

ASHLAND/NSP LAKEFRONT SITE
JUNE 15, 2005 PROGRESS REPORT (No. 19)
WDNR BRRTS #02-02-00013
CERCLA Docket No. V-W-04-C-764
USEPA ID# WISFN057952

This is the nineteenth progress report prepared in accordance with the Administrative Order on Consent (AOC) for the Ashland/NSP Lakefront Site, effective November 14, 2003. This report covers activities completed in May 2005. It is intended to meet the requirements described in Task 8 of the Statement of Work appended to the AOC.

Field Activities Completed

The reconnaissance sampling for sediments and related hydrographic activities was completed May 9 – 13, 2005. This work accomplished the following:

- 1) Preliminary sampling of Site Sediment Quality Triad (SQT) stations to verify concentrations of total polycyclic aromatic hydrocarbons (PAHs) and finalize station selection;
- 2) Identification of reference stations for SQT investigation; and
- 3) Placement of in situ Acoustic Doppler Current Profiler (ADCP) and velocimeter and turbidimeter to collect vertical profiles of wave and current speeds, wave heights and suspended sediments.
- 4) Completion of the site re-survey by Coleman

Findings of the work are as follows:

- A mobile laboratory was on site during the sampling to provide real time data for PAH values. Select samples were also sent to a permanent lab for confirmation of the mobile lab results, as well as analyses for inorganic parameters and other analytes. Samples were analyzed for the approved list of PAHs and inorganics; PCBs and pesticides were added to confirm any interference conditions.
- Reconnaissance of the affected area found most samples in the range of 2-10 mg/kg total PAHs; three samples yielded total PAHs 50-100 mg/kg, and one sample >100 mg/kg. A video survey identified wood debris covering 75 percent of the entire affected area, confirming earlier studies.
- Reference samples were collected from several areas from Oak Point to Bayfield. The presence/absence of sand and wood were documented. Samples were collected in water depths of 6-15 feet, although most were in the 7-9 feet range. Sample locations selected for the primary sediment sampling program to be conducted later this summer include station 2 (west of the Bayfront Power Plant), station 4 (near Washburn) station 8 (about 3,000 feet from the mouth of Fish Creek), and station 10 (near Bayfield).
- A significant storm event occurred May 11-12. Instrument data will be analyzed for this event when the ADCP is retrieved during the summer sampling program.

A summary of the analytical findings from the reconnaissance sampling is included in Tables 1 – 3 and Appendix A.

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The free product recovery system operated throughout May. One measured automatic shutdown was recorded on May 17, 2005. A high level alarm in the sump tank had triggered the shutdown. The sump level switches were checked and the system restarted. It was operated the remainder of the month without incident.

Coal tar recovery during May declined significantly from the previous month. A total of 18.4 gallons were recovered between May 3 and June 2, 2005, most of which consisted of floating product collected from the bubbler collection barrel placed downstream of the oil water separator. It was previously reported that Coleman had increased cycling frequencies in an attempt to increase tar recovery compared to the volume of water and emulsified product. As an additional measure, the DNAPL transfer pump was shutdown in late April to visually monitor free-product in the oil water separator. The observations made during the subsequent visits in May showed very little product accumulating in the separator; material that was collected was transferred to the DNAPL tank during the site visits.

As discussed during previous reports, this decline likely indicates that the tar recovery wells screened in the Copper Falls aquifer have essentially reached the "peak" of production of the mobile fraction in the respective capture zone for each well. The system continues to capture groundwater and treat it prior to discharge to the sanitary sewer. With regard to EW-4 at the head of the ravine, this is an essential function. We will continue to monitor tar recovery for the next few months before recommending any major system revisions.

The water treatment system continued to operate at optimum conditions, removing contaminants to below regulatory thresholds before discharge. However, the air treatment system shows anomalous disparities between the air stripper and the effluent discharge. The air stripper yielded no detections compared to the first stage carbon and the effluent, which yielded increasing contaminant levels. This is curious because the vapor phase carbon was recently replaced. It may have been a transcription error; another month of data will be collected before any adjustments are made.

A summary of the system monitoring data is included in Tables 7 – 11. Lab analysis reports for the system monitoring are included in Appendix B.

Further work on the detailed site survey was also performed in May.

Reporting Activities Completed

This report includes the vapor probe results for the recollected samples from Probe VP-10 and the indoor sample, both from inside the NSPW service center, along with another upwind sample for comparison. These indoor samples were recollected because an incorrect sampling procedure was followed for the original sampling performed during

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March. Table 6 shows the tabulated data, and Appendix C includes the laboratory forms. The sample from VP-10 includes essentially the same compounds collected previously from the network (aromatics likely originating from the site, as well as freon compounds common to the analysis method). However, the indoor air sample also measured low detections of chlorinated compounds (TCE, carbon tetrachloride¹, 1,1,1-TCA), not characteristic of site contaminants. It is possible these originate from a solvent source local to the building.

This report also includes the laboratory data from the smelt analyses. Samples were collected the evening of April 20, 2005 during the migratory smelt run. Reference samples were collected offshore from Pamida Beach and the Americinn Inn via fyke nets; samples were collected from the affected area via an electroshock boat. A physical summary of the collected specimens from each site is included in Table 4. A summary of the analyses for each sample is included in Table 5. Laboratory Reporting Forms are included in Appendix D.

In general, the data shows that samples collected from the reference areas yielded total PAHs for ecological risk 1½ - 2 times higher than for human health risk (ecological risk samples analyzed the whole fish, while human health samples were restricted to fillets only). Total PAHs for human health ranged from about 70 – 150 mg/kg PAHs, while samples for ecological risk ranged from 110 – 220 mg/kg total PAHs. The samples from Pamida Beach were slightly higher than those collected from the Americinn Inn.

Samples from the affected area were higher but more comparable for each risk analysis method. Samples for ecological risk ranged from approximately 350 – 680 mg/kg total PAHs, while samples for human health ranged from about 285 – 1150 mg/kg total PAHs. Note that one sample for human health yielded 1154 mg/kg, and one sample yielded 761 mg/kg total PAHs. The remainder of the human health samples yielded values in the 400 – 500 mg/kg range, while the majority of the ecological risk samples yielded values in the 500 – 700 mg/kg range.

On May 26, 2005, representatives of USEPA, WDNR, NOAA, the Bad River and Red Cliff tribes and NSPW met in Ashland to discuss the results of the reconnaissance sampling, and discuss future planned sampling efforts. The information described earlier was presented, as well as a discussion of the fish species targeted for collection. The consensus on species collection was as follows:

- Pelagic
 - Walleye
 - Yellow perch
 - Smallmouth bass

¹ Carbon tetrachloride was also measured in the VP-10 sample.

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- Demersal (bottom)
 - Longnose sucker
 - White sucker
 - Brown bullhead

It was decided that if these are not found in sufficient abundance, alternative species would be gathered.

At the May 26th meeting, NSPW indicated that a QAPP addendum including a proposal for lake bottom surveys and details on the bioassay analyses for the sediment sampling program would be submitted within the following week. NSPW requested that USEPA attempt to provide a review of the QAPP Addendum in a timely a manner as possible to meet the planned June sampling schedule.

The meeting also discussed future sampling activities for the upland areas. These included the test pit investigation and issues associated with free-product migration and well abandonment/well replacement at well nest MW-4. WDNR indicated it would work with the City of Ashland to resolve access issues for the test pit program. This work had been delayed because boats remained in dry dock on the west side of Kreher Park prohibiting access. The agencies also indicated they would convene an internal discussion with regard to the well nest issue within the following week.

Field Activities Planned

The test pit sampling program is scheduled to be initiated the week of June 6th; it should be complete the week of June 13, 2005. At the time of this report, this work was nearing completion. Additionally, this mobilization will include the installation of diffusion bag samplers to aid in the evaluation of contaminant migration.

The sediment and fish sampling programs are scheduled to begin the week of June 13th, and should be concluded the week of June 20, 2005. Work to be performed includes the retrieval of the ADCP meter; collection of sediment samples from selected reference stations; collection of sediment quality triad samples; core samples for sediment stability analysis; collection of fish samples; collection of surface water samples; completion of a wetland and wildlife survey, and completion of a UV light profile study.

Coleman Engineering will continue to monitor the tar removal system on a weekly basis during June 2005. Coleman will also assist with the repair of a cracked well casing at the MW-23 well nest.

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Reporting Activities Planned

The test pit investigation performed during the week of June 6th uncovered a clay tile pipe west of the MW-23 well nest containing coal tar/free-product. Because of this finding, NSPW will be submitting a Work Plan Addendum in the near future to investigate this clay tile, and potentially other features identified during the test pit program.

At the time of this report, USEPA indicated it was in the process of reviewing the QAPP Addendum for the sediment sampling program.

This report also includes the latest EDMAN data package of validated data for the March 2005 groundwater samples, and the March, April and May interim system data.

Attachments:

- Table 1 - May 2005 Sediment Reconnaissance Results - Inorganics
- Table 2 - May 2005 Sediment Reconnaissance Results – PAHs
- Table 3 - May 2005 Sediment Reconnaissance Results – Surface Water
- Table 4 - April 2005 Rainbow Smelt Composite Sample Summary
- Table 5 - April 2005 Rainbow Smelt Sample Results - PAHs
- Table 6 - April 2005 Vapor Probe Air Results - VOCs
- Table 7 - Remediation System Water Quality Monitoring Results
- Table 8 - Remediation System Air Monitoring Results
- Table 9 - Summary of Coal Tar and Groundwater Volume Removed
- Table 10 - Interim Treatment System – Air Treatment Summary
- Table 11 - Interim Treatment System – Water Treatment Summary

Cover letter to Doug Zamastil

- Appendix A – May 2005 Reconnaissance Sampling - Laboratory Reporting Forms
- Appendix B – Interim Treatment System - Laboratory Reporting Forms
- Appendix C – April 2005 Air Sampling – Laboratory Reporting Forms
- Appendix D – April 2005 Smelt Sampling Summary – Laboratory Reporting Forms.

Table 1
May 2005 Sediment Recon Results - Inorganics
Draft - Unvalidated Data
Northern States Power, Ashland, Wisconsin

Analyte	Units	LOD	LOQ	NSP-SE-1-9A-0505	NSP-SE-1-13A-0505	NSP-SE-1-15C-0505	NSP-SE-21-1C-0505	NSP-SE-24-1A-0505
Solids, percent	%	0.1		26.2	70.3	33.7	54.1	53.4
ALUMINUM	mg/kg	11	40	NA	NA	NA	5500	8100
ANTIMONY	mg/kg	1.5	5.2	NA	NA	NA	0 U	1.5 J
ARSENIC	mg/kg	1.2	4.1	NA	NA	NA	3.9 J	2.2 J
BARIUM	mg/kg	0.25	0.51	NA	NA	NA	45	44
BERYLLIUM	mg/kg	0.25	0.89	NA	NA	NA	0.22	0.084 J
CADMIUM	mg/kg	0.38	1.4	NA	NA	NA	0 U	0 U
CALCIUM	mg/kg	76	150	NA	NA	NA	2500	4900
Chromium (III)	mg/kg	0.76	1.5	NA	NA	NA	14	18
Chromium (VI)	mg/kg	0.27		NA	NA	NA	0 U	0.32
CHROMIUM	mg/kg	0.76	2.7	NA	NA	NA	14	18
COBALT	mg/kg	0.71	2.5	NA	NA	NA	7	7.9
COPPER	mg/kg	0.3	1.1	NA	NA	NA	84	23
IRON	mg/kg	14	53	NA	NA	NA	14000	15000
LEAD	mg/kg	8.2	30	NA	NA	NA	25 J	31 J
MAGNESIUM	mg/kg	76	150	NA	NA	NA	2000	4300
MANGANESE	mg/kg	0.17	0.51	NA	NA	NA	120	180
MERCURY	mg/kg	0.073	0.26	NA	NA	NA	0 U	0 U
NICKEL	mg/kg	1.8	6.4	NA	NA	NA	16	17
POTASSIUM	mg/kg	18	67	NA	NA	NA	590	1100.0
SELENIUM	mg/kg	1.4	4.7	NA	NA	NA	0 U	0 U
SILVER	mg/kg	0.74	2.6	NA	NA	NA	0 U	0 U
SODIUM	mg/kg	1.7	6.1	NA	NA	NA	98	100
THALLIUM	mg/kg	1.7	6.2	NA	NA	NA	0 U	0 U
VANADIUM	mg/kg	0.44	1.6	NA	NA	NA	37	43
ZINC	mg/kg	0.34	1	NA	NA	NA	48	57
Pesticides & PCBs								
Aldrin	ug/kg	0.48	1.5	NA	NA	NA	0 U	0 U
alpha-BHC	ug/kg	0.28	0.89	NA	NA	NA	0 U	0 U
beta-BHC	ug/kg	0.53	1.7	NA	NA	NA	0 U	0 U
delta-BHC	ug/kg	0.25	0.81	NA	NA	NA	0 U	0 U
Lindane	ug/kg	0.37	1.2	NA	NA	NA	0 U	0 U
Chlordane	ug/kg	0.64	2.1	NA	NA	NA	0 U	0 U
4,4'-DDD	ug/kg	0.41	1.3	NA	NA	NA	0 U	0 U
4,4'-DDE	ug/kg	0.45	1.4	NA	NA	NA	0 U	0 U
4,4'-DDT	ug/kg	0.64	2	NA	NA	NA	0 U	0 U
Dieldrin	ug/kg	0.38	1.2	NA	NA	NA	0 U	0 U
Endosulfan I	ug/kg	0.51	1.6	NA	NA	NA	0 U	0 U
Endosulfan II	ug/kg	0.4	1.2	NA	NA	NA	0 U	0 U
Endosulfan Sulfate	ug/kg	0.33	1	NA	NA	NA	0 U	0 U
Endrin	ug/kg	0.33	1.1	NA	NA	NA	0 U	0 U
Endrin Aldehyde	ug/kg	0.48	1.5	NA	NA	NA	0 U	0 U
Heptachlor	ug/kg	0.43	1.4	NA	NA	NA	0 U	0 U
Heptachlor Epoxide	ug/kg	0.42	1.3	NA	NA	NA	0 U	0 U
Methoxychlor	ug/kg	0.77	2.5	NA	NA	NA	0 U	0 U
Toxaphene	ug/kg	18.9	63	NA	NA	NA	0 U	0 U
Aroclor-1016	ug/kg	4.3	14.4	NA	NA	NA	0 U	0 U
Aroclor-1221	ug/kg	12.6	40.2	NA	NA	NA	0 U	0 U
Aroclor-1232	ug/kg	3.1	10.5	NA	NA	NA	0 U	0 U
Aroclor-1242	ug/kg	5.5	18.2	NA	NA	NA	0 U	0 U
Aroclor-1248	ug/kg	3.3	11	NA	NA	NA	0 U	0 U
Aroclor-1254	ug/kg	2.1	6.6	NA	NA	NA	0 U	0 U
Aroclor-1260	ug/kg	4.1	13.7	NA	NA	NA	0 U	0 U
Total PCBs	ug/kg	4.3	14.4	NA	NA	NA	0 U	0 U

NA = not analyzed
LOD = limit of detection, LOQ = limit of quantitation
U = not detected, J = detected between LOD and LOQ
Detected values are shown in bold face

Table 1
May 2005 Sediment Recon Results - Inorganics
Draft - Unvalidated Data
Northern States Power, Ashland, Wisconsin

