Requirements

The selected remedy meets all ARARs and other advisories, criteria, or guidance to be considered (TBCs), which are listed in Table 7. MNA will restore drinking water to SDWA MCLs and WDNR ESs over time. Dredging contaminated sediment from the Wisconsin River and covering the Pfiffner Pioneer Park pond will comply with sediment and surface quality requirements, and will be conducted in compliance with air emissions, solid waste management, endangered species, and navigable waters requirements.

2.13.3 Cost- Effectiveness

A cost-effective remedy is one whose costs are proportional to its overall effectiveness (effectiveness and permanence; reduction in toxicity, mobility, and volume (TMV) through treatment; and short-term effectiveness). Based on the composition of overall effectiveness to cost, the selected remedy would meet the statutory requirement that Superfund remedies be cost-effective in that it protects human health and the environment and achieves CLs in an acceptable time frame at a lower cost than other effective alternatives. The factors considered in determining the cost-effectiveness of the remedial alternatives are summarized in Table 8.

2.13.4 Utilization of Permanent Solutions and Alternative Treatment Technologies (or Resource Recovery Technologies) to the Maximum Extent Practicable

The final remedy achieves the most permanent level of protectiveness, while considering the preference for treatment and bias against off-site disposal. There are no cost-effective treatment options for soil or sediment at the Stevens Point MGP Site, and off-site disposal is only used where necessary to achieve an acceptable level of protectiveness. Off-site disposal of sediment contaminated above the PEC from the Wisconsin River is acceptable because it is the most permanent solution to provide conditions for a healthy benthic community. Treatment of groundwater is practicable but would achieve CLs in virtually the same time frame as MNA, with the same level of permanence, and would result in off-site disposal of treatment residuals.

2.13.5 Preference for Treatment as Principal Element

There is no principal threat waste at the Stevens Point MGP Site, and therefore the statutory preference for treatment does not apply.

Table 7: ARARs and TBCs Met by the Final Remedy

Media	Standard, Requirement, Criteria, Limitation	Citation
Federal ARARs		
Groundwater	Groundwater quality standards	Safe Drinking Water Act
Sediment	Discharge of dredge material	Clean Water Act (Section 304); 33 § CFR 323
Solid waste	Waste characterization and handling requirements	Resource Conservation and Recovery Act , 40 CFR §§ 260 and 268
Solid waste	Management of non-hazardous solid waste	40 CFR Part 258
Floodplains	Construction in floodplains	Floodplain Management Executive Order 11988 (40 CFR Part 6, App.A)
Wetlands	Construction/remediation in wetlands	Wetlands: Permits for Dredge and Fill (CWA Section 404; 33 CFR Part 300); Protection of Wetlands Executive Order 1190 (40 CFR Part 6, App. A)
Surface water body	Consultation with US Fish and Wildlife Service prior to water body modification	16 U.S.C. §§ 661-667e
River	Waterway protection	Wild and Scenic Rivers Act (36 CFR § Part 297)
Navigable waterway	Prohibits activities that could impede navigation and commerce	Rivers and Harbors Act, Section 10; 33 CFR Parts 320-323
Air	Air quality standards	Clean Air Act, 40 CFR § 50
Wisconsin ARARs		
Soil	Soil cleanup standards	WAC chs. 720 and 722
Groundwater	Groundwater quality standards	Wis. Admin. Code (WAC) ch. NR140
Groundwater	Groundwater monitoring well requirements	WAC ch. NR 141
Sediment	Water quality standards for wetlands	WAC ch. NR 103
Sediment and surface water	Dredging requirements	Wis. Stat. § 30.20; WAC chs. 345-47
Solid waste	Storage, transportation and disposal requirements for solid waste	Wis. Stats. Ch. 289; WAC chs. NR 500-590
Navigable waters	Miscellaneous structures in and dredging of navigable waters	Wis. Stats. Ch. 30; WAC ch. NR 329
Air	Air quality standards	Wis Stat. ch. 285; WAC chs. NR 404, 415, 419, 431, 440, 445
Air	Control of organic compound emissions	WAC § NR 419.07
Wisconsin TBCs		
Sediment	Sediment quality	WAC chs. NR 105—106; WNDR Guidance Document: "Assessing Sediment Quality in Water Bodies Associated with Manufactured Gas Plant Sites" (WDNR PUBL-WR-447-96, March 1996)

Table 8: Cost and Effectiveness Matrix of Remedial Alternatives

Alternative (check box if cost-effective)	Present Worth Cost	Incremental Cost	Long-Term Effectiveness and Permanence	Reduction of TMV Through Treatment	Short-Term Effectiveness
Soil Alternatives					
☐ S1 - No Action	$42,000	-$169,000	• No reduction in long-term risk to human health and the environment • Baseline risk	• No reduction in TMV	• No additional short-term risks to workers or community
☑ S2 – ICs and ECs	$169,1000	-	• Prevents exposure as long as ICs are enforced and ECs are maintained	• Mobility is reduced by soil and asphalt cover and restrictions on unauthorized excavation • No reduction in toxicity or volume	• No additional short-term risks to workers or community • Prevents exposures within two months
☐ S3 - Excavation and ICs	$3,100,000	+$2,931,000	• Eliminates exposure to the most contaminated soil • Prevents exposure to less contaminated soil as long as ICs are enforced and ECs are maintained	• Mobility is reduced by placing some contaminated soil in a landfill and maintaining a cover and ICs on remaining contaminated soil • No reduction in toxicity or volume	• Minor short term risks include truck traffic and fugitive emissions • Prevents exposure within three months
Groundwater Alternatives					
☐ G1 - No action	$0	-$991,000	• No reduction in long-term risk to human health and the environment	• No reduction in TMV	• No additional short-term risks to workers or community
☐ G2 – ICs	$77,000	-$914,000	• Prevents exposure as long as ICs are enforced • Does not evaluate if or when CLs would be attained	• No reduction in TMV	• No additional short-term risks to workers or community • Prevents exposures within two months
☑ G3 - MNA and ICs	$991,000	-	• Achieves CLs in 40-115 years • Prevents human exposure as long as ICs are enforced until CLs are achieved	• TMV is reduced by MNA, not treatment	• No additional short-term risks to workers or community • Prevents exposures within two months
☐ G4 -P&T and ICs	$3,950,000	+$2,959,000	• Achieves CLs in 40-110 years • Prevents human exposure as long as ICs are enforced until CLs are achieved	• TMV is reduced by pumping and treating groundwater	• Treatment residuals must be managed • Prevents exposures within three months