Analyte	Units	LOD	LOQ	NSP-SE-8-1C-0505	NSP-SE-22-2B-0505	NSP-SE-20-1B-0505	NSP-SE-23-1B-0505	NSP-SE-11-1C-0505
Solids, percent	%	0.1		62.3	45.9	76.6	50.5	73.2
ALUMINUM	mg/kg	11	40	4200	6500	1100	4700	540
ANTIMONY	mg/kg	1.5	5.2	0 U	0 U	1.6 J	1.8 J	0 U
ARSENIC	mg/kg	1.2	4.1	1.8 J	5.1 J	1.0 J	3.3 J	0 U
BARIUM	mg/kg	0.25	0.51	26	47	7.4	36	5.2
BERYLLIUM	mg/kg	0.25	0.89	0 U	0.13 J	0.099 J	0.25	0.045 J
CADMIUM	mg/kg	0.38	1.4	0 U	0 U	0 U	0 U	0 U
CALCIUM	mg/kg	76	150	2100	3300	570	3100	270
Chromium (III)	mg/kg	0.76	1.5	12	16	3.6	13	1.2 J
Chromium (VI)	mg/kg	0.27		0 U	0 U	0 U	0 U	0 U
CHROMIUM	mg/kg	0.76	2.7	12	16	3.6	13	1.2 J
COBALT	mg/kg	0.71	2.5	4.4	7.2	1.7 J	5.7	0.96 J
COPPER	mg/kg	0.3	1.1	7.1	270	1.7	120	1.1
IRON	mg/kg	14	53	11000	13000	4400	10000	2200
LEAD	mg/kg	8.2	30	7.8 J	32 J	0 U	21 J	0 U
MAGNESIUM	mg/kg	76	150	1800	2800.0	440	2100	230
MANGANESE	mg/kg	0.17	0.51	130	120	40	120	20
MERCURY	mg/kg	0.073	0.26	0 U	0 U	0 U	0.15 J	0 U
NICKEL	mg/kg	1.8	6.4	7.6	15	1.3 J	11	0 U
POTASSIUM	mg/kg	18	67	500	820	120	610	60.0
SELENIUM	mg/kg	1.4	4.7	0 U	0 U	0 U	0 U	0 U
SILVER	mg/kg	0.74	2.6	0 U	0 U	0 U	0 U	0 U
SODIUM	mg/kg	1.7	6.1	110	100	31	120	22
THALLIUM	mg/kg	1.7	6.2	0 U	0 U	0 U	0 U	0 U
VANADIUM	mg/kg	0.44	1.6	30	37	12	28	5.2
ZINC	mg/kg	0.34	1	24	60	6.6	54	3.6
Pesticides & PCBs								
Aldrin	ug/kg	0.48	1.5	0 U	0 U	0 U	0 U	0 U
alpha-BHC	ug/kg	0.28	0.89	1.8	0 U	2.0	0 U	4.1
beta-BHC	ug/kg	0.53	1.7	0 U	0 U	0 U	0 U	0 U
delta-BHC	ug/kg	0.25	0.81	0 U	0 U	0 U	0 U	0 U
Lindane	ug/kg	0.37	1.2	0 U	0 U	1.2	0 U	1.6
Chlordane	ug/kg	0.64	2.1	0 U	0 U	0 U	0 U	0 U
4,4'-DDD	ug/kg	0.41	1.3	0 U	0 U	0 U	0 U	0 U
4,4'-DDE	ug/kg	0.45	1.4	0 U	0 U	0 U	0 U	0 U
4,4'-DDT	ug/kg	0.64	2	0 U	0 U	0 U	0 U	0 U
Dieldrin	ug/kg	0.38	1.2	0 U	0 U	0 U	0 U	0 U
Endosulfan I	ug/kg	0.51	1.6	0 U	0 U	0 U	0 U	0 U
Endosulfan II	ug/kg	0.4	1.2	0 U	0 U	0 U	0 U	0 U
Endosulfan Sulfate	ug/kg	0.33	1	0 U	0 U	0 U	0 U	0 U
Endrin	ug/kg	0.33	1.1	0 U	0 U	0 U	0 U	0 U
Endrin Aldehyde	ug/kg	0.48	1.5	0 U	0 U	0 U	0 U	0 U
Heptachlor	ug/kg	0.43	1.4	0 U	0 U	0 U	0 U	0 U
Heptachlor Epoxide	ug/kg	0.42	1.3	0 U	0 U	0 U	0 U	0 U
Methoxychlor	ug/kg	0.77	2.5	0 U	0 U	0 U	0 U	0 U
Toxaphene	ug/kg	18.9	63	0 U	0 U	0 U	0 U	0 U
Aroclor-1016	ug/kg	4.3	14.4	0 U	0 U	0 U	0 U	0 U
Aroclor-1221	ug/kg	12.6	40.2	0 U	0 U	0 U	0 U	0 U
Aroclor-1232	ug/kg	3.1	10.5	0 U	0 U	0 U	0 U	0 U
Aroclor-1242	ug/kg	5.5	18.2	0 U	0 U	0 U	0 U	0 U
Aroclor-1248	ug/kg	3.3	11	0 U	0 U	0 U	0 U	0 U
Aroclor-1254	ug/kg	2.1	6.6	0 U	0 U	0 U	0 U	0 U
Aroclor-1260	ug/kg	4.1	13.7	0 U	0 U	0 U	0 U	0 U
Total PCBs	ug/kg	4.3	14.4	0 U	0 U	0 U	0 U	0 U

NA = not analyzed
LOD = limit of detection, LOQ = limit of quantitation
U = not detected, J = detected between LOD and LOQ
Detected values are shown in bold face

Table 1
May 2005 Sediment Recon Results - Inorganics
Draft - Unvalidated Data
Northern States Power, Ashland, Wisconsin

Analyte	Units	LOD	LOQ	NSP-SE-2-2B-0505	NSP-SE-9-1B-0505	NSP-SE-26-1A-0505	NSP-SE-10-2C-0505	NSP-SE-10-1A-0505
Solids, percent	%	0.1		63.2	65.9	72.6	69.8	68.5
ALUMINUM	mg/kg	11	40	2300	3500	720	1400	1300
ANTIMONY	mg/kg	1.5	5.2	1.6 J	0 U	0 U	2.1 J	1.6 J
ARSENIC	mg/kg	1.2	4.1	1.8 J	1.9 J	1.9 J	0 U	0 U
BARIUM	mg/kg	0.25	0.51	18	18	4.2	11	11
BERYLLIUM	mg/kg	0.25	0.89	0.044 J	0 U	0.097 J	0.19	0.051 J
CADMIUM	mg/kg	0.38	1.4	0 U	0 U	0 U	0 U	0 U
CALCIUM	mg/kg	76	150	2200	1900	390	690	940
Chromium (III)	mg/kg	0.76	1.5	8.6	10	2.2	52	3.6
Chromium (VI)	mg/kg	0.27		0 U	0 U	0 U	0 U	0 U
CHROMIUM	mg/kg	0.76	2.7	8.6	10	2.2	5.2	3.6
COBALT	mg/kg	0.71	2.5	3.2	3.5	1.1 J	1.3 J	1.9
COPPER	mg/kg	0.3	1.1	7.9	6.0	1.2	3.7	4.7
IRON	mg/kg	14	53	8700	10000	4000	4100	5800
LEAD	mg/kg	8.2	30	0 U	5.8 J	0 U	0 U	21 J
MAGNESIUM	mg/kg	76	150	990	1600.0	360	540	620
MANGANESE	mg/kg	0.17	0.51	110	100	33	37	70
MERCURY	mg/kg	0.073	0.26	0 U	0 U	0 U	0 U	0 U
NICKEL	mg/kg	1.8	6.4	4.4 J	6.9	1.5 J	2.0 J	2.5 J
POTASSIUM	mg/kg	18	67	300	430	69	190	160.0
SELENIUM	mg/kg	1.4	4.7	0 U	0 U	0 U	0 U	0 U
SILVER	mg/kg	0.74	2.6	0 U	0 U	0 U	0 U	0 U
SODIUM	mg/kg	1.7	6.1	53	53	28	38	49
THALLIUM	mg/kg	1.7	6.2	0 U	0 U	0 U	0 U	0 U
VANADIUM	mg/kg	0.44	1.6	23	26	11	12	13
ZINC	mg/kg	0.34	1	17	19	7.3	13	21
Pesticides & PCBs								
Aldrin	ug/kg	0.48	1.5	0 U	0 U	0 U	0 U	0 U
alpha-BHC	ug/kg	0.28	0.89	1.9	35	0 U	4.6	0 U
beta-BHC	ug/kg	0.53	1.7	0 U	0 U	0 U	0 U	0 U
delta-BHC	ug/kg	0.25	0.81	0 U	0 U	0 U	0 U	0 U
Lindane	ug/kg	0.37	1.2	3.9	11	0 U	0 U	0 U
Chlordane	ug/kg	0.64	2.1	0 U	0 U	0 U	0 U	0 U
4,4'-DDD	ug/kg	0.41	1.3	0 U	0 U	0 U	0 U	0 U
4,4'-DDE	ug/kg	0.45	1.4	0 U	0 U	0 U	0 U	0 U
4,4'-DDT	ug/kg	0.64	2	0 U	0 U	0 U	0 U	0 U
Dieldrin	ug/kg	0.38	1.2	0 U	0 U	0 U	0 U	0 U
Endosulfan I	ug/kg	0.51	1.6	0 U	0 U	0 U	0 U	0 U
Endosulfan II	ug/kg	0.4	1.2	0 U	0 U	0 U	0 U	0 U
Endosulfan Sulfate	ug/kg	0.33	1	0 U	0 U	0 U	0 U	0 U
Endrin	ug/kg	0.33	1.1	0 U	0 U	0 U	0 U	0 U
Endrin Aldehyde	ug/kg	0.48	1.5	0 U	0 U	0 U	0 U	0 U
Heptachlor	ug/kg	0.43	1.4	0.95 J	1 J	0 U	0 U	0 U
Heptachlor Epoxide	ug/kg	0.42	1.3	0 U	0 U	0 U	0 U	0 U
Methoxychlor	ug/kg	0.77	2.5	0 U	0 U	0 U	0 U	0 U
Toxaphene	ug/kg	18.9	63	0 U	0 U	0 U	0 U	0 U
Aroclor-1016	ug/kg	4.3	14.4	0 U	0 U	0 U	0 U	0 U
Aroclor-1221	ug/kg	12.6	40.2	0 U	0 U	0 U	0 U	0 U
Aroclor-1232	ug/kg	3.1	10.5	0 U	0 U	0 U	0 U	0 U
Aroclor-1242	ug/kg	5.5	18.2	0 U	0 U	0 U	0 U	0 U
Aroclor-1248	ug/kg	3.3	11	0 U	0 U	0 U	0 U	0 U
Aroclor-1254	ug/kg	2.1	6.6	0 U	0 U	0 U	0 U	0 U
Aroclor-1260	ug/kg	4.1	13.7	0 U	0 U	0 U	0 U	0 U
Total PCBs	ug/kg	4.3	14.4	0 U	0 U	0 U	0 U	0 U

NA = not analyzed

LOD = limit of detection, LOQ = limit of quantitation

U = not detected, J = detected between LOD and LOQ

Detected values are shown in bold face

Table 1
May 2005 Sediment Recon Results - Inorganics
Draft - Unvalidated Data
Northern States Power, Ashland, Wisconsin

Analyte	Units	LOD	LOQ	NSP-SE-5-2A-0505	NSP-SE-13-1A-0505	NSP-SE-15-1A-0505	NSP-SE-4-1A-0505	NSP-SE-25-1A-0505
Solids, percent	%	0.1		69.5	70.9	66.8	31.4	62.8
ALUMINUM	mg/kg	11	40	380	900	1100	2400	2600
ANTIMONY	mg/kg	1.5	5.2	0 U	1.3 J	1.6 J	0 U	0 U
ARSENIC	mg/kg	1.2	4.1	0 U	2.1 J	1.7 J	2.2 J	0 U
BARIUM	mg/kg	0.25	0.51	2.6	5.3	7.8	18	16
BERYLLIUM	mg/kg	0.25	0.89	0.47	1.2	0.096 J	0.13 J	0.078 J
CADMIUM	mg/kg	0.38	1.4	0 U	0 U	0 U	0 U	0 U
CALCIUM	mg/kg	76	150	140	390	510	2000	1700
Chromium (III)	mg/kg	0.76	1.5	0.66 J	2.3	2.3	4.4	5.8
Chromium (VI)	mg/kg	0.27		0 U	0 U	0 U	0 U	0.36
CHROMIUM	mg/kg	0.76	2.7	0.66 J	2.3	2.3	4.4	6.2
COBALT	mg/kg	0.71	2.5	0.55 J	1.2 J	1.3 J	2.3 J	2.6
COPPER	mg/kg	0.3	1.1	0.85	1.6	1.9	4.9	4.9
IRON	mg/kg	14	53	1000	3000	3500	3000	6500
LEAD	mg/kg	8.2	30	0 U	0 U	0 U	0 U	0 U
MAGNESIUM	mg/kg	76	150	160	360.0	460	890	1000
MANGANESE	mg/kg	0.17	0.51	15	33	37	53	75
MERCURY	mg/kg	0.073	0.26	0 U	0 U	0 U	0 U	0 U
NICKEL	mg/kg	1.8	6.4	0 U	1.6 J	2.1 J	3.6 J	3.8 J
POTASSIUM	mg/kg	18	67	80	110	180	370	360
SELENIUM	mg/kg	1.4	4.7	0 U	0 U	0 U	0 U	0 U
SILVER	mg/kg	0.74	2.6	0 U	0 U	0 U	0 U	0 U
SODIUM	mg/kg	1.7	6.1	9.9	12	28	40	57
THALLIUM	mg/kg	1.7	6.2	0 U	0 U	0 U	0 U	0 U
VANADIUM	mg/kg	0.44	1.6	2.2	8.6	8.2	9.1	15
ZINC	mg/kg	0.34	1	2.6	5.9	8.3	22	16
Pesticides & PCBs								
Aldrin	ug/kg	0.48	1.5	0 U	0 U	0 U	0 U	0 U
alpha-BHC	ug/kg	0.28	0.89	4.5	7.1	1.7	7.9	24
beta-BHC	ug/kg	0.53	1.7	2.2 J	0 U	0 U	0 U	3.2 J
delta-BHC	ug/kg	0.25	0.81	0 U	0 U	0 U	0 U	0 U
Lindane	ug/kg	0.37	1.2	2.6	0 U	1.4	0 U	2.8
Chlordane	ug/kg	0.64	2.1	0 U	0 U	0 U	0 U	0 U
4,4'-DDD	ug/kg	0.41	1.3	0 U	0 U	0 U	0 U	0 U
4,4'-DDE	ug/kg	0.45	1.4	0 U	0 U	0 U	0 U	0 U
4,4'-DDT	ug/kg	0.64	2	0 U	0 U	0 U	0 U	0 U
Dieldrin	ug/kg	0.38	1.2	0 U	0 U	0 U	0 U	0 U
Endosulfan I	ug/kg	0.51	1.6	0 U	0 U	0 U	0 U	0 U
Endosulfan II	ug/kg	0.4	1.2	0 U	0 U	0 U	0 U	0 U
Endosulfan Sulfate	ug/kg	0.33	1	0 U	0 U	0 U	0 U	0 U
Endrin	ug/kg	0.33	1.1	0 U	0 U	0 U	0 U	0 U
Endrin Aldehyde	ug/kg	0.48	1.5	0 U	0 U	0 U	0 U	0 U
Heptachlor	ug/kg	0.43	1.4	0 U	0 U	0.59 J	0 U	0 U
Heptachlor Epoxide	ug/kg	0.42	1.3	0 U	0 U	0 U	0 U	0 U
Methoxychlor	ug/kg	0.77	2.5	0 U	0 U	0 U	0 U	0 U
Toxaphene	ug/kg	18.9	63	0 U	0 U	0 U	0 U	0 U
Aroclor-1016	ug/kg	4.3	14.4	0 U	0 U	0 U	0 U	0 U
Aroclor-1221	ug/kg	12.6	40.2	0 U	0 U	0 U	0 U	0 U
Aroclor-1232	ug/kg	3.1	10.5	0 U	0 U	0 U	0 U	0 U
Aroclor-1242	ug/kg	5.5	18.2	0 U	0 U	0 U	0 U	0 U
Aroclor-1248	ug/kg	3.3	11	0 U	0 U	0 U	0 U	0 U
Aroclor-1254	ug/kg	2.1	6.6	0 U	0 U	0 U	0 U	0 U
Aroclor-1260	ug/kg	4.1	13.7	0 U	0 U	0 U	0 U	0 U
Total PCBs	ug/kg	4.3	14.4	0 U	0 U	0 U	0 U	0 U

NA = not analyzed
 LOD = limit of detection, LOQ = limit of quantitation
 U = not detected, J = detected between LOD and LOQ
 Detected values are shown in bold face

Table 1
May 2005 Sediment Recon Results - Inorganics
Draft - Unvalidated Data
Northern States Power, Ashland, Wisconsin