Table 8: Cost and Effectiveness Matrix of Remedial Alternatives, continued

Alternative (check box if cost-effective)	Present Worth Cost	Incremental Cost	Long-Term Effectiveness and Permanence	Reduction of TMV Through Treatment	Short-Term Effectiveness
River Sediment Alternatives					
☐ R1 - No action	$0	-$1,221,000	• No reduction in long-term risk to human health and the environment	• No reduction in TMV	• No additional short-term risks to workers or community
☑ R2a - Sand cover (PEC)	$480,000	-$741,000	• Over time, sand cover could be disturbed by currents or bioturbation • Benthos would continue to be exposed to soil with contamination levels between the PEC and the TEC	• Mobility is reduced as long as the sand cover remains in place • No reduction in toxicity or volume	• Existing benthic community would be disturbed • Sand cover would provide clean sediment for benthos colonization within 1-2 weeks
☑ R2b - Sand cover (TEC)	$738,000	-$483,000	• Over time, sand cover could be disturbed by currents or bioturbation	• Mobility is reduced as long as the sand cover remains in place • No reduction in toxicity or volume	• Existing benthic community would be disturbed • Sand cover would provide clean sediment for benthos colonization within 3-4 weeks
☑ R3a - Sand cover/armor (PEC)	$519,000	-$702,000	• Armor layer would likely preserve the clean sand cover • Benthos would continue to be exposed to soil with contamination levels between the PEC and the TEC	• Mobility is reduced by containment, not treatment, as long as the sand cover and armor remains in place • No reduction in toxicity or volume	• Existing benthic community would be disturbed • Sand cover/armor would provide clean sediment for benthos recolonization within 1-2 weeks
☑ R3b - Sand cover/armor (TEC)	$863,000	-$359,000	• Armor layer would likely preserve the clean sand cover	• Mobility is reduced by containment, not treatment, as long as the sand cover and armor remains in place • No reduction in toxicity or volume	• Existing benthic community would be disturbed • Sand cover/armor would provide clean sediment for benthos recolonization within 3-4 weeks

Table 8: Cost and Effectiveness Matrix of Remedial Alternatives, continued

Alternative (check box if cost-effective)	Present Worth Cost	Incremental Cost	Long-Term Effectiveness and Permanence	Reduction of TMV Through Treatment	Short-Term Effectiveness
☑ R4a - Dredging (PEC), Sand cover (TEC)	$1,461,000	+$240,000	• Exposure to contaminated sediment above the PEC would be permanently eliminated • Over time, sand cover could be disturbed by currents or bioturbation	• Mobility is reduced by containment, not treatment, as long as the sand cover and armor remains in place • No reduction in toxicity or volume	• Existing benthic community would be eliminated • Dredging and sand cover would provide clean sediment for benthos recolonization within 5-6 weeks
☐ R4b – Dredging (TEC)	$2,294,000	+$1,073,000	• Adverse impacts on benthos from Site contaminants would be permanently eliminated	• Mobility is reduced by removal and containment in a landfill, not treatment • No reduction in toxicity or volume	• Existing benthic community would be eliminated • Dredging would provide clean sediment for benthos recolonization within 7-8 weeks
☑ R4c -Dredging (PEC)	$1,269,000	-	• Benthos would continue to be exposed to soil with contamination levels between the PEC and the TEC	• Mobility is reduced by removal and containment in a landfill, not treatment • No reduction in toxicity or volume	• Existing benthic community would be eliminated • Dredging would provide clean sediment for benthos recolonization within 5-6 weeks

Table 8: Cost and Effectiveness Matrix of Remedial Alternatives, continued

Alternative (check box if cost-effective)	Present Worth Cost	Incremental Cost	Long-Term Effectiveness and Permanence	Reduction of TMV Through Treatment	Short-Term Effectiveness
Pond Sediment Alternatives					
☐ P1 - No action	$0	-$274,000	• No reduction in long-term risk to human health and the environment	• No reduction in TMV	• No additional short-term risks to workers or community
☑ P2 - Sand cover	$258,000	-$15,200	• Over time, sand cover could be disturbed by bioturbation	• Mobility is reduced by containment, not treatment, as long as the sand cover and armor remains in place • No reduction in toxicity or volume	• No additional short-term risks to workers or community • Existing benthic community would be disturbed • Sand cover would provide clean sediment for benthos colonization within one week
☑ P3 - Sand cover/ activated carbon	$273,000	-	• Activated carbon would improve the containment of the clean sand cover	• Mobility is reduced by containment, not treatment, as long as the sand cover and armor remains in place • No reduction in toxicity or volume	• No additional short-term risks to workers or community • Existing benthic community would be disturbed • Sand cover would provide clean sediment for benthos colonization within one week
☐ P4 – Dredging, placement of clean sand	$703,000	+$388,000	• Adverse impacts on benthos from Site contaminants would be permanently eliminated	• Mobility is reduced by removal and containment in a landfill, not treatment • No reduction in toxicity or volume	• No additional short-term risks to workers or community • Existing benthic community would be eliminated • Dredging would provide clean sediment for benthos recolonization within one month

2.13.1 Five-Year Review Requirements

Because this remedy will result in hazardous substances, pollutants, or contaminants remaining on Site above levels that allow for unlimited use and unrestricted exposure, policy reviews will be conducted every five years after initiation or remedial action to ensure that the remedy is, or will be, protective of human health and the environment. The five-year reviews will evaluate the protectiveness of soil, groundwater, and pond sediment remedies.