Analyte	Units	LOD	LOQ	NSP-SE-5-1B-0505	NSP-SE-4-2B-0505
Solids, percent	%	0.1		64.4	67
ALUMINUM	mg/kg	11	40	660	570
ANTIMONY	mg/kg	1.5	5.2	2.0 J	1.2 J
ARSENIC	mg/kg	1.2	4.1	1.2 J	0 U
BARIUM	mg/kg	0.25	0.51	4.4	6.3
BERYLLIUM	mg/kg	0.25	0.89	0 U	0 U
CADMIUM	mg/kg	0.38	1.4	0 U	0 U
CALCIUM	mg/kg	76	150	320	710
Chromium (III)	mg/kg	0.76	1.5	1.4 J	1.3 J
Chromium (VI)	mg/kg	0.27		0 U	0 U
CHROMIUM	mg/kg	0.76	2.7	1.4 J	1.3 J
COBALT	mg/kg	0.71	2.5	0.88 J	0.97 J
COPPER	mg/kg	0.3	1.1	1.7	1.5
IRON	mg/kg	14	53	1800	2000
LEAD	mg/kg	8.2	30	0 U	0 U
MAGNESIUM	mg/kg	76	150	230	260.0
MANGANESE	mg/kg	0.17	0.51	25	34
MERCURY	mg/kg	0.073	0.26	0 U	0 U
NICKEL	mg/kg	1.8	6.4	0 U	0 U
POTASSIUM	mg/kg	18	67	95	110
SELENIUM	mg/kg	1.4	4.7	0 U	0 U
SILVER	mg/kg	0.74	2.6	0 U	0 U
SODIUM	mg/kg	1.7	6.1	21	15
THALLIUM	mg/kg	1.7	6.2	0 U	0 U
VANADIUM	mg/kg	0.44	1.6	7.0	5.5
ZINC	mg/kg	0.34	1	7.4	5.7
Pesticides & PCBs					
Aldrin	ug/kg	0.48	1.5	0 U	0 U
alpha-BHC	ug/kg	0.28	0.89	4.3	3.5
beta-BHC	ug/kg	0.53	1.7	0 U	0 U
delta-BHC	ug/kg	0.25	0.81	0 U	0 U
Lindane	ug/kg	0.37	1.2	2.9	2.8
Chlordane	ug/kg	0.64	2.1	0 U	0 U
4,4'-DDD	ug/kg	0.41	1.3	0 U	0 U
4,4'-DDE	ug/kg	0.45	1.4	0 U	0 U
4,4'-DDT	ug/kg	0.64	2	0 U	0 U
Dieldrin	ug/kg	0.38	1.2	0 U	0 U
Endosulfan I	ug/kg	0.51	1.6	0 U	0 U
Endosulfan II	ug/kg	0.4	1.2	0 U	0 U
Endosulfan Sulfate	ug/kg	0.33	1	0 U	0 U
Endrin	ug/kg	0.33	1.1	0 U	0 U
Endrin Aldehyde	ug/kg	0.48	1.5	0 U	0 U
Heptachlor	ug/kg	0.43	1.4	0 U	0 U
Heptachlor Epoxide	ug/kg	0.42	1.3	0 U	0 U
Methoxychlor	ug/kg	0.77	2.5	0 U	0 U
Toxaphene	ug/kg	18.9	63	0 U	0 U
Aroclor-1016	ug/kg	4.3	14.4	0 U	0 U
Aroclor-1221	ug/kg	12.6	40.2	0 U	0 U
Aroclor-1232	ug/kg	3.1	10.5	0 U	0 U
Aroclor-1242	ug/kg	5.5	18.2	0 U	0 U
Aroclor-1248	ug/kg	3.3	11	0 U	0 U
Aroclor-1254	ug/kg	2.1	6.6	0 U	0 U
Aroclor-1260	ug/kg	4.1	13.7	0 U	0 U
Total PCBs	ug/kg	4.3	14.4	0 U	0 U

NA = not analyzed

LOD = limit of detection, LOQ = limit of quantitation

U = not detected, J = detected between LOD and LOQ

Detected values are shown in bold face

Table 2
May 2005 Sediment Recon Results - PAHs
Draft - Unvalidated Data
Northern States Power, Ashland, Wisconsin

Analyte	Lab	units	LOD	SED-SE-1-2A-0505	SED-SE-1-4A-0505	SED-SE-1-5A-0505	SED-SE-1-5C-0505	SED-SE-1-6A-0505	SED-SE-1-7B-0505	SED-SE-1-8B-0505	SED-SE-1-9A-0505	SED-SE-1-10C-0505
Solids, Total	ECCS	%		80.9	80.1	38.1	38.1	29.1	31.9	30.8	31.5	35.6
Naphthalene	ECCS	ug/kg	200	0 U	0 U	996	1260	0 U	0 U	0 U	0 U	1516
1-Methylnaphthalene	ECCS	ug/kg	200	0 U	0 U	1023	1076	0 U	0 U	0 U	0 U	1179
2-Methylnaphthalene	ECCS	ug/kg	200	0 U	0 U	0 U	525	0 U	0 U	0 U	0 U	617
Acenaphthylene	ECCS	ug/kg	200	0 U	0 U	1914	2310	0 U	0 U	0 U	0 U	2975
Acenaphthene	ECCS	ug/kg	200	0 U	0 U	810	656	0 U	0 U	0 U	0 U	926
Fluorene	ECCS	ug/kg	200	0 U	0 U	682	604	0 U	0 U	0 U	0 U	786
Phenanthrene	ECCS	ug/kg	200	0 U	0 U	2124	2415	0 U	0 U	0 U	951	2554
Anthracene	ECCS	ug/kg	200	0 U	0 U	1416	1313	0 U	0 U	0 U	0 U	1712
Fluoranthene	ECCS	ug/kg	200	0 U	0 U	3592	3465	0 U	0 U	877	1078	3733
Pyrene	ECCS	ug/kg	200	0 U	0 U	6110	5486	1135	627	1364	1205	6231
Benzo(a)anthracene	ECCS	ug/kg	200	0 U	0 U	4484	4463	791	0 U	780	698	4743
Chrysene	ECCS	ug/kg	200	0 U	275	4195	4541	1306	1003	0 U	793	5108
Benzo(b)fluoranthene	ECCS	ug/kg	200	0 U	0 U	3278	3806	0 U	0 U	650	729	4294
Benzo(k)fluoranthene	ECCS	ug/kg	200	0 U	0 U	3959	4095	0 U	0 U	0 U	698	3929
Benzo(e)pyrene	ECCS	ug/kg	200	0 U	0 U	3671	4016	0 U	0 U	0 U	0 U	4378
Benzo(a)pyrene	ECCS	ug/kg	200	0 U	0 U	6582	6720	1100	0 U	1105	1142	7578
Indeno(1,2,3-cd) Pyrene	ECCS	ug/kg	200	0 U	0 U	2701	2966	0 U	0 U	715	0 U	3368
Dibenzo(a,h)anthracene	ECCS	ug/kg	200	0 U	0 U	1495	1628	0 U	0 U	0 U	0 U	1628
Benzo(g,h,i)perylene	ECCS	ug/kg	200	0 U	0 U	3300	3518	756	0 U	747	634	4378
Total PAH	ECCS	ug/kg	200	0 U	275	52360	54863	5088	1630	6237	7929	61634

ECCS = Environmental Chemistry Consulting Services mobile laboratory

NLS = Northern Lake Service laboratory in Crandon, Wisconsin

LOD = limit of detection

U = not detected, J = detected between LOD and LOQ

Detected values are shown in bold face

Dibenzofuran, 2-Methylphenol, 3&4 methylphenol and phenol were not included in Total PAH calculations.

**Table 2
May 2005 Sediment Recon Results - PAHs
Draft - Unvalidated Data
Northern States Power, Ashland, Wisconsin**

Analyte	Lab	units	LOD	SED-SE-2-2A-0505	SED-SE-2-1A-0505	SED-SE-9-1A-0505	SED-SE-1-13A-0505	SED-SE-1-11C-0505	SED-SE-1-12A-0505	SED-SE-1-15C-0505	SED-SE-1-15A-0505	SED-SE-1-12G-0505
Solids, Total	ECCS	%		72.6	78.3	67.8	82.9	37.0	84.3	41.1	35.6	32.7
Naphthalene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	622	2124	1435	1910	825
1-Methylnaphthalene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	0 U	1495	1338	1629	611
2-Methylnaphthalene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	0 U	1151	754	871	0 U
Acenaphthylene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	0 U	0 U	3673	4130	3084
Acenaphthene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	0 U	1626	1143	1517	1008
Fluorene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	0 U	688	559	1601	825
Phenanthrene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	0 U	2741	2554	3343	2138
Anthracene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	0 U	902	2335	2500	1832
Fluoranthene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	757	1068	4962	6798	5100
Pyrene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	1325	1685	8221	10872	9253
Benzo(a)anthracene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	974	487	7467	8652	7085
Chrysene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	595	475	7005	8849	6840
Benzo(b)fluoranthene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	676	249	5570	6911	5252
Benzo(k)fluoranthene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	595	249	6470	7529	5985
Benzo(e)pyrene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	811	297	6372	7444	6627
Benzo(a)pyrene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	1352	534	10823	13400	10413
Indeno(1,2,3-cd) Pyrene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	676	0 U	4840	5927	4703
Dibenzo(a,h,)anthracene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	595	0 U	2554	3259	2443
Benzo(g,h,i)perylene	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	784	250	6299	7585	6321
Total PAH	ECCS	ug/kg	200	0 U	0 U	0 U	0 U	9764	16022	84372	100000	80343

ECCS = Environmental Chemistry Consulting Services mobile laboratory

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LOD = limit of detection

U = not detected, J = detected between LOD and LOQ

Detected values are shown in bold face

Dibenzofuran, 2-Methylphenol, 3&4 methylphenol and phenol were not included in Total PAH calculations.

Table 2
May 2005 Sediment Recon Results - PAHs
Draft - Unvalidated Data
Northern States Power, Ashland, Wisconsin

Analyte	Lab	units	LOD	LOQ	NSP-SE-1-9A-0505	NSP-SE-1-13A-0505	NSP-SE-1-15C-0505	NSP-SE-21-1C-0505	NSP-SE-24-1A-0505	NSP-SE-8-1C-0505	NSP-SE-22-2B-0505	NSP-SE-20-1B-0505	NSP-SE-23-1B-0505
Acenaphthene	NLS	ug/kg	32	110	0 U	0 U	710	0 U	0 U	0 U	0 U	0 U	0 U
Acenaphthylene	NLS	ug/kg	31	100	0 U	0 U	2400	0 U	430	0 U	0 U	0 U	0 U
Anthracene	NLS	ug/kg	38	130	0 U	0 U	950	0 U	170 J	0 U	0 U	0 U	0 U
Benzo(a)anthracene	NLS	ug/kg	34	110	340	83 J	4500	160 J	700	0 U	0 U	0 U	430
Benzo(a)pyrene	NLS	ug/kg	34	110	440	120	7300	170 J	1100	0 U	0 U	0 U	490
Benzo(b)fluoranthene	NLS	ug/kg	38	130	500	110 J	6400	200 J	1000	0 U	0 U	0 U	600
Benzo(g,h,i)perylene	NLS	ug/kg	33	110	200	0 U	2300	0 U	360	0 U	0 U	0 U	200 J
Benzo(k)fluoranthene	NLS	ug/kg	38	130	160	0 U	2400	0 U	390	0 U	0 U	0 U	200 J
Chrysene	NLS	ug/kg	36	120	390	87 J	4700	200 J	760	0 U	0 U	0 U	560
Dibenzo(a,h,)anthracene	NLS	ug/kg	34	110	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Dibenzofuran	NLS	ug/kg	32	110	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Fluoranthene	NLS	ug/kg	37	120	570	100 J	3600	250	660	0 U	0 U	0 U	730
Fluorene	NLS	ug/kg	32	110	0 U	0 U	570	0 U	0 U	0 U	0 U	0 U	0 U
Indeno(1,2,3-cd) Pyrene	NLS	ug/kg	31	100	140	0 U	1400	0 U	210	0 U	0 U	0 U	0 U
1-Methylnaphthalene	NLS	ug/kg	32	110	0 U	0 U	450	0 U	0 U	0 U	0 U	0 U	170 J
2-Methylnaphthalene	NLS	ug/kg	31	100	0 U	0 U	740	0 U	0 U	0 U	0 U	0 U	270
2-Methylphenol	NLS	ug/kg	26	87	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
3 & 4-Methylphenol	NLS	ug/kg	55	190	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Naphthalene	NLS	ug/kg	31	100	0 U	0 U	880	0 U	0 U	0 U	0 U	0 U	210
Phenanthrene	NLS	ug/kg	37	120	470	63 J	1800	220 J	290	0 U	0 U	0 U	710
Phenol	NLS	ug/kg	28	94	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Pyrene	NLS	ug/kg	36	120	620	140	6400	290	1100	0 U	0 U	0 U	820
Benzo (e) pyrene	NLS	ug/kg	38	130	310	73 J	4400	150 J	660	0 U	0 U	0 U	440
Total PAH	NLS	ug/kg	40	140	4140	776	51900	1640	7830	0 U	0 U	0 U	5830

ECCS = Environmental Chemistry Consulting Services mobile laboratory

NLS = Northern Lake Service laboratory in Crandon, Wisconsin

LOD = limit of detection

U = not detected, J = detected between LOD and LOQ

Detected values are shown in bold face

Dibenzofuran, 2-Methylphenol, 3&4 methylphenol and phenol were not included in Total PAH calculations.

Table 2
May 2005 Sediment Recon Results - PAHs
Draft - Unvalidated Data
Northern States Power, Ashland, Wisconsin

Analyte	Lab	units	LOD	LOQ	NSP-SE-11-1C-0505	NSP-SE-2-2B-0505	NSP-SE-9-1B-0505	NSP-SE-26-1A-0505	NSP-SE-10-2C-0505	NSP-SE-10-1A-0505	NSP-SE-5-2A-0505	NSP-SE-13-1A-0505	NSP-SE-15-1A-0505
Acenaphthene	NLS	ug/kg	32	110	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Acenaphthylene	NLS	ug/kg	31	100	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Anthracene	NLS	ug/kg	38	130	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Benzo(a)anthracene	NLS	ug/kg	34	110	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Benzo(a)pyrene	NLS	ug/kg	34	110	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Benzo(b)fluoranthene	NLS	ug/kg	38	130	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Benzo(g,h,i)perylene	NLS	ug/kg	33	110	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Benzo(k)fluoranthene	NLS	ug/kg	38	130	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Chrysene	NLS	ug/kg	36	120	0 U	57 J	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Dibenzo(a,h,)anthracene	NLS	ug/kg	34	110	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Dibenzofuran	NLS	ug/kg	32	110	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Fluoranthene	NLS	ug/kg	37	120	0 U	65 J	85 J	0 U	0 U	0 U	0 U	0 U	0 U
Fluorene	NLS	ug/kg	32	110	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Indeno(1,2,3-cd) Pyrene	NLS	ug/kg	31	100	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1-Methylnaphthalene	NLS	ug/kg	32	110	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
2-Methylnaphthalene	NLS	ug/kg	31	100	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
2-Methylphenol	NLS	ug/kg	26	87	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
3 & 4-Methylphenol	NLS	ug/kg	55	190	0 U	0 U	0 U	0 U	0 U	680	0 U	0 U	0 U
Naphthalene	NLS	ug/kg	31	100	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Phenanthrene	NLS	ug/kg	37	120	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Phenol	NLS	ug/kg	28	94	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Pyrene	NLS	ug/kg	36	120	0 U	66 J	78 J	0 U	0 U	0 U	0 U	0 U	0 U
Benzo (e) pyrene	NLS	ug/kg	38	130	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Total PAH	NLS	ug/kg	40	140	0 U	188	163	0 U	0 U	0 U	0 U	0 U	0 U

ECCS = Environmental Chemistry Consulting Services mobile laboratory

NLS = Northern Lake Service laboratory in Crandon, Wisconsin

LOD = limit of detection

U = not detected, J = detected between LOD and LOQ

Detected values are shown in bold face

Dibenzofuran, 2-Methylphenol, 3&4 methylphenol and phenol were not included in Total PAH calculations.