2.14 Documentation of Significant Change

The Proposed Plan for the Stevens Point MGP Site was released for public comment in July 2012. The Proposed Plan identified Alternatives S2 (ICs and ECs), G3 (ICs and MNA), R4c (dredging sediment above the PEC), and P3 (sand cover with activated carbon) as the Preferred Alternatives for soil, groundwater, and sediment remediation. EPA reviewed all written and verbal comments submitted during the public comment period. It was determined that no significant changes to the remedy, as originally identified in the Proposed Plan, were necessary or appropriate.

PART 3 RESPONSIVENESS SUMMARY

In accordance with CERCLA Section 117, 42 U.S.C. Section 9617, EPA held a public comment period from July 2, 2012 to August 3, 2012, to allow interested parties to comment on the Proposed Plan for the Site. The Proposed Plan identified the cleanup alternatives and preferred option for the final remedy at the Stevens Point MGP Site in Stevens Point, Wisconsin. The Proposed Plan was issued by EPA, the lead agency, and reviewed by WDNR. EPA, in consultation with WDNR, has selected a final remedy for the Site now that the public comment period has ended; and written and oral comments have been submitted and considered.

The purpose of this Responsiveness Summary is to document the Agency's responses to questions, concerns, and comments received during the comment period. These comments and concerns were considered prior to selection of the final remedial action to the Site. A complete copy of the Proposed Plan, Administrative Record, and other pertinent information are available at the Portage County Public Library, Charles M. White Library Building, 1001 Main Street, Stevens Point, Wisconsin.

EPA received one comment letter on the Proposed Plan, which is summarized below.

3.1 Stakeholder Issues and Lead Agency Responses

Comment 1: The use of institutional controls to limit use of the Site and prohibit soil excavation would harm the city of Stevens Point. The former MGP property is a vital part of the city's redevelopment plan for downtown Stevens Point, and it is unclear whether the land-use restrictions in the proposed remedy would impair the city's ability to promote redevelopment of the Site.

Response 1: Returning Superfund sites to beneficial re-use is an important factor in cleanups under CERCLA. The area comprising the Stevens Point MGP Site is zoned by the city of Stevens Point as commercial, central business, light industrial, or conservancy. These local zoning ordinances, along with the Site's location in the central business area, indicate that a soil remedy must protect persons who work and recreate on the Site, as well as construction workers whose activities may disturb the soil.

Under the selected remedy, institutional controls would limit the property to the uses specified above, and would prohibit the unauthorized excavation of soil. Construction work that disturbs soil, such as the construction of basements and foundations, land regrading, and installation of utilities, may occur. The institutional controls would require that it be done under a soil management plan that provides for proper soil handling and, if necessary, disposal.

In addition, planned structures may be required to test for toxic or flammable gases migrating underneath them, and if necessary, install a system to ensure that the gases do not accumulate in the subsurface. The location and design of the planned structure would determine whether this precaution is warranted. EPA has not discovered significant gas migration near current structures such that a mitigation system would be required.

FIGURES

Figure 1: WPSC Stevens Point MGP Location Map

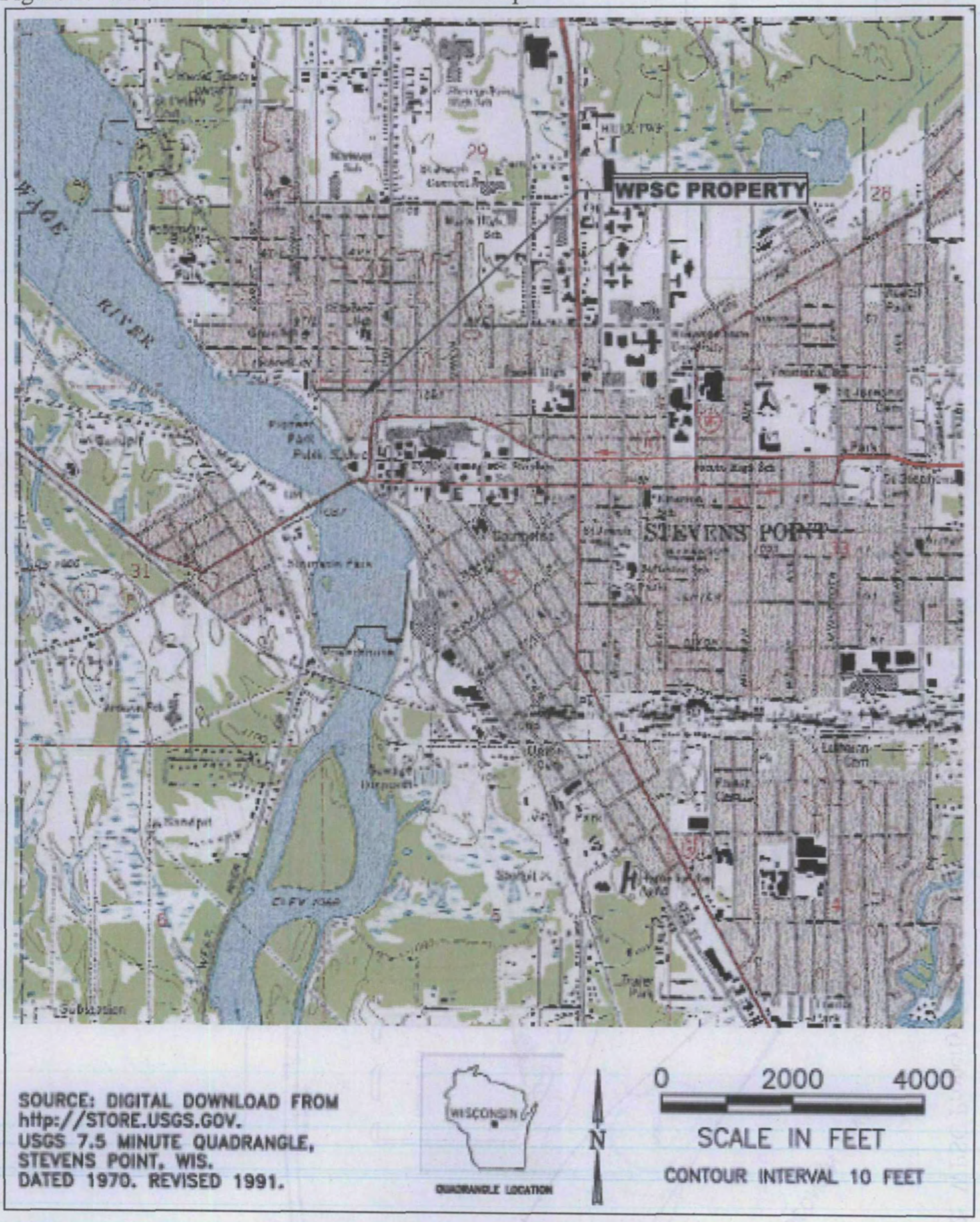


Figure 2: WPSC Property, Location of former MGP Structures, and Adjacent Properties