Table 2
May 2005 Sediment Recon Results - PAHs
Draft - Unvalidated Data
Northern States Power, Ashland, Wisconsin

Analyte	Lab	units	LOD	LOQ	NSP-SE-4-1A-0505	NSP-SE-25-1A-0505	NSP-SE-5-1B-0505	NSP-SE-4-2B-0505
Acenaphthene	NLS	ug/kg	32	110	0 U	0 U	0 U	0 U
Acenaphthylene	NLS	ug/kg	31	100	0 U	0 U	0 U	0 U
Anthracene	NLS	ug/kg	38	130	0 U	0 U	0 U	0 U
Benzo(a)anthracene	NLS	ug/kg	34	110	0 U	0 U	0 U	0 U
Benzo(a)pyrene	NLS	ug/kg	34	110	0 U	0 U	0 U	0 U
Benzo(b)fluoranthene	NLS	ug/kg	38	130	0 U	0 U	0 U	0 U
Benzo(g,h,i)perylene	NLS	ug/kg	33	110	0 U	0 U	0 U	0 U
Benzo(k)fluoranthene	NLS	ug/kg	38	130	0 U	0 U	0 U	0 U
Chrysene	NLS	ug/kg	36	120	0 U	0 U	0 U	0 U
Dibenzo(a,h,)anthracene	NLS	ug/kg	34	110	0 U	0 U	0 U	0 U
Dibenzofuran	NLS	ug/kg	32	110	0 U	0 U	0 U	0 U
Fluoranthene	NLS	ug/kg	37	120	0 U	0 U	0 U	0 U
Fluorene	NLS	ug/kg	32	110	0 U	0 U	0 U	0 U
Indeno(1,2,3-cd) Pyrene	NLS	ug/kg	31	100	0 U	0 U	0 U	0 U
1-Methylnaphthalene	NLS	ug/kg	32	110	0 U	0 U	0 U	0 U
2-Methylnaphthalene	NLS	ug/kg	31	100	0 U	0 U	0 U	0 U
2-Methylphenol	NLS	ug/kg	26	87	0 U	0 U	0 U	0 U
3 & 4-Methylphenol	NLS	ug/kg	55	190	480	190	0 U	0 U
Naphthalene	NLS	ug/kg	31	100	0 U	0 U	0 U	0 U
Phenanthrene	NLS	ug/kg	37	120	0 U	0 U	0 U	0 U
Phenol	NLS	ug/kg	28	94	0 U	0 U	0 U	0 U
Pyrene	NLS	ug/kg	36	120	0 U	0 U	0 U	0 U
Benzo (e) pyrene	NLS	ug/kg	38	130	0 U	0 U	0 U	0 U
Total PAH	NLS	ug/kg	40	140	0 U	0 U	0 U	0 U

ECCS = Environmental Chemistry Consulting Services mobile laboratory

NLS = Northern Lake Service laboratory in Crandon, Wisconsin

LOD = limit of detection

U = not detected, J = detected between LOD and LOQ

Detected values are shown in bold face

Dibenzofuran, 2-Methylphenol, 3&4 methylphenol and phenol were not included in Total PAH calculations.

Table 3
May 2005 Surface Water Sampling Results
Draft - Unvalidated Data
Northern States Power, Ashland, Wisconsin

Analyte	Units	LOD (detection limit)	NSP-SW- ADCP2-0505	NSP-SW- ADCP4-0505	NSP-SW-ADCP6- 0505	NSP-SW-ADV- 0505	NSP-SW- ADCP2B-0505	NSP-SW- ADCP4B-0505	NSP-SW- ADCP6B-0505	NSP-SW- ADVB-0505
Inorganics										
Solids, TSS	mg/L	1.0	1.0	2.0	ND	ND	8.0	11	11	13
Turbidity, Lab	NTU	0.5	2.9	2.1	2.1	2.0	5.3	ND	9.6	8.0

ND = not detected

Samples called "ADCP" (Acoustic Doppler Current Profiler) were collected at depths of 2, 4, and 6 feet below water surface.

Samples called "ADV" (Acoustic Doppler Velocimeter) were both collected from the water surface.

Note: both ADCP and ADV samples were collected on 5/11/05, first collection in the morning, second collection "B", approximately 5 hours later.

Table 4
Composite Sample Summary
April 2005 Rainbow Smelt (*Osmerus mordax*)
Northern States Power, Ashland, Wisconsin

Sample Name	Reference Area 1 (Bayview Park - Pamida Beach)										Reference Area 2 (Americinn)									
	Human Health Risk Assessment				Ecological Risk Assessment						Human Health Risk Assessment						Ecological Risk Assessment			
	F-1-1	F-1-2	F-1-3	F-1-4	W-1-5	W-1-6	W-1-7	W-1-8	W-1-DUP3	W-1-MSMSD	F-2-1	F-2-2	F-2-3	F-2-4	F-2-DUP4	F-2-MSMSD	W-2-5	W-2-6	W-2-7	W-2-8
Length (inches)	6.5	6.1	7.4	6.3	5.1	5.6	5.5	5.4	5.0	6.1	6.4	7.2	7.0	6.0	7.6	6.5	6.3	6.6	6.5	6.1
	6.5	6.5	7.0	6.5	5.3	5.5	5.5	6.2	5.8	5.5	6.1	8.2	7.0	6.0	8.0	6.5	7.0	6.2	6.2	6.5
	6.4	6.0	6.5	5.7	5.5	5.9	5.8	6.2	5.0	5.1	6.2	7.1	6.6	6.2	8.1	6.8	6.1	6.5	6.6	6.2
	6.4	6.5	6.4	6.2	5.3	5.9	5.5	6.2	5.0	5.2	7.0	8.1	7.0	6.0	7.6	6.3	6.5	6.5	6.5	6.5
	7.0	6.4	6.5	5.6	5.1	5.5	5.0	6.0	5.0	5.5	6.5	7.0	6.8	6.2	8.0	6.5	6.5	6.2	7.1	7.0
	7.4	6.8	7.1	6.5	5.1	6.1	5.5	5.3	4.8	5.5	6.2	7.1	6.1	6.2	8.0	6.5	6.4	6.5	6.2	6.3
	6.5	6.1	6.5	6.2	5.5	6.0	5.6	5.5	5.0	5.8	6.2	7.9	6.8	6.5	7.6	7.0	6.5	6.8	7.0	6.0
	6.8	6.4	6.3	5.5	4.9	5.5	5.2	6.3	5.5	5.6	6.5	7.0	6.5	6.0	7.5	6.8	6.3	6.5	6.5	6.8
	6.4	6.0	6.9	6.0	5.3	5.8	5.1	6.2	5.0	5.5	7.0	7.0	6.5	6.2	7.5	6.5	6.3	7.0	6.5	6.0
	6.7	6.2	6.4	6.0	5.0	6.0	5.5	5.1	4.8	5.2	6.5	6.9	6.0	6.0		6.0				
	7.0	6.5	6.1	6.0	5.1	5.8	5.5	6.0	5.0	5.0	6.2		7.0	6.0		6.5				
	6.0	6.1	6.0	5.9	5.2	5.8	5.0	6.2	5.0	5.5	6.5		7.0	6.0		6.5				
	6.5	7.0	6.4	6.0	5.0	5.4	5.5	5.0	5.3	5.5	6.3		6.0	6.0		6.8				
		6.5		5.8	5.2		5.0	5.1	5.3	5.7			6.7	6.5						
					6.0		5.5	5.9	5.0	5.5				6.0						
					5.5		5.2		4.8	5.5										
					5.1				4.5											
					5.0				4.8											
					4.9				5.0											
					5.0				5.0											
					5.3				4.8											
					5.5				5.0											
									5.0											
									5											
									4.7											
									5.1											
Number in Sample	13	14	13	14	22	13	16	15	26	16	13	10	14	15	9	13	9	9	9	9
Mean Length (in)	6.6	6.4	6.6	6.0	5.2	5.8	5.4	5.8	5.0	5.5	6.4	7.4	6.6	6.1	7.8	6.6	6.4	6.5	6.6	6.4
Minimum Length (in)	6.0	6.0	6.0	5.5	4.9	5.4	5.0	5.0	4.5	5.0	6.1	6.9	6.0	6.0	7.5	6.0	6.1	6.2	6.2	6.0
Maximum Length (in)	7.4	7.0	7.4	6.5	6.0	6.1	5.8	6.3	5.8	6.1	7.0	8.2	7.0	6.5	8.1	7.0	7.0	7.0	7.1	7.0
Ratio of Size Variation	81.1	85.7	81.1	84.6	81.7	88.5	86.2	79.4	77.6	82.0	87.1	84.1	85.7	92.3	92.6	85.7	87.1	88.6	87.3	85.7
Sex of Sample	Female	Male	Female	Male	Female	Female	Male	Male	Male	Male	Male	Female	Female	Male	Female	Male	Male	Female	Female	Male

All smelt collected on April 21 and 22, 2005.

Table 4
Composite Sample Summary
April 2005 Rainbow Smelt (*Osmerus mordax*)
Northern States Power, Ashland, Wisconsin

Sample Name	Area of Concern																			
	Human Health Risk Assessment										Ecological Risk Assessment									
	F-3-1	F-3-2	F-3-3	F-3-4	F-3-5	F-3-6	F-3-7	F-3-8	F-3-DUP1	F-3-MSMSD	W-3-9	W-3-10	W-3-11	W-3-12	W-3-13	W-3-14	W-3-15	W-3-16	W-3-DUP2	W-3-MSMSD
Length (inches)	7.0	6.1	6.9	6.6	6.2	5.7	6.0	6.0	6.2	5.5	5.5	5.8	5.7	5.0	6.9	6.1	6.2	5.6	6.0	4.7
	7.0	5.8	6.8	6.3	6.1	5.8	6.5	5.7	6.2	5.5	5.5	6.4	6.5	5.0	6.8	6.1	6.2	5.8	5.5	5.5
	6.7	6.0	6.8	6.4	6.5	6.1	6.0	5.5	6.5	5.6	4.7	6.0	6.3	5.1	6.7	6.2	6.3	4.9	5.9	4.8
	6.8	6.4	6.7	6.7	6.1	6.2	6.2	5.0	6.1	5.5	5.0	5.5	5.6	4.9	6.7	6.5	6.3	5.5	6.3	5.1
	7.3	5.9	6.5	7.1	6.0	6.3	6.2	5.8	6.3	5.3	5.0	5.4	6.0	4.7	7.1	6.0	6.2	5.2	6.1	5.5
	7.4	6.0	7.3	6.3	5.8	6.5	6.1	4.9	6.0	5.5	5.0	6.0	5.6	4.9	6.7	6.4	6.3	5.1	6.3	5.1
	7.1	6.1	7.0	6.6	6.0	6.2	6.1	5.5	6.1	5.3	5.6	5.8	5.5	5.0	6.8	6.4	6.3	5.4	5.5	5.3
	7.1	6.2	6.8	6.1	6.6	6.2	5.8	5.3	6.0	5.8	5.1	5.8	6.0	5.8	6.7	6.3	6.1	4.6	5.4	5.3
	7.0	6.2	6.3	6.4	6.2	6.0	6.2	5.5	5.9	5.5	5.0	6.0	6.0	4.4	6.5	6.4	5.9	5.5	6.1	5.3
		6.2	6.5	6.4	6.1	6.0	6.1	5.4	5.9	5.3	5.4	6.0	6.3	5.1		6.2	6.3	5.2	5.8	5.3
		6.0	7.0	6.0	6.0	6.0	5.7	5.8	6.0	5.8	4.8	6.0	5.5	5.0		6.2	5.9	5.2	6.0	5.5
		6.0	7.2	6.1	6.1	6.2	6.1	5.8	6.0	5.2	5.3	6.2	6.3	5.2				5.8		5.2
		6.2		6.1	6.1	6.0	5.7	5.0	6.5	5.8	4.9	6.4	5.7	4.8				5.1		5.1
		5.8			6.0		6.2	5.5	6.1	5.8	5.3			4.9				4.8		4.8
		6.1			6.6		5.9	6.0	6.1	5.8	5.0			5.3				5.2		5.4
					6.2					5.4	4.7			5.1				4.6		5.0
					6.4					5.6	5.2			4.8				5.0		4.9
										5.2	5.4			5.1						5.0
										6.0	5.5			5.6				5.0		5.1
										5.8	5.5			4.7						
										5.5				5.1						
										5.8										
										5.0										
										5.5										
Number in Sample	9	15	12	13	17	13	15	24	15	21	20	13	13	21	9	11	11	18	11	19
Mean Length (in)	7.0	6.1	6.8	6.4	6.2	6.1	6.1	5.5	6.1	5.5	5.2	5.9	5.9	5.0	6.8	6.3	6.2	5.2	5.9	5.2
Minimum Length (in)	6.7	5.8	6.3	6.0	5.8	5.7	5.7	4.9	5.9	5.2	4.7	5.4	5.5	4.4	6.5	6.0	5.9	4.6	5.4	4.7
Maximum Length (in)	7.4	6.4	7.3	7.1	6.6	6.5	6.5	6.0	6.5	5.8	5.6	6.4	6.5	5.8	7.1	6.5	6.3	5.8	6.3	5.5
Ratio of Size Variation	90.5	90.6	86.3	84.5	87.9	87.7	87.7	81.7	90.8	89.7	83.9	84.4	84.6	75.9	91.5	92.3	93.7	79.3	85.7	85.5
Sex of Sample	Male	Male	Female	Male	Female	Male	Male	Female	Male	Male	Male	Male	Male	Male	Female	Female	Female	Female	Male	Male

All smelt collected on April 21 and 22, 2005.

Table 5
April 2005 Rainbow Smelt (Osmerus mordax) Sample Results - PAHs
Draft - Unvalidated Data
Northern States Power, Ashland, Wisconsin

Reference Area 1 (Bayview Park - Pamida Beach)													
				Human Health Risk Assessment				Ecological Risk Assessment					
Analyte	Lab	units	LOD (range)	F-1-1	F-1-2	F-1-3	F-1-4	W-1-5	W-1-6	W-1-7	W-1-8	W-1 DUP 3	W-1 MSMSD
Lipids	STL	%	0.1	2.2	2.6	2.0	2.1	3.0	3.5	3.4	4.1	2.9	3.3
1-Methylnaphthalene	STL	ug/kg	8.3-9.5	9.1 U	9.1 U	9.1 U	8.7 U	9.5 U	11	13	10	15	9.1 U
1-Methylphenanthrene	STL	ug/kg	8.3-9.5	9.1 U	9.1 U	9.1 U	8.7 U	9.5 U	8.3 U	8.7 U	8.3 U	8.7 U	9.1 U
2,3,5 Trimethylnaphthalene	STL	ug/kg	8.3-9.5	9.1 U	9.1 U	9.1 U	8.7 U	9.5 U	8.3 U	8.7 U	8.3 U	8.7 U	9.1 U
2,6 Dimethylnaphthalene	STL	ug/kg	8.3-9.5	9.1 U	9.1 U	9.1 U	8.7 U	9.5 U	8.3 U	8.7 U	8.3 U	8.7 U	9.1 U
2-Methylnaphthalene	STL	ug/kg	8.3-9.5	11	9.7	9.1 U	8.7 U	9.9	11	14	12	17	10
Acenaphthene	STL	ug/kg	8.3-9.5	15	16	14	17	15	20	24	22	22	20
Acenaphthylene	STL	ug/kg	8.3-9.5	9.1 U	9.1 U	9.1 U	8.7 U	9.5 U	8.3 U	8.7 U	8.3 U	8.7 U	9.1 U
Anthracene	STL	ug/kg	8.3-9.5	9.1 U	9.1 U	9.1 U	8.7 U	9.5 U	8.3 U	8.7 U	8.3 U	8.7 U	9.1 U
Benzo(a)anthracene	STL	ug/kg	8.3-9.5	9.1 U	9.1 U	9.1 U	8.7 U	9.5 U	8.3 U	8.7 U	8.3 U	8.7 U	9.1 U
Benzo(a)pyrene	STL	ug/kg	8.3-9.5	9.1 U	9.1 U	9.1 U	8.7 U	9.5 U	8.3 U	8.7 U	8.3 U	8.7 U	9.1 U
Benzo(b)fluoranthene	STL	ug/kg	8.3-9.5	9.1 U	9.1 U	9.1 U	8.7 U	9.5 U	8.3 U	8.7 U	8.3 U	8.7 U	9.1 U
Benzo(e)pyrene	STL	ug/kg	8.3-9.5	9.1 U	9.1 U	9.1 U	8.7 U	9.5 U	8.3 U	8.7 U	8.3 U	8.7 U	9.1 U
Benzo(g,h,i)perylene	STL	ug/kg	8.3-9.5	9.1 U	9.1 U	9.1 U	8.7 U	9.5 U	8.3 U	8.7 U	8.3 U	8.7 U	9.1 U
Benzo(k)fluoranthene	STL	ug/kg	8.3-9.5	9.1 U	9.1 U	9.1 U	8.7 U	9.5 U	8.3 U	8.7 U	8.3 U	8.7 U	9.1 U
Biphenyl	STL	ug/kg	8.3-9.5	9.1 U	9.1 U	9.1 U	8.7 U	9.5 U	8.3 U	8.7 U	8.3 U	8.7 U	9.1 U
Chrysene	STL	ug/kg	8.3-9.5	9.1 U	9.1 U	9.1 U	8.7 U	9.5 U	8.3 U	8.7 U	8.3 U	8.7 U	9.1 U
Dibenz(a,h)anthracene	STL	ug/kg	8.3-9.5	9.1 U	9.1 U	9.1 U	8.7 U	9.5 U	8.3 U	8.7 U	8.3 U	8.7 U	9.1 U
Dibenzothiophene	STL	ug/kg	8.3-9.5	9.1 U	9.1 U	9.1 U	8.7 U	9.5 U	8.3 U	8.7 U	8.3 U	8.7 U	9.1 U
Fluoranthene	STL	ug/kg	8.3-9.5	30	22	26	36	37	32	29	44	35	33
Fluorene	STL	ug/kg	8.3-9.5	13	14	12	17	14	18	20	22	22	19
Indeno(1,2,3-cd)pyrene	STL	ug/kg	8.3-9.5	9.1 U	9.1 U	9.1 U	8.7 U	9.5 U	8.3 U	8.7 U	8.3 U	8.7 U	9.1 U
Naphthalene	STL	ug/kg	8.3-9.5	12	10	9.1 U	8.7 U	11	12	13	12	11	9.1 U
Perylene	STL	ug/kg	8.3-9.5	9.1 U	9.1 U	9.1 U	8.7 U	9.5 U	8.3 U	8.7 U	8.3 U	8.7 U	9.1 U
Phenanthrene	STL	ug/kg	8.3-9.5	55	40	44	67	59	68	60	84	75	59
Pyrene	STL	ug/kg	8.3-9.5	11	9.1 U	9.1 U	11	16	9.1	9.8	12	9.6	10
Total PAHs	STL	ug/kg	--	147.0	111.7	96.0	148.0	161.9	181.1	182.8	218.0	206.6	151.0

Reference Area 2 (AmericInn)													
				Human Health Risk Assessment						Ecological Risk Assessment			
Analyte	Lab	units	LOD (range)	F-2-1	F-2-2	F-2-3	F-2-4	F-2 DUP 4	F-2 MSMSD	W-2-5	W-2-6	W-2-7	W-2-8
Lipids	STL	%	0.1	2.8	1.8	2.2	2.5	2.5	2.3	4.0	4.2	3.8	4.2
1-Methylnaphthalene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	9.4	8.7 U	9
1-Methylphenanthrene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U
2,3,5 Trimethylnaphthalene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U
2,6 Dimethylnaphthalene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U
2-Methylnaphthalene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	9.2	9.2	8.7 U	10
Acenaphthene	STL	ug/kg	8.3-9.5	15	12	14	12	16	17	21	18	16	20
Acenaphthylene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U
Anthracene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U
Benzo(a)anthracene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U
Benzo(a)pyrene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U
Benzo(b)fluoranthene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U
Benzo(e)pyrene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U
Benzo(g,h,i)perylene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U
Benzo(k)fluoranthene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U
Biphenyl	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U
Chrysene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U
Dibenz(a,h)anthracene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U
Dibenzothiophene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U
Fluoranthene	STL	ug/kg	8.3-9.5	26	16	18	23	20	31	36	26	25	40
Fluorene	STL	ug/kg	8.3-9.5	14	11	12	11	14	16	20	14	14	19
Indeno(1,2,3-cd)pyrene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U
Naphthalene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	9.5	8.8	9.5
Perylene	STL	ug/kg	8.3-9.5	9.5 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U
Phenanthrene	STL	ug/kg	8.3-9.5	33	23	27	35	32	43	55	38	44	73
Pyrene	STL	ug/kg	8.3-9.5	9.6	8.7 U	9.1 U	9.1	8.7 U	13	11	11	8.7 U	12
Total PAHs	STL	ug/kg		97.6	62.0	71.0	90.1	82.0	120.0	152.2	135.1	107.8	192.5

Detections are shown in bold face.
 LOD = limit of detection
 U = Not detected
 J = estimated value

Table 5
April 2005 Rainbow Smelt (Osmerus mordax) Sample Results - PAHs
Draft - Unvalidated Data
Northern States Power, Ashland, Wisconsin

Area of Concern													
Human Health Risk Assessment													
Analyte	Lab	units	LOD (range)	F-3-1	F-3-2	F-3-3	F-3-4	F-3-5	F-3-6	F-3-7	F-3-8	F-3 DUP 1	F-3 MSMSD
Lipids	STL	%	0.1	2.1	1.8	2.4	NA	1.9	2.2	2	1.5	1.7	1.3
1-Methylnaphthalene	STL	ug/kg	8.3-9.5	92	85	50	85	55	140	81	55	85	70
1-Methylphenanthrene	STL	ug/kg	8.3-9.5	8.7 U	9.1 U	8.7 U	8.7 U	9.3	8.7 U	8.7 U	9.1 U	9.1 U	9.1 U
2,3,5 Trimethylnaphthalene	STL	ug/kg	8.3-9.5	8.7 U	9.1 U	8.7 U	8.8	9.1 U	13	9.7	9.1 U	9.1 U	9.1 U
2,6 Dimethylnaphthalene	STL	ug/kg	8.3-9.5	23	32	17	30	20	46	29	20	27	24
2-Methylnaphthalene	STL	ug/kg	8.3-9.5	90	88	50	84	56	100	79	57	82	77
Acenaphthene	STL	ug/kg	8.3-9.5	65	77	43	72	47	120	69	44	66	55
Acenaphthylene	STL	ug/kg	8.3-9.5	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	9.1 U	9.1 U
Anthracene	STL	ug/kg	8.3-9.5	11	12	8.7 U	13	19	22	13	9.3	14	11
Benzo(a)anthracene	STL	ug/kg	8.3-9.5	8.7 U	9.1 U	8.7 U	8.7 U	76	8.7 U	8.7 U	9.5	9.1 U	9.1 U
Benzo(a)pyrene	STL	ug/kg	8.3-9.5	8.7 U	9.1 U	8.7 U	8.7 U	69	8.7 U	8.7 U	11	9.1 U	9.1 U
Benzo(b)fluoranthene	STL	ug/kg	8.3-9.5	8.7 U	9.1 U	8.7 U	8.7 U	88	8.7 U	8.7 U	16	9.1 U	9.1 U
Benzo(e)pyrene	STL	ug/kg	8.3-9.5	8.7 U	9.1 U	8.7 U	8.7 U	45	8.7 U	8.7 U	9.1 U	9.1 U	9.1 U
Benzo(g,h,i)perylene	STL	ug/kg	8.3-9.5	8.7 U	9.1 U	8.7 U	8.7 U	34	8.7 U	8.7 U	9.1 U	9.1 U	9.1 U
Benzo(k)fluoranthene	STL	ug/kg	8.3-9.5	8.7 U	9.1 U	8.7 U	8.7 U	75	8.7 U	8.7 U	12	9.1 U	9.1 U
Biphenyl	STL	ug/kg	8.3-9.5	9.4	9.7	8.7 U	9.5	9.1 U	14	9.4	9.1 U	9.4	9.1 U
Chrysene	STL	ug/kg	8.3-9.5	8.7 U	9.1 U	8.7 U	8.7 U	78	8.7 U	8.7 U	12	9.1 U	9.1 U
Dibenz(a,h)anthracene	STL	ug/kg	8.3-9.5	8.7 U	9.1 U	8.7 U	8.7 U	12	8.7 U	8.7 U	9.1 U	9.1 U	9.1 U
Dibenzothiophene	STL	ug/kg	8.3-9.5	8.7 U	9.1 U	8.7 U	8.7 U	9.1 U	12	8.7 U	9.1 U	9.1 U	9.1 U
Fluoranthene	STL	ug/kg	8.3-9.5	19	22	12	21	140	28	19	25	21	21
Fluorene	STL	ug/kg	8.3-9.5	28	32	18	30	20	45	29	18	28	26
Indeno(1,2,3-cd)pyrene	STL	ug/kg	8.3-9.5	8.7 U	9.1 U	8.7 U	8.7 U	35	8.7 U	8.7 U	9.1 U	9.1 U	9.1 U
Naphthalene	STL	ug/kg	8.3-9.5	66	100	61	90	68	120	89	63	89	81
Perylene	STL	ug/kg	8.3-9.5	8.7 U	9.1 U	8.7 U	8.7 U	19	8.7 U	8.7 U	9.1 U	9.1 U	9.1 U
Phenanthrene	STL	ug/kg	8.3-9.5	51	61	34	60	69	78	57	41	57	51
Pyrene	STL	ug/kg	8.3-9.5	14	15	8.7 U	15	120	23	14	20	15	11
Total PAHs	STL	ug/kg	--	468.4	533.7	285.0	518.3	1154.3	761.0	498.1	412.8	493.4	427.0

Area of Concern													
Ecological Risk Assessment													
Analyte	Lab	units	LOD (range)	W-3-9	W-3-10	W-3-11	W-3-12	W-3-13	W-3-14	W-3-15	W-3-16	W-3 DUP 2	W-3 MSMSD
Lipids	STL	%	0.1	2.4	3.7	3.7	3.3	3.6	4.0	4.7	1.7	2.7	3.3
1-Methylnaphthalene	STL	ug/kg	8.3-9.5	110	95	95	96	60	66	77	79	100	100
1-Methylphenanthrene	STL	ug/kg	8.3-9.5	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U	8.3 U	8.3 U	9.1 U	8.3 U	8.3 U
2,3,5 Trimethylnaphthalene	STL	ug/kg	8.3-9.5	9.7	8.8	8.9	11	8.3 U	8.3 U	9.4	9.1 U	9.4	12
2,6 Dimethylnaphthalene	STL	ug/kg	8.3-9.5	39	36	35	34	23	22	24	33	37	40
2-Methylnaphthalene	STL	ug/kg	8.3-9.5	110	91	92	99	58	63	80	81	100	100
Acenaphthene	STL	ug/kg	8.3-9.5	100	94	94	72	57	59	52	83	100	91
Acenaphthylene	STL	ug/kg	8.3-9.5	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U	8.3 U	8.3 U	9.1 U	8.3 U	8.3 U
Anthracene	STL	ug/kg	8.3-9.5	11	9.8	9.8	15	8.3 U	8.3 U	9.9	12	11	18
Benzo(a)anthracene	STL	ug/kg	8.3-9.5	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U	8.3 U	8.3 U	19	8.3 U	8.3 U
Benzo(a)pyrene	STL	ug/kg	8.3-9.5	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U	8.3 U	8.3 U	17	8.3 U	8.3 U
Benzo(b)fluoranthene	STL	ug/kg	8.3-9.5	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U	8.3 U	8.3 U	17	8.3 U	8.3 U
Benzo(e)pyrene	STL	ug/kg	8.3-9.5	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U	8.3 U	8.3 U	12	8.3 U	8.3 U
Benzo(g,h,i)perylene	STL	ug/kg	8.3-9.5	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U	8.3 U	8.3 U	9.1 U	8.3 U	8.3 U
Benzo(k)fluoranthene	STL	ug/kg	8.3-9.5	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U	8.3 U	8.3 U	18	8.3 U	8.3 U
Biphenyl	STL	ug/kg	8.3-9.5	12	11	10	10	8.3 U	8.3 U	8.3 J	9.6	12	12
Chrysene	STL	ug/kg	8.3-9.5	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U	8.3 U	8.3 U	24	8.3 U	8.3 U
Dibenz(a,h)anthracene	STL	ug/kg	8.3-9.5	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U	8.3 U	8.3 U	9.1 U	8.3 U	8.3 U
Dibenzothiophene	STL	ug/kg	8.3-9.5	9.1 U	8.3 U	8.3 U	10	8.3 U	8.3 U	8.3 U	9.1 U	8.3 U	11
Fluoranthene	STL	ug/kg	8.3-9.5	25	22	23	27	12	12	18	49	24	27
Fluorene	STL	ug/kg	8.3-9.5	38	32	32	34	22	22	26	28	36	39
Indeno(1,2,3-cd)pyrene	STL	ug/kg	8.3-9.5	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U	8.3 U	8.3 U	9.1 U	8.3 U	8.3 U
Naphthalene	STL	ug/kg	8.3-9.5	120	120	110	120	75	73	87	98	110	120
Perylene	STL	ug/kg	8.3-9.5	9.1 U	8.3 U	8.3 U	8.7 U	8.3 U	8.3 U	8.3 U	9.1 U	8.3 U	8.3 U
Phenanthrene	STL	ug/kg	8.3-9.5	71	62	62	54	35	34	37	56	64	78
Pyrene	STL	ug/kg	8.3-9.5	17	14	14	17	9.3	8.3 U	9.3	43	15	20
Total PAHs	STL	ug/kg		662.7	595.6	585.7	599.0	351.3	351.0	437.9	678.6	618.4	668.0

Detections are shown in bold face.
LOD = limit of detection
U = Not detected
J = estimated value

Table 6
April 2005 Vapor Probe Air Results - VOCs
Draft - Unvalidated Data
Northern States Power, Ashland, Wisconsin

Analyte	Units	VP-10 ¹	INDOOR ²	UPWIND ³
VOCs				
1,1,1-Trichloroethane	ppbv	<0.31	2.3	<0.31
1,1,2,2-Tetrachloroethane	ppbv	<0.31	<0.31	<0.31
1,1,2-Trichloroethane	ppbv	<0.31	<0.31	<0.31
1,1-Dichloroethane	ppbv	<0.31	<0.31	<0.31
1,1-Dichloroethene	ppbv	<0.31	<0.31	<0.31
1,2,4-Trichlorobenzene	ppbv	<1.5	<1.5	<1.5
1,2,4-Trimethylbenzene	ppbv	0.7	0.81	<0.31
1,2-Dibromoethane (EDB)	ppbv	<0.31	<0.31	<0.31
1,2-Dichlorobenzene	ppbv	<0.31	<0.31	<0.31
1,2-Dichloroethane	ppbv	<0.31	<0.31	<0.31
1,2-Dichloropropane	ppbv	<0.31	<0.31	<0.31
1,3,5-Trimethylbenzene	ppbv	<0.31	<0.31	<0.31
1,3-Dichlorobenzene	ppbv	<0.31	<0.31	<0.31
1,4-Dichlorobenzene	ppbv	2.3	6.9	<0.31
Benzene	ppbv	1.7	12	<0.31
Benzyl chloride	ppbv	<0.31	<0.31	<0.31
Bromomethane	ppbv	<0.31	<0.31	<0.31
Carbon tetrachloride	ppbv	0.34	1.7	<0.31
Chlorobenzene	ppbv	<0.31	<0.31	<0.31
Chloroethane	ppbv	<0.31	<0.31	<0.31
Chloroform	ppbv	<0.31	<0.31	<0.31
Chloromethane	ppbv	<0.77	1.3	<0.77
cis-1,2-Dichloroethene	ppbv	<0.31	<0.31	<0.31
cis-1,3-Dichloropropene	ppbv	<0.31	<0.31	<0.31
Dichlorodifluoromethane	ppbv	0.89	1.1	0.7
Ethylbenzene	ppbv	0.68	6.2	<0.31
Hexachlorobutadiene	ppbv	<1.5	<1.5	<1.5
Methylene chloride	ppbv	<0.77	1.4	<0.77
m-Xylene & p-Xylene	ppbv	2.3	17	<0.31
o-Xylene	ppbv	0.77	4.3	<0.31
Styrene	ppbv	<0.31	<0.31	<0.31
Toluene	ppbv	3.8	27	0.38
trans-1,3-Dichloropropene	ppbv	<0.31	<0.31	<0.31
Trichloroethene	ppbv	<0.31	0.59	<0.31
Trichlorofluoromethane	ppbv	0.4	0.47	0.34
Vinyl chloride	ppbv	<0.31	<0.31	<0.31

Notes:

VP-10 and the Upwind sample were recollected April 18 and 19, 2005.

¹ VP-10 was recollected in April 2005 and was collected instantaneously.

² Indoor air sample was collected over a 24-hour period inside the Xcel Building.

³ Upwind ambient air sample was collected over a 1-hour period.