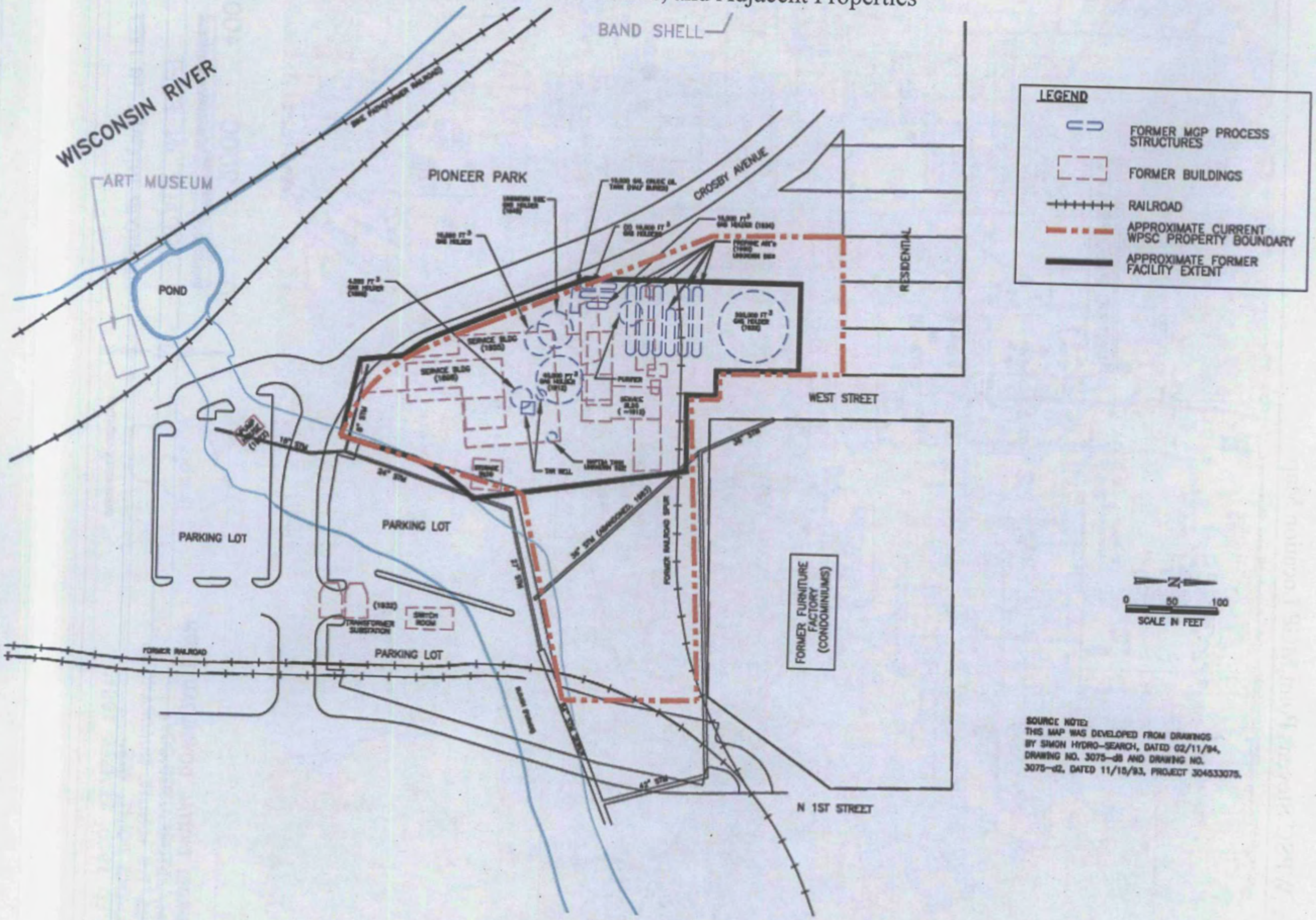


Figure 3: Area of Soil Institutional Controls

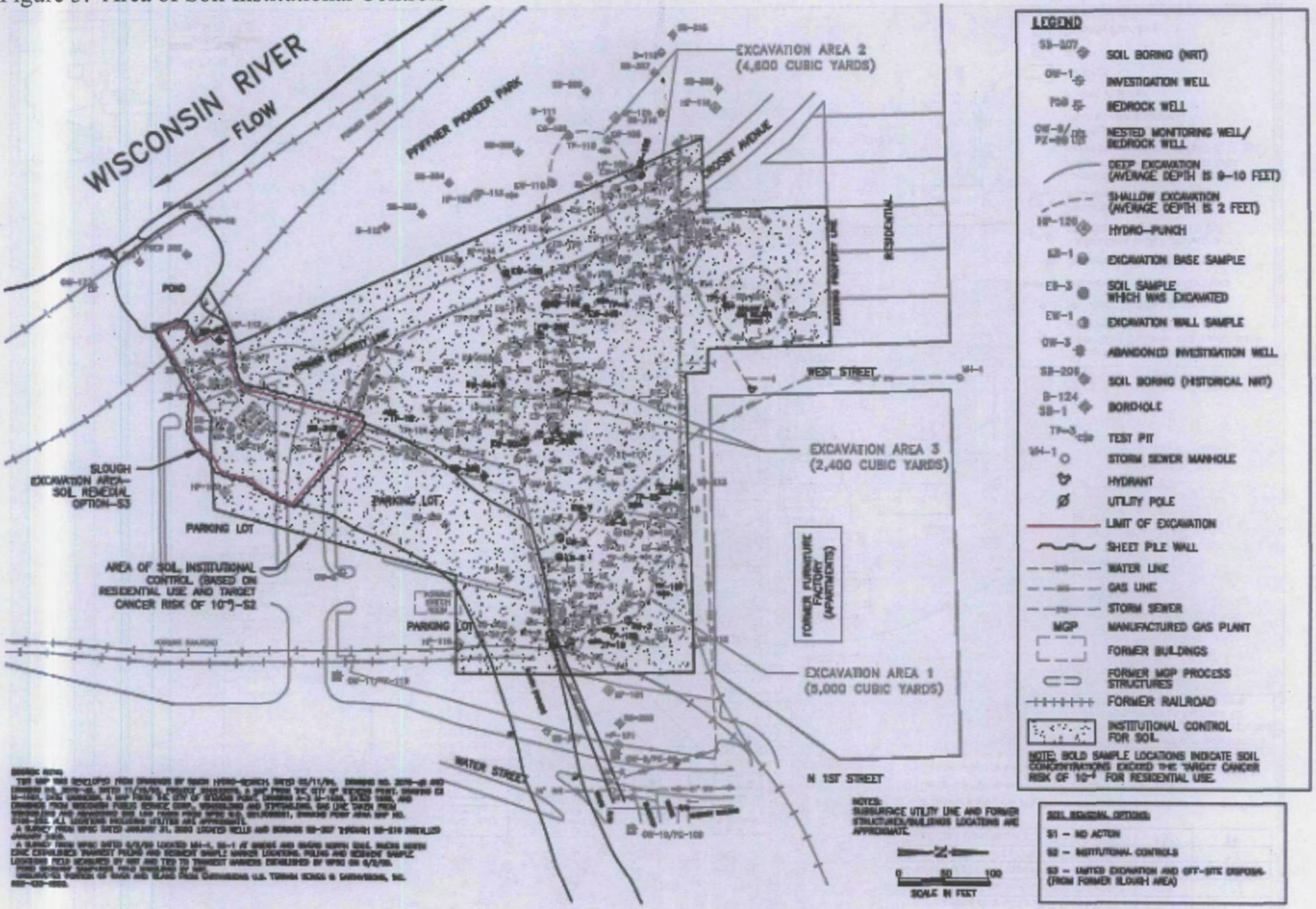


Figure 4: Area of Groundwater Institutional Controls

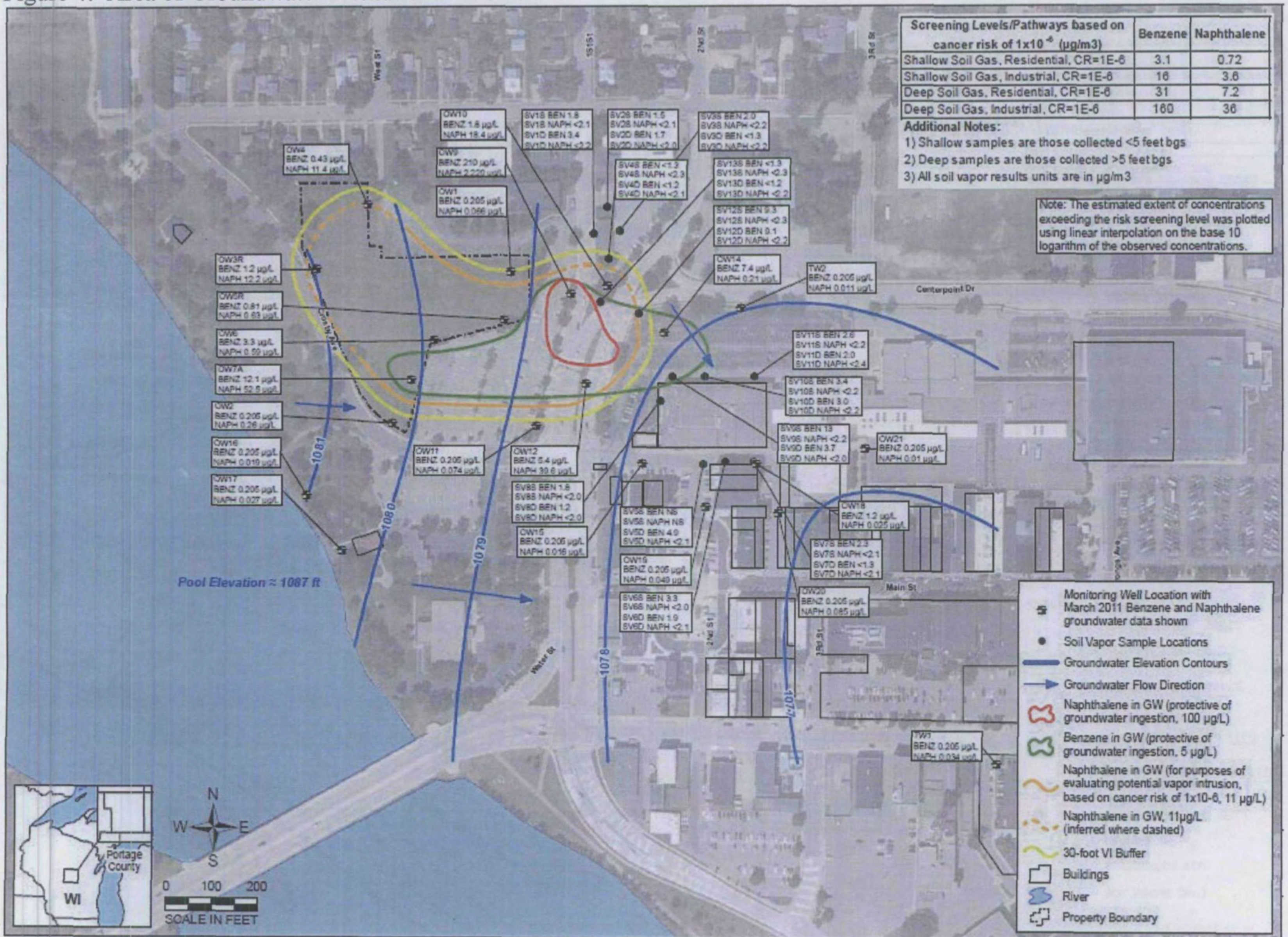
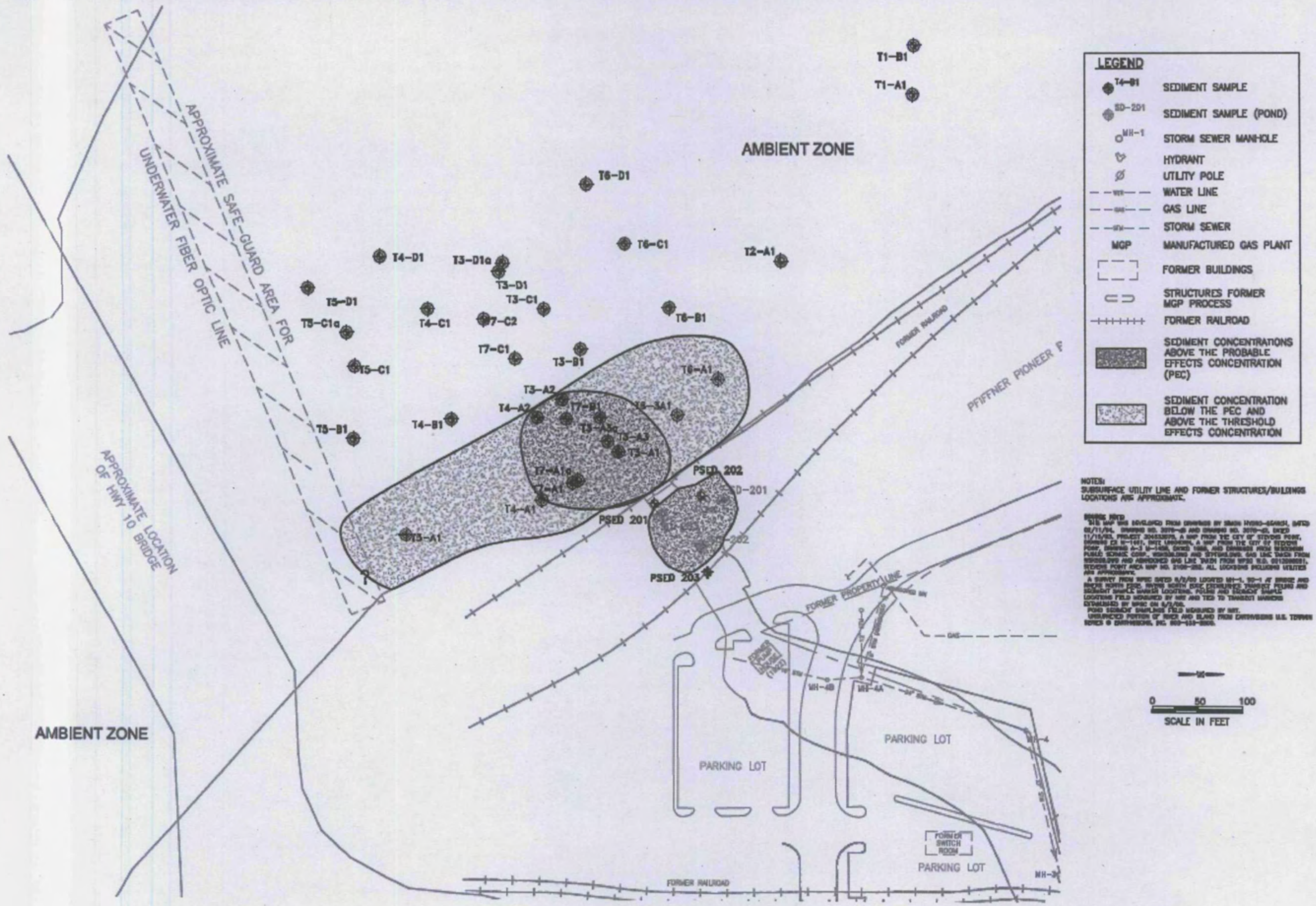


Figure 5: Areas of Contaminated Sediment above the Threshold Effects Concentration and Probable Effects Concentration



ATTACHMENT 1: ADMINISTRATIVE RECORD INDEX

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	10/00/01	State of Wisconsin	Public	Fact Sheet: Human Health Hazards: Former Manufactured Gas Plants (SDMS ID: 411400)	2
2	02/12/02	Horinko, M., U.S. EPA	Superfund National Policy Managers, Regions 1-10 and RCRA Senior Policy Advisors, Regions 1-10	Memorandum re: Principals for Managing Contaminated Sediment Risks at Hazardous Waste Sites (SDMS ID: 411399)	12
3	02/04/05	Natural Resource Technology	U.S. EPA	WPSC Sediment Site Summaries for Former Manufactured Gas Plant Sites (SDMS ID: 364683)	63
4	08/31/05	Natural Resource Technology	WPSC	Initial Data Summary Package for the Upland Portion of the Former Stevens Point MGP (SDMS ID: 406515)	91
5	05/05/06	U.S. EPA	WPSC	Settlement Agreement and Administrative Order on Consent for RI/FS at Six WPSC Manufactured Gas Plant Sites V-W-'06-C-847 (SDMS ID: 255950)	89
6	06/05/06	Natural Resource Technology	WPSC	Completion Report for the Former WPS Stevens Point MGP w/Attached Response to Agency Comments Dated August 7, 2006 with Errata or Minor Comments (SDMS ID: 411477)	306

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
7	08/07/06	Logan, M., U.S. EPA	Bartoszek, B., WPSC	Letter re: Draft Completion Report for the WPSC Stevens Point MGP Site w/Attached Agency Review Comments Dated June 5, 2006 (SDMS ID: 411407)	3
8	08/14/06	WDNR	File	Preliminary Assessment Report for the WPSC Stevens Point Investigation (SDMS ID: 267968)	415
9	10/19/06	WDNR	Logan, M., U.S. EPA	Memorandum re: General Comments on WPSC MGP Proposed Risk Assessment Framework and Conceptual Site Model (SDMS ID: 373390)	6
10	04/26/07	Natural Resource Technology	U.S. EPA	RI/FS Site Specific Work Plan for Stevens Point Former MGP Site, Revision 1(SDMS ID: 406516)	227
11	07/05/07	Hvizdak, T., WDNR	Logan, M., U.S. EPA	E-mail Message re: Comments to the Stevens Point Meeting Summary (SDMS ID: 411414)	2
12	07/11/07	Logan, M., U.S. EPA	Bartoszek, B., Integrys	Letter re: U.S. EPA Review of the RI/FS Site Specific Business Work Plan for the WPSC Support, Stevens Point MGP Site, LLC, Revision 1 (SDMS ID: 411408)	2
13	08/00/07	U.S. EPA	File	Community Involvement for the WPSC Stevens Point Manufactured Gas Plant Site (SDMS ID: 411412)	15

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
14	09/04/07	WDNR	U.S. EPA	WDNR Comments on the Mult-Site Field Sampling Plan – Revision 2 (SDMS ID: 373377)	3
15	09/05/07	Exponent	WPSC, Peoples Gas Light & Coke Company and North Shore Gas Company	Multi-Site Risk Assessment Framework for Former Manufactured Gas Plant Sites, Revision 0 (SDMS ID: 373362)	105
16	09/05/07	WDNR	File	WDNR Comments to Multi-Site Risk Assessment Framework – Revision 0 (SDMS ID: 373379)	1
17	12/20/07	Logan, M. & T. Prendiville, U.S. EPA	Bartoszek, B. & N. Prasad, Integrys Business Support, LLC	U.S. EPA Approval of Multi-Site Risk Assessment Framework for the Former Manufactured Gas Plant Sites w/Comments for Consideration as Site Specific Planning Takes Place (SDMS ID: 373368)	50
18	02/20/08	Bartoszek, B., Integrys Business Support, LLC	Logan, M. & T. Prendiville, U.S. EPA	Letter re: Summary of Re-Revisions to the Multi-Site Field Sampling Plan Revision 2 Dated September 4, 2007 (SDMS ID: 373367)	26
19	02/20/08	WDNR	File	WDNR Comments to the Multi-Site Field Sampling Plan, Revision 3 (SDMS ID: 373384)	1
20	01/08/09	Logan. M., U.S. EPA	Bartoszek, B., Integrys Business Support, LLC	Letter re: Draft Remedial Investigation Report for WPSC Stevens Point MGP w/Attached Agency Comments (SDMS ID: 411404)	5

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
21	04/30/09	Hvizdak, T., WDNR	Logan, M., U.S. EPA	E-mail Message re: Comments to the Draft FS Report for the WSPC Stevens Point MGP Site (SDMS ID: 411418)	3
22	03/05/10	Kahler, J. & S. Meyer, Natural Resource Technology,	Prasad, N. & B. Bartoszek, Integrys Business Support, LLC	Memorandum re: Supplemental RI Activities to be Performed to Complete Soil Vapor Assessments at the WSPC Stevens Point MGP Site (SDMS ID: 411401)	54
23	04/02/10	Lee, T., U.S. EPA	Prasad, N., Integrys Business Support, LLC	E-mail Message re: Tech Memo Describing Supplemental RI Activities at the WSPC Stevens Point MGP Site (SDMS ID: 411397)	2
24	04/27/10	Lee, T., U.S. EPA	Prasad, N., Integrys Business Support, LLC	Letter re: Response to U.S. EPA Comments on Remedial Investigation Report, Revision 0, June 5, 2008 for Stevens Point MGP Site (SDMS ID: 437041)	5
25	07/07/10	Lee, T., U.S. EPA	Prasad, N., Integrys Business Support, LLC	Letter re: U.S. EPA Comments on Feasibility Study Report, Revision 0, January 6, 2009 for WPSC Stevens Point MGP Site (SDMS ID: 411405)	12
26	08/09/10	Lee, T., U.S. EPA	Prasad, N., Integrys Business Support. LLC	Letter re: Response to Comments on Remedial Investigation Report, Revision 0, July 2, 2010 for the WPSC Stevens Point MGP Site (SDMS ID: 411402)	4