< - Below detection limit

Bold face indicates positive detections

Table 7
Remediation System Water Quality Monitoring Results
Northern States Power, Ashland, Wisconsin

May 2005

Analyte	Units	Influent	Precarbon	Effluent	Trip Blank	⁽¹⁾ POTW	Method	⁽³⁾ Frequency
VOCs								
1,1,1,2-TETRACHLOROETHANE	ug/L	<140	<3.5	<0.28	<0.28	--	EPA 8260	Monthly
1,1,1-TRICHLOROETHANE	ug/L	<130	<3.3	<0.27	<0.27	--	EPA 8260	Monthly
1,1,2,2-TETRACHLOROETHANE	ug/L	<160	<4.1	<0.33	<0.33	--	EPA 8260	Monthly
1,1,2-TRICHLOROETHANE	ug/L	<210	<5.2	<0.42	<0.42	--	EPA 8260	Monthly
1,1-DICHLOROETHANE	ug/L	<150	<3.7	<0.3	<0.3	--	EPA 8260	Monthly
1,1-DICHLOROETHENE	ug/L	<210	<5.1	<0.41	<0.41	--	EPA 8260	Monthly
1,1-DICHLOROPROPENE	ug/L	<160	<4	<0.32	<0.32	--	EPA 8260	Monthly
1,2,3-TRICHLOROBENZENE	ug/L	<180	<4.6	<0.36	<0.36	--	EPA 8261	Monthly
1,2,3-TRICHLOROPROPANE	ug/L	<220	<5.4	<0.44	<0.44	--	EPA 8260	Monthly
1,2,4-TRICHLOROBENZENE	ug/L	<180	<4.6	<0.37	<0.37	--	EPA 8260	Monthly
1,2,4-TRIMETHYLBENZENE	ug/L	<150	<4.7>	<0.31	<0.31	--	EPA 8260	Monthly
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	<170	<4.1	<0.33	<0.33	--	EPA 8260	Monthly
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ug/L	<150	<3.8	<0.3	<0.3	--	EPA 8260	Monthly
1,2-DICHLOROBENZENE	ug/L	<140	<3.5	<0.28	<0.28	--	EPA 8260	Monthly
1,2-DICHLOROETHANE	ug/L	<170	<4.2	<0.34	<0.34	--	EPA 8260	Monthly
1,2-DICHLOROPROPANE	ug/L	<170	<4.4	<0.35	<0.35	--	EPA 8260	Monthly
1,3,5-TRIMETHYLBENZENE (MESITYLENE)	ug/L	<200	<4.9	<0.39	<0.39	--	EPA 8260	Monthly
1,3-DICHLOROBENZENE	ug/L	<120	<2.9	<0.24	<0.24	--	EPA 8260	Monthly
1,3-DICHLOROPROPANE	ug/L	<170	<4.2	<0.34	<0.34	--	EPA 8260	Monthly
1,4-DICHLOROBENZENE	ug/L	<120	<2.9	<0.23	<0.23	--	EPA 8260	Monthly
2,2-DICHLOROPROPANE	ug/L	<220	<5.5	<0.44	<0.44	--	EPA 8260	Monthly
2-CHLOROTOLUENE	ug/L	<200	<4.9	<0.39	<0.39	--	EPA 8260	Monthly
4-CHLOROTOLUENE	ug/L	<180	<4.6	<0.37	<0.37	--	EPA 8260	Monthly
BENZENE	ug/L	850	79	<0.29	<0.29	--	EPA 8260	Monthly
BROMOBENZENE	ug/L	<52	<1.3	<0.1	<0.1	--	EPA 8260	Monthly
BROMOCHLOROMETHANE	ug/L	<130	<3.3	<0.27	<0.27	--	EPA 8260	Monthly
BROMODICHLOROMETHANE	ug/L	<160	<4	<0.32	<0.32	--	EPA 8260	Monthly
BROMOFORM	ug/L	<140	<3.4	<0.28	<0.28	--	EPA 8260	Monthly
BROMOMETHANE	ug/L	<190	<4.9	<0.39	<0.39	--	EPA 8260	Monthly
CARBON TETRACHLORIDE	ug/L	<150	<3.7	<0.3	<0.3	--	EPA 8260	Monthly
CHLOROBENZENE	ug/L	<100	<2.6	<0.21	<0.21	--	EPA 8260	Monthly
CHLOROETHANE	ug/L	<850	<21	<1.7	<1.7	--	EPA 8260	Monthly
CHLOROFORM	ug/L	<150	<3.7	<0.3	<0.3	--	EPA 8260	Monthly
CHLOROMETHANE	ug/L	<120	<3	<0.24	<0.24	--	EPA 8260	Monthly
CIS-1,2-DICHLOROETHYLENE	ug/L	<200	<5	<0.4	<0.4	--	EPA 8260	Monthly
CIS-1,3-DICHLOROPROPENE	ug/L	<130	<3.4	<0.27	<0.27	--	EPA 8260	Monthly
CYMENE	ug/L	<150	<3.8	<0.3	<0.3	--	EPA 8260	Monthly
DIBROMOCHLOROMETHANE	ug/L	<150	<3.6	<0.29	<0.29	--	EPA 8260	Monthly
DIBROMOMETHANE	ug/L	<160	<4	<0.32	<0.32	--	EPA 8260	Monthly
DICHLORODIFLUOROMETHANE	ug/L	<89	<2.2	<0.18	<0.18	--	EPA 8260	Monthly
ETHYLBENZENE	ug/L	<130	<3.3	<0.26	<0.26	--	EPA 8260	Monthly
HEXACHLOROBUTADIENE	ug/L	<210	<5.2	<0.41	<0.41	--	EPA 8260	Monthly
ISOPROPYL ETHER	ug/L	<180	<4.4	<0.35	<0.35	--	EPA 8260	Monthly
ISOPROPYLBENZENE (CUMENE)	ug/L	<180	<4.6	<0.36	<0.36	--	EPA 8260	Monthly
M,P-XYLENE (SUM OF ISOMERS)	ug/L	<310	<15>	<0.62	<0.62	--	EPA 8260	Monthly
METHYLENE CHLORIDE	ug/L	<210	<5.3	<0.43	<0.43	--	EPA 8260	Monthly
NAPHTHALENE	ug/L	3900	160	<1.0>	<0.39	--	EPA 8260	Monthly
N-BUTYLBENZENE	ug/L	<160	<3.9	<0.31	<0.31	--	EPA 8260	Monthly
N-PROPYLBENZENE	ug/L	<170	<4.2	<0.34	<0.34	--	EPA 8260	Monthly
O-XYLENE (1,2-DIMETHYLBENZENE)	ug/L	<130	<8.7>	<0.27	<0.27	--	EPA 8260	Monthly
SEC-BUTYLBENZENE	ug/L	<160	<4.1	<0.33	<0.33	--	EPA 8260	Monthly
STYRENE	ug/L	<240>	25	<0.32	<0.32	--	EPA 8260	Monthly
T-BUTYLBENZENE	ug/L	<150	<3.9	<0.31	<0.31	--	EPA 8260	Monthly
TERT-BUTYL METHYL ETHER	ug/L	<150	<3.8	<0.31	<0.31	--	EPA 8260	Monthly
TETRACHLOROETHYLENE (PCE)	ug/L	<150	<3.8	<0.31	<0.31	--	EPA 8260	Monthly
TOLUENE	ug/L	620	57	<0.34	<0.34	--	EPA 8260	Monthly
TRANS-1,2-DICHLOROETHENE	ug/L	<170	<4.3	<0.35	<0.35	--	EPA 8260	Monthly
TRANS-1,3-DICHLOROPROPENE	ug/L	<160	<4	<0.32	<0.32	--	EPA 8260	Monthly
TRICHLOROETHYLENE (TCE)	ug/L	<120	<3.1	<0.25	<0.25	--	EPA 8260	Monthly
TRICHLOROFUOROMETHANE	ug/L	<190	<4.8	<0.38	<0.38	--	EPA 8260	Monthly
VINYL CHLORIDE	ug/L	<53	<1.3	<0.11	<0.11	--	EPA 8260	Monthly
Total VOCs	ug/L	5,610	349.4	1.0	0.0	⁽²⁾ 1000		

Collected May 12, 2005

< - Less Than Limit of Detection

<> Between Limit of Detection and Limit of Quantification

Concentrations exceeding the POTW have been shaded

⁽¹⁾- POTW standards for effluent discharge

⁽²⁾1000 - POTW standard for total BTEX for effluent discharge

Table 8
Remediation System Air Monitoring Results
Northern States Power, Ashland, Wisconsin

May 2005

Analyte	Units	Air Stripper	1st Stage Carbon	Effluent	Method	Frequency
VOCs						
Volume Collected	Liters	3.0	3.0	5.0		
Benzene	mg	<0.02	0.039	0.072	NIOSH 1501	Monthly
Benzene	mg/m ³	<6.67	13.0	14.40		Monthly
Ethylbenzene	mg	<0.02	<0.02	<0.02	NIOSH 1501	Monthly
Ethylbenzene	mg/m ³	<6.67	<6.67	<4.0		Monthly
Hydrocarbons (total)	mg	<0.03	0.097	0.182	NIOSH 1550	Monthly
Hydrocarbons (total)	mg/m ³	<10	32.3	36.4		Monthly
Toluene	mg	<0.02	<0.02	0.029	NIOSH 1501	Monthly
Toluene	mg/m ³	<6.67	<6.67	5.8		Monthly
Xylene, Total	mg	<0.03	<0.03	<0.03	NIOSH 1501	Monthly
Xylene, Total	mg/m ³	<10	<10	<6.0		Monthly

Collected May 12, 2005

< - Less Than Limit of Detection

<> Between Limit of Detection and Limit of Quantification

**Table 9
Summary of Coal Tar and Groundwater Volume Removed**

Date	Cumulative Volume of Coal Tar Removed (gals)	Cumulative Volume of Coal Tar Removed (lbs)	Cumulative Volume of Groundwater Removed from Wells EW-1, EW-2, EW-3 (gals)	Cumulative Volume of Groundwater Removed from well EW-4 (gals)	Cumulative Volume of Total Groundwater Removed (gals)
20-Feb-01	554.2	4,853	22,826	0	22,826
30-Mar-01	850.0	7,443	44,613	0	44,613
26-Apr-01	915.2	8,014	56,978	0	56,978
17-May-01	1,078.2	9,442	58,967	0	58,967
11-Jun-01	1,291.2	11,307	61,094	0	61,094
31-Jul-01	1,535.2	13,444	65,758	0	65,758
15-Aug-01	1,578.0	13,819	65,758	0	65,758
12-Sep-01	1,578.0	14,193	81,524	0	81,524
28-Sep-01	1,789.9	15,674	104,500	0	104,500
12-Nov-01 ¹	2,486.4	21,773	104,900	0	104,900
13-Nov-01	2,551.6	22,344	106,200	0	106,200
14-Nov-01	2,559.7	22,415	107,600	0	107,600
19-Nov-01	2,600.5	22,772	114,200	0	114,200
28-Nov-01	2,682.0	23,486	125,200	0	125,200
03-Dec-01	2,779.8	24,342	131,500	0	131,500
12-Dec-01	2,877.6	25,199	142,300	0	142,300
19-Dec-01	2,975.4	26,055	155,328	0	155,328
03-Jan-02	3,105.8	27,197	172,000	0	172,000
05-Feb-02	3,105.7	27,197	173,116	0	173,116
11-Feb-02	3,122.0	27,340	178,300	0	178,300
12-Feb-02	3,122.1	27,340	180,100	0	180,100
19-Feb-02	3,122.1	27,340	182,900	0	182,900
06-Mar-02	3,138.4	27,483	183,000	0	183,000
12-Mar-02	3,187.3	27,911	194,400	0	194,400
18-Mar-02	3,219.9	28,196	199,400	0	199,400
27-Mar-02	3,317.7	29,053	210,500	0	210,500
03-Apr-02	3,350.3	29,338	216,600	0	216,600
09-Apr-02	3,399.2	29,767	224,000	0	224,000
23-Apr-02	3,473.6	30,419	238,100	0	238,100
30-Apr-02	3,514.3	30,775	246,700	0	246,700
08-May-02	3,538.8	30,989	256,900	0	256,900
15-May-02	3,587.7	31,418	264,500	0	264,500
20-May-02	3,612.1	31,631	266,900	0	266,900
24-May-02	3,636.5	31,845	268,365	10,935	279,300
28-May-02	3,652.8	31,988	272,215	13,185	285,400
17-Jun-02	3,669.1	32,131	287,693	28,507	316,200
25-Jun-02	3,726.2	32,631	295,908	35,492	331,400
02-Jul-02	3,766.9	32,987	299,147	42,153	341,300
09-Jul-02	3,783.2	33,130	306,783	42,717	349,500
17-Jul-02	3,799.5	33,272	314,710	49,990	364,700
22-Jul-02	3,824.0	33,487	319,384	54,516	373,900
29-Jul-02	3,864.7	33,843	326,542	57,158	383,700
08-Aug-02	3,905.5	34,201	334,406	68,394	402,800
15-Aug-02	3,921.8	34,343	340,391	68,609	409,000
09-Sep-02	3,942.1	34,521	343,084	79,816	422,900
19-Sep-02	4,003.3	35,057	350,659	91,441	442,100
26-Sep-02	4,003.3	35,057	356,565	91,535	448,100
04-Oct-02	4,003.3	35,057	363,135	93,265	456,400
11-Oct-02	4,003.3	35,057	374,863	94,737	469,600
18-Oct-02	4,027.8	35,272	374,863	94,737	485,600
25-Oct-02	4,158.2	36,414	379,459	116,901	496,360
31-Oct-02	4,166.3	36,484	381,556	121,045	502,600
08-Nov-02	4,166.3	36,484	390,756	121,045	511,800
21-Nov-02	4,753.3	41,625	387,629	124,272	511,900
26-Nov-02	4,773.6	41,803	391,434	127,566	519,000
04-Dec-02	4,789.9	41,945	398,205	129,795	528,000
10-Dec-02	4,802.2	42,053	403,230	130,971	534,200
18-Dec-02	4,826.6	42,267	410,356	132,444	542,800
23-Dec-02	4,842.9	42,409	412,967	133,333	546,300
30-Dec-02	4,855.1	42,516	415,842	134,458	550,300
10-Jan-03	4,883.7	42,767	425,575	136,125	561,700
15-Jan-03	4,900.0	42,910	429,541	136,859	566,400

**Table 9
Summary of Coal Tar and Groundwater Volume Removed**

Date	Cumulative Volume of Coal Tar Removed (gals)	Cumulative Volume of Coal Tar Removed (lbs)	Cumulative Volume of Groundwater Removed from Wells EW-1, EW-2, EW-3 (gals)	Cumulative Volume of Groundwater Removed from well EW-4 (gals)	Cumulative Volume of Total Groundwater Removed (gals)
20-Jan-03	4,920.3	43,087	434,133	137,567	571,700
30-Jan-03	4,952.9	43,373	442,556	138,844	581,400
13-Feb-03	4,989.6	43,694	454,019	140,881	594,900
19-Feb-03	5,007.8	43,854	456,851	141,149	598,000
26-Feb-03	5,036.3	44,103	463,081	142,019	605,100
04-Mar-03	5,036.3	44,103.1	468,458	142,742	611,200
27-Mar-03	5,036.3	44,103.1	471,979	143,488	615,467
02-Apr-03	5,097.5	44,639	478,430	144,870	623,300
09-Apr-03	5,105.6	44,710	483,745	145,855	629,600
16-Apr-03	5,121.9	44,853	487,333	148,267	635,600
23-Apr-03 ²	4,910.0	42,997	492,504	152,796	645,300
29-Apr-03	4,926.3	43,140	495,729	155,771	651,500
07-May-03	4,926.3	43,140	499,877	158,223	658,100
15-May-03	4,926.3	43,140	499,877	158,223	658,100
21-May-03	4,942.6	43,283	515,230	172,470	687,700
28-May-03	4,958.9	43,425	522,943	175,357	698,300
03-Jun-03	4,967.1	43,497	524,602	176,598	701,200
10-Jun-03	4,975.2	43,568	529,728	178,472	708,200
17-Jun-03	4,983.4	43,640	534,411	179,789	714,200
26-Jun-03	4,983.4	43,640	540,050	180,950	721,000
02-Jul-03	4,983.4	43,640	543,291	181,909	725,200
09-Jul-03	4,983.4	43,640	549,991	181,909	731,900
16-Jul-03	4,991.5	43,711	553,174	185,526	738,700
22-Jul-03	4,999.7	43,783	556,643	186,957	743,600
30-Jul-03	5,007.8	43,854	560,726	188,074	748,800
06-Aug-03	5,040.4	44,139	562,275	188,825	751,100
20-Aug-03	5,081.2	44,496	567,361	191,139	758,500
28-Aug-03	5,138.2	44,995	570,561	191,139	761,700
04-Sep-03	5,316.7	46,559	572,759	191,841	764,600
11-Sep-03	5,382.7	47,137	575,659	191,841	767,500
19-Sep-03	5,423.5	47,494	579,259	191,841	771,100
25-Sep-03	5,366.4	46,994	578,399	197,101	775,500
03-Oct-03	5,382.7	47,137	584,399	197,101	781,500
09-Oct-03	5,399.0	47,279	583,771	198,229	782,000
24-Oct-03	5,452.0	47,743	589,679	200,821	790,500
29-Oct-03	5,481.5	48,002	592,579	200,821	793,400
06-Nov-03	5,530.4	48,430	596,979	200,821	797,800
13-Nov-03	5,546.7	48,573	598,764	200,836	799,600
11/192003	5,571.2	48,787	598,895	201,005	799,900
25-Nov-03	5,591.5	48,965	601,544	202,056	803,600
03-Dec-03	5,620.1	49,215	604,762	203,438	808,200
11-Dec-03	5,644.5	49,429	608,144	204,556	812,700
19-Dec-03	5,669.0	49,644	612,612	205,488	818,100
26-Dec-03	5,685.5	49,788	615,254	206,146	821,400
29-Dec-03	5,693.4	49,857	615,310	206,190	821,500
09-Jan-04	5,705.6	49,964	618,110	206,190	824,300
20-Jan-04	5,709.7	50,000	619,147	207,153	826,300
29-Jan-04	5,713.8	50,036	626,409	208,091	834,500
03-Feb-04	5,726.0	50,143	630,515	208,485	839,000
11-Feb-04	5,726.0	50,143	633,094	208,706	841,800
17-Feb-04	5,734.2	50,215	637,911	209,089	847,000
26-Feb-04	5,742.3	50,286	645,083	209,617	854,700
02-Mar-04	5,754.5	50,392	649,270	209,930	859,200
12-Mar-04	5,774.9	50,571	657,501	210,999	868,500
19-Mar-04	5,807.9	50,860	664,798	212,102	876,900
25-Mar-04	5,819.7	50,963	669,603	214,997	884,600
02-Apr-04	5,823.8	50,999	669,738	215,163	884,900
05-Apr-04	5,823.8	50,999	672,233	217,667	889,900
23-Apr-04	5,827.9	51,035	672,869	218,231	891,100
27-Apr-04	5,836.0	51,106	673,684	219,616	893,300
12-May-04	5,852.3	51,249	678,475	223,625	902,100
17-May-04	5,856.4	51,285	682,349	225,151	907,500
25-May-04	5,872.7	51,427	688,062	226,538	914,600
04-Jun-04	5,884.9	51,534	697,811	230,589	928,400
10-Jun-04	5,913.5	51,785	703,940	232,060	936,000
14-Jun-04	5,937.9	51,998	708,258	232,742	941,000