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
27	10/05/10	Kovatch, E. & J. Kahler, Natural Resource Technology	Lee, T., U.S. EPA	Letter re: Response to U.S. EPA's August 9, 2010 Comments on the Remedial Report , Revision 0) for WPSC Stevens Point Former MGP Site (SDMS ID: 411420)	5
28	11/08/10	Lee, T., U.S. EPA	Prasad, N., Integrys Business Support, LLC	Letter re: Response to U.S. EPA Comments on Feasibility Study Report Report, Revision 0, Jan. 6, 2009 for Stevens Point MGP Site (SDMS ID: 437042)	5
29	12/06/10	Lee, T., U.S. EPA	Prasad, N., Integrys Business Support, LLC	Letter re: Response to Integrys' Response to EPA Comments to Remedial In-vestigation Report, Re-vision 0, June 5, 2008 for the WPSC Stevens Point Former MGP Site (SDMS ID: 411403)	4
30	12/17/10			Dec. 17, 2010 Meeting Summary: Integrys business Support, LLC Manufactured Gas Plant Sites Vapor Intrusion Approach (SDMS ID: 437048)	2
31	12/22/10	Kovatch, E. & J. Kahler, Natural Resource Technology	Lee, T., U.S. EPA	Letter re: Response to U.S. EPA's July 7 & November 8, 2010 Comments on Feasibility Study Re-port, Revision 0, for the WPSC Stevens Point MGP Site (SDMS ID: 411419)	21
32	04/20/11	Prasad, N., Integrys Energy Group, Inc.	del Rosaria, R., L. Patterson & S. Sullivan, U.S. EPA	Letter re: Multi-Site Risk Assessment Frame-work Addendum – Former Manufactured Gas Plant Sites (SDMS ID: 437049)	26

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33	08/01/11	Hvizdak, T., WDNR	Patterson, L., U.S. EPA	E-mail Message re: WDNR RI/FS Comments for the Stevens Point MGP Site (SDMS ID: 437050)	3
34	08/18/11	Patterson, L., U.S. EPA	Hvizdak, T., WDNR	E-mail Message re: ARARs WI ARARs and the Remedial Alternatives for the Stevens Point MFG Plant Site (SDMS ID: 437054)	2
35	09/09/11	Lee, T., U.S. EPA	Prasad, N., Integrys Business Support, LLC	Letter re: U.S. EPA Com- on Revision 1 of Remedial Investigation/Feasibility Study Reports Submitted in May 2011 (SDMS ID: 437043)	10
36	11/04/11	Gustavson, K., U.S. Army Corps Of Engineers	Patterson, L., U.S. EPA	Memorandum re: Evaluation of the Feasibility Study Comparison of Sediment Remedies at the Stevens Point Former MGP Site (SDMS ID: 437053)	6
37	03/02/12	Patterson, L., U.S. EPA	Prasad, N., Integrys Business Support, LLC	Letter re: Additional U.S. EPA Comments on Re-vision 2 of the Remedial Investigation/Feasibility Study Reports Submitted in December 20011 and Figures Submitted on February 29, 2012 (SDMS ID: 437044)	2
38	03/07/12	Fitzpatrick, W., WDNR	Hvizdak, T., WDNR	E-mail Message re: Comments to the RI/FS for the Stevens Point MFG Plant Site (SDMS ID: 437051)	2

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39	04/17/12	Natural Resource Technology	Integrys Business Support	Remedial Investigation Report (Rev. 3) for WPSC Stevens Point Manufactured Gas Plant Site (SDMS ID: 437029)	3986
40	04/17/12	Natural Resource Technology	Integrys Business Support	Feasibility Study Report (Rev. 3) for WPSC Stevens Point Manufactured Gas Plant Site (SDMS ID: 437030)	1089
41	05/01/12	Patterson, L., U.S. EPA	Prasad, N., Integrys Business Support, LLC	Letter re: U.S. EPA Approval of April 17, 2012 Remedial Investigation/ Feasibility Study Reports, Revision 3 for WPSC Stevens Point Former MGP Site (SDMS ID: 437045)	1
42	05/08/12	Fitzpatrick, W., WDNR	Hvizdak, T., WDNR	E-mail Message re: WPSC Stevens Point Remedy, River Sediments Issue w/Reply History (SDMS ID: 437046)	2
43	05/09/12	Fitzpatrick, W., WDNR	Patterson, L., U.S. EPA	E-mail Message re: WPSC Stevens Point Remedy, Backfill & Obligations w/Reply History (SDMS ID: 437047)	2
44	06/05/12	Hvizdak, T., WDNR	Patterson, L., U.S. EPA	E-mail re: Transmittal of WDNR Comments to U.S. EPA Proposed Remedial Action Plan (SDMS ID: 437052)	2
45	06/00/12	U.S. EPA	Public	U.S. EPA Fact Sheet: EPA Proposes Cleanup Plan, Seeks Public Comments (SDMS ID: 437056)	6

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46	06/00/12	U.S. EPA		Proposed Plan for the WPSC Stevens Point Former Manufactured Gas Plant Site (SDMS ID: 437057)	28
47	07/23/12	Ostrowski, M., City of Stevens Point	U.S. EPA	Public Comment Sheet re: City of Stevens Point Comments on the Proposed Plan for the WPSC Stevens Point Manufactured Gas Plant Site	

ATTACHMENT 2: STATE LETTER OF CONCURRENCE

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

WISCONSIN DEPT. OF NATURAL RESOURCES

September 20, 2012

Mr. Richard C. Karl, Director
Superfund Division
U.S. EPA Region 5 S-6J
77 W. Jackson Blvd.
Chicago IL 60604

Subject: Concurrence on the Record of Decision
WPSC Stevens Point Superfund Alternatives Site
Stevens Point, Portage County, Wisconsin
FID No. 750081200
BRRTS No. 02-50-000079

Dear Mr. Karl:

This letter is provided by the Wisconsin Department of Natural Resources (WDNR) to document the State's concurrence with the September 2012 Record of Decision (ROD) for the WPSC Stevens Point Superfund Alternative Site. We believe the remedy selected in the ROD is consistent with the requirements of Wisconsin statutes and administrative rules and is protective of human health and the environment for the soil, groundwater, vapor and sediment pathways.

Thank you for your support and cooperation in addressing the contamination at the WPSC Stevens Point Superfund Alternative Site. Please feel free to contact me at (608)267-7562, Bill Evans at (715) 839-3710, or Tom Hvizdak at (715) 421-7850 if you have any questions.

Sincerely,

Mark F. Giesfeldt, P.E., Director
Remediation and redevelopment Bureau

Cc: Tom Hvizdak – WCR
Leslie Patterson – U.S. EPA Region 5
Mark Gordon – RR/5
Bill Evans - WCR