**Table 9
Summary of Coal Tar and Groundwater Volume Removed**

Date	Cumulative Volume of Coal Tar Removed (gals)	Cumulative Volume of Coal Tar Removed (lbs)	Cumulative Volume of Groundwater Removed from Wells EW-1, EW-2, EW-3 (gals)	Cumulative Volume of Groundwater Removed from well EW-4 (gals)	Cumulative Volume of Total Groundwater Removed (gals)
24-Jun-04	5,995.0	52,498	719,009	234,191	953,200
02-Jul-04	6,039.8	52,891	726,095	235,205	961,300
06-Jul-04	6,064.2	53,104	729,338	235,762	965,100
14-Jul-04	6,133.5	53,711	745,363	237,038	982,400
20-Jul-04	6,133.5	53,711	739,893	238,007	977,900
26-Jul-04	6,182.4	54,139	744,946	238,654	983,600
04-Aug-04	6,235.4	54,604	749,874	239,426	989,300
10-Aug-04	6,284.3	55,032	752,585	239,915	992,500
19-Aug-04	6,316.9	55,317	753,677	240,923	994,600
26-Aug-04	6,345.4	55,567	759,482	241,618	1,001,100
31-Aug-04	6,378.0	55,852	762,807	242,793	1,005,600
10-Sep-04	6,422.8	56,245	766,587	243,514	1,010,100
15-Sep-04	6,439.1	56,387	770,402	244,599	1,015,000
24-Sep-04	6,451.4	56,495	777,825	247,575	1,025,400
27-Sep-04	6,492.1	56,852	780,289	248,111	1,028,400
07-Oct-04	6,508.4	56,994	789,339	249,261	1,038,600
15-Oct-04	6,528.8	57,173	795,323	250,477	1,045,800
19-Oct-04	6,541.0	57,280	798,370	251,030	1,049,400
28-Oct-04	6,557.3	57,422	805,072	252,428	1,057,500
04-Nov-04	6,577.7	57,601	809,388	254,112	1,063,500
11-Nov-04	6,663.3	58,351	809,373	254,427	1,063,800
17-Nov-04	6,679.6	58,493	813,846	255,954	1,069,800
23-Nov-04	6,704.0	58,707	815,871	256,629	1,072,500
01-Dec-04	6,708.1	58,743	818,447	257,353	1,075,800
09-Dec-04	6,720.3	58,850	825,818	258,582	1,084,400
15-Dec-04	6,744.8	59,064	831,411	259,289	1,090,700
21-Dec-04	6,761.1	59,207	836,911	259,289	1,096,200
03-Jan-05	6,850.7	59,992	848,711	259,289	1,108,000
12-Jan-05	6,891.5	60,349	853,611	259,289	1,112,900
20-Jan-05	6,924.1	60,635	859,476	259,824	1,119,300
27-Jan-05	6,981.1	61,134	864,329	260,671	1,125,000
01-Feb-05	7,013.7	61,419	867,637	261,264	1,128,900
08-Feb-05	7,058.5	61,811	872,617	262,083	1,134,700
17-Feb-05	7,103.4	62,205	879,040	263,060	1,142,100
23-Feb-05	7,225.7	63,276	883,368	263,632	1,147,000
03-Mar-05	7,274.6	63,704	889,041	264,459	1,153,500
08-Mar-05	7,307.2	63,989	892,526	264,974	1,157,500
15-Mar-05	7,347.9	64,346	895,198	265,602	1,160,800
22-Mar-05	7,372.4	64,560	899,294	266,206	1,165,500
29-Mar-05	7,413.1	64,917	898,895	269,205	1,168,100
06-Apr-05	7,453.9	65,274	904,348	270,652	1,175,000
14-Apr-05	7,494.6	65,630	903,599	277,501	1,181,100
20-Apr-05	7,531.3	65,952	904,434	278,967	1,183,400
27-Apr-05	7,572.0	66,308	905,998	279,902	1,185,900
03-May-05	7,572.0	66,308	907,569	280,831	1,188,400
13-May-05	7,576.1	66,344	909,996	281,504	1,191,500
17-May-05	7,576.1	66,344	910,118	281,583	1,191,700
27-May-05	7,584.3	66,416	911,688	282,912	1,194,600
03-Jun-05	7,590.4	66,469	912,599	283,802	1,196,400
09-Jun-05	7,590.4	66,469	913,562	285,038	1,198,600

¹ Increase in coal tar removal w/ no change in groundwater removal volume due to coal tar collection tank and wash tank being pumped out and shipped to WRR in Eau Claire, WI. Total volume of 1324 gallons, w/ a current estimate of 85% coal tar in that volume.

² Correction of revised quantity of coal tar removed on 4/23/2003 of -211.9 gallons due to settling of emulsified coal tar measured on this date.

Table 10
Remediation System Air Treatment Summary
Northern States Power, Ashland, Wisconsin

Sample Date	Total Elapsed Time (days) ¹	Sample Type (Influent/ Effluent)	Air Flow Rate (CFM)	Effluent Temp. (F)	Total Hydrocarbons (mg/m ³) ²	Benzene (mg/m ³) ²	Total Hydrocarbon Rate (lbs/day) ³	Benzene Rate (lbs/day) ³	Cummulative Mass of Hydrocarbons Removed by Carbon (lbs.) ⁴	Cummulative Mass of Benzene Removed by Carbon (lbs.) ⁴	Cummulative Mass of Hydrocarbons Emitted (lbs.) ⁴	Cummulative Mass of Benzene Emitted (lbs.) ⁴
28-Sep-00	2	Effluent	176	70	5	3.33	0.08	0.05	-	-	0.2	0.1
19-Jan-01	21	Influent	176	-	45.5	9.1	0.71	0.14	10.36	0.00		
19-Jan-01	21	Effluent	176	45	13.7	9.1	0.21	0.14			4.2	2.8
30-Mar-01	84	Influent	176	-	71.7	26.3	1.11	0.41	50.73	18.08		
30-Mar-01	84	Effluent	176	52	30.4	7.8	0.47	0.12			33.9	10.4
11-Apr-01	96	Influent	176	-	33	7.67	0.51	0.12	56.32	19.14		
11-Apr-01	96	Effluent	176	62	3	2	0.05	0.03			34.5	10.8
17-May-01	110	Effluent	176	68	5	3.33	0.08	0.05			35.6	11.5
13-Jun-01	125	Effluent	176	80	5	3.33	0.08	0.05			36.7	12.3
31-Jul-01	135	Effluent	176	80	5	3.33	0.08	0.05			37.5	12.8
7-Dec-01	196	Influent	176	35	60	10	0.93	0.16	116.90	26.49		
7-Dec-01	196	Effluent	176	35	5	3.33	0.08	0.05			44.2	17.2
22-Feb-02	232	Influent	176	30	303	39	4.70	0.61	284.47	47.15		
22-Feb-02	232	Effluent	176	30	3	2	0.05	0.03			45.8	18.4
4-Apr-02	267	Influent	176	55	33	8	0.51	0.12	300.76	50.41		
4-Apr-02	267	Effluent	176	55	3	2	0.05	0.03			47.5	19.4
8-Aug-02	393	Influent	15	80	1270	311	1.68	0.41	473.04	91.27		
8-Aug-02	393	Effluent	15	80	236	65.8	0.31	0.09			86.8	30.4
31-Oct-02	456	Influent	125	32	2100	410	23.14	4.52	1919.39	373.59		
31-Oct-02	456	Intermediate	125	32	32.7	3.33	0.36	0.04				
31-Oct-02	456	Effluent	125	32	16.6	2	0.18	0.02			98.3	31.8
27-Nov-02	470	Influent	125	25	1780	500	19.61	5.51	2193.53	450.21		
27-Nov-02	470	Intermediate	125	25	15.3	3.33	0.17	0.04				
27-Nov-02	470	Effluent	125	25	3	2	0.03	0.02			98.8	32.1
30-Jan-03	534	Influent	125	20	17.7	3.33	0.20	0.04	2189.80	445.01		
30-Jan-03	534	Intermediate	125	20	19.7	6.67	0.22	0.07				
30-Jan-03	534	Effluent	125	20	23	10.7	0.25	0.12			115.0	39.7
19-Feb-03	554	Influent	125	19	5	3.33	0.06	0.04	2188.43	444.73		
19-Feb-03	554	Intermediate	125	19	5	3.33	0.06	0.04				
19-Feb-03	554	Effluent	125	19	11.2	4.6	0.12	0.05			117.5	40.7
2-Apr-03	580	Influent	125	29	22	3.33	0.24	0.04	2187.11	442.42		
2-Apr-03	580	Intermediate	125	29	47.3	14.7	0.52	0.16				
2-Apr-03	580	Effluent	125	29	26.6	11.4	0.29	0.13			125.1	43.9
23-Apr-03	596	Influent	125	29	66.3	18.3	0.73	0.20	2195.52	444.62		
23-Apr-03	596	Intermediate	125	29	20.7	3.33	0.23	0.04				
23-Apr-03	596	Effluent	125	29	18.6	5.8	0.20	0.06			128.4	45.0
21-May-03	619	Influent	125	29	43	10	0.47	0.11	2198.51	445.69		
21-May-03	619	Intermediate	125	29	36.7	3.33	0.40	0.04				
21-May-03	619	Effluent	125	29	31.2	5.8	0.34	0.06			136.3	46.4
25-Jun-03	654	Influent	125	29	22	3.33	0.24	0.04	2196.74	442.57		
25-Jun-03	654	Intermediate	125	29	47.3	14.7	0.52	0.16				
25-Jun-03	654	Effluent	125	29	26.6	11.4	0.29	0.13			146.5	50.8
30-Jul-03	684	Influent	125	29	10	3.33	0.11	0.04	2187.05	442.57		
30-Jul-03	684	Intermediate	125	29	15.7	3.33	0.17	0.04				
30-Jul-03	684	Effluent	125	29	39.3	3.33	0.43	0.04			159.5	51.9
28-Aug-03	713	Influent	125	29	5	3.33	0.06	0.04	2183.67	443.00		
28-Aug-03	713	Intermediate	125	29	15	3.33	0.17	0.04				
28-Aug-03	713	Effluent	125	29	15.6	2	0.17	0.02			164.5	52.6
29-Sep-03	745	Influent	125	29	21.3	3.33	0.23	0.04	2182.22	442.34		
29-Sep-03	745	Intermediate	125	29	15	3.33	0.17	0.04				
29-Sep-03	745	Effluent	125	29	25.4	5.2	0.28	0.06			173.5	54.4
29-Oct-03	775	Influent	125	29	5	3.33	0.06	0.04	2179.24	442.78		
29-Oct-03	775	Intermediate	125	29	14.3	3.33	0.16	0.04				
29-Oct-03	775	Effluent	125	29	14	2	0.15	0.02			178.1	55.1

**Table 10
Remediation System Air Treatment Summary
Northern States Power, Ashland, Wisconsin**

Sample Date	Total Elapsed Time (days) ¹	Sample Type (Influent/Effluent)	Air Flow Rate (CFM)	Effluent Temp. (F)	Total Hydrocarbons (mg/m ³) ²	Benzene (mg/m ³) ²	Total Hydrocarbon Rate (lbs/day) ³	Benzene Rate (lbs/day) ³	Cummulative Mass of Hydrocarbons Removed by Carbon (lbs.) ⁴	Cummulative Mass of Benzene Removed by Carbon (lbs.) ⁴	Cummulative Mass of Hydrocarbons Emitted (lbs.) ⁴	Cummulative Mass of Benzene Emitted (lbs.) ⁴
19-Nov-03	796	Influent	125	29	5	3.33	0.06	0.04	2179.71	443.09		
19-Nov-03	796	Intermediate	125	29	5	3.33	0.06	0.04				
19-Nov-03	796	Effluent	125	29	3	2	0.03	0.02			178.8	55.5
29-Dec-03	836	Influent	125	29	5	3.33	0.06	0.04	2177.59	443.67		
29-Dec-03	836	Intermediate	125	29	5	3.33	0.06	0.04				
29-Dec-03	836	Effluent	125	29	9.8	2	0.11	0.02			183.1	56.4
20-Jan-04	858	Influent	125	29	12.7	3.33	0.14	0.04	2179.94	444.00		
20-Jan-04	858	Intermediate	125	29	5	3.33	0.06	0.04				
20-Jan-04	858	Effluent	125	29	3	2	0.03	0.02			183.8	56.9
26-Feb-04	895	Influent	125	29	28.3	6.67	0.31	0.07	2183.65	443.78		
26-Feb-04	895	Intermediate	125	29	23.7	8.33	0.26	0.09				
26-Feb-04	895	Effluent	125	29	19.2	7.20	0.21	0.08			191.7	59.8
19-Mar-04	917	Influent	125	29	12.67	3.33	0.14	0.04	2183.52	442.94		
19-Mar-04	917	Intermediate	125	29	20.00	9.00	0.22	0.10				
19-Mar-04	917	Effluent	125	29	13.20	6.80	0.15	0.07			194.9	61.5
27-Apr-04	956	Influent	125	29	11.30	3.33	0.12	0.04	2184.26	443.51		
27-Apr-04	956	Intermediate	125	29	11.00	3.33	0.12	0.04				
27-Apr-04	956	Effluent	125	29	9.60	2.00	0.11	0.02			199.0	62.3
26-May-04	985	Influent	125	29	5.00	3.33	0.06	0.04	2178.25	443.11		
26-May-04	985	Intermediate	125	29	19.70	3.33	0.22	0.04				
26-May-04	985	Effluent	125	29	23.80	4.60	0.26	0.05			206.6	63.8
24-Jun-04	1014	Influent	125	29	11.70	3.33	0.13	0.04	2179.11	443.53		
24-Jun-04	1014	Intermediate	125	29	13.00	3.33	0.14	0.04				
24-Jun-04	1014	Effluent	125	29	9.00	2.00	0.10	0.02			209.5	64.4
6-Jul-04	1026	Influent	125	29	108.00	3.33	1.19	0.04	2191.17	443.71		
6-Jul-04	1026	Intermediate	125	29	23.01	3.33	0.25	0.04				
6-Jul-04	1026	Effluent	125	29	16.80	2.00	0.19	0.02			211.7	64.7
19-Aug-04	1070	Influent	125	29	5.00	3.33	0.06	0.04	2192.14	444.35		
19-Aug-04	1070	Intermediate	125	29	5.00	3.33	0.06	0.04				
19-Aug-04	1070	Effluent	125	29	3.00	2.00	0.03	0.02			213.1	65.7
30-Sep-04	1112	Influent	125	29	10.30	3.33	0.11	0.04	2190.89	444.97		
30-Sep-04	1112	Intermediate	125	29	14.30	3.33	0.16	0.04				
30-Sep-04	1112	Effluent	125	29	13.00	2.00	0.14	0.02			219.2	66.6
28-Oct-04	1140	Influent	125	29	13.30	3.33	0.15	0.04	2186.48	442.48		
28-Oct-04	1140	Intermediate	125	29	37.30	13.70	0.41	0.15				
28-Oct-04	1140	Effluent	125	29	27.60	11.40	0.30	0.13			227.7	70.1
17-Nov-04	1160	Influent	125	29	23.70	7.00	0.26	0.08	2186.54	442.21		
17-Nov-04	1160	Intermediate	125	29	21.00	6.67	0.23	0.07				
17-Nov-04	1160	Effluent	125	29	23.40	8.20	0.26	0.09			232.8	71.9
15-Dec-04	1188	Influent	125	29	84.70	23.30	0.93	0.26	2197.50	445.51		
15-Dec-04	1188	Intermediate	125	29	52.00	15.00	0.57	0.17				
15-Dec-04	1188	Effluent	125	29	49.20	12.60	0.54	0.14			248.0	75.8
12-Jan-05	1216	Influent	125	29	12.30	3.33	0.14	0.04	2200.37	445.92		
12-Jan-05	1216	Intermediate	125	29	5.00	3.33	0.06	0.04				
12-Jan-05	1216	Effluent	125	29	3.00	2.00	0.03	0.02			248.9	76.4
8-Feb-05	1243	Influent	125	29	15.30	4.17	0.17	0.05	2201.05	446.42		
8-Feb-05	1243	Intermediate	125	29	14.00	4.17	0.15	0.05				
8-Feb-05	1243	Effluent	125	29	13.00	2.50	0.14	0.03			252.8	77.2
25-Mar-05	1288	Influent	125	29	5.00	3.33	0.06	0.04	2199.66	447.08		
25-Mar-05	1288	Intermediate	125	29	5.00	3.33	0.06	0.04				
25-Mar-05	1288	Effluent	125	29	7.80	2.00	0.09	0.02			256.7	78.2
6-Apr-05	1300	Influent	125	29	13.00	3.33	0.14	0.04	2200.32	447.26		
6-Apr-05	1300	Intermediate	125	29	11.00	3.33	0.12	0.04				
6-Apr-05	1300	Effluent	125	29	8.00	2.00	0.09	0.02			257.7	78.4
12-May-05	1336	Influent	125	29	5.00	3.33	0.06	0.04	2195.09	445.72		
12-May-05	1336	Intermediate	125	29	16.15	6.50	0.18	0.07				
12-May-05	1336	Effluent	125	29	18.20	7.20	0.20	0.08			265.0	81.3

- (1) Total Elapsed Time, in days, only for days of remediation system operation, not days since start-up.
(2) When a below detection result occurs, the assumed value is half of the detection limit.
For the 1/19/01 sampling, the samples were incorrectly labeled: Drum #1 is influent to Drum #1, Drum #2 is influent to Drum #2, and Air Stripper is Air Effluent.
(3) Daily emission rate based on laboratory results.
(4) Emission rate to date calculated from average daily emission rate and total days of remediation system operation.

**Table 11
Remediation System Water Treatment Summary
Northern States Power, Ashland, Wisconsin**

Sample Date	Total Elapsed Time (days) ¹	Sample Type	Cummulative Volume of Treated Effluent (gal.)	VOCs (ug/L) ²	Benzene (ug/L) ²	Cummulative Mass of VOCs Removed (lbs.) ³	Cummulative Mass of Benzene Removed (lbs.) ³	Cummulative Mass of VOCs Discharged (lbs.) ⁴	Cummulative Mass of Benzene Discharged (lbs.) ⁴
5-Oct-00	9	Influent ⁵		121,985	60,000				
5-Oct-00	9	Effluent	10,592	12.9	0.94	10.8	5.3	0.00114	0.00008
19-Jan-01	21	Inlet ⁶		859.5	90.4				
19-Jan-01	21	Mid Carbon		17.3	0.62				
19-Jan-01	21	Effluent	17,346	16.6	0.7	17.7	8.7	0.00208	0.00012
30-Mar-01	84	Inlet ⁶		1,120.60	140				
30-Mar-01	84	Effluent	44,613	14.45	0.05	45.6	22.4	0.00520	0.00024
11-Apr-01	96	Influent ⁵		100,629	46,000				
11-Apr-01	96	Inlet ⁶		557.5	110				
11-Apr-01	96	Mid Carbon		50.73	5.1				
11-Apr-01	96	Effluent	54,636	13.79	0.94	54.0	26.3	0.00636	0.00031
17-May-01	110	Effluent	58,967	23.46	1.3	57.6	27.9	0.00721	0.00036
13-Jun-01	125	Effluent	61,094	7.74	0.05	59.4	28.8	0.00735	0.00036
13-Jul-01	135	Influent ⁵		97,450	51,000				
31-Jul-01	135	Effluent	65,758	12.36	0.05	63.2	30.7	0.00783	0.00036
20-Sep-01	157	Influent ⁵		113,925	58,000				
20-Sep-01	157	Inlet ⁶		3,205	1,100				
20-Sep-01	157	Effluent	91,894	19.23	0.05	88.1	43.4	0.01203	0.00038
7-Dec-01	196	Influent ⁵		101,620	52,000				
7-Dec-01	196	Inlet ⁶		4,153.5	530				
7-Dec-01	196	Effluent	136,300	9.835	0.05	125.7	62.7	0.01567	0.00039
14-Feb-02	224	Influent		83,055	35,000				
14-Feb-02	224	Precarbon		35,355.3	7,200				
14-Feb-02	224	Effluent	181,000	8.1	0.2	156.7	75.7	0.01869	0.00047
21-Mar-02	256	Influent		143,140	53,000				
21-Mar-02	256	Precarbon		15,716.5	1,600				
21-Mar-02	256	Effluent	202,700	88.22	67	182.6	85.3	0.03467	0.01264
11-Jun-02	323	Influent		63,570	23,000				
11-Jun-02	323	Precarbon		26,320.0	6,400				
11-Jun-02	323	Effluent	286,524	1,244	1,100	226.2	100.6	0.90481	0.78458
8-Aug-02	393	Influent		87,060	41,000				
8-Aug-02	393	Precarbon		26,320.0	18,695				
8-Aug-02	393	Effluent	402,800	6,554.1	4,000	304.3	136.5	7.26406	4.67835
31-Oct-02	456	Influent		27,090.0	5,600				
31-Oct-02	456	Precarbon		24,362.5	13,000				
31-Oct-02	456	Effluent	502,600	2,438.3	1,600	324.9	139.9	9.30128	6.01517
27-Nov-02	470	Influent		52,350.0	22,000				
27-Nov-02	470	Precarbon		15,633.0	7,300				
27-Nov-02	470	Effluent	519,000	6,449.5	4,600	331.1	142.2	10.18390	6.64674
18-Dec-02	491	Influent		45,325.0	19,000				
18-Dec-02	491	Precarbon		7,685.0	2,700				
18-Dec-02	491	Effluent	542,800	4,785.0	3,300	339.2	145.4	11.13420	7.30426
30-Jan-03	534	Influent		35,275.0	9,600				
30-Jan-03	534	Precarbon		4,230.0	1,700				
30-Jan-03	534	Effluent	581,400	4,584.7	2,200	349.1	147.7	12.61092	8.01520
19-Feb-03	554	Influent		71,520.0	32,000				
19-Feb-03	554	Precarbon		3,149.0	81				
19-Feb-03	554	Effluent	598,000	4,004.0	1,500	358.4	152.0	13.16556	8.22366
2-Apr-03	580	Influent		20,876.0	6,300				
2-Apr-03	580	Precarbon		1,553.0	120				
2-Apr-03	580	Effluent	623,300	114.7	22	362.8	153.3	13.18977	8.22832
23-Apr-03	596	Influent		30,060.0	9,500				
23-Apr-03	596	Precarbon		2,095.0	29				
23-Apr-03	596	Effluent	645,300	3.0	0.15	368.3	155.0	13.19032	8.22835
21-May-03	619	Influent		25,470.0	6,100				
21-May-03	619	Precarbon		5,491.0	71				
21-May-03	619	Effluent	687,700	3.1	0.15	377.3	157.2	13.19142	8.22840
25-Jun-03	654	Influent		42,650.0	26,000				
25-Jun-03	654	Precarbon		3,310.0	150				
25-Jun-03	654	Effluent	721,000	1.9	0.12	389.2	164.4	13.19195	8.22843
30-Jul-03	684	Influent		8,440.0	1,400				
30-Jul-03	684	Precarbon		144.0	6				
30-Jul-03	684	Effluent	748,800	1.2	0.19	391.1	164.7	13.19224	8.22848
28-Aug-03	713	Influent		10,630.0	2,200				
28-Aug-03	713	Precarbon		434.3	36				
28-Aug-03	713	Effluent	761,700	0.5	0.16	392.3	165.0	13.19229	8.22849

**Table 11
Remediation System Water Treatment Summary
Northern States Power, Ashland, Wisconsin**

Sample Date	Total Elapsed Time (days) ¹	Sample Type	Cummulative Volume of Treated Effluent (gal.)	VOCs (ug/L) ²	Benzene (ug/L) ²	Cummulative Mass of VOCs Removed (lbs.) ³	Cummulative Mass of Benzene Removed (lbs.) ³	Cummulative Mass of VOCs Discharged (lbs.) ⁴	Cummulative Mass of Benzene Discharged (lbs.) ⁴
29-Sep-03	745	Influent		18,770	3,400				
29-Sep-03	745	Precarbon		300.1	17				
29-Sep-03	745	Effluent	781,500	0.7	0.12	395.4	165.5	13.19241	8.22851
29-Oct-03	775	Influent		8,730	1,200				
29-Oct-03	775	Precarbon		169.7	3				
29-Oct-03	775	Effluent	793,400	0.3	0.18	396.3	165.7	13.19243	8.22853
19-Nov-03	796	Influent		10,940	2,000				
19-Nov-03	796	Precarbon		529	23				
19-Nov-03	796	Effluent	799,900	3.5	0.71	396.8	165.8	13.19262	8.22857
29-Dec-03	836	Influent		11,710	2,100				
29-Dec-03	836	Precarbon		7,815	2,900				
29-Dec-03	836	Effluent	821,500	0.0	0.12	399.0	166.1	13.19262	8.22859
20-Jan-04	858	Influent		9,021	2,200				
20-Jan-04	858	Precarbon		576	44				
20-Jan-04	858	Effluent	826,300	2.57	0.50	399.3	166.2	13.19273	8.22861
26-Feb-04	895	Influent		21,425	4,900				
26-Feb-04	895	Precarbon		631	38				
26-Feb-04	895	Effluent	854,700	0.49	0.05	404.4	167.4	13.19284	8.22862
15-Mar-04	917	Influent		20,660	4,500				
15-Mar-04	917	Precarbon		673	39				
15-Mar-04	917	Effluent	876,900	0	0.05	408.2	168.2	13.19284	8.22863
27-Apr-04	956	Influent		11,650	3,500				
27-Apr-04	956	Precarbon		430	74				
27-Apr-04	956	Effluent	893,300	0.28	0.09	409.8	168.7	13.19288	8.22865
26-May-04	985	Influent		22,300	4,800				
26-May-04	985	Precarbon		500	12				
26-May-04	985	Effluent	914,600	0	0.15	413.8	169.6	13.19288	8.22867
24-Jun-04	1014	Influent		24,040	4,800				
24-Jun-04	1014	Precarbon		627	47				
24-Jun-04	1014	Effluent	953,200	0	0.15	421.5	171.1	13.19288	8.22872
6-Jul-04	1026	Influent		15,530	2,600				
6-Jul-04	1026	Precarbon		153.1	9.8				
6-Jul-04	1026	Effluent	965,100	0.59	0.09	423.1	171.4	13.19294	8.22873
19-Aug-04	1070	Influent		15,060	1,900				
19-Aug-04	1070	Precarbon		82.2	5.2				
19-Aug-04	1070	Effluent	994,600	0.37	0.09	426.8	171.8	13.19303	8.22875
27-Sep-04	1109	Influent		23,520	5,800				
27-Sep-04	1109	Precarbon		645.9	17.0				
27-Sep-04	1109	Effluent	1,028,400	0.29	0.09	433.4	173.5	13.19311	8.22878
28-Oct-04	1140	Influent		21,680	5,000				
28-Oct-04	1140	Precarbon		274.6	26				
28-Oct-04	1140	Effluent	1,057,500	0.64	0.09	438.7	174.7	13.19327	8.22880
17-Nov-04	1160	Influent		29,010	9,600				
17-Nov-04	1160	Precarbon		201.7	14				
17-Nov-04	1160	Effluent	1,069,800	0.00	0.09	441.7	175.7	13.19327	8.22881
15-Dec-04	1188	Influent		22,710	6,200				
15-Dec-04	1188	Precarbon		199.4	21				
15-Dec-04	1188	Effluent	1,090,700	201.1	200	445.6	176.7	13.22834	8.26380
12-Jan-05	1216	Influent		69,060	23,000				
12-Jan-05	1216	Precarbon		11.8	1.9				
12-Jan-05	1216	Effluent	1,112,900	167.5	160	458.3	180.9	13.25937	8.29354
8-Feb-05	1243	Influent		18,930	4,300				
8-Feb-05	1243	Precarbon		211.8	27				
8-Feb-05	1243	Effluent	1,134,700	0.7	0.42	461.8	181.7	13.25950	8.29362
18-Mar-05	1281	Influent		10,710	2,100				
18-Mar-05	1281	Precarbon		926	510				
18-Mar-05	1281	Effluent	1,160,800	1.13	0	464.1	182.2	13.25974	8.29362
6-Apr-05	1300	Influent		7,750	1,200				
6-Apr-05	1300	Precarbon		220.6	18				
6-Apr-05	1300	Effluent	1,175,000	0	0	465.0	182.3	13.25974	8.29362
12-May-05	1336	Influent		5,610	850				
12-May-05	1336	Precarbon		349.4	79				
12-May-05	1336	Effluent	1,191,500	1.0	0	465.8	182.4	13.25988	8.29362

- (1) Total Elapsed Time, in days, only for days of remediation system operation, not days since start-up.
- (2) When a below detection result occurs, the assumed value is half of the detection limit.
- (3) Removal based on Influent vs. Effluent
- (4) Emission rate to date calculated from average concentrations in effluent and total days of remediation system operation.
- (5) This sample was collected at the oil-water separator discharge, prior to the air diffuser.
- (6) This sample was collected at the inlet to the liquid phase carbon.



June 15, 2005

Doug Zamastil
Remedial Response Section 4
Superfund Division
US EPA Region 5 (SR-5J)
77 West Jackson Blvd.
Chicago, IL 60604

RE: EDMAN Electronic Data Submittal #006
Ashland/NSP Lakefront Site
WDNR BRRTS #02-02-000013
CERCLA Docket No. V-W-04-C-764
EPA Facility ID #WISFN057952

Dear Mr. Zamastil:

Enclosed is the sixth electronic data deliverable (EDD) in the EDMAN format for the above referenced site. This submittal includes groundwater sample data collected from March 15-25, 2005. Additionally, this submittal includes interim treatment system sample data collected in March 2005, April 2005, and May 2005.

Chemistry files include the sample information file (*EPAR5SMP_v1*), the sample results without QC file (*EPAR5TRS_v1*), the sample batch file (*EPAR5BAT_v1*), and the water table file (*EPAR5GWTR_v1*). The chemistry field measurement file (*EPAR5CFM_v1*) for the March 2005 groundwater sampling event could not be submitted at this time, but will be included in a later submittal.

There are two data output exceptions that cannot be entered in accordance with EDMAN format requirements. In the chemistry result file *EPAR5TRS_v1*, the laboratory name codes "NLS" (Northern Lake Service, Crandon, Wisconsin) and "TIACR" (Test America Inc., Cedar Rapids, Iowa) were used but are not listed as valid lab codes in Table A-17 of the Appendix in the EDD Specification Manual version 1.1. We have previously proposed adding these lab name codes to the list of valid values.

Future EDMAN data will be submitted as data is generated and validated during Remedial Investigation activities at the site. This data will be submitted concurrently with monthly status reports as it becomes available.

Please contact us at (608) 442-5223 if you have any questions.

NEWFIELDS
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Sincerely yours,

NEWFIELDS

A handwritten signature in cursive script that reads "David P. Trainor".

David P. Trainor P.E., P.G.
Associate

A handwritten signature in cursive script that reads "Derek Zoellner".

Derek Zoellner
Data Manager

Enclosure

CC: Scott Hansen – EPA Region 5 RPM

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